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Former International Malleable Iron Company

Phase Two Environmental Site Assessment

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City of Guelph

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Former International Malleable Iron Company

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Acronyms and Abbreviations

°C	degree(s) Celsius
µg/g	microgram(s) per gram
µg/L	microgram(s) per litre
µm	micron(s) or micrometre(s)
ABN	acid/base/neutral compounds
ALS	ALS Environmental
APEC	area of potential environmental concern defined in O. Reg. 153/04 as "the area on, in or under a phase one property where one or more contaminants are potentially present, as determined through the phase one environmental site assessment, including through (a) identification of past or present uses on, in or under the phase one property, and (b) identification of potentially contaminating activity"
AST	aboveground storage tank
BTEX	benzene, toluene, ethylbenzene, and xylene
CH2M	CH2M HILL Canada Limited
City	The Corporation of the City of Guelph
cm	centimetre(s)
COA	certificate of analysis
COC	contaminant of concern
COPC	contaminant of potential concern
CSM	conceptual site model
DCS	Decommissioning Consulting Services
DO	dissolved oxygen
DQE	data quality evaluation
Earth Tech	Earth Tech Canada Inc.
EC	electrical conductivity
EM	electromagnetic
ESA	Environmental Site Assessment
eV	electron-volt
FD	field duplicate
FIP	fire insurance plan
GPR	ground-penetrating radar
HSA	hollow-stem auger
HWS boron	hot-water-soluble boron
ID	identification

IMICO	International Malleable Iron Company
kg	kilogram(s)
km	kilometre(s)
L	litre(s)
LNAPL	light nonaqueous phase liquid
m	metre(s)
masl	metre(s) above sea level
mbgs	metre(s) below ground surface
MECP	Ontario Ministry of the Environment, Conservation and Parks
mg/L	milligram(s) per litre
m/m	metre(s) per metre
mm	millimetre(s)
m/s	metre(s) per second
mS/cm	millisiemens per centimetre
NAPL	nonaqueous phase liquid
OLS	Ontario Land Surveyor
O. Reg.	Ontario Regulation
ORP	other regulated parameters
OTR	Ontario Typical Range
P&R	Proctor & Redfern Limited
PAH	polycyclic aromatic hydrocarbon
PCA	potentially contaminating activity defined in O. Reg. 153/04 as “a use or activity set out in Column A of Table 2 of Schedule D that is occurring or has occurred in a phase one study area”
PCB	polychlorinated biphenyl
PGMIS	Provincial Groundwater Monitoring System
Phase Two Property	Former International Malleable Iron Company foundry facility located at 200 Beverley Street, Guelph, Ontario
PHC	petroleum hydrocarbon compound
PID	photoionization detector
ppm	parts per million
PVC	polyvinyl chloride
QA	quality assurance
QC	quality control
QPESA	Qualified Person for ESAs according to MECP (O. Reg. 153/04)
RA	risk assessment

RL	laboratory reporting limit
RSC	Record of Site Condition
SAP	Sampling and Analysis Plan
SAR	sodium adsorption ratio
SCS	Site Condition Standard
SOP	standard operating procedure
Site	Former International Malleable Iron Company foundry facility located at 200 Beverley Street, Guelph, Ontario
SWRT	single-well response test
Table 6 SCS	Table 6, Generic Site Condition Standards for Shallow Soils in a Potable Groundwater Condition for coarse-textured soils and residential/parkland/institutional property use (MECP 2011b)
TCE	trichloroethylene
TCLP	Toxicity Characteristic Leaching Procedure
Tesla	Tesla Environmental Services Inc.
TPH	total petroleum hydrocarbon
UST	underground storage tank
VOC	volatile organic compound
WSP	WSP Canada Inc.

1. Executive Summary

The City of Guelph (City) retained CH2M HILL Canada Limited (CH2M), now a wholly own subsidiary of Jacobs Engineering Group Inc. (Jacobs), to provide environmental services for the property identified as the former International Malleable Iron Company (IMICO) foundry facility located at 200 Beverley Street, Guelph, Ontario (hereafter identified as the Phase Two Property or Site). It is Jacobs' understanding that the City requires environmental services to complete a Phase Two Environmental Site Assessment (ESA) and risk assessment (RA) to support the Site's redevelopment or potential sale for residential/parkland land use.

The Site is approximately 5.2 hectares in size and is located east of the City's downtown. The Site currently consists of vacant land historically used for industrial purposes. Onsite buildings have been razed, with concrete floor slabs still in place. The Phase Two ESA is based on the current investigation, which began in September 2017, and historical investigations conducted by Proctor & Redfern (1991), Gartner Lee Limited (1999; 2004), Earth Tech Canada Inc. (1999), Decommissioning Consulting Services (2007; 2014), AECOM (2012; 2013; 2014; 2015; 2016; 2017), and WSP Canada Inc. (2016).

Jacobs has conducted field work to support and update these previous investigations at the Site; to meet current Ontario Regulation 153/04 (Ontario Ministry of the Environment, Conservation and Parks [MECP], 2011a) regulatory requirements and to investigate or further investigate areas of potential environmental concern identified during the Phase One ESA (CH2M 2017). The Phase Two ESA is also being completed to support the future potential filing of a Record of Site Condition for the Site to support Site redevelopment.

Phase Two ESA activities on the Phase Two Property consisted of nonintrusive geophysical investigations, soil borings, test pitting, and groundwater monitoring well installation. Over 100 investigative locations were advanced across the Site as part of the Phase Two ESA investigation, which ranged from 0.89 to 26.19 metres below ground surface (mbgs).

The onsite geology was typified by

i. Surficial fill from ground surface ranging from 0.15 to 3.1 mbgs
ii. A silty sand unit, ranging in thickness from 0 metre (m) to 3.0 m
iii. Stone Road Member of the Eramosa Formation ranging in thickness from 1.7 to 5.8 m
iv. Reformatory Quarry Member of the Eramosa Formation ranging in thickness from 6.4 to 9.6 m
v. Vinemount Member of Eramosa Formation ranging in thickness from 6.4 to 9.6 m
vi. Goat Island Formation interpreted thickness of greater than 8.5 m

During the Phase Two ESA, the fill, native silty fine sands, and units of bedrock from the Eramosa Formation to the Goat Island Formation were investigated. Monitoring wells were instrumented in the upper sands and fractured Stone Road Member bedrock to characterize the water table, and also deeper in the Reformatory Quarry and Vinemount Members of the Eramosa Formation to characterize the lower bedrock beneath the Site. The deepest well onsite extends approximately 33 mbgs into the Goat Island Formation.

Water level measurements have been collected in onsite monitoring wells since 2010, and including the Phase Two ESA, they make up 27 water level events (2010 to 2020). Aside from seasonal variability, the

depth-to-water table elevation has remained consistent across the Site throughout this period and has ranged from 0.93 to 4.97 mbgs, with an average of 2.78 mbgs. Light nonaqueous phase liquid was measured (up to 0.97 m) in three of the monitoring wells screening within the overburden and bedrock contact zone.

Soil and groundwater quality data was compared with the Generic Site Condition Standards for Shallow Soils in a Potable Groundwater Condition for coarse-grained soil and residential/parkland/institutional property use (Table 6 SCS) (MECP 2011b).

On the Phase Two Property, soil was found to be generally impacted with elevated soil concentrations of metals and petroleum hydrocarbons (PHCs) and localized impacts from polycyclic aromatic hydrocarbons (PAHs); benzene, toluene, ethylbenzene, and xylenes (BTEX); volatile organic compounds (VOCs); and polychlorinated biphenyls. The presence of these parameters is consistent with the Site's historical and industrial land use. The widespread soil exceedances for metals (including hydride-forming metals) are interpreted to occur throughout most of the fill, extending to the bedrock surface. Lead and zinc are the predominant parameters with concentrations exceeding the Table 6 SCS. PHC exceedances occur throughout a significant portion of the Site, with concentrations in some localized areas (northeastern area downgradient of historically remediated area and near the former garage) exceeding the MECP Free-Phase Threshold Values (MECP 2011d). Elevated BTEX, PAH, and VOCs are localized to areas corresponding with historical activities (such as the former garage and galvanizing building), and elevated electrical conductivity concentrations are connected to imported backfill for historical excavations.

Groundwater was generally found to be impacted with chlorinated VOCs (specifically, chloroethenes), with localized impacts of chloroethanes, BTEX, metals, PAHs, and PHCs. Chloroethenes were found across the Site at various depths: shallower impacts (in the upper overburden and bedrock contact zone) are generally located in the southwestern portion and eastern corner of the Site, whereas the deeper impacts (Eramosa Formation [Reformatory Quarry/Vinemount members]) extend across the entire Site, including the Site's northwestern portion where shallow groundwater impacts were not observed. Specifically, cis-1,2-DCE was found at low levels exceeding the Table 6 SCS in the Vinemount and the deepest well screened in the Goat Island Formation and is understood to be a regional issue in the City. Chloroethanes were found primarily localized to the southwestern area of the Site in the upper overburden and bedrock contact zone, with limited detections in the Reformatory Quarry Member (Eramosa Formation). Based on distribution and groundwater flow direction, the chloroethanes are likely from an onsite source, though no concentrations have been found in the soil. The source of the PHC-impacted groundwater, present in historically remediated areas, is suspected to be related to the historical presence of highly contaminated material and soil in these areas. BTEX and PAH concentration distributions in groundwater are similar to the PHC areas and likely indicate related sources. Elevated metals concentrations in groundwater include mainly zinc, with localized occurrences for arsenic and lead.

Based on the results of the Phase Two ESA, the Phase Two Property did not meet the applicable SCS, and remediation or development of property-specific standards under the completion of an RA is required in order for a Record of Site Condition to be obtained for the Phase Two Property.

Based on extensive sampling and remediation from across the Phase Two Property, it has been concluded that the lateral and vertical extent of soil and groundwater impacts have been sufficiently defined for Phase Two ESA purposes, as well as to support the RA and evaluation of risk management measures.

2. Introduction

The City of Guelph (City) retained CH2M HILL Canada Limited (CH2M), now a wholly owned subsidiary of Jacobs Engineering Group Inc. (Jacobs), to provide environmental services for the property identified as the former International Malleable Iron Company (IMICO) foundry facility located at 200 Beverley Street, Guelph, Ontario (hereafter identified as the Phase Two Property or Site). It is Jacobs' understanding that the City requires environmental services to complete a Phase Two Environmental Site Assessment (ESA) and risk assessment (RA) to support the Site's redevelopment or potential sale for residential/parkland land use. Figure 2-1 shows the Site location.

The Site is approximately 5.2 hectares in size and is located east of the City's downtown. The Site currently consists of vacant land historically used for industrial purposes. Onsite buildings have been razed, with concrete floor slabs still in place. The Phase Two ESA is based on the current investigation, which began in September 2017, and historical investigations conducted by Proctor & Redfern ([P&R] 1991), Gartner Lee Limited (1999; 2004), Earth Tech Canada Inc. ([Earth Tech] 1999), Decommissioning Consulting Services ([DCS] 2007; 2014), AECOM (2012; 2013; 2014; 2015; 2016; 2017), and WSP Canada Inc. ([WSP] 2016).

The Site has undergone several subsurface environmental investigations between 1991 and 2020. Jacobs has conducted field work to support and update these previous investigations at the Site to meet current Ontario Regulation (O. Reg.) 153/04 (Ontario Ministry of the Environment, Conservation and Parks [MECP] 2011a) regulatory requirements and to investigate or further investigate areas of potential environmental concern (APECs) identified during the Phase One ESA (CH2M 2017). The Phase Two ESA is also being completed to support the future filing of a Record of Site Condition (RSC) for the Site to support the Site's planned redevelopment.

2.1 Site Description

The Phase Two Property is located east of the City's downtown and is approximately 5.2 hectares. The Site currently consists of vacant land historically used for industrial purposes. Onsite buildings have been razed, with concrete floor slabs still in place. The Phase Two Property is surrounded by a mix of commercial, industrial, and residential land uses. The Site is located at 200 Beverley Street, east of Stevenson Street and north of Beverley Street, with rail tracks located immediately north of the northern property boundary. The property information, including the address and property identifier number, are identified in Table 2-1.

Table 2-1. Property Information

Phase Two Environmental Site Assessment, 200 Beverly Street, Guelph, ON

Municipal Address	Property Identification Number	Legal Description
200 Beverley Street	71343-0074(LT)[a]	Part of Lots 1, 2 & 3, Range 3, Division F, City of Guelph; Part Beverley Street, Plan 343, closed by DEP2184; as in RO706184; S/T RO706184; Guelph

[a] Ontario Land Title

2.1.1 Adjacent Properties

Figure 2-1 shows the properties surrounding the Site and the official zoning as per the City of Guelph Official Plan (City of Guelph 2014). Guelph Junction Railway Lines border the northern property boundary. Properties further north are generally industrial, commercial, or residential. Properties to the south and to

the east within 250 metres (m) of the Site are a mix of residential, industrial, and commercial (mixed office, mixed business). Properties to the west within 250 m of the Site are shown as residential based on the City of Guelph Official Plan; however, based on recent Site visits, it appeared to have some commercial uses and had some former industrial uses in the past based on the Phase One ESA (CH2M 2017).

2.2 Property Ownership

The City currently owns the Phase Two Property identified in Table 2-1. Table 2-2 presents contact information for the owner of the Phase Two Property.

Table 2-2. Contact Information, Owner of Phase Two Property
Phase Two Environmental Site Assessment, 200 Beverly Street, Guelph, ON

Agency	Role	Contact Information
City of Guelph	Owner Representative	Prasoon Adhikari, M.Sc., P.Eng., PMP Environmental Engineer City of Guelph Engineering and Transportation Services, Infrastructure, Development and Environmental Engineering 1 Carden Street Guelph, Ontario, N1H 3A1 Ph: 519.822.1260 ext. 2946 Email: Prasoon.Adhikari@guelph.ca

2.3 Current and Proposed Future Uses

The Site currently consists of vacant, undeveloped land historically used for industrial purposes, as documented in the Phase One ESA (CH2M 2017). Onsite buildings have been razed, with concrete floor slabs still in place. Figure 2-2 shows the location of historical onsite buildings. It is Jacobs' understanding that the City plans to redevelop the property for residential and parkland uses. The locations of proposed buildings were unknown at the time this report was written.

Because the historical land use of the Phase Two Property was industrial, according to Section 168.3.1 of the *Environmental Protection Act* (MECP 1990a), an RSC must be filed prior to redeveloping the Site for residential/ parkland land use.

2.4 Applicable Site Condition Standards

O. Reg. 153/04 (MECP 2011a) under Part XV.1 of the *Environmental Protection Act* addresses assessment, cleanup, and RSC filing for brownfield sites in Ontario and is applicable to the Phase Two Property. Jacobs evaluated the Site based on several criteria to decide which of the generic site condition standards (SCS) provided in the Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the *Environmental Protection Act* (MECP 2011b) were applicable for a comparison of soil and groundwater results from the Phase Two ESA investigation.

The items in Table 2-3 were considered during the SCS selection, as outlined in O. Reg. 153/04, as amended (MECP 2011a).

The special conditions for environmentally sensitive areas under Section 41 of O. Reg. 153/04 were considered for applicability to the Phase Two Property, because soil pH results ranged from 6.6 to 10.64

based on 103 soil samples. With the exception of two samples, the remaining soil samples were found to have a pH value within the Ministry's acceptable range (that is, a pH value in surface soil between 5 and 9, or a pH value in subsurface soil between 5 and 11). A review of the borehole logs from the two locations (BH17-204 and MW17-100S) indicated that concrete rubble or dust was likely present in the submitted samples that reported pH values of 10.64 and 9.45, respectively. The soil from the first location (BH17-204) was determined to be "isolated fill" because concrete foundations were encountered both above and below the soil layer, isolating it from the overburden soils at the Site. For this reason, the soil pH from this sample was not considered representative of Site soils and was removed from consideration in determining soil pH at the Site. An additional sample was collected at MW17-100S to address the second location with a high pH value. The sample was collected from within 2 m of the original sampling location at the same sampling depth. The result was a pH concentration of 7.71. Using the average of the two samples as outlined in Section 48 of O. Reg. 153/04, it was confirmed that pH concentrations were within the acceptable range.

The special conditions for land within 30 m of a water body under Section 43.1 of O. Reg. 153/04 do not apply to the Phase Two Property; however, as bedrock has been encountered at less than 2 metres below ground surface (mbgs), the special condition for shallow soil properties cited under Section 43.1 of O. Reg. 153/04 applies to the Phase Two Property.

The Phase Two Property and adjacent properties within 100 m are serviced by a municipal water source. As the groundwater near the Property does and will serve as a raw water supply for a drinking water system, the potable groundwater condition was applied. Based on the information presented previously and in Table 2-3 and at the Qualified Person for ESA's (QPESA's) discretion, Jacobs selected the Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Groundwater Condition for use under Part XV.1 of the *Environmental Protection Act* adopted under O. Reg. 153/04 (MECP 2011b) for coarse-grained soil and residential/parkland/institutional property use (Table 6 SCS) as applicable to the Site.

Table 2-3 outlines the items considered for the selection of site condition standards.

Table 2-3. Items Considered for Site Condition Standards Selection
Phase Two Environmental Site Assessment, 200 Beverly Street, Guelph, ON

Condition	Evaluation
Land use	The current land use is industrial, and the proposed future land use may include residential/parkland and commercial uses, provided an RSC acknowledged by the MECP is obtained.
Potable or nonpotable groundwater	The Site and adjacent properties within 100 m are serviced by a municipal water source. As the groundwater near the property does and will serve as a raw water supply for a drinking water system, the potable groundwater condition applies.
Proximity to surface water body	The Site is not located within 30 m of a water body.
Proximity to areas of natural significance or environmentally sensitive areas	The Site is not considered to be within the proximity of an environmentally sensitive area based on the information reviewed as part of the Phase One ESA (CH2M HILL 2017).
Depth to bedrock	A property is considered a shallow soil property if one-third or more of the area consists of soil depths of 2 mbgs or less, excluding nonsoil surface treatment (that is, asphalt, concrete, or aggregate) (MOE 2011a). The depth to bedrock is considered to be less than 2 m, because shallow soil was observed on one-third or more of the Phase Two Property.
pH of soil	Based on the results of the Jacobs investigations, soil pH was found to range from 6.6 to 9.0, with the exception of two samples. Samples collected at BH17-204 and MW17-100S were measured with a pH value outside of MECP's acceptable upper limit of 9 for surface soils. A review of the borehole logs from these locations indicated that concrete rubble or dust was likely present in the submitted samples, which had pH values of 9.45 and 10.64. The other pH values collected during the CH2M investigation were within the MECP's acceptable range. The soil from BH17-204 was determined to be "isolated fill" because concrete foundations were encountered both above and below the soil layer, isolating it from the overburden soils at the Site. An additional sample was collected at MW17-100S, which reported a pH value of 7.71. Using the average of the two samples as outlined in Section 48 of O. Reg. 153/04, it was confirmed that pH concentrations were within the acceptable range.
Soil texture	For this evaluation, because of the extensive presence of heterogeneous fill materials across the Site, the standards for coarse-grained soils were used to be conservative.

3. Background Information

3.1 Physical Setting

The topography over the majority of the Phase Two Property is flat lying with surveyed ground surface elevations ranging from approximately 316.4 metres above sea level (masl) in the northwest near OW13-39 to 315.4 masl in the southwest near MW18-122. Based on available topographic mapping, the surrounding properties generally slope from north to south towards the Eramosa River.

The Phase Two Property and corresponding Phase One Study Area do not include a water body or land within 30 m of a water body and are also not considered to be within, or adjacent to, an area of natural significance.

The regional topography and surface water drainage features are shown on Figure 3-1. The Eramosa River, located south of the Phase Two Property, is the major surface water drainage feature in the area, with the headwaters located northeast of Guelph near Acton. The Eramosa River flows westwards where it joins with the Speed River near the downtown core.

The City of Guelph categorizes regions of the City within Wellhead Protection Areas (City of Guelph 2012). The IMICO site is within Wellhead Protection Area B (two-year travel time) for several of the City of Guelph's municipal water supply wells. The City of Guelph is additionally part of the Grand River Source Protection Plan (Lake Erie Region Source Protection Committee 2019). The Plan assigns Drinking Water Threat Vulnerability Scores across the region based on various risk factors; the IMICO site is assigned a Vulnerability Score of 10, the highest score possible, indicating its susceptibility to contamination. The Site is not located within an Intake Protection Zone (GRCA 2017).

3.2 Past Investigations

The City provided Jacobs with copies of environmental reports that had been completed by others for the Site, including several soil and groundwater investigations and studies from 1991 to 2016. A review and summary of relevant documents were compiled as part of Jacobs' Phase One ESA (CH2M 2017) and are provided in Table 3-1. Further details can be found in the original reports.

3.2.1 Reliability of Historical Data

Table 3-1 summarizes the following:

- Field program associated with each historical subsurface investigation
- Evaluation of whether data or information from the historical subsurface investigation is considered reliable for inclusion in the current Phase Two ESA for RSC purposes and actions taken to confirm or update data or information not considered reliable

In general, Jacobs made the following observations during this evaluation:

- Parameters, such as oil and grease; total petroleum hydrocarbons (TPHs); benzene, toluene, ethylbenzene, and xylenes (BTEX); and volatile organic compounds (VOCs) were characterized more adequately by current standards, using appropriate sample collection and laboratory analysis methods. Oil and grease and TPH analyses were replaced by petroleum hydrocarbon (PHC) fraction (F)1 through F4 analysis. TPH and VOC analyses from before 2004 are considered unreliable because of changes in analytical methods.

- Groundwater concentrations older than 10 years from the commencement of the Phase Two ESA activities were considered not representative of current conditions.
- Some results (specifically those prior to 1999) were provided in some reports without supporting laboratory certificates of analysis (COAs).

Where these observations were noted, a portion of the historical data could not be fully relied upon to reflect current environmental conditions at the Site. Therefore, Jacobs used the data for screening purposes only during the Phase Two ESA to reflect the possible presence of contaminants in certain areas. The data were not used to confirm concentrations meeting the applicable standards in APECs nor used to confirm maximum concentrations on the Phase Two Property.

The following historical data in soil were determined to be adequate for identifying contaminant concentrations:

- Metals, including hydride-forming and other regulated parameters (ORP) hexavalent chromium and mercury
- Polycyclic aromatic hydrocarbons (PAHs)
- Polychlorinated biphenyls (PCBs)
- VOCs and BTEX after 2004

PAHs and PCB are less likely to degrade in the field; however, current analytical methods for PAH and PCB analysis have lower detection limits and therefore are of better use for defining limits and extents of contamination relative to current standards. Where older method detection limits may have been exceeded, additional analysis may be required to confirm maximum concentrations or to confirm that concentrations are less than applied standards. Jacobs considered this requirement while developing the various Sampling and Analysis Plans (SAPs) for the Phase Two ESA. Minimal metal degradation in soil is expected over time; therefore, data are assumed to reasonably reflect the Phase Two Property conditions, except in areas inferred to have been further contaminated since initially sampled, which has not been known to occur at the Site.

Note that where historical data were used for the parameters, results should be interpreted with caution. Over time, regulations, analytical best practices, and methods have evolved. Many hold times and preservatives changed as a result of O. Reg. 153/04 (Ministry 2011c). Changes in analytical methods, hold times, and sample preservation do not necessarily invalidate previous data, but they keep the analytical procedures in step with current science. Most preservatives and hold times are designed to retain analytes of interest in solution for the stated hold-time period. It is reasonable to state that as hold times and preservatives are changed with the use of new analytical best practices, older data could be biased low; however, this is not necessarily always the case. Moreover, changes in current rules affecting sample preservatives and hold times do not invalidate historical data usability.

Despite these considerations, the historical soil and groundwater data deemed adequate for identifying contaminant concentrations are considered valid for ESA and remedial planning or RA purposes for the following reasons:

- Changes in current rules affecting sample preservatives and hold times do not invalidate historical data usability. Over time, regulations, analytical best practices, and methods have evolved.
- Samples were analyzed at commercial laboratories, using standardized methods for environmental sampling. Commercial laboratories have the ultimate goal of producing valid and reproducible data by

performing analysis using current reference methods, often written by the United States Environmental Protection Agency or the MECP.

- More recent data have lower detection limits; however, this is accounted for in the data evaluation. The testing that is done at commercial laboratories has, for the most part, been conducted for years; the testing method evolution has improved the method's performance but has not invalidated previous data.
- In general, changes to detection limits will not change the absolute values determined; however, there will be more detections because the detection limits are reduced.

4. Scope of Investigation

The Site has undergone several subsurface environmental investigations between 1999 and 2020. The current Phase Two ESA activities on the Site were completed between September 2017 and March 2020 and consisted of soil borings, test pits, and groundwater monitoring well installation. Analytical data from a total of 147 investigative locations previously advanced across the Site as part of historical Phase Two ESA investigations were considered reliable for use in the current Phase Two ESA. An additional 104 investigative locations (21 boreholes, 25 test pits, and 58 monitoring wells) were advanced as part of the Phase Two ESA investigation between 2017 and 2020. Analytical data from a total of 173 soil sampling locations and 94 groundwater sampling locations were used to evaluate contaminants of concern (COCs) as part of the Phase Two ESA.

The purpose of the Phase Two investigations were to

- Support and update previous studies
- Meet current O. Reg. 153/04 (MECP 2011a) regulatory requirements
- Investigate or further investigate APECs identified during the Phase One ESA (CH2M 2017)
- Provide data to support future remedial activities, an RA, or both, that will need to be conducted prior to Site redevelopment

In addition, the report is intended to support an RSC filing for the Site to allow for the Phase Two Property's future redevelopment.

During the Phase One ESA, CH2M identified areas where potentially contaminating activities (PCAs) have occurred on the Phase Two Property and on lands within 250 m of the Phase Two Property. PCAs occurring on the Phase Two Property were subsequently carried through the investigation as APECs, as required by O. Reg. 153/04, as amended. When offsite PCAs were identified as having the potential to affect the Phase Two Property, they were also carried through the investigation as APECs.

As summarized in the Phase One ESA (CH2M 2017), 33 APECs were identified on the Phase Two Property, of which 29 were attributable to onsite PCAs and 4 were attributable to offsite PCAs (located within 250 m of the Phase Two Property). Figure 4-1a and 4-1b show the onsite and offsite PCAs and their associated APECs, respectively. These APECs and PCAs were the focus of the Phase Two ESA activities. Figure 4-2 shows the APECs identified in the Phase One ESA for the Phase Two Property, as well as the historical and recent Phase Two ESA borehole and monitoring well locations.

The principal objective of the Phase Two ESA is assess and update current Site conditions (considering previous findings and Site work) to identify general and current subsurface impacts that will need to be managed during Site redevelopment. The Phase Two ESA included multiple soil and groundwater Site investigations as follows:

- Reviewing historical reports for previous subsurface investigations
  - A total of 111 soil samples from boreholes, test pits, and excavations were collected, and 36 monitoring wells were installed as a part of the historical investigations, resulting in 184 historical soil samples considered reliable for use in the Phase Two ESA. Groundwater samples were collected in 2007 by DCS, and from 2010 to 2016 by AECOM as part of an annual groundwater monitoring program, and in 2016 by WSP, resulting in 186 historical groundwater samples that were considered reliable for use in the Phase Two ESA.

- Arranging for public and private underground utility locates
- Developing SAPs based on Phase One ESA findings and historical subsurface investigations
- Drilling 41 boreholes and advancing 25 test pits to collect selected soil samples analyzed for COCs to address data gaps identified while reviewing the current and historical data, and to assess and determine subsurface stratigraphy. Boreholes and test pits were advanced as follows:
  - October 2017: 17 boreholes were advanced (BH17-200 through BH17-204, MW17-100S, MW17-101D, MW17-102D, MW17-103D, MW17-104D, MW17-105D, MW17-106D, MW17-107S, MW17-108S, MW17-109S, MW17-110S, and MW17-111S) to depths of 0.89 to 3.2 mbgs.
  - October 2017: 9 test pits were advanced (TP17-300 through TP17-308) to depths of 1.22 to 2.59 mbgs.
  - June–July 2018: 14 boreholes were advanced (BH18-204 through BH18-208, and MW18-117S, MW18-120D, MW18-121S, MW18-122D, MW18-123D, MW18-124S, MW18-125S, MW18-126D, and MW18-129D) to depths of 2.29 to 3.66 mbgs.
  - July 2018: 11 test pits were advanced (TP18-309 through TP18-319) to depths of 1.22 to 2.90 mbgs.
  - April 2019: 6 boreholes were advanced (BH19-100i, BH19-102i, BH19-102ii, BH19-209 through BH19-211) to depths of 0.30 to 3.05 mbgs, which included locations to confirm pH at MW17-100 and VOCs at MW17-102D.
  - February 2020: 4 boreholes were advanced (BH18-207i, BH20-212 through BH20-214) to depths of 1.83 to 3.66 mbgs.
  - February 2020: 5 test pits were advanced (TP20-320 through TP20-324) to depths of 1.52 to 2.39 mbgs.
- Installing 58 groundwater monitoring wells and sampling from an additional 36 historical monitoring well locations, as follows:
  - September 2017: 26 existing monitoring wells were sampled (OW02, OW03-I, OW03-II, OW07-31, OW07-32, OW07-33, OW07-34D, OW07-34S, OW-07-37, OW07-38S, OW11-I, OW11-II, OW12, OW13-39D, OW13-39S, OW15, OW16, OW17, OW19, OW22D, OW22S, OW23D, OW24D, OW24S, OW25, and OW31).
  - October 2017: 17 monitoring wells were installed to depths ranging from 3.66 to 15.29 mbgs. 13 wells were installed in the overburden and bedrock contact zone: MW17-100S, MW17-101S, MW17-103S, MW17-104S, MW17-104D, MW17-105S, MW17-106S, MW17-106D, MW17-107S, MW17-108S, MW17-109S, MW17-110S, and MW17-111S. Screen depths ranged from 1.22 to 8.53 mbgs. Four wells were installed in the Eramosa Formation bedrock unit: MW17-101D, MW17-102D, MW17-103D, and MW17-105D. Screen depths ranged from 6.7 to 15.29 mbgs. Groundwater samples were collected in October and November 2017.
  - March 2018: 12 existing monitoring wells were sampled (MW17-101D, MW17-108S, OW07-31, OW07-33, OW09-II, OW11-II, OW12, OW13, OW14, OW19, OW22S, and OW23S).
  - April 2018: 5 existing monitoring wells were sampled (MW17-101D, OW07-33, OW09-II, OW11-II, OW22S).
  - July 2018: 2 existing monitoring wells were sampled (MW17-100S, MW17-104D).
  - July 2018: 27 monitoring wells were installed to depths ranging from 4.04 to 20.32 mbgs. 14 wells were installed in the overburden and bedrock contact zone: MW18-112S, MW18-113S,

MW18-114S, MW18-115S, MW18-116S, MW18-117S, MW18-118S, MW18-119S, MW18-123S, MW18-124S, MW18-125S, MW18-121S, MW18-127S, and MW18-131S. Screen depths ranged from 2.51 to 5.79 mbgs. 13 wells were installed in the Eramosa Formation bedrock unit: MW18-107D, MW18-112D, MW19-116D, MW18-120D, MW18-121D, MW18-122D, MW18-123D, MW18-126D, MW18-128D, MW18-129D, MW18-130D, MW18-132D, and MW18-133D. Screen depths ranged from 6.4 to 20.32 mbgs. Groundwater samples were collected in July and August 2018.

  - October 2018: 7 existing monitoring wells were sampled (MW18-128D, MW18-130D, MW18-131S, MW18-132D, MW18-133D, OW25, and OW31).
  - November–December 2018: 13 monitoring wells were installed to depths ranging from 4.27 to 25.32 mbgs. Two wells were installed in the overburden and bedrock contact zone (MW18-134S and MW18-135S). Screen depths ranged from 2.74 to 11.28 mbgs. Eleven wells were screened in the Eramosa Formation (MW18-105G, MW18-112G, MW18-113D, MW18-114D, MW18-115D, MW18-119D, MW18-122G, MW18-134D, MW18-135D, MW18-136D, and MW18-136G). Screen depths ranged from 4.27 to 25.32 mbgs. Groundwater samples were collected from newly installed wells, and two existing wells were resampled (MW17-102D and MW18-112D).
  - March–April 2019: 5 existing monitoring wells were sampled (MW18-114D, OW03-I, OW07-32, OW07-37, and OW25). OW25 was also sampled again in April 2019. One monitoring well, MW19-137, was installed in April 2019 in the overburden and contact zone for potential light nonaqueous phased liquids (LNAPL) monitoring.
  - February–March 2020: 90 monitoring wells were sampled. The three wells with historical nonaqueous phased liquids (NAPL) were not sampled.

- Collecting groundwater levels using an oil/water interface probe from the recently installed wells to determine groundwater elevations and whether free-phase product was present
- Performing single-well hydraulic tests on 15 monitoring wells screened in the various hydrostratigraphic units onsite to improve the understanding of hydraulic properties of the units beneath the Phase Two Property
- Determining the applicable SCS
- Surveying newly installed boreholes, test pits, and new and existing monitoring wells to a geodetic benchmark

Figure 4-2 shows the locations of the test pits, borings and wells advanced as part of this Phase Two ESA, as well as during historical investigations. Environmental studies were conducted at the Site in the past, and the historical results were used as a screening method to focus the current Phase Two ESA work. Where reliable, as evaluated through a data quality evaluation (DQE), the historical results were used to supplement the Phase Two ESA results. In general, the historical data used are considered valid for inclusion in this Phase Two ESA.

4.1 Media Investigated

Soil and groundwater were the only media investigated during this Phase Two ESA work. Sediment investigation was not applicable, because of the absence of surface water bodies on the Site.

Soil quality at the Site was determined using various sampling techniques, including test pitting and conventional hollow-stem drilling methods. The selected method was determined based on sample depth, likely subsurface conditions, overhead access, and space for drilling equipment. Section 5 provides further detail regarding soil sampling methods. Section 6 provides soil sampling results.

Groundwater samples from newly installed monitoring wells, as well as existing monitoring wells, were collected and submitted for analysis. The sampling method for groundwater samples collected from 2017 to 2020 used low-flow purging/sampling techniques (for example, peristaltic pump, water quality meter, and dedicated tubing) based on the samples' turbidity and analysis required. Section 5 provides further detail regarding groundwater sampling methods. Section 6 provides results of the groundwater sampling.

4.2 Phase One Site Conceptual Model

A Phase One conceptual site model (CSM) was completed as part of the Phase One ESA (CH2M 2017) and is summarized in Table 4-1.

4.3 Deviations from Sampling and Analysis Plan

Before completing the Phase Two ESA work, a detailed SAP was prepared. Given that the fieldwork was completed in multiple stages, a SAP was developed for each stage of work and subsequently implemented. The SAPs applicable for the work completed are provided in Appendix B.

Throughout the Phase Two ESA work, deviations from the project SAP were discussed with and agreed upon by the project QPESAs according to (O. Reg. 153/04).

i. October/November 2017 – Borehole for intended MW17-106D was advanced but hit two levels of concrete slabs. Borehole was renamed BH17-204, and the location was moved for MW17-106D.

ii. October 2018 – Hydraulic conductivity testing was completed at monitoring wells MW17-101D, MW17-101S, MW17-104D, MW17-105D, MW17-109S, MW18-114S, MW18-12S, MW18-122D, OW9-I, OW9-II, OW22D, and OW23D.

iii. November 2018 – BH18-100i and BH18-100ii were not advanced, because of thick concrete in the area.

iv. December 2018 – Monitoring well MW18-112D was sampled for VOCs in groundwater.

v. February 2020 – MW18-134S, MW18-135D, and MW18-135S were not sampled for groundwater, because of the presence of NAPL.

It is noted that the deviations from the initial work plan during the field investigation were primarily completed to assist in the lateral or vertical delineation of contamination at the Phase Two Property, consequently resulting in additional samples being submitted to the laboratory for analysis, as well as expanding the parameters analyzed at select sample locations.

4.4 Impediments

The main impediment encountered while completing the Phase Two ESA was the presence of rubble, foundations, and underground concrete slabs from the former buildings, which remained on the Site.

During the ESA subsurface investigations, Jacobs installed borings through the former building foundations in areas proposed for sampling to characterize the underlying soil and groundwater in a number of locations. The presence of rubble and foundations from the former buildings did not significantly affect the ESA outcome, however, because the borings and wells were installed through these features in areas where sampling was planned.

Weather (for example, snow cover) was also an impediment to the field program; however, ultimately, the work was completed as planned.

5. Investigation Method

5.1 General

Various environmental field and subsurface investigation methods were used to assess soil and groundwater quality during the Phase Two ESA, including the following:

- Geophysical surveys
- Test pits for soil sampling, including field screening measurements and observations
- Drilling (including rock coring) with soil sampling, including field screening measurements and observations
- Hand augering with soil sampling and observations
- Installing groundwater monitoring wells and groundwater sampling
- Analytical testing of soil and groundwater samples
- Managing investigation-derived waste
- Implementing quality assurance (QA) and quality control (QC) measures, including collecting and analyzing field duplicate (FD) and trip blank samples

The Phase Two ESA activities were guided by individual SAPs for each investigation (Appendix B). The SAP was designed to investigate the contaminants of potential concern (COPCs) within the APECs identified as a part of the Phase One ESA (CH2M 2017) review.

Figure 4-2 shows the sampling locations associated with the Phase Two investigation.

Jacobs retained third-party contractors to conduct or assist with field investigations. Jacobs field staff, under the direction of the project QPESA, supervised field activities and recorded field activities, soil characteristics, groundwater sampling results, and other general field investigation notes.

Jacobs developed standard operating procedures (SOPs) and field forms to comply with O. Reg. 153/04 (MECP 2011a). The SOPs guided Jacobs staff in conducting, performing, and documenting Phase Two ESA investigative work. The following is a list of Jacobs SOPs relevant to the Phase Two ESA activities at the Site:

- Decontamination of Heavy Equipment
- Decontamination of Field Sampling Equipment
- Logging of Soil Borings
- Logging of Rock Cores
- Logging and Sampling of Test Pits
- Measurement of Soil-Vapour Headspace
- Soil Sampling for VOCs using Methanol Preservation
- Installation of Shallow Monitoring Wells
- Water Level Measurements
- Aquifer Testing – Slug Tests
- Monitoring Well Development
- Groundwater Purging and Measurement of Field Parameters
- Low-Flow Groundwater Purging and Sampling
- Sample Packaging, Storage, and Transport to Laboratory

The methods employed generally followed the SOPs and are described in detail in the following subsections.

5.2 Drilling, Excavating, and Hand Augering

Drilling, excavating, and hand augering were conducted at the Site to facilitate the evaluation of subsurface conditions via collecting environmental samples and installing groundwater monitoring wells. In addition, test pits were excavated to facilitate the evaluation of subsurface conditions via collecting environmental samples or to investigate the inferred anomalies identified during the geophysical investigation. The drilling, excavating, and augering activities were completed under the supervision of Jacobs field personnel. Soil sample collection frequency for field screening and for submission for chemical analysis is detailed on the borehole and test pit logs included in Appendix C. Intrusive equipment was decontaminated in accordance with the SOPs.

5.2.1 Utility Locates

Prior to commencing excavation and drilling activities for each field event, Jacobs contacted Ontario One Call to arrange clearances of public utility services, including, but not limited to, the following:

- Telephone
- Cable television
- Natural gas
- Hydroelectricity
- Water
- Sanitary lines
- Storm sewers

As an additional precaution, Jacobs also retained OnSite Locates Inc., a private utility contractor located in Newmarket, Ontario, to clear the proposed investigative locations of the same private utility services by using radio detection and electrical isolation for utilities. The resulting locate clearance documents were retained at the Site by Jacobs for the duration of the intrusive investigative activities.

Site buildings had been razed at the time of the Site investigation, and the City indicated that services had been decommissioned prior to the demolition activities. Services had formerly entered the buildings from the adjacent streets; however, no construction details for the onsite services were identified.

5.2.2 Geophysical Investigation

In August 2017, Jacobs retained OnSite Locates Inc. to conduct an electromagnetic (EM) and ground-penetrating radar (GPR) survey at two locations where the Phase One ESA (CH2M 2017) identified the potential presence of underground storage tanks (USTs). The EM survey was conducted using a Geonics EM-31, an instrument that transmits EM energy into the ground and analyzes the enhanced reflected energy to create a profile of detectable subsurface features. The instrument permits interpretation of subsurface features to a depth of roughly 6 m. The GPR data were acquired using a GPR system equipped with 250-megahertz antennas in a shielded configuration. The instrument transmits radar pulses to image the subsurface and permits real-time interpretation of subsurface features to a depth of roughly 0.5 to 5 m. The maximum depth of signal penetration depends on the soil conductivity: the approximate depth of GPR signal penetration at the Site was approximately 2.0 m. The EM and GPR survey results for the Phase Two Property are discussed in Section 6.4 of this report. A copy of the geophysical investigation survey results is provided in Appendix D and shows the approximate area within

the Phase Two Property where EM and GPR surveys were conducted, along with the location of the inferred anomalies.

5.2.3 Drilling

Atcost Drilling Inc. (Atcost) of Gormley, Ontario, and Aardvark Drilling Inc. (Aardvark) of Guelph, Ontario were subcontracted to advance boreholes and install wells at the Site. Soil and rock borings were advanced using a track-mounted conventional rotary power rig (Central Mine Equipment 45, 75, or 850). Final borehole depths were variable and ranged between 0.89 and 26.19 mbgs across the Site, depending on the actual subsurface conditions encountered at the time of drilling. While advancing each soil boring, using hollow-stem auger (HSA) methods (108-millimetre [mm] or 159-mm interior diameter HSA), samples were collected using 0.61-m-long, 50-mm outside diameter split-spoon samplers. Once the split-spoon sampler was extracted from the HSA, a drilling contractor representative opened the split spoon to expose the soil. Rock coring was completed via water-diamond coring with PQ, HQ, and NQ (123 mm, 96 mm, 76 mm, respectively) tooling. Once the rock core was retrieved from the core barrel, it was logged for recovery, rock quality designation, type of rock, colour, weathering, strength, structure, joint spacing, and continuity. Discontinuity data (fracture logging) were also collected from the core; fracture characteristics recorded included depth, type of fracture, aperture, roughness, and infilling. Photographs were taken of the rock core and stored onsite for future reference if required. Sample frequency at each borehole varied in accordance with the SAP. Borehole logs are provided in Appendix C.

Drilling equipment was decontaminated in accordance with the Decontamination of Heavy Equipment and Field Sampling Equipment Decontamination SOPs.

5.2.4 Test Pitting

Test pits were used to investigate areas of known soil contamination to help visually delineate subsurface impacts, for general soil characterization, and to investigate geophysical anomalies identified during the geophysical investigation. Jacobs retained Ground Force Environmental Inc. of Kitchener, Ontario, and Lewis Straus Construction of Kitchener, Ontario, to conduct test pitting. Locations were excavated using a Kubota KX080-4 or Doosan DX140LCR track-mounted excavator. In total, 25 test pits were excavated to depths ranging between 1.22 and 2.90 mbgs. Soil samples were collected using the excavator bucket and a trowel. Sample analysis frequency was in general accordance with the SAPs as provided in Appendix B. Once the test pits were excavated and sampled, they were backfilled in the approximate same order as the material was removed and compacted with the excavator bucket. The equipment used for test pitting was decontaminated in accordance with the SOPs.

5.2.5 Hand Augering

Hand augering was used to collect shallow soil to delineate subsurface impacts. In total, four hand-auger borings were completed to depths ranging between 0.30 and 0.45 mbgs, and soil samples were collected using a 5-centimetre (cm) diameter AMS Dutch auger. Sample analysis frequency was in accordance with the SAPs as provided in Appendix B. Once the hand borings were sampled, they were backfilled with the removed soil. The equipment used for hand augering was decontaminated in accordance with the SOPs.

5.3 Soil Sampling

Soil borings were advanced using a conventional rotary power CME rig. Boreholes were advanced to bedrock, and rock coring was completed to facilitate monitoring well installation where required. Final borehole depths completed across the Site were variable and ranged between 0.89 and 26.19 mbgs. Final depths depended on the actual subsurface conditions encountered at the time of drilling.

While advancing each soil boring, using HSA methods, samples were collected using 0.61-m-long, 50-mm outside diameter split-spoon samplers. Once the split-spoon sampler was extracted from the HSA, a drilling contractor representative opened the split spoon to expose the soil.

During test pit excavation, once a new soil layer was exposed, the operator collected a bucket of soil from the new layer to be examined and sampled.

Hand augering was completed with a 5-cm diameter AMS Dutch auger. Once the auger was removed from the boring hole, soil was placed in a decontaminated stainless-steel bowl for examination and sampling.

The previously described soil samples were examined in the field by Jacobs field staff for the following:

- Soil type
- Discolouration
- Olfactory evidence or signs of impacts
- General soil properties

Soil samples to be analyzed for PHC Fraction (F)1 or F2, VOCs, or BTEX were collected using laboratory-supplied soil syringes; the soil core was then placed in vials containing methanol. New, disposable nitrile gloves were used when handling samples from different depths at the same sample location to minimize the potential for sample cross-contamination.

The following soil types were identified during the investigation:

- Fill
- Silty Sand
- Eramosa Formation/Stone Road Member Dolostone
- Eramosa Formation/Reformatory Quarry Member Dolostone
- Eramosa Formation/Vinemount Member Shaley Dolostone
- Guelph Formation Dolostone

Appendix C provides borehole logs. These logs provide a geological description of overburden samples collected during the investigation.

Collected soil samples were split for field screening and potential laboratory analysis. Field screening was conducted as described in Section 5.4.

5.4 Field Screening Measurements

Collected samples were divided into two portions: one for field vapour screening and the other for laboratory submission (which were immediately placed in the appropriate laboratory-supplied sample containers). The soil samples for field vapour screening were placed in a clean, self-sealing plastic bag, labelled, and set aside to equilibrate to approximately 15 degrees Celsius (°C) for conducting head space screening using a MiniRAE 3000 photoionization detector (PID). Soil-vapour headspace and ambient measurements, as well as instrument calibration, were performed per the SOP.

The frequency of field screening measurements during the intrusive drilling investigation was typically at 0.61-m intervals. Field screening of soil samples during test pitting typically occurred at (1) a change of stratigraphic unit, (2) when an interval was selected for potential laboratory analysis, or (3) when the interval had strong visual or olfactory appearances of impacts. Frequency and results of soil-vapour

headspace measurements in parts per million (ppm) were also recorded on the borehole and test pit logs included in Appendix C, as discussed in Section 6.6 of this report.

Field staff used the MiniRAE 3000 PID equipped with a 10.6 or 11.7-electron-volt (eV) discharge lamp for field screening. This instrument detects a wide range of VOCs with an ionization potential less than 10.6 or 11.7 eV and includes chlorinated organics. The MiniRAE 3000 has a detection range of 0 to 10,000 ppm. The unit's accuracy is +/-2 ppm, or 10 percent of the reading for readings of 0 to 2,000 ppm, and +/-20 percent for readings above 2,000 ppm. The unit's resolution is 0.1 ppm for readings less than 99 ppm and 1.0 ppm for readings between 100 and 10,000 ppm.

At a concentration of 100 ppm, isobutylene was used as the calibration gas, and the instruments were calibrated according to the manufacturer's recommendations prior to use each day. Each instrument's calibration was checked by exposing the instrument to the calibration gas with a known concentration and comparing it with the actual reading.

A summary of the measures taken to minimize the potential for cross-contamination during completion of soil sampling activities is discussed in Sections 5.1 and 5.3.

5.5 Groundwater: Monitoring Well Installation

Monitoring wells were installed by Atcost and Aardvark in accordance with the requirements specified in O. Reg. 903 (MECP 1990b) as part of this investigation in a subset of the advanced soil borings where rock coring was completed to assess groundwater quality and assist in determining groundwater flow rates and directions at the Phase Two Property. Section 5.2 describes the drilling equipment used for monitoring well installation.

The monitoring wells were installed such that the screened portion straddles and intercepts seasonal fluctuations at the water table unless otherwise indicated by the SAP (for example, monitoring wells below the water table wholly screened in the bedrock). The saturated screen thickness of each well did not exceed 3.05 m. Each monitoring well was constructed per the SOP. The monitoring well construction generally consisted of the following:

- Approximately 5-cm-diameter, Schedule 40 polyvinyl chloride (PVC) risers
- 5-cm-diameter, Schedule 40, No. 10 slot PVC screen with a preferred screen length of 3.05 m (variations in screen length occurred)
- Appropriate sand pack to 0.3 m above top of screen
- 0.6 m of bentonite seal above sand pack composed of a 0.6-cm hydraulic hole plug with the remaining annular space to be filled by a 0.6-cm hydraulic hole plug or bentonite grout slurry
- Protective monument well casings secured with concrete

Monitoring well installation details are provided in the borehole logs in Appendix C. Monitoring wells onsite were tagged under well tag No. A202490, A252554, A243494, or A252527 as Well Clusters.

Dedicated Waterra polyethylene tubing with an inertial lift foot valve was installed in each newly installed monitoring well. Well development was conducted using this equipment to remove particulates or fluids

that may have collected in the screen or sand pack during well installation activities. Well development was considered complete in the field under one of the following conditions:

- Removal of three complete well volumes, including sand pack
- Monitoring well was developed dry three times
- Groundwater was clear and relatively free of particulates

The monitoring wells for each sampling event were examined for NAPL, using an interface probe. The presence or absence of NAPL was recorded in the monitoring well development field form. The monitoring well was then developed in accordance with the SOPs. Once the monitoring well had recovered to static conditions, the monitoring well was examined for NAPL, using an interface probe.

5.6 Groundwater: Field Measurement of Water Quality Parameters

Field measurement of water quality parameters was performed during well purging and prior to the collection of groundwater samples. These measurements were required to indicate whether the samples collected were stable and representative of the groundwater in the formation and to evaluate groundwater quality at the time of sampling. This task was performed per the SOP.

Water quality parameters were measured using a Horiba U-52 water quality meter. This instrument measures groundwater temperature, pH, ORP, dissolved oxygen (DO), conductivity, and turbidity. Prior to making the field measurements, the water quality meters used were calibrated according to the manufacturer's instructions, using standard calibration solutions. Water quality meters were calibrated prior to use each day.

Water quality meter readings were collected approximately every 3 to 5 minutes and recorded in the field book or in groundwater sampling field tracking sheets for the following parameters: groundwater temperature, pH, ORP, DO, conductivity, and turbidity. These field parameters provided an indication of stabilized groundwater conditions before sampling occurred. Indicator parameters were deemed to be stable when an average of three consecutive measurements met the following criteria:

- pH = ±0.1 unit
- Temperature = ±10 percent
- DO = ±10 percent, or ±0.1 milligram per litre (mg/L) if reading is less than 1 mg/L
- Conductivity = ±10 percent
- ORP = ±10 millivolts

Once stabilization had been reached, samples were collected in the appropriate sample containers for laboratory analysis.

5.7 Groundwater: Sampling

A decontaminated 30-m interface probe was used to measure groundwater depth and presence or absence of NAPL below the top of the monitoring well casing or other reference point. To prevent cross-contamination between monitoring wells, the interface probe was decontaminated per the SOP.

Prior to sampling, the monitoring wells were purged using a low-flow method so that representative samples of the water-bearing formation were obtained. Purging was generally conducted using a peristaltic pump and dedicated polyethylene tubing at each well.

Field measurement of water quality parameters was performed routinely throughout the purging process and immediately before collecting groundwater samples. Refer to Section 5.6 for details.

Groundwater samples were collected immediately following completion of purging and stabilization of the groundwater parameters via Waterra inertial foot valves or peristaltic pump and dedicated polyethylene tubing.

New laboratory-supplied containers were used to collect groundwater samples for the parameters of interest. Sampling containers were prepared by the laboratory, with the required preservatives added to the parameter-specific sample bottles. When filling the sample bottles, field staff verified that a minimal level of particulate matter was entrained into the sample. Samples with more than 1 cm of particulate in the sample bottle (after it has settled) are considered unsuitable for chemical analysis and are discarded; samples are then recollected in new laboratory-supplied bottles. No such issues with particulate occurred during the sampling activities.

Field filtering was conducted for certain parameters consistent with the SOPs. Field filtering of dissolved metals was conducted using dedicated 0.45 micrometre (µm) filters. PAH groundwater samples were not field filtered; however, benzo(a)pyrene analysis samples may be filtered by the lab (in compliance with MECP [2011c]). Field filtering of samples was documented in the groundwater sampling forms. VOC and PHC F1 sample containers were completely filled, with no headspace.

Groundwater sampling SOPs were developed prior to collecting groundwater samples from the newly installed monitoring wells. Groundwater sampling involved the following sequence of subtasks denoted by the appropriate SOP:

- Monitoring Well Development
- Water Level Measurements
- Groundwater Purging and Measurement of Field Parameters
- Groundwater Sample Collection
- Sample Packaging, Storage, and Transport to Laboratory

5.8 Sediment: Sampling

The Phase Two Property does not contain a water body as defined under O. Reg. 153/04, as amended; therefore, sediment was not present in the investigation area, and no sediment sampling was conducted.

5.9 Analytical Testing

Offsite laboratory analyses were provided by ALS Environmental (ALS) for the Phase Two ESA work conducted by Jacobs between August 2017 and March 2020. ALS is accredited by the Canadian Association for Laboratory Accreditation. Chemical analysis was performed in compliance with the MECP Laboratory Services Branch's *Protocol for Analytical Methods Used in the Assessment of Properties under Past XV.1 of the Environmental Protection Act* (MECP 2011c).

5.10 Residue Management Procedures

Excess soil cuttings generated from the field activities were contained in 200-litre (L) drums, and fluids generated during equipment decontamination, monitoring well development, and groundwater sampling were contained in either 1,000 L totes or 200 L drums that were temporarily stored on the Phase Two Property. A composite soil sample was collected from the soil cuttings generated and submitted for Toxicity Characteristic Leaching Procedure (TCLP) analysis for environmental waste characterization and future waste management purposes. A TCLP analysis was submitted to the laboratory for analysis for each

soil subsurface soil investigation conducted as part of the current investigation. Wastes were managed per the requirements of O. Reg. 347/90 (MECP 1990c). For the purpose of waste characterization, sample results were compared with O. Reg. 347/90, Schedule 4 (MECP 1990c).

Jacobs coordinated soil and groundwater removal as follows:

- Purged groundwater and decontamination fluids (approximately 7,946 L) classified as light fuels (Provincial Classification 221-L) were removed from the Site on October 26, 2017, under Waste Manifest No. ZM24272-6 by Tesla Environmental Services Inc. (Tesla), an MECP-licensed waste carrier, and were received by Aevitas Inc. (Aevitas) at its receiving facility in Brantford, Ontario.
- Purged groundwater and decontamination fluids (approximately 5,000 L) classified as light fuels (Provincial Classification 221-L) were removed from the Site on December 7, 2017, under Waste Manifest No. PY27747-3 by Tesla, an MECP-licensed waste carrier, and were received by Aevitas at its receiving facility in Brantford, Ontario.
- Purged groundwater and decontamination fluids (approximately 16,191 L) classified as other specified inorganic sludges, slurries, or solids (Provincial Classification 146-L) were removed from the Site on July 30, 2018, under Waste Manifest No. SA23209-8 by Tesla, an MECP-licensed waste carrier, and were received by Aevitas at its receiving facility in Brantford, Ontario.
- Purged groundwater and decontamination fluids (approximately 8,200 L) classified as other specified inorganic sludges, slurries, or solids (Provincial Classification 146-L) were removed from the Site on August 30, 2018, under Waste Manifest No. CA63621-0 by Tesla, an MECP-licensed waste carrier, and were received by Aevitas at its receiving facility in Brantford, Ontario.
- Purged groundwater and decontamination fluids (approximately 12,776 L) classified as other specified inorganic sludges, slurries, or solids (Provincial Classification 146-L) were removed from the Site on May 7, 2019, under Waste Manifest No. CA62002-4 by Tesla, an MECP-licensed waste carrier, and were received by Aevitas at its receiving facility in Brantford, Ontario.
- A total of 37 drums containing soil cuttings were removed from the Site. Seven drums (approximately 2,100 kilograms [kg]), 15 drums (approximately 3000 kg), and 15 drums (approximately 3,000 kg) were removed on December 5, 2017, September 14, 2018, and June 7, 2019, respectively, under Bill of Lading No. 004070, A101193 and A106996, respectively. The soil was classified as nonhazardous soil cuttings. Soil removed on December 5, 2017, was removed by Tervita Environmental Services Inc. (Tervita). Tervita's facility located in Hamilton, Ontario, received the soil. The remaining soil was removed by Aevitas and was received by its receiving facility located in Ayr, Ontario.

Appendix E contains Waste Manifests and Bills of Lading related to the removal of the soil, groundwater, and decontamination fluids from the Site, as well as the results of the TCLP samples collected for characterization prior to disposal.

One soil drum and five purged groundwater drums remain at the Site. Once removed from the Site, the details surrounding their removal will be included in an update to this report.

5.11 Elevation Surveying

Jacobs contracted West & Ruska, a licensed Ontario Land Surveyor of Brantford, Ontario, to perform an elevation survey to a geodetic benchmark following the completion of the subsurface investigations.

The elevation survey included the coordinates and elevations of the ground surface and top-of-riser pipe (as applicable) for the monitoring well, borehole, and test pit locations advanced as part of Jacobs' investigation.

Multiple elevation surveys were completed as part of this investigation, with the most recent survey activities completed in March 2020. Surveys included the ground surface or top-of-riser pipe (as applicable) for the recently completed monitoring wells, boreholes, and test pits.

5.12 Quality Assurance and Quality Control Measures

Soil and groundwater sampling was performed by Jacobs staff with experience in intrusive field investigation techniques and with the COPCs encountered at the Phase Two Property, under the guidance of the QPESA. Jacobs collected soil and groundwater samples according to the SOPs and field forms, which were developed in accordance with O. Reg. 153/04, as amended. Additional details about the QA/QC program can be found in Section 6.10.

The following sample handling, equipment cleaning, and field QC measures were followed during the Phase Two ESA investigation:

- Soil and groundwater samples were collected in sample containers provided by the analytical laboratory, which were pre-charged with the appropriate preservatives, where applicable, and sized relevant to the analyses requested.
- Sample container labels included the project No., sample identification (ID), and parameters for chemical analysis. Unique sample IDs were assigned to correspond with the field notes or field forms associated with each sampling location.
- Once labelled, sample containers were placed in ice-filled coolers.
- Samples were transported to ALS, an offsite analytical laboratory; a chain-of-custody form was completed and accompanied each sample shipment.
- Deviations from the SAPs were noted and discussed with the QPESA, as applicable. Refer to Section 4.4 for the discussion of SAP deviations.
- Equipment decontamination procedures were carried out per Jacobs' SOPs, which were developed in accordance with O. Reg. 153/04, and include the following (as applicable):
  - Cleaning tools for sample collection by removing particulate matter with a brush (as needed), rinsing with potable water, rinsing with methanol, rinsing with potable water, and drying with clean paper towel
  - Cleaning heavy equipment by removing particulate matter with a brush, pressure washing, or both, as required
- The SAPs included a QA/QC program that specified the following minimum field QC measures:
  - One laboratory-prepared trip blank was included in each cooler shipment containing volatile organics (for example, VOCs, BTEX, or PHC F1) samples.
  - Duplicate soil and groundwater samples were collected and submitted at a minimum frequency of one duplicate for each 10 samples submitted. Duplicate samples were submitted "blind" to the laboratory, and field staff documented in their field books each duplicate sample location.
  - Calibration checks on field instruments were completed daily and reported in the field book or SOP calibration forms.
  - Deviations from the QA/QC program were noted and discussed with the QPESA, as applicable. Refer to Section 4.4 for the discussion of SAP deviations.

6. Review and Evaluation

6.1 Geology

Overburden units, including coarse-textured tills and coarse-grained outwash and fluvial deposits deposited during the Quaternary period (2 million years ago to 10,000 years ago), provide a record of advance and retreat of glacial ice across the Guelph area (Karrow 1987, 1968). Bedrock is exposed in some areas along the Speed and Eramosa River valleys and is comprised of Silurian-aged dolostone of the Guelph, Eramosa, and Goat Island Formations. The overburden and bedrock geological units are discussed in greater detail in the following subsections.

6.1.1 Regional Geology

6.1.1.1 Overburden Geology

Approximately 18,000 to 20,000 years ago, a continental-scale ice sheet advanced from the north across Southern Ontario, leaving behind the stony and overconsolidated Catfish Creek Till. The till's matrix is sandy silt to silty sand, and it is often referred to as "hardpan" in driller logs. Although this unit was originally deposited across Southern Ontario, glacial and fluvial erosion have removed the Catfish Creek Till across the much of the area, and within the Guelph area, it is commonly discontinuous and present in overlying bedrock in bedrock valleys and topographic lows (Karrow 1968).

Approximately 13,000 years ago, the Erie-Ontario ice lobe advanced into the Guelph and Cambridge areas, with its maximum northwestward extent marked by the Paris and Galt Moraines, which lie east of the City limits. The moraines' core contains interbeds of till (Wentworth Till) and sand. The Wentworth Till is described as a silty to sandy till, and the till's matrix is coarse-grained near the moraines where the till is often interbedded with glaciofluvial outwash sands and gravels (Karrow 1968).

The youngest sediments mapped in the Guelph area are the outwash (glaciofluvial) sands and gravels (Karrow 1968). These sediments are mapped at the surface across much of the City, especially along the Eramosa and Speed Rivers.

6.1.1.2 Bedrock Geology

The Silurian bedrock geology of southwestern Ontario has been extensively studied in recent years by staff at the Ontario Geological Survey (Priebe, Neville, and Brunton 2017; 2014; Armstrong et al. 2013; Brunton and Brintnell 2011; Brunton et al. 2012; Brunton 2009, 2008). These studies have advanced the understanding of the depositional environments of the stratigraphic framework, and descriptions of the bedrock formation are based on these studies. Table 6-1 lists the youngest bedrock formations present beneath the Guelph area at the top of the table and the oldest formations at the bottom.

Table 6-1. Paleozoic Geology beneath the City of Guelph

Phase Two Environmental Site Assessment, 200 Beverly Street, Guelph, ON

Formation	Members	Lithology
Guelph		Medium to thickly bedded crinoidal grainstones and wackestones and reefal complexes
Eramosa	Stone Road	Cream-coloured coarsely crystalline dolostone
	Reformatory Quarry	Light brown to black, thinly to thickly bedded, fine to coarsely crystalline dolostone
	Vinemount	Dark grey to black, thin-bedded, finely crystalline dolostone with shaley beds
Goat Island	Ancaster	Medium to ash grey, chert-rich, finely crystalline dolostone
	Niagara Falls	Finely crystalline, cross-laminated crinoidal grainstone (stromatoporoid dominated). Occasional reefal facies in basal succession, where present
Gasport		Cross-bedded crinoidal grainstone-packstone (tabulate coral dominated) with sequences of reef mound and coquina lithofacies (reefing-upward cycles)

The Guelph Formation is described as a light brown to buff-coloured, porous, well-fractured, medium to thickly bedded crinoidal grainstone and wackestone (dolostone) (Brunton et al. 2012; Brunton 2008). The formation present in the Guelph region is interpreted to be a reefal facies. The Guelph Formation is interpreted not to be present at the IMICO site.

The Eramosa Formation consists of three members: the Stone Road (upper), Reformatory Quarry (middle) and Vinemount (lower) (Brunton 2008). The Stone Road Member is a cream-coloured coarsely crystalline unit that is often difficult to distinguish from the overlying Guelph Formation. The Reformatory Quarry Member is a dolostone unit that contains a seismite marker bed, which has been traced from the Niagara area to the Bruce Peninsula (Brunton 2008). This unit is described as a fine to coarsely crystalline dolostone. This unit also often contains dark mud-rich and microbial mat-bearing lithofacies that reduces the vertical permeability across the unit, and in places, it acts as an aquitard. The Vinemount Member is described as a black to dark grey, thinly bedded, fine crystalline dolostone with shaley beds that give off a distinctive petroliferous odour when broken (Brunton 2008). This unit contains mud-rich and microbial mat-bearing facies. The Vinemount Member acts as a regional aquitard (Brunton 2009).

The Vinemount Member conformably overlies the Goat Island Formation, which is subdivided into two members: the Ancaster Member (upper) and Niagara Falls Member (lower) (Brunton et al. 2012; Brunton 2008). The Ancaster Member is a finely crystalline dolostone that is medium to ash grey in colour, bioturbated, thin to medium bedded, and its thickness varies depending on the thickness of the underlying Gasport Formation (Brunton 2008). The Niagara Falls Member is a finely crystalline dolostone that displays a distinct cross-laminated striped appearance. The Niagara Falls Member overlies the Gasport Formation, a cross-bedded crinoidal grainstone-packstone with large-scale microbial reef mounds.

6.1.2 Site-specific Geology

The Site-specific geological conditions on the Site were determined using onsite data collected in the previous and ongoing investigations on the Phase Two Property. Data from over 100 onsite locations were reviewed, including 52 boreholes, 76 test pits, and 94 monitoring wells that were advanced as part of historical and ongoing investigations. Of those onsite locations, Jacobs drilled 21 boreholes, 58 monitoring

wells, and 25 test pits in the 2017 (November), 2018 (June, November, and December), 2019 (March), and 2020 (February) field programs. Construction details for each well are presented in Table 6-2a.

Investigation depths ranged from shallow test pits that extended less than 1.25 mbgs to monitoring wells that extended 33 mbgs (OW31). Previous subsurface investigative boreholes were also used to supplement the Phase Two findings and have been used to develop the Site stratigraphy descriptions discussed later. Borehole and monitoring well logs for both the current Phase Two ESA and from applicable historical investigations can be found in Appendix C.

Overburden thickness reported in onsite test pits, boreholes, and wells averages approximately 2.2 m and ranges from 1.0 m at MW18-116S to a maximum thickness of 3.4 m at OW31. The top of the bedrock elevation reaches a low of 312.6 masl at MW18-127S in the central portion of the Site, and it reaches a high of 314.6 masl at OW23D. Buried bedrock valleys or other topographical lows on the bedrock surface are not noted beneath the Site.

Cross-sections were created using a three-dimensional geological model of the Site. The model incorporated borehole data from past geological Site investigations and then applied a three-dimensional interpolation to these data to generate a Site-wide geological interpretation of the geological units beneath the Site. Figure 6-1 illustrates the cross-section locations, and Figures 6-1a through 6-1h illustrate cross-sections A-A' through H-H', respectively.

The subsurface sediments and bedrock typically encountered beneath the Phase Two Property generally consisted of the following units:

i. Surficial fill at ground surface ranging from 0.15 mbgs at MW17-105D to 3.1 mbgs at OW31. Fill materials were defined as coarse and were predominantly composed of dark brown to black silty sands (like foundry sand) with black ash, brick, cinders, metal, and wood debris.

ii. Silty sand unit, ranging in thickness from 0 m at MW17-106D where fill and concrete were reported from surface to top of bedrock, to a maximum of 3.0 m at MW17-108S

iii. Stone Road Member of the Eramosa Formation unit ranging in thickness from 1.7 to 5.8 m

iv. Reformatory Quarry Member of the Eramosa Formation ranging in thickness from 6.4 to 9.6 m

v. Vinemount Member of Eramosa Formation ranging in thickness from 6.4 to 9.6 m

vi. Goat Island Formation interpreted thickness of greater than 8.5 m

Frank Brunton of the Ontario Geological Survey was provided with photos of the bedrock core for OW31, the deepest well onsite, and his geological picks were provided for this study. He confirmed the location and thicknesses of the units beneath the study area, and his interpretation of the units was carried through to the bedrock interpretations beneath the Site. Bedrock descriptions in historical boreholes could not be made, because the bedrock descriptions on the logs were not detailed enough to subdivide into the different formations. The depth and thickness of each of the geological units present onsite are discussed in the following sections.

The uppermost bedrock unit onsite is interpreted to be the Eramosa Formation, Stone Road Member. This unit's total thickness was interpreted to vary from 1.7 to 5.8 m beneath the Site. Onsite, this dolostone unit is characterized as being light brown in colour, coarse crystallinity, crinoid and gastropods in the fossil assemblage, medium to thick beds with cross-stratification and a high abundance of pin-point porosity, vugs, and horizontal fractures. It is noted that previous assessments of the Site by Jacobs have interpreted the

uppermost layer as both Guelph Formation and the Stone Road Member; however, it is now interpreted that the Guelph Formation is not present at the Site and that the uppermost bedrock is only Stone Road Member.

Underlying the Stone Road Member is the Reformatory Quarry Member of the Eramosa Formation. This member was interpreted to have a total thickness that ranged from 6.4 to 9.6 m beneath the Site. This dolostone unit was observed to be brown in colour in the upper reaches and dark grey to black at depth. It had fine to medium crystallinity and contained pseudo-nodules, with decreasing frequency of vugs and horizontal fractures with depth. The base of the unit closely resembled the Vinemount Member with occasional small fossils.

The Vinemount Member underlies the Reformatory Quarry Member beneath the Site and is interpreted to range in thickness from 6.4 to 9.6 m beneath the Site. The unit is dark grey, fine crystallinity with thin beds of bioturbated traction currents, very few vugs, and few horizontal fractures.

The Goat Island Formation beneath the Site has a light bluish to grey colour, fine to medium crystallinity, and the upper Ancaster Member contains chert nodules. The contact between the Vinemount Member of the Eramosa Formation and the underlying Goat Island Formation is sharp.

Core descriptions and photos from the deepest boreholes onsite, including OW31, MW18-133D, and MW18-102D, indicate the greatest fracture intensity occurs in the Stone Road Member and upper Reformatory Quarry Member (generally from 3 to 6 mbgs) and decreases substantially with depth to the Goat Island Formation.

6.2 Groundwater: Elevations and Flow Direction

Based on the Site geology information presented in Section 6.1, the field investigation included evaluating subsurface conditions within the upper fill and overburden, as well as the underlying bedrock formations. Jacobs relied on the historical data and information from other investigations when developing the SAPs and selecting monitoring well locations. Locations were determined based on the following criteria:

- An understanding of historical land use(s)
- Likely sources of actual or potential environmental concerns
- Visual observations and data collected during the Phase Two ESA field program
- Professional and scientific judgment

There are 95 monitoring wells beneath the Site, excluding 5 wells that were previously decommissioned or excavated; 57 are screened in the overburden and upper fractured bedrock of the Stone Road Member of the Eramosa Formation, 36 monitoring wells are screened in the Reformatory Quarry and Vinemount Members of the Eramosa Formation, and 2 are screened in the Goat Island Formation.

Static groundwater levels were measured by Jacobs and others from the groundwater monitoring wells in groundwater monitoring events from March 2010 to February 2020, and these water level elevations are summarized in Table 6-2b. NAPL was detected in three wells—OW23S, MW17-108S and MW18-135S—during Jacobs' Site investigations, which is discussed further in Section 6.7.4. The thicknesses of observed NAPL above the water table were measured up to 0.97 m (OW23S) and are presented in Table 6-2c.

In addition to regular manual groundwater measurements, pressure transducers were installed by Jacobs in eight wells (MW17-105S, MW17-105D, MW18-105G, MW18-115D, MW18-133D, OW13-39S, OW13-39D, and OW31) to evaluate seasonal fluctuation of groundwater elevations. The transducers were installed for the period from March 26, 2019, to March 11, 2020, and recorded groundwater elevations at hourly

intervals in these wells. A barometric pressure logger was also installed onsite to provide an atmospheric pressure compensation. Transducer data were recovered during groundwater monitoring snapshots, and the transducer results were compared with manual water level measurements to confirm.

To evaluate groundwater flow directions onsite, the geological units beneath the site were subdivided into three hydrostratigraphic units:

a) Overburden and bedrock contact zone. This regional aquifer unit is characterized by wells completed in the Stone Road Member and the uppermost portion of the Reformatory Quarry Member

b) Competent Eramosa Formation (competent Reformatory Quarry and Vinemount)

c) Goat Island Formation

The water level elevations are presented in Table 6-2b. A hydrograph of the groundwater elevations recorded by the transducers is presented in Appendix F as Chart F-1. Groundwater flow directions for each of these units are outlined in the following sections.

6.2.1 Overburden and Bedrock Contact Zone

The coarse-grained overburden and upper bedrock unit, interpreted as the Stone Road Member and uppermost portion of the Reformatory Quarry Member of the Eramosa Formation, together form a local and regional groundwater aquifer. The water table lies primarily in the fractured bedrock (or the base of the overburden), and as such, groundwater flow in this unit is driven by secondary porosity features such as horizontal fractures and solution-enhanced vugs and cavities.

To evaluate the seasonal change in water levels onsite, current and historical water levels collected in monitoring wells completed in the overburden and bedrock contact zone were tabulated. Eight water level snapshots were collected by Jacobs across the Site between December 2017 and February 2020, and during this period, the typical seasonal water level elevations varied on average by approximately 0.3 to 1.0 m. Within this period, the water levels were lowest in the August 2018 and July 2019 snapshots. The highest groundwater levels were recorded by the transducers in January 2020. During this month, warm temperatures caused an earlier-than-typical snowmelt, which coincided with a major rain event (64 mm of rain recorded on January 11, 2020 [Environment Canada 2020]). This weather resulted in a large, temporary groundwater system recharge, with groundwater levels rising by approximately 0.7 to 1.0 m in a 24-hour period, which was the highest observed at the Site over the investigation period. Apart from the January 2020 recharge event, which was likely a rare weather condition at the Site, the March 2019 snapshot recorded the highest groundwater elevations during the investigation period and was considered more representative of the minimal depth-to-water table elevations onsite.

To evaluate the potential seasonal changes in groundwater flow direction and hydraulic gradient, groundwater contour maps were created for the snapshots collected in August 2018, March 2019, and February 2020. Water table elevations collected in monitoring wells in August 2018 were contoured (Figure 6-2a) to represent the lowest water table elevations collected between December 2017 and February 2020. The observed low water table elevations collected during this snapshot ranged from 312.50 to 313.34 masl (1.92 to 3.99 mbgs). Figure 6-2b also illustrates the interpreted groundwater flow directions: groundwater tends to flow from a high in the northeastern portion of the Site to the south and southeast.

Water table elevations collected in monitoring wells completed in the overburden and contact zone in March 2019 are illustrated on Figure 6-2b, representing the highest water table. The observed high water table elevations collected during this snapshot ranged from 312.88 to 314.09 masl (1.12 to 3.49 mbgs). Similar

flow directions were observed in March 2019 compared with the August 2018 monitoring event. The water table elevations collected in monitoring wells in February 2020 are presented on Figure 6-2c. This contour is included because it is the most recent groundwater snapshot available and was chosen to represent an approximate average groundwater condition at the Site. The contour patterns and interpreted flow directions represented on this figure are similar to the August 2018 and March 2019 snapshots. Water table elevations for this snapshot ranged from 312.77 to 313.79 masl (1.41 to 3.74 mbgs).

Depth to water table recorded during the January 11, 2020, storm was measured by pressure transducers in wells OW13-39S (screened in overburden/Stone Road Member) and MW17-105S (screened in Stone Road formation). The highest groundwater elevation at OW13-39S was recorded as 314.56 masl (1.94 mbgs); at MW17-105S, the highest groundwater elevation measured was 313.91 masl (2.93 mbgs).

The interpreted groundwater flow directions among the three water level monitoring events (Figures 6.2a and 6.2c) are similar, suggesting there is limited seasonal variation in onsite groundwater flow directions for the water table unit. The hydraulic gradients' steepness appeared to fluctuate seasonally; this trend is discussed in Section 6.4. The same trend was noted in previous studies, with the highest water levels onsite lying in the northeastern portion of the Site near OW17 (AECOM 2012, 2014, 2015; Gartner Lee Limited 1999).

6.2.2 Bedrock: Competent Eramosa Formation

Based on review of the onsite core and a regional understanding of bedrock formations in the area, the lower portions of the Reformatory Quarry and the Vinemount Members of the Eramosa Formation are notably less fractured, less vuggy, and more competent than the overlying Stone Road and the upper portion of the Reformatory Quarry Members, and they are interpreted to act as a regional groundwater aquitard (Brunton 2009). While these geological layers are considered to act as a single hydrostratigraphic unit, the unit has been measured up to 17 m thick at the Site, and monitoring well depths within varied considerably. As such, potentiometric surfaces for the competent Eramosa Formation were generated using water levels (August 2018, March 2019, February 2020) from wells screened within the Vinemount Member (Figure 6.2d, e, f).

Groundwater elevations in the Vinemount wells ranged from 312.52 to 312.62 masl in August 2018, 312.81 to 313.03 masl in March 2019, and 312.77 to 312.97 masl in February 2020. Groundwater contours for each of these dates are illustrated on Figures 6.2d, 6.2e and 6.2f. The groundwater levels in the Vinemount have less variation than groundwater in the overburden and bedrock contact zone. The overall flow direction is from a high in the southwest near MW18-107D to southeastern portion of the Site (near MW18-105G and MW17-101D). It is noted that the onsite groundwater flow direction in the Eramosa Formation towards the southeast of the Site is also observed in the overburden and bedrock contact zone. Given the limited number of wells in the Vinemount Member of the Eramosa Formation, there are uncertainties associated with the interpreted flow directions in this unit.

6.2.3 Bedrock: Goat Island Formation

The Goat Island Formation acts as a low-transmissivity regional aquifer beneath the City (Brunton 2009), and a few of the City's current and former water supply wells draw water from this unit (that is, the Clythe Creek, Burke, Sacco, and Smallfield wells) as well as the underlying Gasport Formation. In some areas, the upper member of the Goat Island Formation (Ancaster Member) contains low permeability shaley bedrock similar to the overlying Vinemount Member of the Eramosa Formation and acts as a local aquitard.

Two onsite monitoring wells are completed within the Goat Island Formation: OW31 and MW18-136G (MW18-136G is partially screened in the overlying Vinemount Member). The observed water levels in these wells taken during groundwater snapshots were 312.72 masl (3.80 mbgs) in August 2018, 312.86 to 313.01 masl (3.70 to 2.67 mbgs) in March 2019, and 312.73 to 312.89 masl (2.83 to 3.57 mbgs) in February 2020. Additionally, the range of water levels in OW31 was measured for the period of March 26, 2019, to March 11, 2020, by pressure transducer. The highest observed water levels in this unit ranged from a minimum of 312.57 masl to a maximum of 313.89 masl (associated with the January 11, 2020, storm event). As a result of a mechanical error with the transducer in this well, data from July 24, 2019, to December 19, 2020, were not available. It is likely that this period would have shown lower water levels than the presented range. Water levels in Goat Island were very similar to that of boreholes completed in the overlying Vinemount Member of the Eramosa Formation; however, there is insufficient data to create a potentiometric surface for the Goat Island Formation, using data collected within these two boreholes.

6.3 Groundwater: Hydraulic Conductivity Estimates

Jacobs conducted single-well response tests (SWRTs) on 15 monitoring wells screened in the various hydrostratigraphic units onsite to improve the understanding of hydraulic properties of the units beneath the Site. SWRT data were analyzed using the most representative portion of the response with the Bouwer & Rice method (1976). Analyses of individual tests are presented in Appendix F (Figures F-1a through F-14f).

Table 6-3a summarizes the range of results from the rising and falling head tests collected within each well and the geometric mean of hydraulic conductivity (K) values. Based on the hydraulic test results, the hydraulic conductivity of the overburden and contact zone aquifer ranged from 7.0×10^{-7} to 3.1×10^{-4} metres per second (m/s), with a geometric mean of 3.9×10^{-5} m/s (Table 6-3a). This value is comparable to literature values for silty sand (1.0×10^{-7} to 1.0×10^{-3} m/s) and dolostone (1.0×10^{-9} to 5.0×10^{-6} m/s) (Freeze and Cherry 1979). The result is also similar to values chosen in a regional hydrogeology study (Matrix 2014), where the upper bedrock layer was interpreted to have a range of hydraulic conductivity values from 1.0×10^{-6} to 1.0×10^{-4} m/s (note that this report classifies the upper bedrock as Guelph Formation rather than the Stone Road Member).

Hydraulic tests completed in two wells completed in the lower portion of the Reformatory Quarry and the Vinemount Members estimated hydraulic conductivity values that ranged from 4.2×10^{-8} to 7.6×10^{-6} m/s with a geometric mean of 5.7×10^{-7} m/s. As expected, this value is lower than wells completed in the overlying fractured contact zone unit.

Hydraulic conductivity tests completed in MW18-136G in the Goat Island Member ranged from 3.6×10^{-5} to 3.7×10^{-5} m/s, with the overall geomean of the Goat Island Formation being 3.7×10^{-5} m/s. A packer test was also carried out at well OW31 screened in the Goat Island. The results of this test are included in Table 6-3, but the test was completed as a qualitative measure of the well's competency and was not intended to be used for analytical purposes.

6.4 Groundwater: Hydraulic Gradients

6.4.1 Vertical Hydraulic Gradients

The vertical hydraulic gradients onsite were estimated by dividing the hydraulic head difference by the vertical distance between the screen midpoints for each of the nested monitoring well pairs, for the most recent water level snapshots completed on the Site (Table 6-3b). Vertical gradients onsite are generally downwards. The range of downward vertical gradients observed in the nested pairs between the Bedrock

Contact Zone and the underlying Reformatory Quarry Members was 0.001 to 0.17 metre per metre (m/m), with the largest gradient being recorded between MW17-101S and MW17-101D (MW17-101S was screened from 1.22 to 4.27 mbgs; MW17-101D was screened from 6.30 to 7.8 mbgs). Upwards gradients were consistently observed at well nests MW18-112S/D (ranging from 0.010 to 0.015 m/m) and MW18-122D/G (ranging from 0.003 to 0.004 m/m; note that in February 2020, the gradient changed to downwards). MW18-122D/MW18-122G are screened in the Reformatory Quarry and Lower Vinemount, and the low magnitude of the vertical gradients observed suggests that there is a hydraulic connection between these units. At other nests such as MW18-116S/D and MW17-106S/D, the vertical gradient direction fluctuated between upwards and downwards over the investigation period.

Vertical gradients to the Goat Island unit were calculated using the water levels taken from wells MW18-136D/MW18-136G, screened in the Lower Reformatory Quarry and Lower Vinemount/Goat Island. The first vertical gradient measured between these wells was a strong upward gradient, but this was recorded shortly after the wells were constructed and likely does not reflect static conditions. Subsequent measurements found a consistent downward vertical gradient between these wells, ranging from 0.001 to 0.004 m/m.

Additionally, using data recorded by pressure transducers, vertical gradients were calculated at hourly intervals in well nests MW17-105S/MW17-105D/MW18-105G and OW13-39S/OW13-39D. These gradients are plotted in time series in Appendix F as Chart F-2. Downward vertical gradients between these wells were observed for most of the monitoring period; one exception was on January 11, 2020, associated with the major precipitation event, where an upward vertical gradient was recorded between MW17-105S (Stone Road/upper Reformatory Quarry Members) and the underlying MW17-105D (Reformatory Quarry) and MW18-105G (Vinemount). The upwards gradient lasted for a period of approximately 10 hours and then reversed to a large downward gradient that lasted for several days. A seasonal trend was observed in vertical gradients at the transducer well nests. Downwards gradients from MW17-105S and OW13-39S (overburden/bedrock contact zone) to underlying wells in the Reformatory Quarry and Vinemount were steepest in March–May 2019 and March 2020 and lowest in the Summer period; additionally, it was noted that rain events often resulted in a temporary increased downward gradient. Vertical gradients between MW17-105D and MW17-105G were consistently low over the monitoring period (less than 0.01 m/m).

6.4.2 Horizontal Hydraulic Gradients

6.4.2.1 Overburden and Bedrock Contact Zone

The horizontal hydraulic gradients within the overburden and contact zone aquifer were estimated to range from 0.002 to 0.019 m/m in August 2018, from 0.003 to 0.016 m/m in March 2019, and from 0.002 to 0.013 m/m in February 2020, based on the groundwater contours presented on Figures 6-1a–c.

Horizontal hydraulic conductivities of the overburden and contact zone aquifer beneath the Site from the SWRT interpretations (Section 6.3) range from 7.0×10^{-7} to 3.1×10^{-4} m/s, with geometric mean of 3.9×10^{-5} m/s. Assuming a porosity of 0.10 and the geometric mean hydraulic conductivity, groundwater in this unit was calculated to move horizontally beneath the Site at a velocity of approximately 25 to 230 m per year. These values are comparable to previous estimates of 107 m per year (Gartner Lee Limited 1999) for the shallow bedrock.

6.4.2.2 Eramosa Formation

Horizontal hydraulic gradients within the Vinemount Member of the Eramosa Formation were calculated using the contours presented on Figures 6-2d–6-2f. It was found that groundwater gradients were generally uniform across the Site for each snapshot; the average gradients calculated for this unit ranged from 0.0004 m/m in August 2018, to 0.002 m/m in February 2020.

Horizontal hydraulic conductivities within the competent Reformatory Quarry and Vinemount Members beneath the Site from the slug test interpretations (Section 6.3) ranged from 4.2×10^{-8} to 7.6×10^{-6} m/s with a geometric mean of 5.7×10^{-7} m/s. Assuming a horizontal hydraulic gradient between 0.0004 and 0.002 m/m, a porosity value of 0.01 (Matrix 2014) and the geometric mean hydraulic conductivity, groundwater in Vinemount was calculated to move horizontally at a velocity of 0.7 to 3.5 m per year. This value is lower than the previously reported result of 14 m per year in the deeper bedrock units beneath the Site (Gartner Lee Limited 1999) because the previous calculation had not isolated the Vinemount Member.

6.5 Fine-Medium Soil Texture

Under O. Reg. 153/04, as amended, "coarse-textured soil" is soil that contains more than 50 percent by mass of particles that are 75 µm or larger in mean diameter (MECP 2011a). According to O. Reg. 153/04, if one-third of the soils at the Phase Two Property are coarse-textured, then the more-stringent coarse-textured soil standards apply to the Site; otherwise, the medium-/fine-textured soil standards may apply.

Grain size analysis was performed on selected soil samples from the native sand unit. The grain size analysis indicates that the sand layer contains particles primarily in the fine- to medium-textured sand range, with approximately 75 to 90 percent fine to medium sand. No soil samples from the fill layer were submitted for grain size analysis, because the field observations indicated that the soils contained large parts coarse sand and gravel and therefore classified soils within the layer as coarse-textured. Grain size curves for the selected samples are provided in Appendix F.

For purposes of this evaluation, because of the extensive presence of heterogeneous fill materials across the Site, the soil condition standards for coarse-textured soils were used to be conservative. The coarse-textured soil standards were used as listed under the Table 3 SCS for residential/parkland/institutional property use.

6.6 Soil: Field Screening

Field screening techniques were used during the Phase Two ESA to identify soils impacted by volatile compounds such as VOCs, PAHs, and PHCs. These techniques included visual and olfactory observations and the use of a PID, equipped with an 11.7 eV discharge lamp, to measure soil-vapour headspace concentrations. PID measurements were performed during the investigation, using the procedures and equipment described in Section 5.4.

Visual and olfactory observations were documented in the borehole and test pit logs provided in Appendix C. Soil-vapour headspace measurements (in ppm) were also recorded in the borehole and test pit logs provided in Appendix C. Other COPCs such as PCBs were not targeted during field screening.

6.7 Soil Quality

Through current and historical investigations, the nature and extent of potential soil contamination was investigated for each identified APEC and the Phase Two Property in its entirety. Figure 4-1 shows the APECs and associated sample locations. Investigative locations, including the analysis completed at each location, are summarized on an APEC-by-APEC basis in Table 6-4. The analytical results of the investigation, along with sampling depth, are summarized in Table 6-5, with comparison to the Table 6 SCS (MECP 2011b). Figures 6-3 through 6-11 present the distribution of soil concentrations exceeding the Table 6 SCS by analytical group in plan view for the stratigraphic units.

The inferred horizontal extent of soil concentrations greater than the Table 6 SCS are also shown. Where there are exceedances of the applicable SCS, Jacobs has prepared at least one cross-section by analytical group, which follows the plan view figure. The cross-sections present the inferred vertical extent of soil concentrations greater than the Table 6 SCS. Maximum concentrations of each detected parameter are provided in Table 6-6 and shown in red text on the respective plan view and cross-sectional figures.

Soil quality across the Site was evaluated using a total of 349 soil samples collected from various depths from 173 locations across the Phase Two Property. Samples were submitted for laboratory analysis for one or more of the following analytes:

- Metals and hydride-forming metals
- ORPs (hot-water-soluble boron [HWS boron], hexavalent chromium, cyanide, mercury, EC, SAR)
- BTEX
- PHCs
- PAHs
- VOCs
- Chlorophenols (CPs)
- PCBs
- Acid, base, neutral compounds (ABNs)

Soil at the Phase Two Property was found to be generally impacted with elevated soil concentrations of metals and PHCs. Localized soil impacts from PAHs, BTEX, VOCs, and PCBs were also identified in limited areas of the Phase Two Property. The presence of these parameters is consistent with the Site's historical and industrial land use.

Soil samples were analyzed at various depths to show vertical and horizontal delineation in soil on a general and APEC-specific basis, as applicable, depending on the COC. The following subsections provide details about the frequency, distribution and identification of COCs.

6.7.1 Metals, Hydride-Forming Metals, Mercury, and Hexavalent Chromium

Metals exceedances in soil were widespread across the Site, with the majority of samples having exceedances for lead and zinc. A total of 151 of 235 samples (64 percent) from 100 of 142 locations (70 percent) exceeded the Table 6 SCS. Metals exceedances were identified to a maximum depth of 2.9 mbgs.

These impacts are consistent with the Site's historical use as a foundry (APEC-1), with associated machine shop uses (APEC-2 and APEC-10), annealing uses (APEC-3), and galvanizing activities (APEC-4 and APEC-11). Lead was detected at concentrations greater than the Table 6 SCS in 76 samples. Detected exceedances of lead greater than 5,000 micrograms per gram (µg/g) were localized to the area

surrounding BH07-65, near the western boundary of the Site within APEC-26 (Former Substation). Zinc was detected in concentrations greater than the Table 6 SCS in 139 samples. Detected exceedances of zinc greater than 5,000 µg/g were found in 11 samples, with 6 of those at concentrations greater than 10,000 µg/g. These locations were localized to areas on the southeastern corner of the Site, each within APEC-5 (Galvanizing Building), with the exception of TP13-09, which is located 6 m west of the APEC boundary. The maximum zinc concentration of 67,200 µg/g occurred at MW17-108S. Outside of these highly impacted areas, zinc was generally seen to increase in concentration with increasing depth, indicating that elevated zinc concentrations may also be attributable to naturally occurring zinc levels in the till or the bedrock below.

Other maximum concentrations of metals (including antimony, arsenic, cobalt, copper, mercury, and molybdenum) were mostly found in the surficial fill at various locations across the Site and are likely associated with the historical operations associated with the former foundry, as well as unknown fill quality (APEC-29). The northwestern portion of the Site showed the least impacts, as known historical use was limited to an employee parking area. Other than this area, metals impacts extend to the property boundaries and are present in both the upper fill and deeper native silt overburden units, extending to the contact with the shallow bedrock surface.

The detected exceedances for metals, hydride-forming metals, mercury, and hexavalent chromium for soil, including their horizontal and vertical extents, are shown in plan view on Figure 6-3 (Part 1 and 2) and in cross-section view on Figures 6-3a through 6-3f.

Metal exceedances, specifically arsenic, lead, and zinc, were also found in groundwater, indicating that metals impacts in soil have the potential to be acting as a contaminant source contributing to impacts in groundwater.

6.7.2 Other Regulated Parameters (Hot-Water-Soluble Boron, Cyanide, Electrical Conductivity, Sodium Adsorption Ratio)

ORPs, including HWS boron, cyanide, electrical conductivity (EC), and sodium adsorption ratio (SAR), exceeded the Table 6 SCS in 3 of 105 samples (3 percent) from 2 of 75 locations (3 percent). EC was the only parameter that had detected exceedances of the Table 6 SCS, with a maximum concentration of 2.19 millisiemens per centimetre (mS/cm) at TP-320. The impacted samples were collected from within the historical excavation area in the northeastern portion of the Site. Borehole logs note the material as grey-brown sand and gravel. The other samples collected and analyzed for EC from the Phase Two Property met the Table 6 SCS. It is likely that the EC impacts are associated with the imported backfill materials used following the 1999 excavations.

The locations and exceedances for these other regulated parameters in soil are shown in plan view and cross-section on Figures 6-4 and 6-4a, respectively.

Correlated ORPs in groundwater, sodium, and chloride were not detected at concentrations greater than the Table 6 SCS at the Phase Two Property, indicating that these parameters in soil are not currently acting as a contaminant source contributing to groundwater.

6.7.3 Benzene, Toluene, Ethylbenzene, Xylenes

Concentrations of BTEX (specifically benzene, ethylbenzene, and xylenes) detected in soil greater than the Table 6 SCS occurred in 3 of 146 samples (2 percent) from 2 of 90 locations (2 percent). Exceedances were localized to two areas of the Site to a maximum depth of 1.22 mbgs. The first area is along the

western boundary in the area of a former garage (APEC-20). Concentrations of benzene, ethylbenzene and xylenes of 0.26, 4.1, and 3.9 µg/g, respectively, were measured at BH07-66. A test pit (TP18-317) was advanced at this location (within 2 m), with a sample collected at the bedrock interface where concentrations of BTEX were not detected and met the SCS. The second area is in the south-central portion of the Site, potentially associated with the former foundry (APEC-1) or unknown fill quality (APEC-29), with a concentration of benzene of 0.23 µg/g (duplicate sample concentration of 0.25 µg/g) at TP13-11.

The detected BTEX exceedances in soil are shown in plan view on Figure 6-5 and in cross-section on Figures 6-5a and 6-5b.

BTEX exceedances, specifically benzene, ethylbenzene, and xylenes, were also found in groundwater; however, based on the low concentrations in soil and the locations of where these occurred, it is unlikely that the remaining BTEX impacts in soil have the potential to be acting as a contaminant source contributing to impacts in groundwater. The larger area of distribution in groundwater may indicate migration away from historically remediated soils (such as the northeastern corner) with groundwater flow or the presence of offsite sources, or both.

6.7.4 Petroleum Hydrocarbons

PHCs in soil were detected at concentrations greater than the Table 6 SCS in 27 of 130 samples (21 percent) from 21 of 90 locations (23 percent). Concentrations greater than the SCS were detected to a maximum depth of 3.2 mbgs, which is approximately at the bedrock interface.

Exceedances were localized to three general areas: (1) a western portion near the boundary of the Site at the former garage (APEC-20) extending east to the general open areas of the Site, which may have been "oiled" for dust control (APEC-29); (2) a central southern area of the Site within the former foundry (APEC-1) in the areas of the former oil house (APEC-7), transformers (APEC-16; APEC-22) and PCB capacitors (APEC-17); and (3) the northeastern and eastern portion of the Site surrounding the former 1999 excavation where a former machine shop (APEC-2; APEC-10), oil house (APEC-9), annealing room (APEC-3), galvanizing building (APEC-5), and plating operations (APEC-11) were located.

The maximum concentrations for F2 of 3,600 µg/g at BH07-46 and for F3 of 23,000 µg/g at BH07-40 are both located in the northeastern portion of the Site within and downgradient of the area historically remediated (for metals and PHC impacts). The maximum concentration for F4 was 7,300 µg/g at BH07-67 on the western portion of the Site near the former garage (APEC-20). F1 was not detected at concentrations greater than the Table 6 SCS.

Five samples from four locations analyzed for PHCs exhibited concentrations greater than the MECP Free-Phase Threshold Values (MECP 2011d) for F2 (BH07-41), F3 (BH07-40, BH07-41, BH07-67, and MW17-108S), and F4 (BH07-67). PHC impacts were found in both the upper fill and deeper native silt overburden units, including at the contact with the shallow bedrock surface, at a depth where the groundwater table is present on the eastern portion of the Site. LNAPL has been found in wells in the area of BH07-40, BH07-41, and at MW17-108S, which is further discussed in Section 6.8.4.

The PHC exceedances detected in soil are shown in plan view on Figure 6-6 and in cross-section view on Figures 6-6a through 6-6e.

There is the potential for the PHC impacts in soil to act as a contaminant mass, which likely contributes to the presence of PHC impacts to groundwater at the Phase Two Property.

6.7.5 Polycyclic Aromatic Hydrocarbons

Concentrations of PAHs detected in soil greater than the Table 6 SCS occurred in 30 of 125 samples (24 percent) from 22 of 89 locations (25 percent) to a maximum depth of 2.13 mbgs. PAHs impacts in soil were localized to four general areas: at the western boundary of the Site in the area of the former garage and coal storage (APEC-20 and APEC-21); in the south-central area of the Site where the former foundry (APEC-1), sand storage (APEC-4; APEC-15), coal storage (APEC-12), rail lines (APEC-13) were located; along the northern boundary of the Site, west of the former excavation in areas formerly used for coal storage (APEC-18), paint shop (APEC-23), former rail line (APEC-13), and former drum storage (APEC-25); and the eastern portion of the Site, south of the former excavation in areas where the former machine shop (APEC-2; APEC-10), UST (APEC-8) and coal storage (APEC-19) were located. PAH concentrations in these areas could also be attributable to the unknown fill quality (APEC-29).

Most of the maximum PAH concentrations were located at OW07-34D, within the south-central area and extending to a depth of 1.22 mbgs. Concentrations of PAHs at this location were consistently one or two orders of magnitude greater than other detected exceedances on the Phase Two Property. Borehole logs indicate that the material sampled at this location for PAHs was the upper fill material. Deeper samples (that is, greater than 1.22 mbgs) collected just above the bedrock surface at nearby TP18-315 and MW17-102D also had concentrations of PAHs greater than the Table 6 SCS; however, fewer analytes had exceedances, and the reported concentrations were lower than at OW07-34D. Vertically, the PAHs impacts were primarily located in the fill, with decreasing concentrations in the deeper native silt overburden unit.

The PAH exceedances detected in soil are shown in plan view on Figure 6-7 and in cross-section view on Figures 6-7a through 6-7c.

PAH exceedances were also found in groundwater, indicating that PAH impacts in soil have the potential to be acting as a contaminant source contributing to impacts in groundwater.

6.7.6 Volatile Organic Compounds

VOC concentrations detected in soil exceeding the Table 6 SCS were limited to trichloroethylene (TCE), and occurred in 12 of 126 samples (10 percent) from 7 of 79 locations (9 percent). One of these locations included MW17-102D in the southwestern area of the Site, which had a TCE exceedance of 0.082 µg/g at a depth of 0.15 to 0.3 mbgs. MW17-102D was reinvestigated by taking two samples within 2 m of the original location at the same depth of the previous exceedance, and both results met the Table 6 SCS. The combined average of the three samples (0.041 µg/g) confirmed that concentrations of TCE met the SCS (using averaging as per Section 48(2) of O. Reg. 153/04) for this location. The deeper sample collected at MW17-102D from 1.83 to 2.13 mbgs also met Table 6 SCS.

The remaining six locations where TCE was detected at concentrations greater than the Table 6 SCS of 0.061 µg/g were localized to one area of the Site: the eastern corner where a former galvanizing building (APEC-5) and machine shop (APEC-10) were located. The maximum TCE concentration of 35.4 µg/g was found at BH18-207i, a location likely within the footprint of the former galvanizing building, at a depth of 0.15 to 0.76 mbgs. Deeper samples collected at this location showed concentrations reducing with depth, including a sample collected from just above the bedrock (2.9 mbgs) that met the Table 6 SCS. The remaining detected TCE concentrations in the area were found to be significantly lower, at concentrations of 1 µg/g and below, and extended east to the property boundary.

The soil investigation results for VOCs are shown in plan view on Figure 6-8 and in cross-section view on Figures 6-8a through 6-8c.

VOC exceedances were also found in groundwater; however, the low concentrations in soil do not suggest the impacts are acting as a contaminant source contributing to impacts in groundwater. Based on the groundwater investigation results for VOCs, concentrations appear to indicate an offsite source for deep groundwater VOC impacts.

6.7.7 Chlorophenols

CPs in soil at the Site were investigated via 23 samples from 13 locations, with no detected exceedances of the Table 6 SCS. The assessment of CPs on the Site are associated with the potential presence in spent foundry sand, which could be associated with the former foundry (APEC-1), sand storage and mixing areas (APEC-4; APEC-15), and random areas of foundry operation waste fill across the Site of unknown quality (APEC-29).

As CPs did not have detected concentrations at the Phase Two Property, they are not considered COCs for the Site. The locations investigated for CP in soil are shown in plan view on Figure 6-9.

6.7.8 Polychlorinated Biphenyls

Concentrations of PCBs in soil greater than the Table 6 SCS occurred in 6 samples from 5 locations of the 72 samples analyzed from 53 locations. PCB exceedances were localized to three general areas: near the western boundary within APECs for a former garage (APEC-20) and unknown fill quality (APEC-29); to the east within APECs for a former machine shop (APEC-2; APEC-10) and unknown fill quality (APEC-29); and in the south-central area of the Site with APECs for former PCB capacitors (APEC-17) and unknown fill quality (APEC-29). The maximum PCB concentration of 1.65 µg/g occurred in the western area at the surface in TP17-300. An adjacent location, BH07-67, had a sample from 0.05 to 0.91 mbgs with a concentration of 1.5 µg/g for total PCBs. The maximum concentration at TP17-300 was vertically delineated by a deeper sample from 0.3 to 0.61 mbgs that meets the Table 6 SCS. The exceedance at BH07-67 was delineated by a deeper sample at 1.22 to 1.37 mbgs with concentrations of PCBs less than the SCS. Other areas of PCB contamination at SS-41 and TP17-306 in the south-central portion of the Site did not have deeper samples, because they were collected right above the bedrock. Shallow PCB impacts at TP13-08 in the eastern area were vertically delineated by deeper samples collected from TP18-316 and BH07-52. The results of the soil investigation for PCBs are shown in plan view on Figure 6-10 and in cross-section view on Figures 6-10a and 6-10b.

6.7.9 Acid, Base, and Neutral Compounds

ABNs in soil at the Site were assessed in the current investigations with 23 samples from 13 locations. There were no detected exceedances of the Table 6 SCS. The assessment of ABNs on the Site were associated with the potential presence of foundry sand, which could be associated with the former foundry (APEC-1), sand storage and mixing areas (APEC-4; APEC-15), and random areas of foundry operation waste fill across the Site of unknown quality (APEC-29).

Historical samples had some ABN parameters analyzed as part of historical laboratory scans but were not considered a complete parameter suite assessed under O. Reg. 153/04 requirements. The samples were not included in APEC assessment (Table 6-4), delineation, or determination if a location met the SCS (that is, not shown on the plan view and cross-section figures).

As ABNs did not have detected concentrations at the Phase Two Property, they are not considered COCs for the Site. The locations investigated for ABNs in soil are shown in plan view on Figure 6-11.

6.7.10 Contaminants of Concern in Soil

O. Reg. 153/04 (MECP 2011a) defines COCs as chemicals with concentrations that exceed the applicable SCS or chemicals with no applicable SCS that are associated with a PCA. The MECP document entitled *Procedures for Use of Risk Assessment under Part XV.1 of the Environmental Protection Act* (MECP 2005) indicates that at the discretion of the QPESA, chemicals without an applicable SCS may be included or excluded as COCs based on an understanding of geoscience or the potential for the chemical to limit use of the Site.

Maximum concentration (as shown in Table 6-6) of each chemical analyzed in soil at the Phase Two Property were screened against the Table 6 SCS (as shown in Table 6-7a). In general, where concentrations were found detected greater than the Table 6 SCS, the parameters were retained as a COC to be evaluated in the RA.

Parameters with no applicable MECP standard were compared with the Ontario Typical Range (OTR) values for Region 2, as provided in Table 8.2 of the MECP Rationale document (MECP 2011d) or the OTR document (MECP 1999) if available for the parameter. The OTR values are considered representative of upper limits of typical province-wide background concentrations that are not contaminated by point sources.

Where nondetect concentrations exceeded the Table 6 SCS because of increased reporting limits (RLs), or where no Table 6 SCS or OTR value was available but there were detections on the Phase Two Property, data were evaluated, and analytes were removed as COCs where the QPESA determined it was appropriate. Table 6-7b outlines the rationale for removing these analytes.

Table 6-7c summarizes the chemicals retained as COCs in soil for the Phase Two Property based on the evaluation provided.

COAs for the samples collected as part of the Phase Two ESA are provided in Appendix G.

6.8 Groundwater Quality

The nature and extent of potential groundwater contamination was investigated for the identified APECs and the Phase Two Property in its entirety. Figure 4-1 shows the APECs and associated sample locations. Investigative locations, including the analysis completed at each location, are summarized on an APEC-by-APEC basis in Table 6-4. The investigation's analytical results and the well screen interval are summarized in Table 6-8, along with a comparison to the applicable Table 6 SCS (MECP 2011b). Figures 6-12 through 6-20 present the distribution of groundwater concentrations exceeding the applicable Table 6 SCS by analytical group in plan view for the groundwater units.

The inferred horizontal extent of groundwater concentrations greater than the Table 6 SCS are also shown. Where there are exceedances of the applicable SCS, Jacobs has prepared at least one cross-section by analytical group, which follows the plan view figure. The cross-sections present the inferred vertical extent of groundwater concentrations greater than the Table 6 SCS. Maximum concentrations of each detected parameter are provided in Table 6-9 and shown in red text on the respective plan view and cross-sectional figures.

Groundwater across the Site was evaluated using a total of 448 groundwater samples collected from 94 groundwater monitoring wells across the Phase Two Property. Samples were submitted for laboratory analysis for one or more of the following analytes:

- Metals including hydride-forming metals,
- Other regulated parameters (chloride, cyanide, hexavalent chromium, mercury, and sodium)
- BTEX
- PHCs
- PAHs
- VOCs
- CPs
- PCBs
- ABNs

Groundwater at the Phase Two Property was generally found to be impacted with chlorinated VOCs (specifically, chloroethenes) and localized impacts of chloroethanes, BTEX, metals, PAHs, and PHCs. Sample results were compared with the MECP Table 6 SCS.

Groundwater samples were analyzed at various depths to show vertical and horizontal delineation on a general and APEC-specific basis, as applicable, depending on the COC. The following subsections provide details about COC frequency, distribution, and identification.

6.8.1 Metals, Hydride-Forming Metals, Mercury, and Hexavalent Chromium

Concentrations of metals in groundwater greater than the Table 6 SCS were observed in 71 of 252 samples (28 percent) from 22 of 72 locations (30 percent). Exceedances were reported for arsenic, lead, and zinc. Isolated exceedances of antimony, arsenic, cobalt, and uranium occurred in single sampling events, but the results were not reproduced in subsequent sampling events. Therefore, these analytes (other than arsenic, which occurred elsewhere on the Site) were not considered to be groundwater COCs. The distribution of metals impacts in groundwater is smaller in area than the distribution of impacts in soil, but the impacts generally correspond geographically and are consistent with the Site's widespread historical use as a foundry (APEC-1).

Arsenic exceedances in groundwater occurred at one location at the north-central area of the Site, just within the area historically used for drum storage (APEC-25) and may be associated with this or the unknown fill quality (APEC-29). The impacts (arsenic reported up to 45.7 micrograms per litre [µg/L]) are more likely to be associated with offsite sources such as PCAs to the north (APEC-30) because the soil conditions in this immediate area did not exhibit elevated arsenic (or other metal and hydride-forming metal) concentrations. Exceedances of the Table 6 SCS for arsenic occurred in the upper overburden and bedrock contact zone (MW18-112S, OW07-31) and Eramosa Formation (Reformatory Quarry Member) (MW18-112D). Impacts at this location were vertically delineated by MW18-112G, which was installed deeper than OW07-31/MW18-112S/MW18-112D within the lower Vinemount Member of the Eramosa Formation.

Lead exceedances were localized to one location (OW09-II) in the eastern portion of the Site, with concentrations up to 17 µg/L over the Table 6 SCS of 10 µg/L. The area is associated with historical coal storage (APEC-19), a former UST (APEC-8), and unknown fill quality (APEC-29) and may see potential impacts from offsite PCAs to the south (APEC-31). OW09-II is screened within the Eramosa Formation (Reformatory Quarry) unit, and the lead impacts were vertically delineated by OW09-I and MW18-129D,

which are installed shallower (overburden and bedrock contact zone) and deeper within the same unit, respectively, at the same location.

Zinc exceedances were localized to the eastern portion of the Site and a single central location at the Site (OW07-32). The eastern impacts were found at 10 locations and are likely attributable to the former plating and galvanizing buildings (APECs 11 and 5) as well as associated operations, including a former machine shop (APEC-10), unknown fill quality (APEC-29), and offsite PCAs to the east (APEC-31). Zinc impacts were generally limited to the upper overburden and bedrock contact zone with the exception of three samples from one location (OW18-II) screened in the Eramosa Formation (Reformatory Quarry). Zinc exceedances in the central portion of the Site at OW07-32 (overburden and bedrock contact zone) are vertically delineated with MW18-116D, screened in the Eramosa Formation (Reformatory Quarry). In the eastern portion of the Site, several wells provide vertical delineation for the shallow groundwater impacts, including MW18-130D, MW18-132D, OW13-39D, OW22D, MW18-133D, MW18-129D, and OW31.

Concentrations of antimony (MW18-114D), arsenic (MW17-101D), cobalt (OW11-II), lead (OW07-33), uranium (OW22S), and zinc (OW36S) were greater than the Table 6 SCS in one sampling event but met the SCS in at least two subsequent sampling events at the same location. Therefore, these exceedances were considered anomalous and not representative of current Site conditions. These results are detailed in Table 6-10c and were not treated as exceedances for the purpose of the Phase Two ESA.

The groundwater metals exceedances are shown in plan view on Figure 6-12 and in cross-section view on Figures 6-12a through 6-12d.

6.8.2 Other Regulated Parameters (Chloride, Sodium, and Cyanide)

Inorganic parameters, including chloride, cyanide, and sodium, were not detected at concentrations greater than the Table 6 SCS in the 227 samples analyzed from 65 locations. The locations of these ORPs investigated in groundwater are shown in plan view on Figure 6-13.

6.8.3 Benzene, Toluene, Ethylbenzene, Xylenes

Concentrations of BTEX (specifically, benzene and ethylbenzene) in groundwater greater than the Table 6 SCS occurred in 70 of 378 samples (19 percent) from 17 of 94 locations (18 percent). Exceedances were found to be localized to two areas of the Site: the eastern third and the south-central area along the Phase Two Property's southern boundary. These areas had APECs related to a former foundry (APEC-1) and unknown fill quality (APEC-29) in the south-central area and former machine shops (APEC-2; APEC-10), annealing room (APEC-3), former UST (APEC-8), oil house (APEC-9), plating (APEC-11), and offsite PCAs to the east (APEC-31) for the eastern third of the Site. The distribution of BTEX impacts in groundwater is larger in area than the distribution of impacts in soil and generally do not overlap. This pattern may indicate migration away from historical remediated soil sources (for example, in the northeastern corner of the Site) with groundwater flow, the presence of offsite sources, or both.

Maximum detected concentrations for benzene and ethylbenzene both occurred at MW17-105S in the upper overburden and bedrock contact unit in the eastern portion of the Site. MW17-105D, nested with MW17-105S but screened within the Eramosa Formation (Reformatory Quarry/Vinemount) unit also had exceedances of the Table 6 SCS for benzene but had nondetected results for ethylbenzene. The benzene concentrations were an order-of-magnitude lower in the deeper unit compared with the upper unit. Monitoring well MW18-105G was installed deeper than MW17-105D for vertical delineation, with no

detected concentrations of BTEX reported. The BTEX impacts in the eastern area were vertically delineated by several monitoring wells, including MW18-105G, MW18-128D, MW18-133D, and OW31.

In the south-central area of the Site, benzene exceedances were noted in MW17-102D at a screened depth of 13.76 to 15.29 mbgs. The APECs in this area (general foundry use [APEC-1} and unknown fill quality [APEC-29]) do not suggest that a point or diffuse source of BTEX was historically located in this area, because there are no overlying BTEX impacts in soil identified. BTEX concentrations met the Table 6 SCS in nearby shallower upgradient monitoring wells (OW07-34S/D, MW18-125S, OW25, or MW18-126D), shallower cross-gradient monitoring wells (MW17-107S and OW26S/D), and deeper cross-gradient/downgradient monitoring wells (MW18-107D, MW18-121D). Based on this evaluation, additional efforts to delineate the benzene impacts in MW17-102D were not deemed warranted, because of the relatively low concentrations (1.44 µg/L compared with the maximum concentration onsite of 66.8 µg/L in the eastern portion of the Site), the depth of the impacts, and the lack of evidence linking these impacts to an onsite source.

Concentrations of benzene and ethylbenzene at OW22S were greater than the Table 6 SCS in one sampling event but met the SCS in two subsequent sampling events at the same location. Therefore, these exceedances were considered anomalous and not representative of current Site conditions. These results are detailed in Table 6-10c and were not treated as exceedances for the purpose of the Phase Two ESA.

The groundwater locations investigated for BTEX are shown in plan view on Figure 6-14 and in cross-section view on Figures 6-14a through 6-14d.

6.8.4 Petroleum Hydrocarbons

Concentrations of PHCs (PHC F1 to F4) in groundwater were greater than the Table 6 SCS in 26 of 211 samples (12 percent) from 8 of 64 locations (13 percent). PHC impacts in groundwater are localized to two areas of the Phase Two Property: the eastern third of the Site with APECs for a former annealing room (APEC-3), machine shops (APEC-2; APEC-10), unknown fill quality (APEC-29), and offsite PCAs to the east (APEC-31) and the south-central area of the Site with APECs for a former foundry (APEC-1), PCB capacitors (APEC-17), and unknown fill quality (APEC-29). The locations of PHC impacts in groundwater are geographically similar to two of the three areas where PHCs in soil were identified. This pattern suggests that the groundwater impacts are a result of onsite soil sources (with the exception of F1 PHCs, which did not exceed the Table 6 SCS in soil), with some dispersion away from soil sources via groundwater flow. Maximum concentrations of F2, F3, and F4 occurred at OW22S, located near the northeastern corner of the Phase Two Property within the footprint of the area historically remediated for metals and PHC impacts. The maximum concentration of PHC F1 occurred at OW24D, located in the southeastern corner of the Site, potentially attributable to an offsite source to the east. PHC impacts in groundwater in the eastern portion of the Site were vertically delineated by several monitoring wells, including OW22D, OW13-39D, MW17-104D, MW18-128D, MW18-135D, and OW31. LNAPL has been measured within OW23S, MW17-108S, and MW18-135S (each screened within the overburden and bedrock contact zone aquifer unit) on various occasions. The shallow PHC impacts in the south-central portion of the Site at OW25 were vertically delineated by MW18-126D.

Concentrations of F2 exceeded the half-solubility limit in 16 samples from six locations (OW18-II, OW22S, OW23S, OW25, MW17-104S, MW18-135S). LNAPL was measured at both OW23S and MW18-135S on multiple occasions. The other locations with F2 concentrations greater than the half-solubility did not have observations of LNAPL during the investigation. PHC concentrations in soil did exceed the free-phase threshold at locations near OW23S and MW18-135S; therefore, it is likely that the PHC exceedances in soil are acting as a contaminant source mass contributing to the groundwater impacts. However, these impacts

are limited to the overburden and bedrock contact zone aquifer unit based on vertical delineation completed. Concentrations of F3 and F4 exceeded the half-solubility limit in the samples, because the limits for F3 and F4 in a potable, shallow soil condition are orders of magnitude smaller than the method detection limits for the analytical tests. Elevated concentrations of F3 and F4 were reported at OW22S, OW23S, and OW25; however, these locations have shown a decreasing trend during recent sampling events.

The concentration of F2 PHCs at OW18-II was greater than the Table 6 SCS in one sampling event but met the SCS in two subsequent sampling events at the same location. Therefore, the exceedance was considered anomalous and not representative of current Site conditions. This result is detailed in Table 6-10c and was not treated as an exceedance for the purpose of the Phase Two ESA.

The PHC results in groundwater and LNAPL locations are shown in plan view on Figure 6-15 and in cross-section view on Figures 6-15a through 6-15e.

6.8.5 Polycyclic Aromatic Hydrocarbons (PAHs)

Concentrations of PAHs in groundwater were greater than the Table 6 SCS in 24 of 197 samples (12 percent) from 8 of 55 locations (15 percent). Exceedances of PAHs in groundwater were generally localized to one area of the Property: the eastern third with APECs for the former annealing room (APEC-3), plating (APEC-11), machine shop (APEC-10), unknown fill quality (APEC-29), and offsite PCAs to the north (APEC-30). The distribution of PAH impacts in groundwater is comparable in area to the distribution of impacts in soil, but the impacts do not overlap in every case. The historical remedial activities in the northeastern corner of the Site (for metals and PHCs) may have removed a soil source of PAHs, because PAHs are absent in soil in this area, but the largest region of PAH impacts in groundwater are located within, and adjacent to, the excavation footprint.

The majority of detected exceedances and maximum concentrations for PAHs occurred at OW22S and OW23S, both screened in the upper overburden and bedrock contact zone aquifer. Both of these locations have nested deeper wells installed in the Eramosa Formation (Reformatory Quarry) unit that have samples meeting the SCS for the parameters that exceeded in the shallow aquifer unit (OW22D for OW22S and OW23D for OW23S). Additional vertical delineation in the eastern portion of the Site is provided by OW13-39D and MW18-135D.

Concentrations of PAHs in the centre and south-central areas of the Site at OW03-I and OW25 were greater than the Table 6 SCS in one sampling event but met the SCS in at least two subsequent sampling events at the same location. Therefore, these exceedances were considered anomalous and not representative of current Site conditions. These results are detailed in Table 6-10c and were not treated as exceedances for the purpose of the Phase Two ESA.

The groundwater results for PAHs are shown in plan view on Figure 6-16 and in cross-section view on Figures 6-16a through 6-16d.

6.8.6 Volatile Organic Compounds (VOCs)

VOCs were found at concentrations greater than the Table 6 SCS in 200 of 366 samples (55 percent) from 53 of 94 monitoring well locations (56 percent) across the Phase Two Property. VOC impacts were present across the entire Site. The distribution of VOC impacts in groundwater is larger in area than the distribution of VOC impacts in soil, indicating migration away from soil sources with groundwater flow. One area of soil VOC concentrations suggestive of an onsite chlorinated VOC source area was identified at BH18-207;

however, the decreasing concentrations in soil to Table 6 SCS at a depth above the groundwater table and the magnitude of concentrations present in groundwater suggest an alternate source or sources. Chlorinated VOC-impacted groundwater may originate or be amplified by the presence of offsite sources (for example, offsite manufacturing activities [APEC-31; APEC-32; APEC-33]). While onsite APECs associated with historical VOC use have been identified—for example, the operation of a foundry (APEC-1), machine/electrical shops (APEC-2; APEC-10; APEC-27), galvanizing activities (APEC-5; APEC-11) —most of the VOC impacts in groundwater in the Eramosa Formation or deeper are believed to originate from offsite sources.

The following subsections discuss the distribution of chloroethenes (specifically, 1,1-dichloroethene; cis-1,2-dichloroethene [cis-1,2-DCE]; tetrachloroethene; trans-1,2-dichloroethene; trichloroethylene [TCE]; and vinyl chloride) and chloroethanes (1,1,1-trichloroethane and 1,1-dichloroethane) in groundwater. The results of the groundwater investigation for VOCs are shown in plan view on Figure 6-17 (Part 1 and 2) and in cross-section view on Figures 6-17a through 6-17e.

Chloroethenes

Chloroethenes in groundwater were found at various depths throughout the Site. Of the 68 wells screened in the upper overburden and bedrock contact zone and sampled for chloroethenes, 29 had concentrations greater than the Table 6 SCS (43 percent). These shallower impacts are generally located in the southwestern portion and eastern corner of the Site. Of the 25 wells screened in the Eramosa Formation (Reformatory Quarry/Vinemount) unit and sampled for chloroethenes, 19 had concentrations greater than the Table 6 SCS (76 percent). These deeper impacts extend across the entire Site, including the northwestern portion of the Site where shallow groundwater impacts were not observed. Both wells screened in the Goat Island Formation (OW31 and MW18-136G) had low-level detections of cis-1,2-dichloroethene (1.88 µg/L to 3.14 µg/L compared with SCS of 1.6 µg/L), with the other chloroethenes reported as nondetect. The maximum concentrations of the majority of the chloroethenes were found in OW24D, which is located in the extreme southeastern corner of the property, adjacent to an area of known increasing groundwater concentrations off Site, therefore implying a source area off Site in an easterly direction. Vertical delineation of impacts has been achieved for 1,1-dichloroethene and trans-1,2-dichloroethene (MW18-128D and OW31), TCE (MW17-103D, OW07-34D, MW18-123D, and OW31), and vinyl chloride (MW18-128D, MW18-133D, MW18-136D, MW18-105G, and OW31). Concentrations of these COCs are generally highest adjacent to the eastern property boundary (near OW13-39S/D and OW24D) and decrease with both depth and distance from this area. Vertical delineation was not achieved for cis-1,2-dichloroethene, with uniform concentrations encountered in almost every monitoring well installed with screens between 10.28 and 25.32 mbgs. Concentrations of cis-1,2-Dichloroethene in 15 monitoring wells in this zone ranged from 1.23 to 5.36 µg/L (average of 2.4 µg/L), which is similar to the concentrations measured in OW31, screened from 28.9 to 33.32 mbgs in the Goat Island Formation. Further efforts to vertically delineate cis-1,2-DCE deeper into the Goat Island Formation were not considered warranted, because of the following:

- The concentration of cis-1,2-DCE in the deepest hydrostratigraphic unit, the Goat Island Formation, does not appear to be the result of chlorinated VOC impacts derived from the upper hydrostratigraphic unit. That is, where maximum chlorinated VOC parent compounds were identified, elevated concentrations of cis-1,2-DCE were not observed. This is evident in the area near OW31 where elevated concentrations of TCE were identified in the Stone Road and Reformatory Quarry Members of the Eramosa Formation. At this location, TCE was not identified in the lower Goat Island Formation in OW31; however, approximately 2 µg/L of cis-1,2-DCE was identified.

- The concentration of cis-1,2-DCE at OW31 could be the result of downward migration in that area; however, as previously noted, cis-1,2-DCE was identified from 1.23 to 5.36 µg/L in the lower hydrostratigraphic units (Vinemount Member and Goat Island Formation) across the area of the Site, including areas that are hydraulically up and cross-gradient of the shallow groundwater flow paths where elevated chlorinated VOCs in higher hydrostratigraphic units are observed. The concentration of cis-1,2-DCE at OW31 ranged from 1.88 to 2.01 µg/L (in the Goat Island Formation) and was consistent with the concentration of cis-1,2-DCE noted in other wells screened across the Goat Island and Vinemount Member, where concentrations ranged from 1.23 to 5.36 µg/L.
- The consistent concentration of cis-1,2-DCE identified in the Goat Island Formation and the Vinemount Member, a regional aquitard, implies that the impact to the Goat Island Formation may be widespread and is interpreted to be sourced from an area upgradient of the Site.
- It is also noted that the Site lies within the 2-year travel time Wellhead Protection Area for several of the City's municipal water supply wells. Phase Two activities included COC characterization to a depth of approximately 25 to 30 mbgs, but characterization did not extend into the underlying municipal production aquifer (Gasport Formation) that is estimated to lie approximately 40 to 50 mbgs. As previously discussed, the Goat Island and Gasport Formation are understood to be hydraulically connected to one another, with the Gasport Formation serving as the principal municipal aquifer. Water quality data in the City's Membro, Park, and Emma Wells were observed to have low concentrations of TCE and cis 1,2-DCE in 2017 (City of Guelph 2018). The average detected concentrations of cis-1,2 DCE in the City's water supply in 2017 was 1.8 µg/L (0.00178 mg/L), similar to the observed concentrations on Site (City of Guelph 2018).

These factors suggest there is a broad area of low concentration cis-1,2-DCE just greater than the Table 6 SCS beneath the Vinemount Member of the Eramosa Formation, a regional aquitard, including on the Site. The data do not support the conclusion that chlorinated VOC impacts identified on the Site are materially contributing to the observed elevated concentrations of cis-1,2-DCE.

This information also provides confidence that the concentration of cis-1,2-DCE identified in OW24D (in the northeastern corner of the Site, downgradient of the inferred offsite source area) represents the maximum concentration onsite. No significant VOC sources in soil were identified onsite, and aside from the northeastern corner of the Site where the maximum was identified, concentrations of cis-1,2-DCE were observed to be consistently lower, measuring between approximately 1 and 6 µg/L.

Chloroethanes

Chloroethanes were found at concentrations greater than the Table 6 SCS in 13 samples from eight locations (3 percent of samples, 9 percent of locations). These impacts appear to be localized to the southwestern area of the Phase Two Property within the areas formerly used as a foundry (APEC-1), electrical shop (APEC-27), and waste oil storage (APEC-28). Based on the distribution and groundwater flow direction, the impacts are likely from an onsite source, though no concentrations of chloroethanes have been found in soil. The chloroethane impacts are primarily located in the upper overburden and bedrock contact zone in this area, with deeper impacts only observed in two monitoring wells (MW18-122D and OW07-34D) within the Eramosa Formation (Reformatory Quarry). Vertical delineation of chloroethane impacts are provided by the following monitoring wells, which have concentrations of chloroethanes less than the Table 6 SCS: MW18-122G, MW18-120D, MW18-119D, MW18-116D, MW18-123D, MW18-126D, MW17-102D, and OW26D.

6.8.7 Chlorophenols

No detected concentrations of CPs were reported of the 12 samples analyzed from 10 locations, and RLs met the Table 6 SCS. Concentrations were also reported as nondetect in soil. CP assessment on the Site is associated with the potential presence in spent foundry sand, which could be associated with the former foundry (APEC-1), sand storage and mixing areas (APEC-4; APEC-15), and random areas of foundry operation waste fill across the Site of unknown quality (APEC-29). As CPs did not have detected concentrations at the Phase Two Property, they are not considered COCs for the Site. The locations investigated for CPs in groundwater are shown in plan view on Figure 6-18.

6.8.8 Polychlorinated Biphenyls

PCBs were analyzed in 27 groundwater samples from 17 locations, with concentrations reported greater than the Table 6 SCS at one location, OW26S, in 2010. Subsequent sampling events in 2011 and 2017 at this location reported nondetect concentrations and RLs below the SCS of 0.20 µg/L. The exceedance is considered anomalous and not representative of Site conditions, and these results are detailed in Table 6-10c. The other samples for PCBs in groundwater on the Phase Two Property were nondetect with RLs that met the Table 6 SCS. APECs associated with PCBs include transformer use (APEC-16 and APEC-22), a garage (APEC-20), former capacitor room (APEC-17), former substation (APEC-29), PCB storage area (APEC-24), and fill of unknown quality (APEC-29).

Previous remediation for PCBs occurred in the late 1990s for the former capacitor room (APEC-17) where concentrations of PCBs in soil less than 5 µg/g were left in place. These residual soil impacts do not appear to be having an impact on groundwater, based on nondetect results of PCBs in the monitoring wells immediately downgradient of this APEC.

As PCB concentrations were considered anomalous and were not reproduced in subsequent sampling events at the Phase Two Property, they are not considered COCs for the Site. The locations where groundwater was investigated for PCBs are shown in plan view on Figure 6-19.

6.8.9 Acid, Base, and Neutral Compounds

ABNs were analyzed in 12 samples from 10 locations and were not detected in concentrations greater than the Table 6 SCS. ABN assessment on the Site was associated with the potential presence of foundry sand, which could be associated with the former foundry (APEC-1), sand storage and mixing areas (APEC-4; APEC-15), and random areas of foundry operation waste fill across the Site of unknown quality (APEC-29).

Historical samples had some ABN parameters (specifically 1,1-biphenyl) analyzed as part of historical laboratory scans but were not considered a complete parameter suite assessed under O. Reg. 153/04 requirements. The samples were not included in APEC assessment (Table 6-4), delineation, or determination if a location met the SCS (that is, not shown on the plan view and cross-section figures).

As ABNs did not have detected concentrations at the Phase Two Property, they are not considered COCs for the Site. The locations investigated for ABNs in soil are shown in plan view on Figure 6-20.

6.8.10 Contaminants of Concern in Groundwater

O. Reg. 153/04, (MECP 2011a) defines COCs as chemicals with concentrations that exceed the applicable SCS or chemicals with no applicable SCS associated with a PCA. The MECP document entitled *Procedures*

for Use of Risk Assessment under Part XV.1 of the Environmental Protection Act (MECP 2005) indicates that at the discretion of the QPESA, chemicals without an applicable SCS may be included or excluded as COCs based on an understanding of geoscience, or the potential for the chemical to limit use of the Site.

Maximum concentrations (as shown in Table 6-9) of each chemical analyzed in groundwater at the Phase Two Property were screened against the Table 6 SCS (as shown in Table 6-10a). In general, where concentrations were found detected greater than the Table 6 SCS, the parameters were retained as a COC to be evaluated in the RA.

Parameters with no applicable MECP standard were compared with the Provincial Groundwater Monitoring Information Monitoring System (PGMIS), as provided in Table 8.4 of the MECP Rationale document (MECP 2011d). The PGMIS values are considered representative of upper limits of typical province-wide background concentrations that are not contaminated by point sources.

Where nondetect concentrations exceeded the Table 6 SCS because of increased RLs, or where no Table 6 SCS or OTR value was available but there were detections on the Phase Two Property, data were evaluated, and analytes were removed as COCs where the QPESA determined it was appropriate. Table 6-10b outlines the rationale for removing these analytes.

Where data were considered anomalous because of a minimum of two subsequent sampling events that resulted in concentrations below the Table 6 SCS, COCs were excluded at the discretion of the QPESA. Table 6-10c outlines the rationale for excluding the anomalous data.

Table 6-10d summarizes the chemicals retained as COCs in groundwater for the Phase Two Property based on the evaluation provided.

COAs for the samples collected as part of the Phase Two ESA are provided in Appendix G.

6.9 Sediment Quality

The Phase Two Property did not have a water body present as defined under O. Reg. 153/04, as amended. Therefore, sediment was not present in the investigation area.

6.10 Quality Assurance and Quality Control Results

Jacobs staff with experience in both intrusive field investigation techniques and the COCs encountered at the Site either performed or supervised the soil and groundwater sampling under the guidance of the QPESA. The field program maintained QA/QC, using appropriate equipment-cleaning procedures and duplicate sampling. Appropriate measures (such as field staff wearing disposable gloves, using dedicated sampling equipment, decontaminating nondedicated sampling equipment, using pre-cleaned laboratory-supplied sample containers, labelling samples, and completing laboratory-supplied, chain-of-custody records) were used to preserve data quality.

Jacobs collected soil and groundwater samples in conformance with Jacobs' SOPs and field forms, which were developed in accordance with O. Reg. 153/04 (MECP 2011a). As part of the QA/QC program, blind duplicate soil and groundwater samples were collected in the field at a frequency of 1 duplicate sample for each 10 field samples submitted. Trip blanks for VOCs were submitted to the laboratory for chemical analysis with each VOC groundwater batch submittal.

Samples were shipped to ALS in ice-filled coolers (in an attempt to maintain temperatures at less than 10°C), along with a chain-of-custody record. ALS performed the chemical analysis in compliance with the MECP Laboratory Services Branch's *Protocol for Analytical Methods Used in the Assessment of Properties under Past XV.1 of the Environmental Protection Act* (MECP 2011c).

Jacobs received soil and groundwater COAs (Appendix G) from ALS electronically to reduce the possibility of transcription errors. The analyses were compiled into a database. The automation of data transfers from laboratory instruments to laboratory information management systems also reduced the possibility of transcription errors. The results reported by ALS were quality-checked internally by a project chemist before being uploaded to the database. Analytical results were reviewed and validated by the project chemist. Data review and validation involved the following:

- Verification that samples were analyzed for the methods requested
- Verification that the appropriate methods were performed as outlined in *Protocol for Analytical Methods Used in the Assessment of Properties under Past XV.1 of the Environmental Protection Act* (MECP 2011c)
- Review of the data for outliers and anomalies
- Review of the laboratory case narrative for events in the laboratory that might have affected the accuracy or precision of the data

The data review and validation performed by the project chemist are documented in the DQE report provided in Appendix H. The DQE assessed the quality of the analytical results for the samples submitted in batches with the Phase Two Property investigation samples.

Data flags were assigned according to the National Functional Guidelines. Multiple flags are routinely applied to specific sample method, matrix, and analyte combinations, but there is only one final flag. A final flag is applied to the data and is the most conservative of the applied validation flags. The final flag also includes matrix and blank sample effects.

The data flags are those listed in the National Functional Guidelines and are defined as follows:

- J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. Data flagged as J were used in the decision-making process.
- R = The sample result was rejected because of serious deficiencies in the ability to analyze the sample and meet the QC criteria. The presence or absence of the analyte could not be verified. Data flagged "R" were rejected and not used in the decision-making process.
- U = The analyte was analyzed for, but was not detected above, the reported sample quantitation limit.
- UJ = The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

The goals of the DQE were to demonstrate that a sufficient number of representative samples were collected and that the resulting analytical data can be used to support the decision-making process. The following summary highlights the findings for the Phase Two Property investigation DQE:

- Precision of the data was verified through the review of the laboratory data quality indicators that include laboratory duplicate and FD samples. The precision reported in this DQE was affected by

relative percent difference exceedance for 17 analytical results in seven FD pairs. There were also 12 analytical results from two samples that were qualified for exceedance of the relative percent difference criteria in the laboratory duplicates. However, the overall precision level is considered acceptable.

- Accuracy of the data was verified through the review of the laboratory control samples, matrix spike, and surrogate recoveries, as well as the evaluation of method and trip blank data. The overall accuracy reported in this DQE is considered acceptable; however, several laboratory QC issues were observed that can affect accuracy: 36 sample results from 35 samples were qualified because of laboratory control sample recovery; 4 sample results from 3 samples were qualified because of matrix spike recovery, and 1 sample result was qualified because of surrogate recovery. Additionally, accuracy was affected by 9 dioxins and furans that were qualified for results between the reportable detection limit and the estimated detection limit; 3 VOC results qualified because of suspected interference; 32 organic (PAH or VOC) results qualified because of the ion ratio's not meeting criteria, and 9 SAR results qualified in cases where the detection limits were used in calculations because of nondetections.
- The data's representativeness was verified through the samples' collection, storage, and preservation procedures and by verifying holding-time compliance. Samples were analyzed within the recommended holding time except one WAD cyanide analysis. Temperature and holding at arrival met criteria.
- Comparability of the data was confirmed through the use of standard analytical procedures and standard units for reporting. Results obtained are comparable to industry standards in that the collection and analytical techniques followed approved, documented procedures.
- Completeness is a measure of the number of valid measurements obtained in relation to the total number of measurements planned. Valid data are defined as data that are not rejected for project use. No data are rejected. The data are considered valid.

In consultation with the project chemist, the QPESA concluded that the data met the data quality objectives, the decision-making was not affected, and the overall objectives of the investigation and assessment were met.

6.11 Phase Two Conceptual Site Model

Based on recent and historical Phase Two ESA work completed at 200 Beverley Street (Phase Two Property or Site) in Guelph, Ontario, a Phase Two CSM is provided and discussed in this section, as required under O. Reg. 153/04 (MECP 2011a). The Site is located east of downtown Guelph, Ontario, and is approximately 5.2 hectares in size. The Site currently consists of vacant land historically used for industrial purposes. Onsite buildings have been razed, with concrete floor slabs still in place. The location of the Phase Two Property is shown on Figure 2-1, and a more detailed Site plan is shown on Figure 2-2.

6.11.1 Potentially Contaminating Activities

The Phase One ESA (CH2M 2017) identified 77 PCAs, resulting in 33 APECs. The following PCAs were identified during the Phase One ESA (CH2M 2017) on the Phase Two Property and resulted in an APEC:

- 8 – Chemical Manufacturing, Processing, and Bulk Storage
- 27 – Garages and Maintenance and Repair of Railcars, Marine Vehicles, and Aviation Vehicles
- 28 – Gasoline and Associated Products Storage in Fixed Tanks
- 30 – Importation of Fill Material of Unknown Quality

- 32 – Iron and Steel Manufacturing and Processing
- 33 – Metal Treatment, Coating, Plating and Finishing
- 34 – Metal Fabrication
- 39 – Paints Manufacturing, Processing or Bulk Storage
- 46 – Rail Yard, Tracks, and Spurs
- 55 – Transformer Manufacturing, Processing and Use

The following PCAs were identified during the Phase One ESA (CH2M 2017) outside the Phase Two Property but within the Phase One Study Area:

- 8 – Chemical Manufacturing, Processing, and Bulk Storage
- 10 – Commercial Autobody Shops
- 11 – Commercial Trucking and Container Terminals
- 12 – Concrete, Cement and Lime Manufacturing
- 27 – Garages and Maintenance and Repair of Railcars, Marine Vehicles, and Aviation Vehicles
- 28 – Gasoline and Associated Products Storage in Fixed Tanks
- 33 – Metal Treatment, Coating, Plating and Finishing
- 34 – Metal Fabrication
- 39 – Paints Manufacturing, Processing or Bulk Storage
- 43 – Plastics (including Fibreglass) Manufacturing and Processing
- 45 – Pulp, Paper and Paperboard Manufacturing and Processing
- 46 – Rail Yard, Tracks, and Spurs
- 49 – Salvage Yard, including Automobile Wrecking
- 55 – Transformer Manufacturing, Processing and Use
- 57 – Vehicles and Associated Parts Manufacturing

6.11.2 Areas of Potential Environmental Concern

As indicated, the Phase One ESA (CH2M 2017) identified several PCAs that resulted in APECs for the Phase Two ESA. As summarized from the Phase One ESA, 33 APECs were identified on the Site, with 29 attributable to onsite PCAs, and 4 APECs attributable to offsite PCAs located within 250 m of the Phase Two Property.

The following APECs were identified for the Phase Two Property:

1) Foundry – A foundry was operated on the Site by IMICO from 1913 to 1989 when the plant closed and was abandoned. The foundry operated as an iron-jobbing facility for the production of various metallic forms, using malleable and ductile iron (DCS 2014). Foundry sands were predominantly located in the concrete pits and sumps of the main foundry building. Foundry sands, sludge materials, and process waste were removed from the Site, and buildings were demolished in 1999 (Earth Tech 1999). The P&R investigation also reported that moulding sands and dust collector waste was stored at the northwestern corner of the building and drained to the truck bay (P&R 1991).

2) Machine Shop – A machine shop was shown on the 1916 fire insurance plan (FIP), east of the original foundry. The northern one-third of the machine shop was identified for “Tumbling and Cleaning” operations, inferred to be in association with the adjacent “Annealing Room” to the north. FIPs prepared in 1929, 1945, and 1960 showed this area changed operations to “Shipping” and a “Pattern Shop.”

3) Annealing – An annealing room with four furnaces is shown on the 1916 FIP. A brick chimney is located on the northern wall. The 1929 FIP shows nine furnaces, with the annealing room extended westwards with an additional chimney on the northern wall within the extended area; the southern

portion of the annealing room is identified as the “Tumbling Dep't.” The 1946 FIP shows a structural addition on the eastern side of the annealing room, with two additional furnaces. The 1960 FIP shows further eastwards expansion and the addition of a third furnace. Tumbling Dep't operations appear consistent in location and footprint from 1929 through to 1960. The furnaces are inferred to be coal fired from 1916 through to 1960, based on the nearby coal storage areas shown on the 1946 and 1960 FIPs and the absence of aboveground storage tanks (ASTs) or USTs for fuel oil storage on the FIPs. The furnace fuel from after 1960 to the end of operations in 1989 is not known, but a period of fuel-oil-fired furnace operation is suspected; see APEC 7. No information was identified to suggest coal or fuel oil storage within the annealing room; however, no information regarding temporary furnace fuel storage, transmission, or waste disposal was identified. Dust control equipment is shown on Figure 4 of the 1991 P&R report, on the northern side of the annealing room.

4) Sand Storage – The 1916 FIP shows a “Sand Shed.” The 1929 and 1946 FIPs again show the sand shed, plus a second smaller building to the west labelled “Sand.” The 1960 FIP shows the original sand shed as “Bricks” and the second smaller building to the west labelled as “Sand & Bricks,” and an additional area to the north labelled “Sand.” No information was identified to indicate whether only clean process, spent foundry sands, or both were stored in these buildings; therefore, the potential storage of spent foundry sand in these buildings is considered. The purpose and types of bricks stored was not identified. The potential for new and used refractory brick and associated process materials is considered possible.

5) Galvanizing Building – A small, free-standing building for “Galvanizing” was present on the southeastern portion of the Site as shown on the 1916, 1929, and 1946 FIPs. The galvanizing building was not shown on the 1960 FIP, with the area occupied by a larger new structure identified as “Fittings Whse” (warehouse). No information was identified regarding process chemical use and storage or waste management practices associated with the galvanizing operations conducted.

6) Chipping/Grinding Room – A “Chipping Room” was shown on the FIPs prepared in 1929, 1946, and 1960, located west of the annealing area. The 1916 FIP shows this as exterior yard area west of the “Annealing Rm,” with a small outbuilding that appears to be connected to the annealing room with a linear underground feature. The 1991 P&R report identified this as a “Trimming and Grinding” area; this information is inferred to be based on the interview of historical IMICO employees. “Dust control equipment” is shown on Figure 4 of the 1991 P&R report, on the exterior western side of the building.

7) Oil Houses, Boiler House and ASTs – A building is shown on the 1929 FIP to the north of the foundry and east of the power house with a label "Oil," and an additional building with the same label is shown to the north of this original building on the 1946 FIP. The 1960 FIP shows the northern building remaining, but it is not labelled as an oil house. The 1916 FIP shows this as empty exterior yard area north of the foundry. The P&R investigation figures show a boiler house to the east of the power house, and two 45,000- L (10,000 gallon) oil tanks to the east of the building with "no history of leaks or spills" (P&R 1991). One 45,000-L AST was reported removed in 1998 during demolition activities and had been used to store Bunker C fuel. The removed AST had been located east of the core room (Earth Tech 1999).

8) Gasoline UST – As indicated on the 1960 FIP, a gasoline UST is shown north of a small office building and west of “scales” at the corner of Kingsmill Avenue and Beverley Street. The area is empty exterior yard area on the 1916 FIP, and the 1929 and 1946 FIPs show the office (labelled as a “time office”) but do not show the UST. The gasoline use is not known; however, it is inferred to be for fuelling gasoline-powered equipment/vehicles used at the plant. The 1991 P&R investigation reported that an IMICO employee indicated the UST was removed in the mid-1980s in response to a request from the City related to gasoline vapours in the sewers along Beverley and York Streets. No significant contamination was reported (P&R 1991).

9) Oil House – A building is shown on the 1929 and 1949 FIP to the south of the foundry and west of the galvanizing building with a label "Oil." The building/structure is not on 1916 FIP where the area is shown as exterior yard area and is not present on the 1960 FIP where the area is occupied.

10) Machine Shop – A machine shop is shown on the 1929, 1946, and 1960 FIPs, east of the original foundry building. The floor is indicated as concrete. Machine shop cuttings were stored on the ground north of the building, and two small ceiling-mounted oil tanks were present in the building as noted in the P&R investigation (1991). The area is shown on the 1916 FIP as exterior yard area, with a small unidentified building in the central area of the future machine shop. The northern portion of the machine shop was removed during the 1999 excavation based on the excavation footprint (Earth Tech 1999).

11) Plating/Galvanizing Building – A galvanizing building was present on the Site as shown on the 1946 and 1960 FIPs. The previous FIPs (1916 and 1929) show this as exterior yard area. On subsequent site plans (P&R 1991; Earth Tech 1999), the building was identified as a storage shed and reported as having been used for dip galvanizing before 1975, with rinse water discharged into "dry wells" north of the building (P&R 1991). Investigations by P&R and Gartner Lee Limited indicated high concentrations of zinc, other metals, and oil and grease. Free product was observed in wells (OW01-I, OW20, OW21). The area was excavated to bedrock (ranging from 1.3 to 2.0 mbgs) and approximately 9,400 tonnes of contaminated soil and 925 tonnes of contaminated concrete were removed. Soil samples were collected from the final limits of the excavation walls and indicated most locations as having zinc and TPH concentrations above the Table A Guidelines. The excavation was backfilled with granular "B" materials. A single sample was collected from the backfill and met the guidelines applicable at the time of the report (Earth Tech 1999). A well nest (OW22S/D) was installed within the excavation area (the report for this installation was not available, and therefore, it is unknown whether the soil conditions were analyzed as part of the investigation). Test pits and boreholes installed in the area in 2013 by DCS indicated soils' having high zinc and other metal concentrations. Groundwater conditions at OW22S reported free product, which was highly weathered with a slight oil/diesel odour (as reported in the summary of the Gartner Lee Limited 2000/2001 investigation in DCS 2007). Borehole logs for OW22S/D indicate the presence of fuel/diesel type odour in the fill that extends to approximately 1.5 mbgs and hydrocarbon odour extending into the underlying bedrock with black staining on fractures. Groundwater sampled from OW22S has not since reported free product but has had concentrations of PHCs increasing since the annual monitoring at this location began in 2016, up to 850,000 µg/L of (F)3. Zinc concentrations have widely fluctuated over the years and have exceeded in approximately 25 percent of the sampling events between 2005 and 2016.

12) Coal Storage – A coal shed is shown on the 1946 FIP to the north of the foundry and west of the powerhouse. A larger coal storage area is shown on the 1960 FIP, and the building is extended south to connect with the foundry on subsequent site plans (P&R 1991; Gartner Lee Limited 1999; Earth Tech 1999) without an indication of its use. The previous FIPs (1916 and 1929) show this area as exterior yard area.

13) Rail Line – A former rail line was shown onsite north of the buildings on the 1916, 1929, and 1946 FIPs, running east to west, for the full length of the foundry building. On the 1960 FIP, the western portion was shown to have been removed to accommodate the newly constructed shipping/stock room; the rail siding ended at the eastern side of the building. It is inferred that raw materials and finished products were shipped by rail.

14) Possible Automobile Storage, Maintenance, and Repair – An addition south of the foundry building on the eastern side of the offices is labelled "Auto" on the 1960 FIP. Previous FIPs (1916, 1929, 1946) show this as exterior yard area.

15) Sand Mixing/Storage – Sand mixing is shown in a building north of the foundry, as shown on the 1960 FIP. Previous FIPs (1916, 1929, 1946) show this as exterior yard area north of the foundry. Subsequent site plans (P&R 1991; Gartner Lee Limited 1999; Earth Tech 1999) do not have an indication of the buildings' use.

16) Transformers – Transformers are first shown on the 1960 FIP, north of the powerhouse. Previous FIPS (1916, 1929, 1946) show this as exterior yard area north of the power house. Transformers of this era may have contained PCBs.

17) Capacitor Room – PCB-containing capacitors were present in the centre of the foundry, as first shown on the P&R investigation Site plan, and later remediated as part of the Earth Tech demolition (P&R 1991; Earth Tech 1999). Activities included removing a concrete floor, a utility trench located in the eastern section (concrete walls, granular base) that was heavily stained, a subfloor that was present in the central section, and a sump located on the eastern portion of the capacitor room that were each indicated as being PCB-impacted and excavated and disposed offsite. The area was excavated to bedrock (1.0 to 1.3 mbgs) to remove concentrations above 5 µg/g. Final samples (composite soil, soil, concrete and bedrock) from the limits of excavation in the capacitor room reported PCB concentrations under 5 µg/g, with the exception of two bedrock samples within the eastern sump area that had concentrations around 10 µg/g. A well (OW25) was installed within the excavation area (the report for this installation was not available, and therefore, it is unknown whether the soil conditions were analyzed as part of the investigation), and subsequent groundwater monitoring of the area has indicated concentrations of chlorinated VOCs and petroleum PHCs (mainly F3) exceeding the applicable potable water criteria (Table 6 Standards) (DCS 2007, 2014b; AECOM 2017a; 2017b).

18) Coal Storage – A building for coal storage is shown on the 1960 FIP, to the north of the annealing room, with additional coal piled to the west of the building. Previous FIPs (1916, 1929, 1946) show this as exterior yard area to the north of the annealing room. The coal is inferred to be used in the furnaces in the annealing room. Subsequent site plans show this as a storage area (P&R 1991; DCS 2007).

19) Coal Storage – A small building for coal storage is shown on the 1960 FIP, east of the time keeper's office at the Beverley Street entrance. The building is not present on previous FIPs (1916, 1929, 1946) and is shown as exterior yard area.

20) Garage – A garage was shown on the 1946 and 1960 FIPs along Stevenson Street, on the western side of the property. The building is not present on previous FIPs (1916, 1929) and is shown as exterior yard area. The Site investigation by P&R (1991) identified visual impacts to the soils south of the garage. Some elevated PCB concentrations were found in soil during subsequent investigations.

21) Coal Storage – The 1960 FIP indicates coal storage south of the garage on the western side of the Site. The building is not present on previous FIPs (1916, 1929) and is shown as exterior yard area; on the 1946 FIP, the building is not labelled as coal.

22) Transformer – A 1,200-volt transformer is shown on the 1991 Site plan (P&R 1991).

23) Paint Shop – First shown on the P&R Site plan, a paint shop was located at the northern end of the Site, between the shipping building and the storage area (P&R 1991). Drums were stored against the northern wall for materials used in the paint shop. The FIPs show this area as exterior yard area in the early FIPs (1916, 1929, 1946) and empty space between existing buildings in the 1960 FIP.

24) PCB Storage Area – An area with a concrete pad located at the northeastern corner of the finishing and annealing room was identified in the Earth Tech investigation as a former PCB Storage area. Concentrations exceeding 50 ppm of PCBs were identified. Previous Site maps showed this area as "storage" (P&R 1991) or part of the annealing room (1946 and 1960 FIPs). During demolition activities, approximately 250 kg of PCB-containing ash residue from the top of the concrete pad and

the concrete pad itself were removed and taken for offsite disposal (Earth Tech 1999). Confirmatory samples below the pad were 0.63 and less than 0.05 µg/g. The soil was later excavated to bedrock as part of the soil remediation in the northeastern corner of the property (see APEC-11).

25) Drum Storage – Interviews with former employees as part of the P&R investigation identified drum storage activities along the northern property boundary (P&R 1991). No additional information was provided on the nature of what was stored and whether there was associated contamination as a result of the materials.

26) Former Substation – A former substation is indicated on the P&R (1991) and Earth Tech (1999) Site plans. A sample of transformer oil from the former substation analyzed in the Earth Tech report indicated nondetect concentrations of PCBs. Similarly, one location installed during the DCS Phase II ESA (2007) indicated nondetect PCB concentration. Previous Site plans (FIPs) show this area as exterior yard areas.

27) Former Electrical Shop – A small electrical shop was noted to be on the southwestern corner of the foundry (P&R 1991). This addition was not shown on the FIPs from previous years and was shown as the exterior yard area west of the foundry.

28) Waste Oil Storage – Used oil was stored aboveground on the southwestern end of the foundry as shown on the P&R Site plan (P&R 1991).

29) Fill of Unknown Quality – The entire Site has a layer of fill above the native silty sands. Previous investigations have indicated a layer of fill consisting of foundry sands, slag, and cinders (extending to 1.0 m) was found across the Site (P&R 1991) and the fill to be mix of foundry operation waste such as "coal, clinker, ash, metals and detritus from the former foundry operations" and reworked native from "reworking onsite soils as a result of initial construction and subsequent expansion activities" (DCS 2007). The yard areas were additionally noted to have been oiled (presumably engine oil) (P&R 1991).

30) Potential Offsite Impacts from the North – Historical and current operations on properties to the north have the potential to impact the Phase Two Property, including the following:

    - Rail lines
    - Paper manufacturing
    - Auto body repair shop
    - Automobile repair
    - Gasoline station
    - Trucking company
    - Concrete products manufacturing
    - Wire/spring manufacturing
    - Metal valve manufacturing
    - Former spill
    - Electroplating company
    - Window and door manufacturing
    - Scrap yard

31) Potential Offsite Impacts from the East – Historical and current operations on properties to the east have the potential to impact the Phase Two Property, including the following:

    - Steel valve manufacturing
    - Former stove manufacturer/foundry
    - Box manufacturing
    - Potential USTs
    - Scrap yard

- Former fuel storage facility
- Former pain application
- Chemical manufacturer or distributor
- Transformers

32) Potential Offsite Impacts from the South – Historical and current operations on properties to the south have the potential to impact the Phase Two Property, including the following:

- Screw manufacturing
- Former USTs
- Former transportation company

33) Potential Offsite Impacts from the West – Historical and current operations on properties to the west have the potential to impact the Phase Two Property, including the following:

- Window manufacturing
- Metal treatment
- Spring manufacturing
- Former refractory facility
- Motor vehicle parts manufacturing
- Former spill

Table 6-4 describes the APECs and associated PCAs. Figures 4-1a and 4-1b present the location of the onsite and offsite APECs and PCAs, respectively, along with the locations of boreholes, test pits, and monitoring wells advanced as part of the Phase Two ESA investigations. Figure 4-2 shows the locations of the identified APECs. As summarized in Table 6-4, the APECs occurring on the Phase Two Property have been thoroughly investigated for associated COCs.

6.11.3 Subsurface Utilities and Construction Features

Some concrete foundations, slabs and footings from the former buildings are present on the Site, below grade, along with associated building demolition debris (for example, crushed concrete, industrial fill). Although utilities have been disconnected on the Site, piping and bedding have not been removed, and therefore, there is a potential for utility corridors to act as preferential route of contaminant migration. The specific locations of former utility corridors are not known. Former building outlines are shown on Figure 2-2.

6.11.4 Physical Setting

The Phase Two Property is located in the City of Guelph, within the Speed River Subwatershed of the Grand River Watershed. Regional topography (Figure 3-1) is characterized by broad and oblong drumlins (hills) with gentle slopes and poorly drained till plain valleys that are part of the Guelph Drumlin Field (Chapman and Putnam 2007). The Site lies at an average elevation of approximately 315.5 masl, with a topographic high of approximately 316.5 masl at OW13, which lies in the southeastern portion of the Site (Figure 6-1).

On a regional scale, groundwater flows from areas north of the City to the south towards Cambridge. Within the City, groundwater flow is influenced by groundwater pumping from municipal water supply wells, as well as creeks and rivers, including the Speed and Eramosa Rivers.

The Site lies approximately 0.5 kilometre (km) north of the Eramosa River and 1.1 km east of the Speed River, and flow in both rivers is supported by groundwater discharge. A review of the Permit to Take Water database identified nine Permits to Take Water within 1 km of the Site, which include an industrial water user north of the Site, remediation wells east of the Site, irrigation use to the south (on the opposite side of

the Eramosa River), and dewatering and commercial uses located south-southeast of the Site (MECP 2020a). A review of Ontario Water Well Records found that 86 water wells exist within 250 m of the property; of these, 16 are listed as Test Holes, 44 are listed as Observation Wells, and the remaining are "Abandoned-Other." No wells were listed as being for potable use (MECP 2020b).

The nearest municipal groundwater supply wells are as follows:

- Park #1/#2 – 2.0 km northwest
- Emma – 2.5 km northwest
- Clythe Creek – 2.4 km northeast
- Water St. – 2.25 km southwest
- Edinburgh – 2.6 km southwest
- Dean – 2.6 km southwest
- Membro – 2.9 km southwest
- University – 3.0 km south (past Eramosa River)
- Carter In/Out – 2.95 km southeast (past Eramosa River)

The City categorizes regions of the City within Wellhead Protection Areas (City of Guelph 2012). The IMICO site is within Wellhead Protection Area B. The City of Guelph is additionally part of the Grand River Source Protection Plan (Lake Erie Region Source Protection Committee 2019). The Plan assigns Drinking Water Threat Vulnerability Scores across the region based on various risk factors; the IMICO site is assigned a Vulnerability Score of 10, the highest possible, indicating its susceptibility to contamination. The Site is not located within an Intake Protection Zone (GRCA 2017).

6.11.4.1 Stratigraphy

The geology at the Phase Two Property was investigated through historical investigations and the 194 sampling locations (that is, boreholes, monitoring wells, and test pits) advanced as part of the Phase Two ESA activities and historical investigations. The geology beneath the Site characterized during the Phase Two field investigations is summarized in Exhibit 1.

Exhibit 1. Site Stratigraphy

Geological Unit	Description/ Bedrock Member	Approximate Thickness (m)	Lithology
Fill		0.15 to 3.1	Dark brown to black silty sands (like foundry sand) with black ash, brick, cinders, metal, and wood debris
Silty Fine Sand		0 to 3.0	Silty fine sand
Eramosa Formation	Stone Road Member	1.7 to 5.8	Cream-coloured coarsely crystalline dolostone
	Reformatory Quarry Member	6.4 to 9.6	Brown to black, thinly to thickly bedded, fine to coarse crystalline dolostone
	Vinemount Member	6.4 to 9.6	Dark grey to black, thin-bedded, finely crystalline dolostone with shaley beds
Goat Island Formation		> 8.5	Medium to ash grey, chert-rich, finely crystalline dolostone

Note:

> = greater than

The Eramosa and Goat Island Formations underlie the Phase Two Property, and the top of the bedrock surface was encountered at depths ranging from approximately 1.0 m to 3.4 mbgs (approximately 312.6 to 314.6 masl). The upper few metres of bedrock in the area are highly weathered and fractured, and the bedrock becomes increasingly more competent and less fractured with depth below surface.

Eight geological cross-sections were generated to illustrate the stratigraphy beneath the Site. The cross-section locations are shown on Figure 6-1, and cross-sections A-A' through H-H' are presented on Figures 6-1a through 6-1h, respectively.

During the Phase Two ESA, the fill, native silty fine sands, and units of bedrock from the Eramosa Formation to the Goat Island Formation (Exhibit 1) were investigated. Monitoring wells were instrumented in the upper sands and fractured Stone Road Member bedrock to characterize the water table, and monitoring wells were also installed in the Reformatory Quarry and Vinemount Members of the Eramosa Formation to characterize the lower bedrock beneath the Site. The deepest well onsite extends approximately 33 mbgs (OW31) into the Goat Island Formation.

6.11.4.2 Hydrogeological Characteristics

Hydrostratigraphic Units: To evaluate groundwater flow directions onsite, the geological units beneath the Site were subdivided into the following three hydrostratigraphic units:

- *Overburden and bedrock contact zone*. This unit is characterized by wells completed in the Stone Road Member of the Eramosa Formation. This hydrostratigraphic unit acts as a local and regional groundwater aquifer, with groundwater flow in the upper fractured bedrock influenced by secondary porosity features such as fractures and solution-enhanced vugs and cavities.
- *Eramosa Formation.* Reformatory Quarry and Vinemount Members. Based on review of onsite drill core and our regional understanding of the bedrock formations in the area, the Reformatory Quarry and Vinemount Members of the Eramosa Formation are notably less fractured and more competent than the overlying Guelph Formation and Stone Road Member of the Eramosa Formation, and they act as a regional aquitard.
- *Goat Island Formation*. The Goat Island Formation is interpreted on a regional scale to act as a regional aquifer beneath the City; however, in some areas, the upper member of the Goat Island Formation (Ancaster Member) contains low permeability shaley beds that have similar hydrogeologic properties of the overlying Vinemount Member, and it acts as a local aquitard. To be conservative, we have assumed the Goat Island Formation bedrock beneath the Site behaves as an aquifer and lies in contact with the underlying Gasport Formation aquifer, which is the City's primary water supply aquifer.

The characterization of the hydrostratigraphic units was based on data collected from 95 locations across the Site, which included 37 wells installed in previous investigations and 58 wells drilled and instrumented in the current investigation between August 2017 and April 2019. The current investigation also included drilling 19 boreholes and digging 25 test pits, and it assessed the nature of the subsurface from ground surface to a maximum depth of approximately 25 mbgs.

Of the 95 monitoring wells onsite, 57 wells are completed in the uppermost hydrostratigraphic unit (overburden and bedrock contact zone), 36 are in the middle hydrostratigraphic unit (Competent Eramosa Formation), and 2 are in the Goat Island Formation.

Water table elevations collected in August 2018, March 2019, and February 2020 were mapped and are illustrated on Figures 6-2a, 6-2b, and 6-2c, respectively. Within the overburden and contact zone aquifer unit, groundwater flows from a high in the northeastern portion of the Site to lower water level elevations in the southern and southwestern portions of the Site (Figures 6-2a, 6-2b, and 6-2c). Horizontal hydraulic conductivity values estimated from slug tests conducted in monitoring wells screened in this upper hydrostratigraphic unit yielded averaged values of 3.9×10^{-5} m/s. The average horizontal hydraulic gradients within this unit were estimated to range from 0.002 to 0.019 m/m in the August 2018, March 2019, and February 2020 snapshots, and together with the estimated horizontal geometric mean hydraulic conductivity and a porosity value in the fractured rock of 0.10 yielded a horizontal velocity that ranged from 25 to 230 m per year.

The water level elevations observed in the ***competent Eramosa Formation bedrock unit*** beneath the Site in August 2018, March 2019, and February 2020 were mapped and are illustrated on Figures 6-2d, 6-2e, and 6-2f, respectively. In order to isolate monitoring wells at a consistent elevation, only groundwater wells screened in the Vinemount Member were used for the groundwater contour interpretation. Groundwater level elevations in the Vinemount were observed to be highest in the western portions of the Site near MW18-120D and decrease slightly (approximately 0.2 m) to the east to a low elevation at OW13-39D (Figures 6-2d, 6-2e, and 6-2f). The geomean horizontal hydraulic conductivity value from two slug tests completed in this layer was 5.7×10^{-7} m/s. This estimate is consistent with the understanding that the Vinemount Member of the Eramosa Formation is a regional aquitard.

Assuming a horizontal hydraulic gradient between 0.0004 and 0.002 m/m, based on the groundwater contours for August 2018, March 2019, and February 2020, a porosity value of 0.01 and a geometric mean hydraulic conductivity value of 5.7×10^{-7} m/s, groundwater in this lower bedrock unit was calculated to move horizontally at a velocity of 0.7-3.5 m per year through this aquitard unit.

Within the Goat Island Formation bedrock unit, horizontal hydraulic conductivity values estimated from hydraulic tests conducted in June 2018 in OW31 and screened across this unit were estimated to be 3.7×10^{-5} m/s. As only two wells are screened across the Goat Island Formation, groundwater flow directions and gradients were not characterized for this unit.

Vertical gradients were calculated onsite using 18 monitoring well nests present on the Site. Downward gradients were noted at most wells across the Site on multiple occasions, ranging in magnitude from 0.001 to 0.17 m/m. MW18-112S and MW18-112D and MW18-122D and MW18-122G showed consistent upwards gradients, however. The range of upwards gradients at MW18-112S/D over the monitoring period ranged from 0.010 to 0.015 m/m, while MW18-122D/G exhibited upwards gradients of 0.003 to 0.004 m/m.

Within the upper aquifer, groundwater flow onsite is conceptualized to flow from the north to the southeast and southwest towards the Eramosa River, a groundwater discharge location. Drill cores collected from the Site also showed that horizontal fractures were most common in the upper portions of the bedrock and decreased with depth. The combination of the predominant horizontal fracturing onsite and the nearby (500 m) Eramosa River groundwater discharge location lead to the horizontal gradients beneath the Site.

Approximate Depth to Bedrock

Depth to bedrock onsite ranges from 1.0 to 3.4 mbgs. The elevation at the top of bedrock is deepest onsite at MW18-127S (312.6 masl) in the central portion of the Site and rises to a high of 314.6 masl at

OW23D in the eastern portion of the Site where the bedrock rises slightly (less than 2 m) in comparison to the bedrock surface observed in the surrounding wells.

Approximate Depth to Water Table

The measured depth to water table collected in August 2018, representing the lowest groundwater elevations observed during the monitoring period, ranged from 1.9 to 4.0 mbgs (312.5 to 313.3 masl) for wells screened in the overburden and contact zone unit. Depth to water in March 2019, representing the highest groundwater elevations at the Site, ranged from 1.1 to 3.5 mbgs (312.9 to 314.1 masl). Depth to water table in the most recent sampling event (February 2020) ranged from 1.4 to 3.7 mbgs (312.77 to 313.79), which is interpreted to be an approximate average condition for the Site.

Water level measurements have been collected in onsite monitoring wells since 2010, and aside from seasonal variability, the depth-to-water table elevation has remained consistent across the Site throughout this period. Considering the 27 water level events (2010 to 2020), the depth to groundwater ranged from 0.93 to 4.97 mbgs, with an average of 2.78 mbgs.

6.11.5 Applicable Site Condition Standards

O. Reg. 153/04 (MECP 2011a) under Part XV.1 of the *Environmental Protection Act* addresses assessment, cleanup, and RSC filing for brownfield sites in Ontario and is applicable to the Phase Two Property. Jacobs evaluated the Site based on a number of criteria to decide which of the generic SCS provided in the Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the *Environmental Protection Act* (MECP 2011c) were applicable for a comparison of soil and groundwater results from the Phase Two ESA investigation.

The items in Table 2-3 were considered during the SCS selection, as outlined in O. Reg. 153/04 (MECP 2011a) and are discussed as follows.

The special conditions for environmentally sensitive areas under Section 41 of O. Reg. 153/04 are not applicable to the Phase Two Property. The RA Property is not considered an area of natural significance or to be within the proximity of an area of natural significance, based on the information reviewed as part of the Phase One ESA (CH2M 2017). Soil at the Site (based on 106 samples) was found to have pH values between 6.6 and 8.86, within the MECP's acceptable range (that is, a pH value in surface soil between 5 and 9, or a pH value in subsurface soil between 5 and 11) with the exception of two samples. One of these soil samples with elevated pH was classified as "isolated fill" and is not considered to be representative of soil conditions at the Site. At this location, concrete foundations were noted to be present both above and below the sample, essentially isolating this fill from other overburden soils. As such, this pH result was not considered further for determining pH at the Phase Two Property. The second sample (MW17-100S, collected between 0.3 to 0.46 mbgs) where a pH concentration of 9.45 was found was further investigated with BH19-100i, where a sample was collected from within 2 m of the original sampling location at the same sampling depth as the original sample. The sample reported a pH of 7.71, which, when averaged with the original sample, confirms pH at the Site is within the MECP's acceptable range with a result of 8.0 (sample averaging as per Section 48(2) of the O. Reg. 153/04).

The special conditions for land within 30 m of a water body under Section 43.1 of O. Reg. 153/04 do not apply to the Phase Two Property; however, as bedrock has been encountered at less than 2 mbgs (DCS 2014), the special condition for shallow soil properties cited under Section 43.1 of O. Reg. 153/04 applies to the Phase Two Property.

The Phase Two Property and adjacent properties within 250 m are serviced by a municipal water source. However, as the groundwater near the Property does and will serve as a raw water supply for a drinking water system (understood to be the Gasport Formation as the primary reservoir), a potable groundwater condition was applied.

The current land use is industrial, and the proposed future land use may include residential/parkland and commercial uses, provided an RSC acknowledged by the MECP is obtained. Because of the extensive presence of heterogeneous fill materials across the Site, the standards for coarse-grained soils were considered applicable.

Based on this information, the Table 6 SCS was applied to the Site.

6.11.6 Imported Soil

Fill was found to be present across the Phase Two Property extending from ground surface to a depth of approximately 0.1 to 3.1 mbgs (typically 316.3 to 313.4 masl). The fill materials were defined as coarse and predominantly consisted of dark brown to black silty sands (like foundry sand) with black ash, brick, cinders, metal, and wood debris. The depth of the fill materials ranged from 0.15 m at MW17-105D to 3.1 m at OW31 in the eastern portion of the Site. As discussed in the Phase One ESA (CH2M 2017), two remedial excavations historically occurred at the Phase Two Property: an area in the northeastern corner of the Site (associated with the former galvanizing/plating building) was excavated to bedrock in 1999 (Earth Tech 1999), and a former capacitator room area in the south-central portion of the Site was also remediated for PCBs as part of the Earth Tech (1999) demolition activities. Granular "B" material was used to backfill these excavation areas (shown on Figure 6-1) along with former pits and sumps across the Site.

6.11.7 Proposed Building and Structure Locations

Onsite buildings have been razed, but the majority of the historical buildings' concrete floors, foundations, and footings remain in place. The approximate locations of the former buildings are show on Figure 2-2. Historically, approximately 23 buildings were present onsite.

The Site is proposed to be redeveloped for a combination of one or more of residential, parkland, commercial, and community land uses. The configuration of the buildings associated with the proposed redevelopment is not known at this time.

6.11.8 Contaminants Exceeding Applicable Site Condition Standards in Soil

Soil environmental conditions were characterized based on evaluation of historical samples and the recent investigations conducted for the Phase Two ESA. A total of 173 soil sampling locations and 349 soil samples were used to characterize the soil and identify COCs. Table 6-5 summarizes the soil analytical results.

Soils on the Phase Two Property were found to be generally impacted with elevated concentrations of metals and PHCs. Localized soil impacts from PAHs, BTEX, VOCs, ORPs, and PCBs were also identified in limited areas of the Phase Two Property. The presence of these parameters is consistent with the Site's historical and industrial land use.

The investigation's analytical results are summarized in Table 6-5 along with a comparison to the Table 6 SCS (MECP 2011). Figures 6-3 through 6-11 present the soil concentrations exceeding the Table 6 SCS by analytical group. Where there are exceedances of the Table 6 SCS, at least one cross-section presenting

the inferred vertical extent of soil impacts by analytical group has been prepared and follows the plan view figure. Maximum concentrations of each detected parameter have been provided in Table 6-6 and are shown in red text on the respective plan view and cross-sectional figures. COCs in soil have been identified in Table 6-7c.

The following subsections present a description of the soil conditions for each analytical group investigated.

6.11.8.1 Metals, Hydride-Forming Metals, Mercury, and Hexavalent Chromium

Exceedances of the Table 6 SCS in soil for metals were widespread across the Site and are consistent with the Site's historical use as a foundry (APEC-1), with associated machine shop uses (APEC-2; APEC-10), annealing uses (APEC-3), and galvanizing activities (APEC-4; APEC-11). The main parameters exceeding the Table 6 SCS are lead and zinc. Maximum lead concentrations were greater than 5,000 µg/g, which occurred in a localized area surrounding BH07-65 near the Site's western boundary. Zinc exceedances occurred up to 67,200 µg/g at MW17-108S, along with six other samples with concentrations greater than 10,000 µg/g. These locations were localized to areas on the Site's southeastern corner, within or in the area of the former galvanizing building (APEC-5). Outside of these highly impacted areas, zinc was generally seen to increase in concentration with increasing depth, indicating that elevated zinc concentrations may also be attributable to naturally occurring zinc levels in the till or the bedrock below.

Other maximum metal concentrations (including antimony, arsenic, cobalt, copper, mercury, and molybdenum) were mostly found in the surficial fill at various locations across the Site and are likely associated with the historical operations associated with the former foundry, as well as unknown fill quality (APEC-29). The Site's northwestern portion showed the least impacts, as known historical use was limited to an employee parking area. Other than this area, metals impacts extend to the property boundaries and are present in both the upper fill and deeper native silt overburden units, extending to the contact with the shallow bedrock surface.

The detected exceedances for metals, hydride-forming metals, mercury, and hexavalent chromium for soil, including their horizontal and vertical extents, are shown in plan view on Figure 6-3 (Part 1 and 2) and in cross-section view on Figures 6-3a through 6-3f.

6.11.8.2 Other Regulated Parameters (Hot-Water-Soluble Boron, Cyanide, Electrical Conductivity, Sodium Adsorption Ratio)

ORPs, including HWS boron, cyanide, EC, and SAR were not detected at concentrations greater than the Table 6 SCS with the exception of EC. Three samples from two locations, including one duplicate sample, exceeded the Table 6 SCS with a maximum concentration of 2.19 mS/cm at TP20-320. The impacted samples were collected from within the historical excavation area in the northeastern portion of the Site. Borehole logs note the material as grey-brown sand and gravel. The other samples collected and analyzed for EC from the Phase Two Property met the Table 6 SCS. It is likely that the EC impacts are associated with the imported backfill materials used following the 1999 excavations.

The locations and exceedances for the ORPs in soil are shown in plan view and cross-section on Figure 6-4 and 6-4a, respectively.

6.11.8.3 Benzene, Toluene, Ethylbenzene, Xylenes

Concentrations of BTEX (specifically, benzene, ethylbenzene, and xylenes) detected in soil greater than the Table 6 SCS were localized to two areas of the Site. The first location (BH07-66) is along the western boundary in the area of a former garage (APEC-20), with low-level exceedances. A test pit (TP18-317) was excavated at this location (within 2 m), with a sample collected at the bedrock interface where concentrations of BTEX were not detected and met the SCS. The second location (TP13-11), also with low-level exceedances, is in the south-central portion of the Site potentially associated with the former foundry (APEC-1) or unknown fill quality (APEC-29).

The detected BTEX exceedances in soil are shown in plan view on Figure 6-5 and in cross-section view on Figures 6-5a and 6-5b.

6.11.8.4 Petroleum Hydrocarbons

PHCs (specifically F2 to F4 fractions) in soil detected at concentrations greater than the Table 6 SCS were localized to three general areas: (1) a western portion, near the Site boundary at the area of the former garage (APEC-20) extending east to the general open areas of the Site that may have been "oiled" for dust control (APEC-29); (2) a central southern area of the Site in the areas of the former oil house (APEC-7), transformers (APEC-16; APEC-22), and PCB capacitors (APEC-17); and (3) the northeastern and eastern portion of the Site surrounding the former 1999 excavation where a former machine shop (APEC-2; APEC-10), oil house (APEC-9), annealing room (APEC-3), galvanizing building (APEC-5), and plating operations (APEC-11) were located. PHC F1 concentrations met the Table 6 SCS.

The maximum concentrations for F2 of 3,600 µg/g at BH07-46 and for F3 of 23,000 µg/g at BH07-40 are both located in the northeastern portion of the Site, within and downgradient of the area historically remediated for metals and PHC impacts. The maximum concentration for F4 was 7,300 µg/g at BH07-67 on the western portion of the Site near the former garage (APEC-20).

Five samples from four locations analyzed for PHCs exhibited concentrations greater than the MECP Free-Phase Threshold Values (MECP 2011b) for F2 (BH07-41), F3 (BH07-40, BH07-41, BH07-67, and MW17-108S), and F4 (BH07-67). PHC impacts were found in both the upper fill and deeper native silt overburden units, including at the contact with the shallow bedrock surface at a depth where the groundwater table is present on the eastern portion of the Site. LNAPL has been found in wells in the area of BH07-40, BH07-41 and MW17-108S and are further discussed in Section 1.9.4.

The PHC exceedances detected in soil are shown in plan view on Figure 6-6 and in cross-section view on Figures 6-6a through 6-6e.

6.11.8.5 Polycyclic Aromatic Hydrocarbons

Concentrations of PAHs detected in soil greater than the Table 6 SCS were localized to four general areas: (1) at the western boundary of the Site in the area of the former garage and coal storage (APEC-20 and APEC-21); (2) in the south-central area of the Site where the former foundry (APEC-1), sand storage (APEC-4; APEC-15), coal storage (APEC-12), and rail lines (APEC-13) were located; (3) along the northern boundary of the Site, west of the former excavation in areas formerly used for coal storage (APEC-18), paint shop (APEC-23), former rail line (APEC-13), and former drum storage (APEC-25); and (4) the eastern portion of the Site, south of the former excavation in areas where the former machine shop (APEC-2; APEC-10), UST (APEC-8), and coal storage (APEC-19) were located. PAH concentrations in these areas could also be attributable to the unknown fill quality (APEC-29).

Maximum PAH concentrations were located at OW07-34D, extending to a depth of 1.22 mbgs, located within the south-central area of the Site. Concentrations of PAHs at this location were consistently one or two orders of magnitude greater than other detected exceedances on the Phase Two Property. Borehole logs indicate that the material sampled at this location for PAHs was the upper fill materials. Deeper samples (that is, greater than 1.22 mbgs) collected just above the bedrock surface at nearby TP18-315 and MW17-102D also had concentrations of PAHs greater than the Table 6 SCS; however, fewer analytes had exceedances, and the reported concentrations were significantly lower than at OW07-34D. Vertically, the PAH impacts were primarily located in the fill, with decreasing concentrations in the deeper native silt overburden unit.

The PAH exceedances detected in soil are shown in plan view on Figure 6-7 and in cross-section view on Figures 6-7a through 6-7c.

6.11.8.6 Volatile Organic Compounds

VOC concentrations detected in soil exceeding the Table 6 SCS were limited to TCE and occurred at seven locations on the Site. The maximum TCE concentration of 35.4 µg/g was found at BH18-207i, a location likely within the former galvanizing building's footprint, at a depth of 0.15 to 0.76 mbgs. Deeper samples collected at this location showed concentrations reducing with depth, including a sample collected from just above the bedrock (2.9 mbgs) that met the Table 6 SCS.

The remaining six locations where detected TCE concentrations were greater than the Table 6 SCS of 0.061 µg/g were found to be significantly lower, at concentrations of 1 µg/g or less. Five locations were within the eastern corner of the Site where the former galvanizing building (APEC-5) and machine shop (APEC-10) were located. The last location was MW17-102D in the southwestern area of the Site, which had a TCE exceedance of 0.082 µg/g at a depth of 0.15 to 0.3 mbgs. MW17-102D was reinvestigated with two samples taken within 2 m of the original location at the same depth of the previous exceedance, and both results met the Table 6 SCS. The combined average of the three samples (0.041 µg/g) confirmed that concentrations of TCE met the SCS (using averaging as per Section 48(2) of O. Reg. 153/04) for this location. The deeper sample collected at MW17-102D from 1.83 to 2.13 mbgs also met the Table 6 SCS.

The soil investigation results for VOCs are shown in plan view on Figure 6-8 and in cross-section view on Figures 6-8a through 6-8c.

6.11.8.7 Chlorophenols

No detectable concentrations of CPs were reported at the Site, and (RLs) met the Table 6 SCS. CP assessment on the Site was associated with the potential presence in spent foundry sand, which could be related to the former foundry (APEC-1), sand storage and mixing areas (APEC-4; APEC-15), and random areas of foundry operation waste fill across the Site of unknown quality (APEC-29).

As CPs did not have detected concentrations at the Phase Two Property, they are not considered COCs for the Site. The locations investigated for CP in soil are shown in plan view on Figure 6-9.

6.11.8.8 Polychlorinated Biphenyls

Concentrations of PCBs in soil greater than the Table 6 SCS were localized to three general areas: (1) near the western boundary within APECs for a former garage (APEC-20) and unknown fill quality (APEC-29); (2) to the east within APECs for a former machine shop (APEC-2; APEC-10) and unknown fill quality (APEC-29); and (3) in the south-central area of the Site with APECs for former PCB capacitors (APEC-17)

and unknown fill quality (APEC-29). The maximum PCB concentration of 1.65 µg/g occurred in the western area at the surface in TP17-300. An adjacent location, BH07-67, had a sample from 0.05 to 0.91 mbgs with a concentration of 1.5 µg/g for total PCBs. The maximum concentration at TP17-300 was vertically delineated by a deeper sample from 0.3 to 0.61 mbgs that meets the Table 6 SCS. The exceedance at BH07-67 was delineated by a deeper sample at 1.22 to 1.37 mbgs with concentrations of PCBs less than the SCS. Other areas of PCB contamination at SS-41 and TP17-306 in the south-central portion of the Site did not have deeper samples, because they were collected right above the bedrock. Shallow PCB impacts at TP13-08 in the eastern area were vertically delineated by deeper samples collected from TP18-316 and BH07-52.

The results of the soil investigation for PCBs are shown in plan view on Figure 6-10 and in cross-section view on Figures 6-10a and 6-10b.

6.11.8.9 Acid, Base, and Neutral Compounds

No detectable concentrations of ABNs were reported at the Site from the current investigation, and RLs met the Table 6 SCS. ABN assessment on the Site was associated with the potential presence of foundry sand, which could be related to the former foundry (APEC-1), sand storage and mixing areas (APEC-4; APEC-15), and random areas of foundry operation waste fill across the Site of unknown quality (APEC-29).

As ABNs did not have detected concentrations at the Phase Two Property, they are not considered COCs for the Site. The locations investigated for ABNs in soil are shown in plan view on Figure 6-11.

6.11.9 Contaminants Exceeding Applicable Site Condition Standards in Groundwater

Groundwater quality across the Phase Two Property was evaluated through 448 groundwater samples collected from 94 groundwater monitoring wells screened in the overburden and bedrock contact zone, the Eramosa Formation, or the Goat Island Formation. Table 6-8 summarizes the groundwater analytical results.

Groundwater was generally found to be impacted with chlorinated VOCs (specifically, chloroethenes), with localized impacts of chloroethanes, BTEX, metals, PAHs, and PHCs.

The investigation's analytical results are summarized on Table 6-8 along with a comparison to the Table 6 SCS (MECP 2011). Figures 6-12 through 6-20 present the groundwater concentrations exceeding the Table 6 SCS by analytical group. Where there are exceedances of the Table 6 SCS, at least one cross-section presenting the inferred vertical extent of groundwater impacts by analytical group has been prepared and follows the plan view figure. Maximum concentrations of each detected parameter have been provided in Table 6-9 and are shown in red text on the respective plan view and cross-sectional figures. COCs in groundwater are identified in Table 6-10d.

The following subsections present a description of the groundwater conditions for each analytical group investigated.

6.11.9.1 Metals, Hydride-Forming Metals, Mercury, and Hexavalent Chromium

Concentrations of metals in groundwater greater than the Table 6 SCS were reported for arsenic, lead, and zinc. Isolated exceedances of antimony, arsenic, cobalt, and uranium occurred in single sampling events, but the results were not reproduced in subsequent sampling events. Therefore, these analytes (other than arsenic, which occurred elsewhere on the Site) were not considered groundwater COCs. The distribution of

metals impacts in groundwater is smaller in area than the distribution of impacts in soil, but the impacts generally correspond geographically and are consistent with the Site's widespread historical use as a foundry (APEC-1).

Arsenic exceedances in groundwater occurred at one location at the north-central area of the Site, just within the area historically used for drum storage (APEC-25) and may be associated with this or the unknown fill quality (APEC-29). The impacts (arsenic reported up to 45.7 µg/L) are more likely to be associated with offsite sources such as PCAs to the north (APEC-30), because the soil conditions in this immediate area did not exhibit elevated arsenic (or other metal and hydride-forming metal) concentrations. Exceedances of the Table 6 SCS for arsenic occurred in the upper overburden and bedrock contact zone (MW18-112S, OW07-31) and Eramosa Formation (Reformatory Quarry Member) (MW18-112D). Impacts at this location were vertically delineated by MW18-112G, which was installed deeper than OW07-31/MW18-112S/MW18-112D within the lower Vinemount Member of the Eramosa Formation.

Lead exceedances were localized to one location (OW09-II) in the eastern portion of the Site, with concentrations up to 17 µg/L over the Table 6 SCS of 10 µg/L. The area is associated with historical coal storage (APEC-19), a former UST (APEC-8), and unknown fill quality (APEC-29) and may see potential impacts from offsite PCAs to the south (APEC-31). OW09-II is screened within the Eramosa Formation (Reformatory Quarry) unit, and the lead impacts were vertically delineated by OW09-I and MW18-129D, which are installed shallower (overburden and bedrock contact zone) and deeper within the same unit, respectively, at the same location.

Zinc exceedances were localized to the eastern portion of the Site and a single central location at the Site (OW07-32). The eastern impacts were found at 10 locations and are likely attributable to the former plating and galvanizing buildings (APEC-11 and APEC-5) as well as associated operations, including a former machine shop (APEC-10), unknown fill quality (APEC-29), and offsite PCAs to the east (APEC-31). Zinc impacts were generally limited to the upper overburden and bedrock contact zone with the exception of three samples from one location (OW18-II) that is screened in the Eramosa Formation (Reformatory Quarry). Zinc exceedances in the central portion of the Site at OW07-32 (overburden and bedrock contact zone) are vertically delineated with MW18-116D screened in the Eramosa Formation (Reformatory Quarry). In the eastern portion of the Site, several wells provide vertical delineation for the shallow groundwater impacts, including MW18-130D, MW18-132D, OW13-39D, OW22D, MW18-133D, MW18-129D, and OW31.

Concentrations of antimony (MW18-114D), arsenic (MW17-101D), cobalt (OW11-II), lead (OW07-33), uranium (OW22S), and zinc (OW36S) were greater than the Table 6 SCS in one sampling event but met the SCS in at least two subsequent sampling events at the same location. Therefore, these exceedances were considered anomalous and not representative of current Site conditions. These results are detailed in Table 6-10c and were not treated as exceedances for the purpose of the Phase Two ESA.

The groundwater metals results are shown in plan view on Figure 6-12 and in cross-section view on Figures 6-12a through 6-12d.

6.11.9.2 Other Regulated Parameters (Chloride, Sodium, and Cyanide)

Inorganic parameters, including chloride, cyanide, and sodium, were not detected at concentrations greater than the Table 6 SCS. The locations of these ORPs investigated in groundwater are shown in plan view on Figure 6-13.

6.11.9.3 Benzene, Toluene, Ethylbenzene, and Xylenes

Concentrations of BTEX (specifically, benzene and ethylbenzene) in groundwater greater than the Table 6 SCS occurred in two areas of the Site: (1) the eastern third and (2) the south-central area along the southern boundary of the Phase Two Property. These areas had APECs related to a former foundry (APEC-1) and unknown fill quality (APEC-29) in the south-central area and to the former machine shops (APEC-2; APEC-10), annealing room (APEC-3), former UST (APEC-8), oil house (APEC-9), plating (APEC-11), and offsite PCAs to the east (APEC-31) for the eastern third of the Site. The BTEX impact distribution in groundwater is larger in area than the impact distribution in soil, and they generally do not overlap. This pattern may indicate migration away from historical remediated soil sources (for example, in the northeastern corner of the Site) with groundwater flow, the presence of offsite sources, or both.

Maximum detected concentrations for benzene and ethylbenzene both occurred at MW17-105S in the upper overburden and bedrock contact unit in the eastern portion of the Site. MW17-105D, nested with MW17-105S but screened within the Eramosa Formation (Reformatory Quarry/Vinemount) unit also had exceedances of the Table 6 SCS for benzene but had nondetected results for ethylbenzene. The benzene concentrations were an order-of-magnitude lower in the deeper unit compared with the upper unit. Monitoring well MW18-105G was installed deeper than MW17-105D for vertical delineation, with no detected concentrations of BTEX reported. The BTEX impacts in the eastern area were vertically delineated by several monitoring wells, including MW18-105G, MW18-128D, MW18-133D, and OW31.

In the south-central area of the Site, benzene exceedances were noted in MW17-102D at a screened depth of 13.76 to 15.29 mbgs. The APECs in this area (general foundry use [APEC-1] and unknown fill quality [APEC-29]) do not suggest that a point or diffuse source of BTEX was historically located in this area, because there are no identified overlying BTEX impacts in soil. BTEX concentrations met the Table 6 SCS in nearby shallower upgradient monitoring wells (OW07-34S/D, MW18-125S, OW25, or MW18-126D), shallower cross-gradient monitoring wells (MW17-107S and OW26S/D), and deeper cross-gradient/downgradient monitoring wells (MW18-107D, MW18-121D). Based on this evaluation, additional efforts to delineate the benzene impacts in MW17-102D were not deemed warranted, because of the relatively low concentrations (1.44 µg/L compared with the maximum concentration onsite of 66.8 µg/L in the eastern portion of the Site), the depth of the impacts, and the lack of evidence linking these impacts to an onsite source.

Concentrations of benzene and ethylbenzene at OW22S were greater than the Table 6 SCS in one sampling event but met the SCS in two subsequent sampling events at the same location. Therefore, these exceedances were considered anomalous and not representative of current Site conditions. These results are detailed in Table 6-10c and were not treated as exceedances for the purpose of the Phase Two ESA.

The groundwater locations investigated for BTEX are shown in plan view on Figure 6-14 and in cross-section view on Figures 6-14a through 6-14d.

6.11.9.4 Petroleum Hydrocarbons

Concentrations of PHCs (PHC F1 to F4) in groundwater were greater than the Table 6 SCS in two areas of the Phase Two Property: (1) the eastern third of the Site with APECs for a former annealing room (APEC-3), machine shops (APEC-2; APEC-10), unknown fill quality (APEC-29), and offsite PCAs to the east (APEC-31), and (2) the south-central area of the Site with APECs for a former foundry (APEC-1), PCB capacitors (APEC-17), and unknown fill quality (APEC-29). The locations of PHC impacts in groundwater are geographically similar to two of the three areas where PHCs in soil were identified. This pattern suggests that the groundwater impacts are a result of onsite soil sources (with the exception of F1 PHCs,

which did not exceed the Table 6 SCS in soil), with some dispersion away from soil sources via groundwater flow. Maximum concentrations of F2, F3, and F4 occurred at OW22S, located near the northeastern corner of the Phase Two Property within the footprint of the area historically remediated for metals and PHC impacts. The maximum concentration of PHC F1 occurred at OW24D, located in the southeastern corner of the Site, potentially attributable to an offsite source to the east. PHC impacts in groundwater in the eastern portion of the Site were vertically delineated by several monitoring wells, including OW22D, OW13-39D, MW17-104D, MW18-128D, MW18-135D, and OW31. LNAPL has been measured within OW23S, MW17-108S, and MW18-135S (each screened within the overburden and bedrock contact zone aquifer unit) on various occasions. The shallow PHC impacts in the south-central portion of the Site at OW25 were vertically delineated by MW18-126D.

The concentration of F2 PHCs at OW18-II was greater than the Table 6 SCS in one sampling event but met the SCS in two subsequent sampling events at the same location. Therefore, the exceedance was considered anomalous and not representative of current Site conditions. This result is detailed in Table 6-10c and was not treated as an exceedance for the purpose of the Phase Two ESA.

The PHC exceedances in groundwater and locations of LNAPL are shown in plan view on Figure 6-15 and in cross-section view on Figures 6-15a through 6-15e.

6.11.9.5 Polycyclic Aromatic Hydrocarbons

Concentrations of PAHs in groundwater greater than the Table 6 SCS were generally localized to one area of the property: the eastern third with APECs for the former annealing room (APEC-3), plating (APEC-11), machine shop (APEC-10), unknown fill quality (APEC-29), and offsite PCAs to the north (APEC-30). The PAH impact distribution in groundwater is comparable in area to the impact distribution in soil, but the impacts do not always overlap. The historical remedial activities in the northeastern corner of the Site (for metals and PHCs) may have removed a soil source of PAHs, because PAHs are absent in soil in this area, but the largest region of PAH impacts in groundwater is located within and adjacent to the excavation footprint.

The majority of detected exceedances and maximum concentrations for PAHs occurred at OW22S and OW23S, both screened in the upper overburden and bedrock contact. Both of these locations have nested deeper wells installed in the Eramosa Formation (Reformatory Quarry) unit that have samples meeting the SCS for the parameters that exceeded in the shallow aquifer unit (OW22D for OW22S and OW23D for OW23S). Additional vertical delineation in the eastern portion of the Site is provided by OW13-39D and MW18-135D.

Concentrations of PAHs in the centre and south-central areas of the Site at OW03-I and OW25 were greater than the Table 6 SCS in one sampling event but met the SCS in at least two subsequent sampling events at the same location. Therefore, these exceedances were considered anomalous and not representative of current Site conditions. These results are detailed in Table 6-10c and were not treated as exceedances for the purpose of the Phase Two ESA.

The groundwater results for PAHs are shown in plan view on Figure 6-16 and in cross-section view on Figures 6-16a through 6-16d.

6.11.9.6 Volatile Organic Compounds

VOCs were found at concentrations greater than the Table 6 SCS across the entire Site. VOC impact distribution in groundwater is larger in area than the VOC impact distribution in soil, indicating migration

away from soil sources with groundwater flow. One area of soil VOC concentrations suggestive of an onsite chlorinated VOC source was identified at BH18-207; however, the decreasing concentrations in soil to Table 6 SCS at a depth above the groundwater table and the magnitude of concentrations present in groundwater suggests an alternate source or sources. Chlorinated VOC-impacted groundwater may originate or be amplified by the presence of offsite sources (for example, offsite manufacturing activities [APEC-31; APEC-32; APEC-33]). Although onsite APECs associated with historical VOC use have been identified, for example, the operation of a foundry (APEC-1), machine/electrical shops (APEC-2, APEC-10, APEC-27), and galvanizing activities (APEC-5, APEC-11), most of the VOC impacts in groundwater in the Eramosa Formation or deeper are believed to originate from regional sources.

The following subsections discuss the distribution of chloroethenes (specifically, 1,1-dichloroethene; cis-1,2-dichloroethene [cis-1,2-DCE]; tetrachloroethene; trans-1,2-dichloroethene; trichloroethylene [TCE]; and vinyl chloride) and chloroethanes (1,1,1-trichloroethane and 1,1-dichloroethane) in groundwater. The results of the groundwater investigation for VOCs are shown in plan view on Figure 6-17 (Part 1 and 2) and in cross-section view on Figures 6-17a through 6-17e.

Chloroethenes

Chloroethenes in groundwater were found at various depths throughout the Site. The shallower impacts (in the upper overburden and bedrock contact zone) are generally located in the southwestern portion and eastern corner of the Site. Deeper impacts (Eramosa Formation [Reformatory Quarry/Vinemount members]) extend across the entire Site, including the northwestern portion of the Site where shallow groundwater impacts were not observed. Both wells screened in the Goat Island Formation (OW31 and MW18-136G) had low-level detections of cis-1,2-DCE (1.88 µg/L to 3.14 µg/L compared with a SCS of 1.6 µg/L), with the other chloroethenes reported as nondetect. The maximum concentrations of the majority of the chloroethenes were found in OW24D, which is located in the extreme southeastern corner of the property, adjacent to an area of known increasing groundwater concentrations offsite, thereby implying a source area offsite in an easterly direction. Vertical impact delineation has been achieved for 1,1-dichloroethene and trans-1,2-dichloroethene (MW18-128D and OW31), TCE (MW17-103D, OW07-34D, MW18-123D, and OW31), and vinyl chloride (MW18-128D, MW18-133D, MW18-136D, MW18-105G, and OW31). Concentrations of these COCs are generally highest adjacent to the eastern property boundary (near OW13-39S/D and OW24D) and decrease with both depth and distance from this area. Vertical delineation was not achieved for cis-1,2-DCE, with uniform concentrations encountered in almost every monitoring well installed with screens between 10.28 and 25.32 mbgs. Concentrations of cis-1,2-DCE in 15 monitoring wells in this zone ranged from 1.23 to 5.36 µg/L (average of 2.4 µg/L), which is similar to the concentrations measured in OW31, screened from 28.9 to 33.32 mbgs in the Goat Island Formation. Further efforts to vertically delineate cis-1,2-DCE deeper into the Goat Island Formation were not considered warranted for the following reasons:

- The concentration of cis-1,2-DCE in the deepest hydrostratigraphic unit, the Goat Island Formation, does not appear to be the result of chlorinated VOC impacts derived from the upper hydrostratigraphic unit. That is, where maximum chlorinated VOC parent compounds were identified, elevated concentrations of cis-1,2-DCE were not observed. This is evident in the area near OW31 where elevated concentrations of TCE were identified in the Stone Road and Reformatory Quarry Members of the Eramosa Formation. At this location, TCE was not identified in the lower Goat Island Formation in OW31; however, approximately 2 µg/L of cis-1,2-DCE was identified.
- The concentration of cis-1,2-DCE at OW31 could be the result of downward migration in that area; however, as previously noted, cis-1,2-DCE was identified from 1.23 to 5.36 µg/L in the lower hydrostratigraphic units (Vinemount Member and Goat Island Formation) across the area of the Site,

including areas that are hydraulically up and cross-gradient of the shallow groundwater flow paths where elevated chlorinated VOCs in higher hydrostratigraphic units are observed. The concentration of cis-1,2-DCE at OW31 ranged from 1.88 to 2.01 µg/L (in the Goat Island Formation) and was consistent with the concentration of cis-1,2-DCE noted in other wells screened across the Goat Island and Vinemount Member across the Site where concentrations ranged from 1.23 to 5.36 µg/L.

- The consistent concentration of cis-1,2-DCE identified in the Goat Island Formation and the Vinemount Member, a regional aquitard, implies that impact to the Goat Island Formation may be widespread and is interpreted to be sourced from an area upgradient of the Site.
- It is also noted that the Site lies within the 2-year travel time Wellhead Protection Area for several of the City's municipal water supply wells. Phase Two activities included characterization of the COCs to a depth of approximately 25 to 30 mbgs, but characterization did not extend into the underlying municipal production aquifer (Gasport Formation) that is estimated to lie approximately 40 to 50 mbgs. As previously discussed, the Goat Island and Gasport Formation are understood to be hydraulically connected to one another, with the Gasport Formation serving as the principal municipal aquifer. Water quality data in the City's Membro, Park, and Emma Wells were observed to have low concentrations of TCE and cis 1,2-DCE in 2017 (City of Guelph 2018). The average detected concentrations of cis-1,2 DCE in the City's water supply in 2017 was 1.8 µg/L (0.00178 mg/L), similar to the observed concentrations on the Site (City of Guelph 2018).

These factors suggest there is a broad area of low concentration cis-1,2-DCE just greater than the Table 6 SCS beneath the Vinemount Member of the Eramosa Formation, a regional aquitard, including on the Site. The data do not support the conclusion that chlorinated VOC impacts identified onsite are materially contributing to the observed elevated concentrations of cis-1,2-DCE.

This information also provides confidence that the concentration of cis-1,2-DCE identified in OW24D (in the northeastern corner of the Site, downgradient of the inferred offsite source area) represents the maximum concentration onsite. No significant VOC sources in soil were identified onsite, and aside from the northeastern corner of the Site where the maximum was identified, concentrations of cis-1,2-DCE were observed to be consistently lower, measuring between approximately 1 and 6 µg/L.

Chloroethanes

Chloroethanes were found at concentrations greater than the Table 6 SCS in 13 samples from eight locations. These impacts appear to be localized to the southwestern area of the Phase Two Property within areas formerly used as a foundry (APEC-1), electrical shop (APEC-27), and waste oil storage (APEC-28). Based on the distribution and groundwater flow direction, the impacts are likely from an onsite source, though no concentrations of chloroethanes have been found in soil. The chloroethane impacts are primarily located in the upper overburden and bedrock contact zone in this area, with deeper impacts only observed in two monitoring wells (MW18-122D and OW07-34D) within the Eramosa Formation (Reformatory Quarry). Vertical delineation of chloroethane impacts are provided by the following monitoring wells, which have concentrations of chloroethanes less than the Table 6 SCS: MW18-122G, MW18-120D, MW18-119D, MW18-116D, MW18-123D, MW18-126D, MW17-102D, and OW26D.

6.11.9.7 Chlorophenols

No detectable concentrations of CPs were reported from the analyzed wells, and concentrations were also reported as nondetect in soil. CP assessment on the Site is associated with the potential presence of spent foundry sand, which could be associated with the former foundry (APEC-1), sand storage and mixing areas

(APEC-4; APEC-15), and random areas of foundry operation waste fill across the Site of unknown quality (APEC-29).

Because CPs did not have detected concentrations at the Phase Two Property, they are not considered COCs for the Site. The locations investigated for CPs in groundwater are shown in plan view on Figure 6-18.

6.11.9.8 Polychlorinated Biphenyls

PCBs were reported with concentrations greater than the Table 6 SCS at one location, OW26S, in 2010. Subsequent sampling events in 2011 and 2017 at this location reported nondetect concentrations and RLs below the SCS of 0.20 µg/L. The exceedance is considered anomalous and not representative of Site conditions, and these results are detailed in Table 6-10c. The other samples for PCBs in groundwater on the Phase Two Property were nondetect with RLs that met the Table 6 SCS.

Previous remediation for PCBs occurred in the late 1990s for the former capacitor room (APEC-17) where concentrations of PCBs in soil less than 5 µg/g were left in place. These residual soil impacts do not appear to be having an effect on groundwater, based on nondetect results of PCBs in the monitoring wells immediately downgradient of this APEC.

Because PCB concentrations were considered anomalous and were not reproduced in subsequent sampling events at the Phase Two Property, they are not considered COCs for the Site. The locations where groundwater was investigated for PCBs are shown in plan view on Figure 6-19.

6.11.9.9 Acid, Base, and Neutral Compounds

ABNs were not detected in concentrations greater than the Table 6 SCS at the Phase Two Property. ABN assessment on the Site was associated with the potential presence of foundry sand, which could be associated with the former foundry (APEC-1), sand storage and mixing areas (APEC-4; APEC-15), and random areas of foundry operation waste fill across the Site of unknown quality (APEC-29).

Because ABNs did not have detected concentrations at the Phase Two Property, they are not considered COCs for the Site. The locations investigated for ABNs in soil are shown in plan view on Figure 6-20.

6.11.10 Climatic or Meteorological Conditions Affecting Contaminant Distribution

Climatic or meteorological conditions that may have influenced COC distribution and migration at the Phase Two Property include temporal fluctuations in groundwater levels. No atypical weather events that would be expected to influence COC transport are known to have occurred during the Phase Two Property investigation.

6.11.11 Soil-Vapour Intrusion

Vapour intrusion was not evaluated as part of the Phase Two ESA, because there are currently no existing buildings on the Phase Two Property. Details regarding the location or construction details of future buildings, or where subsurface utilities will be installed are not known at this time. Based on the results of the Phase Two ESA, volatile COCs are present in soil and groundwater at concentrations greater than the Table 6 SCS. Therefore, an assessment of the potential for vapour intrusion into future buildings should be further investigated as part of a Risk Assessment for the Phase Two Property or when detailed redevelopment plans become available.

6.11.12 Contaminant Pathways and Receptors

Figures 6- 21 to 6-24 present the human health and ecological contaminant pathway and receptor models, respectively, based on current and potential future Site conditions. The Site could be redeveloped for a mix of one or more of residential, commercial, parkland, or community land use in the future. The models present preliminary assessments of the exposure pathways that should be further investigated, should an RA be conducted for the Phase Two Property.

These figures identify the following:

1. **Release mechanisms** – The Phase Two Property became impacted as a result of historical operations at the Site (refer to the discussion on PCAs and APECs) where COCs were released to the ground (for example, via a spill or leak) or where impacted soil was imported to the Site and placed as fill.
2. **Contaminant transport pathways** – COCs released to soil may adsorb to soil or infiltrate deeper into the soil column. COCs in soil may also desorb and leach to groundwater or migrate vertically to the water table. COCs in soil can also be transported in the following ways: they can become airborne via wind or traffic erosion, eroded by overland water flow, be taken up by vegetation planted in the soil, or volatilize to outdoor air or indoor enclosed spaces. COCs in groundwater can be transported via vertical or horizontal groundwater flow, volatilization to outdoor air or indoor enclosed spaces, and uptake by vegetation.
3. **Human and ecological receptors located on, in, or under the Phase Two Property** – Receptors currently present or expected to be present in the future at the Phase Two Property include the following:
   - Human Receptors: residents, visitors, indoor workers, outdoor workers, construction workers, and utility workers
   - Ecological Receptors: soil organisms, terrestrial plants, birds, and mammals
4. **Receptor exposure points** – COCs can be contacted directly in soil or groundwater and indirectly in outdoor and indoor air.
5. **Routes of exposure** – The primary routes of exposure by receptor type include the following:
   - Human Receptors
     - Direct contact with either soil or groundwater (incidental ingestion and dermal contact)
     - Inhalation of particulates (dust)
     - Inhalation of volatiles originating from a soil or groundwater source (indoor and outdoor air)
     - Ingestion of garden produce
   - Ecological Receptors
     - Direct contact with either soil or groundwater (ingestion and dermal)
     - Terrestrial plant root uptake from either soil or groundwater
     - Ingestion via terrestrial biota and prey

6.11.13 Nonstandard Delineation

Under the assumption that the RA will be accepted by the MECP, nonstandard delineation per O. Reg. 153/04 Schedule E, Section 7.1 was conducted for cis-1,2-DCE in groundwater at OW31 (refer to Figures 6-17, 6-17c and 6-17d).

Delineation was conducted to the requirements of O. Reg. 153/04 Schedule E, Section 7 for the other COCs identified at the RA Property in soil and groundwater.

There is confidence that the maximum concentration of cis-1,2-DCE onsite has been located (OW24D) given its proximity to the known offsite source of chloroethenes and the consistently lower concentrations found across the remainder of the Site, decreasing both horizontally and vertically. Low levels of cis-1,2-DCE are present at onsite depths greater than the depth of OW24D; however, low-level cis-1,2-DCE is present across the entire Site in the Goat Island Formation and the Vinemount Member and is interpreted to be from an upgradient offsite source based on regional data. Additional vertical or lateral delineation of cis-1,2-DCE at the Site would not materially change the Phase Two ESA CSM or the risk management measures to be developed as part of the RA based on the existing dataset. We understand that the MECP concurs with this interpretation and agrees on the importance of avoiding drilling deeper into the City's municipal drinking water aquifer, the Gasport Formation. Based on this information, the QPESA is satisfied that the current dataset provides adequate information to support the RA, and additional vertical delineation is not required.

7. Conclusions

The following conclusions can be made based on the findings from the Phase Two ESA.

7.1 Site Characterization

Several environmental investigations have been conducted at the Site since 1991. The data from these historical investigations were used in conjunction with Phase One and Phase Two ESA activities conducted by Jacobs to develop a comprehensive understanding of the environmental conditions at the Phase Two Property.

To assess the subsurface conditions, the lithologies recorded from 58 monitoring wells, 21 boreholes, and 25 test pits installed during the Phase Two ESA, as well as available boring logs from previous investigations conducted on the 5.2-hectare Phase Two Property were examined. Geological conditions, as characterized from the dataset at the Phase Two Property, include the following:

i. Surficial fill at ground surface ranging from 0.1 to 3.1 mbgs
ii. 0- to 3.0-m-thick fine silty sand unit;
iii. 1.7- to 5.8-m-thick Stone Road Member of the Eramosa Formation
iv. 6.4- to 9.6-m-thick Reformatory Quarry Member of the Eramosa Formation
v. 6.4- to 9.6-m-thick Vinemount Member of Eramosa Formation
vi. Goat Island Formation

The deepest borehole on the Phase Two Property extended into the Goat Island Formation to a depth of approximately 33 mbgs.

Based on the Site-specific geology, the main units investigated during the Phase Two ESA were the fill, native sands and upper fractured bedrock, and the lower competent bedrock of the Eramosa Formation (Reformatory Quarry and Vinemount Members). The 58 newly installed wells were generally instrumented in the upper fill, sand, and fractured bedrock to straddle the encountered shallow groundwater table, as well as deeper monitoring wells to collect groundwater information from the lower bedrock units. The measured depth to water table collected in August 2018, representing the lowest groundwater levels observed over the investigation, ranged from 1.92 to 3.99 mbgs (312.50 to 313.34 masl) for wells screened in the fill, sands, and upper fractured bedrock. The snapshot with the highest groundwater elevations was completed in March 2019, where depths to the water table ranged from 1.12 to 3.49 mbgs (312.88 to 314.09 masl). The highest groundwater levels measured at the Site were associated with a storm event in January 2020, during which pressure transducers recorded groundwater levels at a maximum elevation of 314.56 masl (1.94 mbgs at the measured well). A consistent groundwater direction from the north to the southeast was observed.

7.2 Soil Quality

On the Phase Two Property, soil was found to be generally impacted with elevated soil concentrations of metals and PHCs and localized impacts from PAHs, BTEX, VOCs, and PCBs. The presence of these parameters is consistent with the Site's historical and industrial land use.

The widespread soil exceedances for metals (including hydride-forming metals) are interpreted to occur throughout most of the fill, extending to the bedrock surface. Lead and zinc are the predominant parameters with concentrations exceeding the Table 6 SCS. PHC exceedances occur throughout a significant portion of the Site, with concentrations in some localized areas (northeastern area downgradient of historically remediated area and near a former garage) exceeding the MECP Free-Phase Threshold Values (MECP 2011d). Elevated BTEX, PAH, and VOCs are localized to areas corresponding with historical activities (such as the former garage and galvanizing building), and elevated EC concentrations are connected to imported backfill for the historical excavations.

Based on extensive sampling over the Phase Two Property, it has been concluded that the horizontal and vertical extents of soil impacts have been defined sufficiently for Phase Two purposes, as well as to support the RA and evaluation of risk management measures.

7.3 Groundwater Quality

Groundwater was generally found to be impacted with chlorinated VOCs (specifically, chloroethenes), with localized impacts of chloroethanes, BTEX, metals, PAHs, and PHCs.

Chloroethenes were found across the Site at various depths: shallower impacts (in the upper overburden and bedrock contact zone) are generally located in the southwestern portion and eastern corner of the Site, whereas the deeper impacts (Eramosa Formation [Reformatory Quarry/Vinemount members]) extend across the entire Site, including the northwestern portion of the Site where shallow groundwater impacts were not observed. Specifically, cis-1,2-DCE was found at low levels exceeding the Table 6 SCS in the Vinemount and the deepest well screened in the Goat Island Formation and is understood to be a regional issue in the City. Chloroethanes were found primarily localized to the southwestern area of the Site in the upper overburden and bedrock contact zone, with limited detections in the Reformatory Quarry Member (Eramosa Formation). Based on distribution and groundwater flow direction, the chloroethanes are likely from an onsite source, though no concentrations have been found in the soil.

The source of the PHC-impacted groundwater, present in the historically remediated areas (northeastern corner for metals and PHC impacts, and PCB capacitors) is suspected to be related to the historical presence of highly contaminated material and soil in these areas. NAPL has been measured during recent sampling events on the Site in a number of wells, with the water level sitting right at or below the overburden and bedrock contact zone. Impacts could be related to remaining soil sources as well as the redistribution (adsorption) of NAPL to the soil during higher groundwater events. The distributions of BTEX and PAH concentrations in groundwater are similar to the PHC areas, and likely indicate related sources. Elevated metals concentrations in groundwater include mainly zinc, with localized occurrences for arsenic and lead.

Based on extensive sampling over the Phase Two Property, it has been concluded that the horizontal and vertical extent of groundwater impacts have been defined sufficiently for Phase Two purposes and to support the RA and evaluation of risk management measures.

7.4 Phase Two Property Certification

Based on the results of the Phase Two ESA, the Phase Two Property did not meet the applicable SCS, and remediation or development of property-specific standards under the completion of an RA for the Phase Two Property is warranted.

7.5 Signatures

Report Preparation Procedures

This report was prepared by Ms. Victoria Peters, B.Sc.Env., GIT under the supervision of Ms. Tania McCarthy, B.A.Sc., P.Eng., QPESA and reviewed by Mr. Ed Taves, M.Sc., P.Geo.(Limited), QPESA. Mr. Jinlong Zang, B.A.Sc., M.Sc., P.Eng. additionally contributed to the review.

The findings and conclusions of this report have been supervised and reviewed by the undersigned QPESA.

As QPESA, I (Tania McCarthy) confirm that I have supervised the carrying out of the Phase Two ESA, findings, and conclusions of this report.

As Senior Technical Reviewer for this report, I (Edgar Taves) confirm that I have completed a technical review of the Phase Two ESA and concur with the findings and conclusions of this report.

Sincerely,

Victoria Peters B.Sc.Env., GIT
Project Scientist

Jinlong Zang B.A.Sc., M.Sc., P.Eng.
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9. Limitations

This Phase Two ESA Report for the former International Malleable Iron Company foundry facility located at 200 Beverley Street, Guelph, Ontario was prepared for the exclusive use of the City of Guelph. Third parties cannot rely upon the findings and conclusions presented in this report without the express written consent of CH2M HILL Canada Limited (CH2M), now a wholly owned subsidiary of Jacobs Engineering Group Inc. (Jacobs), and the City of Guelph through an extension of reliance using a Reliance Letter signed by both parties. CH2M accepts no responsibility for damages, if any, incurred by any third party as a result of decisions made or actions based on this report.

Other considerations and limitations applicable to this Phase Two ESA also include the following:

9.1 Standard of Care and Limitation of Liability

a. CH2M's services are governed by the negligence standard for professional services, measured as of the time those services are performed.

b. CH2M shall not be liable to the City of Guelph for any damages where it has exercised a reasonable standard of care.

9.2 No Third-party Beneficiaries

a. This Phase Two ESA Report gives no rights or benefits to anyone other than the City of Guelph and CH2M, and has no third-party beneficiaries. All work products prepared are for the sole and exclusive use of the City of Guelph for specific application to the Site; is not for the benefit of any third party; and may not be distributed to, disclosed in any form to, used by, or relied upon by any third party without the prior written consent of CH2M, which consent may be withheld in its sole discretion.

b. No warranty, expressed or implied, is made regarding the services performed.

9.3 Existing Site Conditions

a. Any opinions or recommendations presented apply to Site conditions existing when services were performed. CH2M cannot report on or accurately predict events that may change the Site conditions after the described services are performed, whether occurring naturally or caused by external forces.

b. CH2M assumes no responsibility for conditions we are not authorized to investigate, or which are not in our specific scope of work. Unknown contamination may be exposed during excavation.

c. CH2M's services shall not include an independent verification of the quality of work conducted and information provided by independent laboratories or other independent contractors retained by CH2M in connection with CH2M's services.

In preparing this Phase Two ESA Report, CH2M relied, in whole or in part, on data and information provided by the City of Guelph and third parties. This information was not independently verified by CH2M, and CH2M has assumed it to be accurate, complete, reliable, and current. Therefore, while CH2M has used its professional efforts in preparing this Phase Two ESA Report, CH2M does not warrant or guarantee the conclusions set forth in this Phase Two ESA Report that are dependent or based upon data, information, or statements supplied by third parties or the City of Guelph.

Tables

Table 3-1. Summary of Environmental Reports and Data Reliability

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Report Title	Date	Author	Prepared for	Description	Field Program	Data or Information Relied Upon?	Steps Taken to Verify Data or Information Is Reliable or Updated (Screening Data)
Environmental Investigation, International Malleable Iron Company, 200 Beverley Street, Guelph, Ontario	June 10, 1991	Proctor & Redfern Limited	The Bank of Montreal	An environmental investigation, including a background review, was conducted onsite that incorporated a preliminary investigation conducted by P&R in 1989. The background review included a title search, review of aerial photographs, FIPs, and building permits as supplied by the City of Guelph, discussions with municipal and MOECC personnel, and an interview with a former IMICO employee. The field program was based on the findings of the background review to determine the nature and extent of soil and groundwater contamination and provide preliminary cost estimates for site remediation and redevelopment as required.	•55 test pits, including central test pits (A to L, and 1 to 12) were excavated in areas of suspected soil contamination to clean native soil or bedrock to help delineate contaminants •5 observation wells (OW01 through OW05) were installed to investigate the shallow groundwater quality •16 corehole locations were advanced through the foundry floor to investigate conditions beneath the facility	•VOC, BTEX, oil and grease, and TPH soil data are not considered suitable for RSC purposes. Data used for screening only. •Groundwater data from 1991 is not considered suitable for RSC purposes, because it is not representative of current conditions. Data used for screening only. •Metals soil data are missing arsenic, boron, and uranium analysis but are considered suitable for RSC purposes. •Data with no available CofAs were not relied upon but used for screening only. •Data from subsequently excavated material, offsite samples or other material removed from Site were not included in the Phase Two ESA dataset.	•Additional soil locations and analysis for VOCs, BTEX, PHCs, and metals have been completed across the Site to confirm the presence or absence of historical impacts under current conditions using O. Reg. 153/04 protocols. •Groundwater monitoring well installation and analysis has been conducted across the Site to confirm the presence or absence of historical impacts under current conditions using O. Reg. 153/04 protocols. •Laboratory COAs are available for soil data included in the Phase Two ESA dataset.
Supplemental Hydrogeological Investigation Former IMICO Site	March 8, 1999	Gartner Lee Limited	The City of Guelph	A hydrogeological site assessment was conducted that consisted of drilling 11 boreholes, installing 9 monitoring wells (four in the bedrock) and collecting soil and groundwater samples. The stratigraphy over most of the Site was defined as coarse fill materials underlain by native silty fine sand. The depth of the fill materials ranged from 0.3 to 3.2 m from the southern to the eastern portions of the Site. Shallow groundwater flow was observed from the south to southwest, with a high around OW2. The average lateral velocity was measured at 107 m/yr. Flow in the bedrock was generally to the south with a velocity of 14 m/yr. Vertical gradients were downwards, with the exception of OW9 and OW11 where measurements indicated occasional upward gradients. Soils were found to be impacted with metals (mainly zinc and lead), TPH, VOCs and PAH/phthalates in the area immediately east of the former annealing room, with impacts found up to the top of bedrock (1.5 to 2.0 mbgs). Groundwater was found impacted with TPH (heavy oil), zinc, and lead, which were primarily found at the northeastern portion of the Site. Some localized exceedances of PAHs were also reported. Elevated chlorinated VOCs (specifically TCE and VC) were observed on the eastern property boundary (OW18 and OW19). NAPL was identified at OW21 within the dolostone bedrock, which was determined to be fuel oil composed of PAHs/phthalates. Suspected free product was previously observed in monitoring wells in the same area (OWI-1). The development of a remedial action plan was recommended.	Phase IIA (May 1998): •9 observation wells (5 water table and 4 bedrock wells: OW01-II, OW03-II, OW06, OW09-I, OW09-II, OW10, OW11-I, OW11-II) •Groundwater sampling of the existing wells (14) •2 offsite boreholes (BH07, BH08) Phase IIB (September and December 1998): •boreholes (BH22, BH23, BH24) •12 test pits (TP98-01 to 12) •10 monitoring wells (OW13, OW14, OW15, OW16, OW17, OW18-I, OW18-II, OW19, OW20 and OW21) •Groundwater sampling in September and December at existing wells	•Groundwater data from 1998 are not considered suitable for RSC purposes, because they are not representative of current conditions. Data used for screening only. •CofAs were not available for the soil and groundwater data, so no data from this report were used in Phase Two ESA; data were used for screening only	•Soil locations and analysis for VOCs, BTEX, PHCs, and metals have been completed across the Site to confirm the presence or absence of historical impacts under current conditions using O. Reg. 153/04 protocols. •Groundwater monitoring well installation and analysis has been conducted across the Site to confirm the presence or absence of historical impacts under current conditions using O. Reg. 153/04 protocols.
Former IMICO Facility Demolition and Waste Removal Report	October 7, 1999	Earth Tech (Canada) Inc.	City of Guelph Works Department Engineering Services Division	Earth Tech (previously P&R) was retained by the City to provide contract tendering and administration of the demolition of buildings and clean up of waste materials at the Site to address the Director's Order issued by the MOECC in 1994. Waste materials (ACM, PCB-containing material, liquid wastes, foundry sands, contaminated concrete) were removed from the Site and Remediation (excavation and disposal) was completed for two areas on the Site: •The northeastern corner of the Site where a previous plating room was located and indicated high concentrations of zinc, other metals, and oil and grease from previous P&R and Gartner Lee investigations •The area of the capacitor rooms that formerly housed PCB capacitors The capacitor room remediation included removal of a concrete floor, a utility trench, a subfloor, and a sump that were indicated as PCB-impacted; material was excavated and disposed offsite. The area was excavated to bedrock (1.0–1.3 mbgs) to remove concentrations above 5 µg/g. The northeastern corner of the Site was excavated to bedrock (ranging from 1.3 to 2.0 mbgs, and approximately 9,400 tonnes of contaminated soil and 925 tonnes of contaminated concrete were removed. Final samples (composite soil, soil, concrete, and bedrock) from the limits of excavation in the capacitor room reported PCB concentrations under 5 µg/g, with the exception of two bedrock samples within the eastern sump area that had concentrations around 10 µg/g. Soil samples collected from the final limits of the northeastern excavation walls indicated some zinc and TPH concentrations above the Table A Guidelines. The sample collected from the backfill met the guidelines at the time. Groundwater monitoring programs were recommended for areas downgradient of the capacitor room and northeastern corner of the Site.	•Confirmatory samples (soil [SS], concrete [CS] and bedrock [RK]) from the limits of excavation in the capacitor room •Confirmatory soil samples from the northeast excavation were collected from the final limit of the walls (ES-02 through ES-17) •One sample of the backfill material (granular "B") was collected and analyzed	•BTEX and TPH soil data are not considered suitable for RSC purposes. Data used for screening only. •Metals data from the northeast excavation walls were only collected for lead and zinc, and therefore, were they not considered suitable for RSC purposes. Data were used for screening only. •PAH and PCB data were considered to be reliable and suitable for RSC purposes. •Data with no available CofAs were not relied upon but used for screening only. •Data from subsequently excavated material or nonsoil material removed from Site were not included in the Phase Two ESA dataset.	•Phase Two ESA soil sampling programs were focused around historical indications of hot spots where maximum concentrations could potentially exist. •Laboratory COAs are available for soil data included in the Phase Two ESA dataset.

Table 3-1. Summary of Environmental Reports and Data Reliability

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Report Title	Date	Author	Prepared for	Description	Field Program	Data or Information Relied Upon?	Steps Taken to Verify Data or Information Is Reliable or Updated (Screening Data)
Contaminant Investigation 490 York Road, Guelph, Ontario	May 12, 2004	Gartner Lee Limited	The City of Guelph	An investigation of the adjacent property at 490 York was conducted in a response to an MOECC Provincial Order (No. 7616-5LAL3S) from 2003 to better define groundwater quality and source of the VOC contamination at the eastern end of the IMICO site. Three pairs of monitoring wells (OW28, OW29, and OW30) were installed (shallow at approximately 6 m and deep at approximately 12 m), developed and sampled for analysis of major ions, metals, TPH, VOCs, PAHs, and general chemistry. It was noted in the report that groundwater at the northeastern corner of the IMICO site may be influenced by water takings (industrial) at Holody, located 500 m to the northeast. Shallow groundwater was noted to flow to the southeast within the investigation area, likely influenced by the presence of the bedrock ridge. Other factors affecting the flow include buried services such as storm drains, low permeable surfaces (asphalt, buildings, concrete), and surface topography. It was noted in the report that groundwater at the northeastern corner of the IMICO site may also be influenced by water takings (industrial) at Holody, located 500 m to the northeast. The stratigraphy was found to be composed of fill (up to 0.4 mbgs), native soil, and dolostone bedrock. The depth to bedrock ranged from 2.2 to 4.3 mbgs. Vertical gradients at the newly installed well nests were found to be downward. Chlorinated VOCs (TCE and degradation products), lead, and zinc were found in the groundwater on 490 York Road.	•4 offsite monitoring well nests (OW28S/D, OW29S/D and OW30S/D), no soil data collected •Groundwater sampling network of 31 wells	•Groundwater data from 2004 are not considered suitable for RSC purposes, because they is not representative of current conditions. Data used for screening only.	Onsite monitoring wells were resampled during the current Phase Two ESA investigations.
Phase I Environmental Site Assessment Former IMICO Property 200 Beverley Street, Guelph, Ontario	December 20, 2007	Decommissioning Consulting Services Limited	The City of Guelph	DCS conducted a Phase I ESA of the Site to prepare for its redevelopment, which required a subsequent Phase II ESA, and remedial action plan activities. The Phase I ESA consisted of a historical review of past land use (ERIS, aerials, ownership information), review of previous reports, and a site reconnaissance. The IMICO Site was determined to be first developed in 1912 as a foundry and was closed/abandoned in September 1989. The site reconnaissance provided limited information, because there were no buildings/structures present. Information that was gathered from reports reviewed by DCS that were not available to CH2M are as follows: Philip Environmental - Earthtech Remedial Program 1989/1999 - included the decommissioning of wells OW01-I, OW01-II, OW20 and OW21 in the northeastern corner of the site in April 1999 before the excavation of soil in the area. Gartner Lee Investigations 2000/2001 - included the installation of six monitoring wells in three locations (OW22S/D, OW23S/D and OW24S/D) following the excavation of impacted soils in the northeastern corner of the property, and an additional well (OW25) near the remediated capacitor room. Additionally, nine test pits were advances in the southeastern portion of the property because of anomalies detected on the geophysical survey conducted. The anomalies were determined to be buried ferrous material. Soil sample collected indicated elevated zinc and TPH concentrations. Free product was noted in two of the shallow monitoring wells (OW22S and OW23S), which was found to be highly weathered with a slight oil/diesel odour. It was noted that the soil and groundwater conditions did not meet the background standards for metals, PHCs, and PAHs at many locations. Additional subsurface investigations were recommended in the following areas: - Current concentrations of the residual contamination at the eastern property boundary in soil and groundwater (metals, VOCs, PHCs); volatiles may have degraded from original concentrations - Further definition of the residual PCB contamination in the soil and groundwater near the capacitor room - Delineation of metal and occasional VOC impacts on the western site boundary - Investigation of groundwater impacts downgradient of the Site on Kingsmill Avenue	No field program was conducted as part of the Phase I ESA investigation.	No data available as part of this report	Information provided as part of the DCS reviews were considered during the data gap assessment and Phase Two ESA investigation programs.
Phase II Environmental Site Assessment Former IMICO Property 200 Beverley Street, Guelph, Ontario	December 21, 2007	Decommissioning Consulting Services Limited	The City of Guelph	An environmental investigation was completed to address the recommendations outlined in the Phase I ESA. Analytical results were compared to both the Table 1 and Table 2 Standards. Soil exceedances included metals (widespread), PHCs (eastern end of the property, in the vicinity of the former maintenance garage, and one sample south of the capacitor room; F3 the predominant fraction), limited VOC exceedances (BTEX, no chlorinated VOCs identified), PAHs, and PCBs (maintenance garage and south of the former capacitor room). Synthetic leach samples for metals, VOCs, PHCs, PAHs, and PCBs indicated concentrations of copper, lead, and zinc exceeding proposed criteria. Groundwater exceedances included metals (mainly zinc on the east property boundary), PHCs (northeast end of property and south of the capacitor room), VOCs (mainly chlorinated VOCs with the highest concentrations on the east end of the Site), PAHs, and PCBs (one south of the capacitor room). DCS concluded that given the nature of the soil and groundwater quality on the Site, an extensive soil remediation program would be required to clean up to generic standards for the property to be suitable for residential or parkland use. Additionally, they concluded if using a RA, the property boundaries would still need to meet MOECC potable groundwater standards.	- 40 boreholes advanced with 10 borehole locations completed as monitoring wells (BH07-40 through BH-71 and OW07-31 through OW07-38) - 2 monitoring well locations had both a shallow (5-7 mbgs) and a deep (10 mbgs) monitoring well installed at the location (OW24 and OW36)	•All on site soil and groundwater data from this investigation is considered suitable for RSC purposes. •Metals data is missing boron and uranium analysis, but is considered suitable for RSC purposes. •Data from offsite samples were not included in the Phase Two ESA dataset	•COAs are available for all soil and groundwater samples.

Table 3-1. Summary of Environmental Reports and Data Reliability

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Report Title	Date	Author	Prepared for	Description	Field Program	Data or Information Relied Upon?	Steps Taken to Verify Data or Information Is Reliable or Updated (Screening Data)
Preliminary Remedial Action Plan Former IMICO Property 200 Beverley Street, Guelph, Ontario	March 6, 2008	Decommissioning Consulting Services Limited	The City of Guelph	Four main scenarios were considered for the preliminary remedial action plan: 1) Using applicable Table 1 Standards (background) 2) Completing a limited scope RA to allow for the use of Table 2 Standards (potable) 3) Completing a limited scope RA to allow for the use of Table 2 Standards and elevated zinc background values 4) Completing a full scope RA for the proposed site specific land use Option 1 required the remediation of approximately 80,000 m^3 of soil, Option 2 would reduce the remediation required to 54,000 m3 of soil, Option 3 would require 23,000 m^3 of soil based on the evidence of elevated background zinc concentrations in the Guelph area. Option 4 assumes many soil impacts can be managed on site by risk management measures, and limited soils would require removal. For groundwater, the western part of the Site indicated the most practical approach to be completing a limited scope RA to justify the use of Table 2 Standards and installation of recovery wells and a standby treatment system to prevent potential contamination migrating offsite. For the eastern portion of the Site, recommendations were for an ex situ groundwater remediation system, consisting of particle filter and granular activated carbon unit, to treat groundwater and discharge to the Guelph Sanitary Sewer. The particle filter would remove suspended particles that might contain metals, PAHs, PCBs, and PAHs, and the activated carbon would treat the VOCs. Further groundwater investigations were recommended as the potential for recontamination was likely high.	No field program was conducted as part of the Preliminary Remedial Action Plan	No data available as part of this report	
2010 Annual Groundwater Monitoring Report, Former IMICO Site, 200 Beverly Street, Guelph, Ontario	April 23, 2012	AECOM Canada Limited	The City of Guelph	AECOM (formerly Gartner Lee Limited) has been conducting semi-annual groundwater sampling and quarterly water level monitoring since 1998. The report outlines the results of the 2010 monitoring events. Groundwater flow in the shallow aquifer was determined to be south to southwest, towards the Eramosa River. Deeper groundwater was measured at similar elevations across the site, indicating little to no horizontal groundwater flow. LNAPL was measured in OW23 at 0.06 to 0.15 m over the four monitoring events. Groundwater chemistry was compared with the Table 2 Standards for industrial/commercial/community property use. Inorganics found exceeding the standards were zinc, chloride and sodium; the chloride and sodium only occurring offsite at the 490 York Road property, likely because of road salting. Zinc was found in six wells, each along the eastern property boundary. PAHs exceeded standards offsite at 490 York Road, and at one location in each the central (OW25) and west (OW16) portion of the Site. PHCs and PCBs were elevated downgradient of the former capacitor room (OW25 and OW26S, respectively) during the 2010 event. The PCB concentration met Table 2 Standards used for comparison but does not meet current Table 6 Standards. PHCs were also elevated offsite at 490 York Road (specifically F1, differing from the F2-F4 concentrations historically found on the Site) and had not been measured at OW22S or OW23S since 2007. Elevated VOCs included TCE, cis-1,2-DCE, 1,1-DCE, VC, and TCA and were mainly found at the eastern property boundary and on 490 York Road. The highest concentrations of TCE were found offsite at OW30D. Trend analysis indicated that TCE concentrations had mostly stabilized over time, with some wells showing a decreasing trend.	- Monitoring of accessible monitoring wells both on- and offsite for water levels. - Quarterly water level monitoring in March, June, October, and December from 46 accessible wells. - Sampling occurred in March and October, collecting samples from 18 shallow and 14 deep wells.	•Groundwater data are considered suitable for RSC purposes	•COAs are available for groundwater samples
2011 Annual Groundwater Monitoring Report, Former IMICO Site, 200 Beverly Street, Guelph, Ontario	August 15, 2013	AECOM Canada Limited	The City of Guelph	This report outlines the results of the 2011 groundwater monitoring program. Groundwater flow in the shallow aquifer was similar to previous events; deeper groundwater indicated a hydraulic high near OW23D. LNAPL was measured in OW23S at 0.04 to 0.15 m the four events. Groundwater exceedances for inorganics were found for zinc at seven wells and lead in one well. Chlorinated VOCs were similar to concentrations found in 2011, and TCE was noted to be decreasing. PAHs and PHCs were similar to previous years concentrations. PCBs were not analyzed and removed from the program in 2011, despite the last measured concentrations being above Table 6 Standards.	- Monitoring of accessible monitoring wells both on- and offsite for water levels. - Water level monitoring events in June, September, and December, collecting water levels from 46 accessible wells. - Sampling occurred in June and September, collecting samples from 18 shallow and 14 deep wells.	•Groundwater data are considered suitable for RSC purposes	•COAs are available for groundwater samples
2012 & 2013 Annual Groundwater Monitoring Report, Former IMICO Site, 200 Beverley Street, Guelph, Ontario	March 21, 2014	AECOM Canada Limited	The City of Guelph	This report outlines the 2012 and 2013 groundwater monitoring. Water level monitoring was reduced to semi-annually, and sampling events were reduced to annually. Groundwater flow in the shallow aquifer was southerly, similar to previous events; deeper groundwater indicated a hydraulic high presented near OW18-II. LNAPL was measured in OW23S between 0.03 to 0.08 m over the four events. Pressure transducers were installed in three well nests (OW18, OW27 and OW30) between August 23 and August 31, 2013 (Friday through Saturday) to observe any possible influence of the water takings from nearby wells. No precipitation events occurred during the period. Water fluctuations were measured in the shallow wells during 2 weekdays: up to 30 cm in OW27S and OW30S and up to 15 cm in OW18-I. Water levels remained steady in bedrock wells OW18-II and OW30D but fluctuated daily beginning August 26 (Monday). The MOECC stated that Holody Electro Plating has a PTTW for up to 50 imperial gallons per minute, and the water taking occurs continuously during the work week. This pumping is likely affecting the water levels at the Site and may be influencing groundwater flow direction. Groundwater exceedances for inorganics were found for zinc at five wells. Overall, concentrations of chlorinated VOCs were consistent with results from 2011. Degradation products were plotted alongside the TCE concentrations plots. PHC exceedances occurred onsite at OW25, OW22S, OW23S (product measured in this well) and offsite at OW36S and OW30D. PAHs were similar to previous years concentrations.	- Monitoring of accessible monitoring wells both on- and offsite for water levels. - Water level monitoring events in June and December 2012, and August and October 2013, collecting water levels from 46 accessible wells. - Sampling occurred in December 2012 and October 2013, collecting samples from 18 shallow and 14 deep wells. - Hydraulic conductivity testing of offsite wells completed and determined to be consistent with onsite values.	•Groundwater data are considered suitable for RSC purposes	•COAs are available for groundwater samples

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Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Report Title	Date	Author	Prepared for	Description	Field Program	Data or Information Relied Upon?	Steps Taken to Verify Data or Information Is Reliable or Updated (Screening Data)
Phase One Environmental Site Assessment 200 Beverley Street, Guelph, Ontario	February 11, 2014	Decommissioning Consulting Services	The City of Guelph	A Phase One ESA was conducted by DCS to assess the existing site environmental conditions and identify environmental concerns that might affect the future use of the Site. A review of historical information, including historical reports, aerials, MOECC documents, FIPs, chain of title information, and historical databases, was completed, as well as a site reconnaissance. Nine APECs were identified by DCS: 1) Fill of Unknown Quality 2) Former UST on the eastern portion of the Site 3a) Former Iron and Steel Processing, including sand mixing and foundry sumps 3b) Former PCB-containing Capacitors in the Foundry 4) Former Metal Treatment, Coating, and Finishing 5) Historical Garage, Maintenance, and Repair Area on the western property boundary 6) Historical Use and Storage of PCBs in the northeastern portion of the property 7) Former Metal Treatment, Coating, and Finishing 8) Chemical Manufacturing, Processing, and Bulk Storage (North of the Site) 9) Guelph Rail Line Adjacent to the Site (North of the Site) COCs identified were metals, PHCs, BTEX, PCBs, PAHs, and VOCs. Previous investigations reviewed identified impacts from metals VOCs, PHCs, PAHs, and PCBs. Additional Phase Two work was recommended.	No field program was conducted as part of the Phase One ESA investigation.	No data available as part of this report	Information provided as part of the DCS reviews were considered during the data gap assessment and Phase Two ESA investigation programs.
Phase Two Environmental Site Assessment Former IMICO Property 200 Beverley Street, Guelph, Ontario	April 2, 2014	Decommissioning Consulting Services	The City of Guelph	The DCS investigation included excavation of 10 test pits, advancing three boreholes; two of those locations additionally installed a monitoring well. Soil samples were collected for metals, VOCs, PHCs, PAHs, and PCBs. Groundwater samples were collected from the newly installed wells as part of the annual monitoring (AECOM). Groundwater flow was determined to be to the south in the shallow bedrock/overburden, and flow in the deeper bedrock appears to be somewhat radial from the east property boundary. Groundwater velocities in the two units were measured at approximately 15 m/yr and 55 m/yr; an upward gradient was found to be present in some wells. Soil was compared with the MOECC Table 6 Standards and indicated elevated metals across the property and localized exceedances of PAHs and PCBs. Groundwater was found with elevated concentrations mainly on the eastern portion of the Site consisting of VOC, specifically TCE and degradation products, and some PAHs.	- Excavated 10 test pits (TP-1 to TP-6, and TP-8 to TP-11). - Advanced 3 boreholes (MW13-39S, MW13-39D, and BH13-40), 2 of which were installed as monitoring wells. - Groundwater samples were collected from the 2 installed wells following development. - Other groundwater sampling was conducted under the AECOM 2012 and 2013 groundwater monitoring program.	•Soil and groundwater data are considered suitable for RSC purposes	•COAs are available for soil and groundwater samples
Preliminary Remedial Action Plan Former IMICO Property 200 Beverley Street, Guelph, Ontario	April 14, 2014	Decommissioning Consulting Services	The City of Guelph	DCS completed a preliminary remedial action plan for the Site to prepare for its redevelopment. Viable options for soil management included an RA or MGRA in combination with some excavation and offsite disposal. Options for the groundwater were an RA or MGRA with localized free product removal and potential VOC remediation. The source and extent of free product in OW23S would need to also be determined. The presence of offsite impacts were also reported to need further investigation and agreement among the City, MOECC, and stakeholders on appropriate remedial measures or management of groundwater impacts.	No field program was conducted as part of the Preliminary Remedial Action Plan	No data available as part of this report	
2014 Annual Groundwater Monitoring Report, Former IMICO Site, 200 Beverly Street, Guelph, Ontario	April 30, 2015	AECOM Canada Limited	The City of Guelph	The 2014 report outlines the groundwater monitoring program conducted in 2014. Wells were re-surveyed across the Site for top of pipe elevations, with some differences up to 0.45 m from original surveyed elevations, resulting in some minor changes in groundwater flow and hydraulic gradients. Groundwater flow in the shallow aquifer was southerly, similar to previous events; deeper groundwater was reported as generally flat with a hydraulic high presented near OW18-II, as previously reported. LNAPL was measured in OW23S between 0.05 to 0.32 m during 2014. Vertical gradients were generally down, with the exception of OW9, OW11, OW30, OW07-34, and OW07-36, which had upwards hydraulic gradients in 2014. Groundwater exceedances for inorganics were found for zinc at four wells. Overall, concentrations of chlorinated VOCs were consistent with results from 2011, indicating TCE decreasing in the shallow aquifer. Degradation products were plotted alongside the TCE concentrations plot and show concentrations increasing in the deeper wells as expected because of downward flow and anaerobic degradation of TCE in bedrock. PHC and PAHs were similar to previous years' results.	- Monitoring of accessible monitoring wells both on- and offsite for water levels. - Water level monitoring events in July and October from 48 accessible wells. - Sampling occurred in October; samples collected from 18 shallow and 14 deep wells. - Wells were re-surveyed across the site.	•Groundwater data are considered suitable for RSC purposes	•COAs are available for groundwater samples
Vertical Delineation of the Extent of Groundwater Impacts at the Former IMICO Site, 200 Beverley Street, Guelph, Ontario	December 8, 2016	WSP Canada Inc.	The City of Guelph	WSP conducted a vertical delineation investigation at the Site to address the concern that over the years, concentrations of TCE and related degradation products have been increasing at the northeastern wells. The presence of shallow, porous, fractured bedrock (Guelph Formation) has contributed to the migration of TCE and degradation products to deeper depths. Geologic features and competent bedrock formations were reported. The Site is underlain by the Lockport Group, consisting of the Guelph Formation, Eramosa Formation, Goat Island Formation, and the Gasport Formation. The Guelph Formation, which is noted to be a major regional aquifer, has a flow from the north to south and discharge points to the Speed and Eramosa Rivers. The Eramosa Formation is considered a regional aquitard and is a semi-confining unit because of vertical and horizontal fractures. The lower portion of this formation (the Vinemount Member) is considered a better aquitard. The region draws water from two major zones: the upper fractured weathered portion of the bedrock and the deeper highly fractured porous Gasport Formation. TCE was found up to approximately 24 m within the Eramosa formation. The highest concentrations of TCE (432 µg/L) and cis-1,2-DCE (244 µg/L) were reported from approximately 9 to 12 m. Degradation products were found in the final investigated depth in the Goat Island Formation above the Table 1 Standards. PHC exceedances were also noted but were noted to be likely related to the natural presence of hydrocarbons in the Guelph and Eramosa Formations.	- One telescopic bedrock monitoring well was installed (OW31) in the eastern portion of the Site where dense NAPL was identified to be present in groundwater. - OW31 was drilled, cored and sealed to 29 m, with an open hole left from 29–33 mbgs. - Groundwater samples were collected during the drilling and run through a handheld gas chromatograph as well as submitted to the lab for PHC and VOC analysis.	•Groundwater samples collected during the drilling were not considered representative of Site conditions and were used as a screening tool only. •Groundwater samples from the final depth/completed well are considered suitable for RSC purposes and representative of Site conditions.	•COAs are available for groundwater samples •Additional groundwater monitoring wells were installed across the site with various depths, and analyses were conducted to provide more reliable data than the drilling samples.

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Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Report Title	Date	Author	Prepared for	Description	Field Program	Data or Information Relied Upon?	Steps Taken to Verify Data or Information Is Reliable or Updated (Screening Data)
2015 Annual Groundwater Monitoring Report, Former IMICO Site, 200 Beverly Street, Guelph, Ontario	January 31, 2017	AECOM Canada Limited	The City of Guelph	The 2015 annual monitoring included semi-annual events for water level monitoring and an annual sampling event. Groundwater flow in the shallow aquifer was southerly, similar to previous events; deeper groundwater is reported as generally flat with a hydraulic high presented near OW18-II, as previously reported. LNAPL was measured in OW23S between 0.032 to 0.05 m during 2015 and a total of 650 mL of product was purged from the well over two events. Vertical gradients are generally down, with the exception of upwards gradients observed at one or more events for OW9, OW11, OW26, OW07-34, and OW07-36. Groundwater exceedances for inorganics were found for zinc at five wells. Overall, concentrations of chlorinated VOCs were consistent with results from 2011, indicating TCE decreasing in the shallow aquifer. Degradation products were plotted alongside the TCE concentrations plot and show concentrations increasing in the deeper wells as expected because of downward flow and anaerobic degradation of TCE in bedrock. PHC and PAHs were similar to previous years results.	- Monitoring of all accessible monitoring wells both on and off site for water levels. - Water level monitoring events in September and November from 48 accessible wells. - Sampling occurred in November, collecting samples from 18 shallow and 14 deep wells.	•All groundwater data is considered suitable for RSC purposes	•COAs are available for all groundwater samples
2016 Annual Groundwater Monitoring Report, Former IMICO Site, 200 Beverly Street, Guelph, Ontario	June 26, 2017	AECOM Canada Limited	The City of Guelph	The 2016 annual monitoring included semi-annual water level events and an annual sampling event. Groundwater flow in the shallow aquifer was southerly, similar to previous events; deeper groundwater is reported as generally flat with a hydraulic high presented near OW30D, where groundwater flows in a northeasterly direction. LNAPL was measured in OW23S between 0.04 and 0.02 m during 2016, and approximately 200 millilitres of product was purged from the well over two events. Vertical gradients are generally down, with the exception of upwards gradients observed at one or more events for OW9, OW11, OW26, OW30, OW07-34, OW07-36, and OW13-39. OW27S/D were not sampled, because there was significant damage to the well casing and PVC pipes by road construction on Simcoe Street. Groundwater exceedances for inorganics were found for zinc at three wells. Overall, concentrations of chlorinated VOCs were consistent with results from 2011, indicating TCE decreasing in the shallow aquifer. Degradation products were plotted alongside the TCE concentrations plot and show concentrations increasing in the deeper wells as expected because of downward flow and anaerobic degradation of TCE in bedrock. PAHs were similar to previous years results. PHCs were similar with the exception of OW22S, OW23D, and OW30D, which had an increase in concentrations.	- Monitoring of accessible monitoring wells both on- and offsite for water levels. - Water level monitoring events in August and October from 48 accessible wells. - Sampling occurred in October samples collected were from 18 shallow and 14 deep wells.	•Groundwater data are considered suitable for RSC purposes	•COAs are available for groundwater samples

Notes:

µg/g = microgram(s) per gram
µg/L = microgram(s) per litre
ACM = asbestos-containing material
APEC = area of potential environmental concern
BTEX = benzene, toluene, ethylbenzene, and xylene
cm = centimetre(s)
COC = contaminant of concern
DCE = dichloroethylene
ESA = environmental site assessment
FIP = fire insurance plan
IMICO = International Malleable Iron Company
LNAPL = light nonaqueous phase liquid
m = metre(s)
m^3 = cubic metre(s)
m/yr = metre(s) per year
mbgs = metre(s) below ground surface
MGRA = modified generic risk assessment
MOECC = Ministry of the Environment and Climate Change, formerly the Ministry of the Environment
NAPL = nonaqueous phase liquid
P&R = Proctor & Redfern
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PHC = petroleum hydrocarbons
PTTW = permit to take water
RA = risk assessment
TCA = trichloroethane
TCE = trichloroethylene
TPH = total petroleum hydrocarbons
UST = underground storage tank
VC = vinyl chloride
VOC = volatile organic compound

Table 4-1. Phase One Conceptual Site Model

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, ON

Phase One CSM Element	Summary
Existing Buildings and Structures	No buildings or structures.
Identify Water Bodies in the Phase One Study Area	Waterbodies within the Phase One Study area include a portion of the Hanlon Creek and Mill Creek Swamp located off Site, but in the southern/central portion of the Phase One Study Area as shown on Figure 2-1[a].
Areas of Natural Significance	No identified areas of natural significance are located wholly or partly within the Phase One Study Area.
Presence of Drinking Water Wells	No drinking water wells were identified on the Phase One Property. Thirty water wells are located within the Phase One Study Area as shown on Figure 4-1[a].
Identify Roads within the Phase One Study Area	Figure 6-1[a] presents the roadways and land use within the Phase One Study Area.
Adjacent Property Uses	Figure 6-1[a] presents the current adjacent property use: The adjacent use based on this and observations from the site reconnaissance are: • To the north: residential, industrial, and commercial • To the east: residential, industrial, and commercial • To the south: residential, industrial, and commercial • To the west: residential and commercial
Identify PCAs in the Phase One Study Area	The following PCA types were found in the Phase One Study Area: • 8 – Chemical Manufacturing, Processing, and Bulk Storage • 10 – Commercial Autobody Shops • 11 – Commercial Trucking and Container Terminals • 12 – Concrete, Cement, and Lime Manufacturing • 27 – Garages and Maintenance and Repair of Railcars, Marine Vehicles, and Aviation Vehicles • 28 – Gasoline and Associated Products Storage in Fixed Tanks • 30 – Importation of Fill Material of Unknown Quality • 32 – Iron and Steel Manufacturing and Processing • 33 – Metal Treatment, Coating, Plating, and Finishing • 34 – Metal Fabrication • 37 – Operation of Dry Cleaning Equipment (where chemicals are used) • 39 – Paints Manufacturing, Processing, and Bulk Storage • 45 – Pulp, Paper, and Paperboard Manufacturing and Processing • 46 – Rail Yard, Tracks, and Spurs • 47 – Rubber Manufacturing and Processing • 49 – Salvage Yard, including automobile wrecking • 54 – Textile Manufacturing and Processing • 55 – Transformer Manufacturing, Processing, and Use • 57 – Vehicles and Associated Parts Manufacturing Table 7.2-1[a] summarizes the details of the PCAs identified in the Phase One Study area; locations are shown on Figure 6-1[a].
Identify APECs	Thirty-three APECs are identified for the Phase One Property.

Table 4-1. Phase One Conceptual Site Model

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, ON

Phase One CSM Element	Summary
COPs	The COPCs identified within the Phase One Study Area include metals and inorganics, VOCs, PHCs, PAHs, PCBs, ABNs, and CPs. This list includes COPCs that are confirmed to be present based on historical investigations. Based on previous reports and contaminant concentrations, there is a potential for free phase product to exist on the Site.
Presence of Underground Utilities	Although utilities have been disconnected on Site, piping and bedding have not been removed, and therefore, there is potential for utility corridors to be providing a preferential route of contaminant migration.
Regional/Local Geology	The Site topography varies from approximately 315 and 316.5 masl based on topographic information and previous investigations completed at the Site. The Site and surrounding lands generally slope southeastward to the Eramosa River. Geology from previous investigations indicate subsurface materials consisting of fill (varying from 0.3 to 3.2 m deep), underlain by native silty fine sand. The approximate bedrock depth based on past investigations on the Site was 2.0 mbgs (elevation of 313.5 masl) and ranged from approximately 0.7 m to 3.4 mbgs (elevation of 312.7 to 315.0 masl). The bedrock was described as dolostone, grey, porous and highly fractured with a rock quality index indicating it is highly weathered and fractured (GLL 1999). The regional geology indicates the Phase One Study Area consists of "silt to sandy silt matrix, becoming silt to silty clay near Lake Erie, strongly calcareous, moderate to low clast content decreasing southward" (OGS 2000) and bedrock of the Guelph Formation, consisting of sandstone, shale, dolostone, siltstone (OGS 1991). The bedrock elevation is approximately 305 masl based on *OGS Preliminary Map P.224, Guelph Area, Southern Ontario, Bedrock Topography Series* (Karrow 1979).
Regional/Local Hydrogeology	Groundwater levels at the Site have been measured during previous investigations between 2.02 and 4.13 mbgs (310.84 to 316.40 masl), with an inferred groundwater flow direction to the south towards the Eramosa River.
Uncertainties Affecting the Validity of Phase One CSM	On the basis of the uncertainties presented within the Phase One ESA report, it is possible that a PCA/APEC or land use has not been identified within the individual components of the Phase One ESA. Information was gathered from numerous sources (that is, aerial photographs, City Directories, database searches, historical reports, interviews, and site reconnaissance), which decreases the chance that a major PCA or land use was not identified in this Phase One ESA. Many aspects of the CSM have been previously studied and verified through subsurface investigations (for example, groundwater flow direction); these aspects are not directly affected by the noted uncertainties: • Quality of aerial photographs may not allow some features to be clearly identified, and professional judgment was used to relate the historical features identified in the aerial photographs to present day locations. • Municipal addresses are known to change. • Information provided by interviewed individuals could be based on hearsay or personal opinion.

[a] Figures and tables referenced correspond to figures and tables in the Phase One ESA report (CH2M, 2017)

Notes:

ABN = acid base neutral compound
APEC = area of potential environmental concern
COPC = contaminant of potential concern
CP = chlorophenol
CSM = conceptual site model
ESA = Environmental Site Assessment
m = metre(s)
masl = metre(s) above sea level
mbgs = metre(s) below ground surface
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PCA = potentially contaminating activity
PHC = petroleum hydrocarbon
VOC = volatile organic compound

Table 6-2a. Well Construction Details

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Well ID	Northing (m)	Easting (m)	Ground Surface Elevation	Top of Riser Elevation (masl)	Installation Date	Well Inner Diameter (mm)	Screened Interval				Hydrogeologic Unit
							(mbgs)		(masl)		
							Top	Bottom	Top	Bottom	
OW01-I	562334.74	4822429.49	315.75	316.46	4/25/1995	50	1.52	3.96	314.23	311.79	Decommissioned
OW01-II	562329.24	4822425.37	315.60	--	5/11/1998	50	6.31	7.83	309.29	307.77	Decommissioned
OW02	562239.90	4822421.88	315.26	315.95	4/25/1991	50	0.91	3.96	314.35	311.30	Overburden and Bedrock Contact Zone
OW03-I	562223.25	4822343.44	315.39	316.15	4/25/1991	50	1.07	3.35	314.32	312.04	Overburden and Bedrock Contact Zone
OW03-II	562221.71	4822344.70	315.55	316.17	5/4/1998	50	6.33	7.85	309.22	307.70	Overburden and Bedrock Contact Zone
OW04	562353.40	4822358.40	315.93	316.58	4/25/1991	50	1.27	3.10	314.66	312.83	Overburden and Bedrock Contact Zone
OW05	562097.08	4822270.37	314.90	315.82	4/26/1991	50	2.06	4.34	312.84	310.56	Decommissioned
OW09-I	562367.75	4822358.51	316.27	316.96	5/7/1998	50	1.79	4.84	314.48	311.43	Overburden and Bedrock Contact Zone
OW09-II	562366.49	4822359.30	316.19	316.94	5/7/1998	50	6.33	7.85	309.86	308.34	Overburden and Bedrock Contact Zone
OW10	562308.54	4822302.07	315.53	316.22	5/11/1998	50	1.80	4.85	313.73	310.68	Overburden and Bedrock Contact Zone
OW11-I	562194.27	4822189.82	315.41	316.04	5/5/1998	50	1.60	4.65	313.81	310.76	Overburden and Bedrock Contact Zone
OW11-II	562195.32	4822190.97	315.45	316.13	5/6/1998	50	6.28	7.80	309.17	307.65	Overburden and Bedrock Contact Zone
OW12	562152.53	4822209.28	315.53	316.22	5/6/1998	50	1.76	4.81	313.77	310.72	Overburden and Bedrock Contact Zone
OW13	562370.06	4822351.77	316.52	317.30	9/1/1998	50	6.48	8.00	310.04	308.52	Overburden and Bedrock Contact Zone
OW14	562384.57	4822375.35	316.43	317.25	9/1/1998	50	6.29	7.81	310.14	308.62	Overburden and Bedrock Contact Zone
OW15	562089.90	4822265.47	315.15	315.85	9/2/1998	50	1.75	4.80	313.40	310.35	Overburden and Bedrock Contact Zone
OW16	562099.47	4822262.84	315.14	315.88	9/2/1998	50	1.82	4.87	313.32	310.27	Overburden and Bedrock Contact Zone
OW17	562280.92	4822426.30	315.62	316.36	9/2/1998	50	1.79	4.84	313.83	310.78	Overburden and Bedrock Contact Zone
OW18-I	562375.82	4822424.47	316.47	316.35	9/3/1998	50	1.81	4.86	314.66	311.61	Overburden and Bedrock Contact Zone
OW18-II	562377.37	4822422.85	316.47	316.36	9/3/1998	50	6.32	7.84	310.15	308.63	Eramosa Formation
OW19	562356.78	4822443.49	316.48	316.39	9/3/1998	50	1.77	4.82	314.71	311.66	Overburden and Bedrock Contact Zone
OW20-I	562331.24	4822440.00	316.30	--	9/4/1998	50	2.53	5.58	313.77	310.72	Decommissioned
OW21-I	562321.88	4822415.56	315.50	--	9/4/1998	50	2.02	5.07	313.48	310.43	Decommissioned
OW22S	562320.80	4822417.76	315.20	316.03	7/12/1999	50	1.36	4.10	313.84	311.10	Overburden and Bedrock Contact Zone
OW22D	562322.84	4822419.51	315.18	315.96	7/12/1999	50	6.71	7.47	308.48	307.71	Eramosa Formation
OW23S	562361.09	4822402.03	316.48	316.37	7/13/1999	50	2.52	5.26	313.96	311.22	Overburden and Bedrock Contact Zone
OW23D	562359.15	4822404.37	316.49	316.42	7/13/1999	50	6.55	7.77	309.94	308.72	Overburden and Bedrock Contact Zone
OW24S	562400.93	4822400.83	316.47	316.40	7/14/1999	50	2.60	5.34	313.87	311.13	Overburden and Bedrock Contact Zone
OW24D	562402.17	4822399.45	316.46	316.40	7/14/1999	50	6.55	7.77	309.91	308.69	Overburden and Bedrock Contact Zone
OW25	562252.06	4822289.14	315.32	316.08	7/15/1999	50	1.98	4.72	313.34	310.60	Overburden and Bedrock Contact Zone
OW26S	562264.60	4822256.04	315.53	316.34	8/13/2002	50	3.08	4.60	312.45	310.93	Overburden and Bedrock Contact Zone
OW26D	562263.65	4822254.78	315.48	316.26	8/13/2002	50	10.28	11.80	305.20	303.68	Eramosa Formation
OW31	562395.44	4822394.64	316.46	317.60	9/13/2016	101	28.90	33.32	287.56	283.14	Goat Island Formation
OW07-31	562146.80	4822376.39	315.00	315.80	2/22/2007	50	1.50	6.22	313.50	308.78	Overburden and Bedrock Contact Zone
OW07-32	562213.62	4822318.43	315.55	316.22	2/22/2007	50	3.17	6.22	312.38	309.33	Overburden and Bedrock Contact Zone
OW07-33	562224.69	4822298.70	315.36	316.23	2/22/2007	50	3.10	6.15	312.26	309.21	Overburden and Bedrock Contact Zone
OW07-34S	562247.92	4822270.74	315.65	316.45	3/12/2007	50	1.55	4.60	314.10	311.05	Overburden and Bedrock Contact Zone
OW07-34D	562246.08	4822270.22	315.53	316.31	2/22/2007	50	6.12	9.17	309.41	306.36	Overburden and Bedrock Contact Zone
OW07-37	562174.98	4822308.11	315.63	316.35	2/22/2007	50	3.10	6.15	312.53	309.48	Overburden and Bedrock Contact Zone
OW07-38	562254.62	4822392.72	315.79	316.61	2/22/2007	50	1.79	4.84	314.00	310.95	Overburden and Bedrock Contact Zone
OW13-39S	562388.08	4822416.23	316.50	317.40	12/12/2013	50	3.04	6.09	313.46	310.41	Overburden and Bedrock Contact Zone
OW13-39D	562386.99	4822417.45	316.51	317.28	11/12/2013	50	10.68	12.20	305.83	304.31	Eramosa Formation
MW17-100S	562267.12	4822360.99	315.56	316.22	10/12/2017	50	3.38	4.90	312.18	310.66	Overburden and Bedrock Contact Zone
MW17-101D	562327.32	4822375.75	315.25	316.01	10/20/2017	50	6.30	7.82	308.95	307.43	Overburden and Bedrock Contact Zone
MW17-101S	562326.63	4822374.30	315.24	316.13	10/20/2017	50	1.22	4.27	314.02	310.97	Overburden and Bedrock Contact Zone
MW17-102D	562245.11	4822260.85	315.41	316.21	10/26/2017	32	13.77	15.29	301.64	300.12	Eramosa Formation
MW17-103D	562231.04	4822329.26	315.54	316.31	10/25/2017	50	7.32	8.84	308.22	306.70	Overburden and Bedrock Contact Zone
MW17-103S	562233.20	4822330.67	315.54	316.30	12/26/2017	50	2.44	3.96	313.10	311.58	Overburden and Bedrock Contact Zone

Table 6-2a. Well Construction Details

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Well ID	Northing (m)	Easting (m)	Ground Surface Elevation	Top of Riser Elevation (masl)	Installation Date	Well Inner Diameter (mm)	Screened Interval				Hydrogeologic Unit
							(mbgs)		(masl)		
							Top	Bottom	Top	Bottom	
MW17-104D	562296.91	4822392.22	315.60	316.40	10/17/2017	50	6.10	7.62	309.50	307.98	Overburden and Bedrock Contact Zone
MW17-104S	562296.07	4822393.70	315.61	316.39	10/18/2017	50	1.22	3.66	314.39	311.95	Overburden and Bedrock Contact Zone
MW17-105D	562351.09	4822354.87	316.02	316.80	10/24/2017	50	6.93	8.46	309.09	307.56	Overburden and Bedrock Contact Zone
MW17-105S	562353.34	4822353.53	316.06	316.84	10/24/2017	50	3.20	4.72	312.86	311.34	Overburden and Bedrock Contact Zone
MW18-105G	562349.21	4822355.56	315.91	316.76	11/21/2018	50	16.97	18.49	298.94	297.42	Eramosa Formation
MW17-106D	562287.53	4822342.66	315.40	316.34	10/18/2017	50	7.01	8.53	308.39	306.87	Eramosa Formation
MW17-106S	562285.82	4822343.13	315.43	316.30	10/18/2017	50	3.05	4.57	312.38	310.86	Overburden and Bedrock Contact Zone
MW17-107S	562197.27	4822254.34	315.30	316.05	10/12/2017	50	2.72	4.85	312.58	310.45	Overburden and Bedrock Contact Zone
MW18-107D	562201.12	4822251.98	315.39	316.44	7/17/2018	50	18.59	20.12	296.80	295.27	Eramosa Formation
MW17-108S	562370.66	4822390.79	316.36	317.10	10/11/2017	50	1.93	4.98	314.43	311.38	Overburden and Bedrock Contact Zone
MW17-109S	562305.77	4822426.26	315.47	316.26	10/16/2017	50	2.79	4.32	312.68	311.15	Overburden and Bedrock Contact Zone
MW17-110S	562264.08	4822401.41	315.70	316.49	10/16/2017	50	3.00	4.52	312.70	311.18	Overburden and Bedrock Contact Zone
MW17-111S	562141.65	4822235.80	315.42	316.31	10/12/2017	50	3.43	4.95	311.99	310.47	Overburden and Bedrock Contact Zone
MW18-112S	562145.39	4822373.69	314.98	315.90	7/25/2018	50	3.42	4.95	311.56	310.03	Overburden and Bedrock Contact Zone
MW18-112D	562145.18	4822375.64	315.00	315.95	7/24/2018	50	6.40	7.92	308.60	307.08	Overburden and Bedrock Contact Zone
MW18-112G	562147.07	4822374.94	315.00	315.80	11/15/2018	50	19.35	20.88	295.65	294.12	Eramosa Formation
MW18-113S	562108.58	4822354.80	315.12	316.09	7/26/2018	50	3.37	4.90	311.75	310.22	Overburden and Bedrock Contact Zone
MW18-113D	562110.58	4822354.96	315.10	315.90	12/4/2018	50	18.29	19.81	296.81	295.29	Eramosa Formation
MW18-114S	562156.55	4822355.47	315.15	316.19	7/25/2018	50	3.37	4.90	311.78	310.25	Overburden and Bedrock Contact Zone
MW18-114D	562156.09	4822357.42	315.13	315.89	12/5/2018	50	19.20	20.73	295.93	294.40	Eramosa Formation
MW18-115S	562187.31	4822387.70	315.26	316.25	7/24/2018	50	3.20	4.72	312.06	310.54	Overburden and Bedrock Contact Zone
MW18-115D	562188.48	4822388.94	315.17	315.98	12/6/2018	50	19.20	20.73	295.97	294.44	Eramosa Formation
MW18-116S	562198.30	4822312.34	315.45	316.51	7/30/2018	50	2.51	4.03	312.94	311.42	Overburden and Bedrock Contact Zone
MW18-116D	562196.10	4822310.81	315.45	316.51	7/27/2018	50	6.50	8.02	308.95	307.43	Eramosa Formation
MW18-117S	562136.06	4822317.68	315.36	316.36	7/25/2018	50	3.35	4.87	312.01	310.49	Overburden and Bedrock Contact Zone
MW18-118S	562185.27	4822335.64	315.65	316.66	7/30/2018	50	3.25	4.77	312.40	310.88	Overburden and Bedrock Contact Zone
MW18-119S	562168.27	4822276.89	315.61	316.57	7/30/2018	50	3.45	4.97	312.16	310.64	Overburden and Bedrock Contact Zone
MW18-119D	562166.65	4822277.97	315.58	316.47	12/3/2018	50	16.89	18.42	298.69	297.16	Eramosa Formation
MW18-120D	562154.80	4822210.27	315.55	316.50	7/16/2018	50	18.59	20.11	296.96	295.44	Eramosa Formation
MW18-121S	562211.66	4822232.26	315.37	316.34	7/27/2018	50	3.12	4.64	312.25	310.73	Overburden and Bedrock Contact Zone
MW18-121D	562214.04	4822231.91	315.38	316.40	7/17/2018	50	16.33	17.85	299.05	297.53	Eramosa Formation
MW18-122D	562190.98	4822188.08	315.39	316.33	7/27/2018	50	12.44	13.96	302.95	301.43	Eramosa Formation
MW18-122G	562192.23	4822188.89	315.36	316.14	11/29/2018	50	19.51	21.03	295.85	294.33	Eramosa Formation
MW18-123S	562283.44	4822287.14	315.69	316.62	8/1/2018	50	3.40	4.92	312.29	310.77	Overburden and Bedrock Contact Zone
MW18-123D	562288.02	4822282.59	315.60	316.58	6/28/2018	50	18.79	20.32	296.81	295.28	Eramosa Formation
MW18-124S	562219.51	4822374.73	315.68	316.67	7/24/2018	50	3.55	5.08	312.13	310.60	Overburden and Bedrock Contact Zone
MW18-125S	562245.34	4822298.06	315.33	316.29	7/31/2018	50	4.26	5.79	311.07	309.54	Overburden and Bedrock Contact Zone
MW18-126D	562254.87	4822291.84	315.30	316.28	7/31/2018	50	6.45	7.97	308.85	307.33	Overburden and Bedrock Contact Zone
MW18-127S	562262.84	4822319.38	315.33	316.37	7/31/2018	50	3.42	4.95	311.91	310.38	Overburden and Bedrock Contact Zone
MW18-128D	562357.96	4822401.16	316.46	317.49	6/27/2018	50	18.74	20.26	297.72	296.20	Eramosa Formation
MW18-129D	562369.01	4822361.46	316.31	317.27	7/23/2018	50	7.97	9.49	308.34	306.82	Overburden and Bedrock Contact Zone
MW18-130D	562358.90	4822439.88	316.44	317.52	7/20/2018	50	6.40	7.92	310.04	308.52	Eramosa Formation
MW18-131S	562322.98	4822441.84	315.47	316.49	7/19/2018	50	3.20	4.72	312.27	310.75	Overburden and Bedrock Contact Zone
MW18-132D	562362.51	4822427.94	316.44	317.49	7/20/2018	50	7.97	9.49	308.47	306.95	Eramosa Formation
MW18-133D	562331.49	4822436.19	315.41	316.50	7/19/2018	50	17.17	18.69	298.24	296.72	Eramosa Formation
MW18-134S	562322.34	4822340.92	315.41	316.24	11/23/2018	50	2.74	4.27	312.67	311.14	Overburden and Bedrock Contact Zone
MW18-134D	562323.23	4822342.78	315.45	316.28	11/22/2018	50	6.40	7.92	309.05	307.53	Overburden and Bedrock Contact Zone
MW18-135S	562332.74	4822403.34	316.53	317.34	11/20/2018	50	4.27	5.79	312.26	310.74	Overburden and Bedrock Contact Zone

Table 6-2a. Well Construction Details

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Well ID	Northing (m)	Easting (m)	Ground Surface Elevation	Top of Riser Elevation (masl)	Installation Date	Well Inner Diameter (mm)	Screened Interval				Hydrogeologic Unit
							(mbgs)		(masl)		
							Top	Bottom	Top	Bottom	
MW18-135D	562332.61	4822404.95	316.44	317.24	11/17/2018	50	9.75	11.28	306.69	305.16	Eramosa Formation
MW18-136D	562288.12	4822312.89	315.58	316.34	11/26/2018	50	11.58	13.11	304.00	302.47	Eramosa Formation
MW18-136G	562286.28	4822312.56	315.56	316.36	11/27/2018	50	23.80	25.32	291.76	290.24	Goat Island Formation
MW19-137S	562388.01	4822376.72	316.44	317.31	4/16/2019	50	2.21	5.26	314.23	311.18	Overburden and Bedrock Contact Zone

Wells installed prior to 2017 were surveyed in 2004 by the City of Guelph; remaining wells were surveyed in 2018 and 2020 by Jacobs.
Historical well construction details obtained from historical reports. See Table 3-1 for report details.

Notes:

Shaded wells have been decommissioned or excavated

ID = identification

masl = metre(s) above sea level

mbgs = metre(s) below ground surface

mm = millimetre(s)

MW = monitoring well

Table 6-2b. Groundwater Measurements

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Well ID	Unit	Top of Screen (mbgs)	Bottom of Screen (mbgs)	Ground Elevation (masl)	Top of Riser Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)
						3/23/2010		6/3/2010		10/6/2010		12/9/2010		6/16/2011		9/19/2011		12/5/2011		6/28/2012		12/10/2012		8/23/2013	
OW01-I	Decommissioned	1.52	3.96	315.75	316.46	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OW01-II	Decommissioned	6.31	7.83	315.60	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OW02	Overburden and Bedrock Contact Zone	0.91	3.96	315.26	315.95	1.27	313.99	1.69	313.57	1.66	313.60	1.59	313.67	1.39	313.87	2.02	313.24	1.23	314.03	1.89	313.37	1.48	313.78	--	--
OW03-I	Overburden and Bedrock Contact Zone	1.07	3.35	315.39	316.15	1.76	313.63	2.62	312.77	2.46	312.93	2.02	313.37	1.85	313.54	2.65	312.74	1.72	313.67	2.56	312.83	1.92	313.47	2.50	312.89
OW03-II	Overburden and Bedrock Contact Zone	6.33	7.85	315.55	316.17	2.65	312.90	3.01	312.54	2.80	312.75	2.69	312.86	2.53	313.02	2.81	312.74	2.37	313.18	2.81	312.74	2.52	313.03	2.82	312.73
OW04	Overburden and Bedrock Contact Zone	1.27	3.10	315.93	316.58	2.79	313.14	--	--	3.21	312.72	3.07	312.86	2.84	313.09	3.22	312.71	2.69	313.24	3.22	312.71	2.88	313.05	3.25	312.68
OW05	Decommissioned	2.06	4.34	314.90	315.82	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OW09-I	Overburden and Bedrock Contact Zone	1.79	4.84	316.27	316.96	3.06	313.21	3.62	312.65	3.52	312.75	3.38	312.89	3.11	313.16	3.60	312.67	2.98	313.29	3.54	312.73	3.20	313.07	3.58	312.69
OW09-II	Overburden and Bedrock Contact Zone	6.33	7.85	316.19	316.94	3.32	312.87	3.67	312.52	3.56	312.63	3.43	312.76	3.23	312.96	3.47	312.72	3.05	313.14	3.51	312.68	3.24	312.95	3.56	312.63
OW10	Overburden and Bedrock Contact Zone	1.80	4.85	315.53	316.22	2.69	312.84	3.02	312.51	2.84	312.69	2.73	312.80	2.55	312.98	2.81	312.72	2.40	313.13	2.84	312.69	2.54	312.99	2.86	312.67
OW11-I	Overburden and Bedrock Contact Zone	1.60	4.65	315.41	316.04	2.04	313.37	2.83	312.58	2.70	312.71	2.35	313.06	2.12	313.29	2.84	312.57	2.14	313.27	2.77	312.64	2.28	313.13	2.71	312.70
OW11-II	Overburden and Bedrock Contact Zone	6.28	7.80	315.45	316.13	2.63	312.82	2.99	312.46	2.77	312.68	--	--	2.49	312.96	2.82	312.63	2.36	313.09	2.82	312.63	2.51	312.94	2.80	312.65
OW12	Overburden and Bedrock Contact Zone	1.76	4.81	315.53	316.22	2.56	312.97	2.99	312.54	2.66	312.87	2.44	313.09	2.31	313.22	2.82	312.71	2.20	313.33	2.77	312.76	2.38	313.15	2.75	312.78
OW13	Overburden and Bedrock Contact Zone	6.48	8.00	316.52	317.30	3.47	313.05	3.93	312.59	3.83	312.69	3.60	312.92	3.47	313.05	3.83	312.69	3.30	313.22	3.82	312.70	3.51	313.01	3.88	312.64
OW14	Overburden and Bedrock Contact Zone	6.29	7.81	316.43	317.25	3.01	313.42	3.55	312.88	3.46	312.97	3.33	313.10	3.09	313.34	3.75	312.68	2.99	313.44	3.63	312.80	3.29	313.14	3.68	312.75
OW15	Overburden and Bedrock Contact Zone	1.75	4.80	315.15	315.85	2.47	312.68	--	--	2.27	312.88	2.22	312.93	2.04	313.11	2.36	312.79	1.88	313.27	2.36	312.79	2.04	313.11	2.33	312.82
OW16	Overburden and Bedrock Contact Zone	1.82	4.87	315.14	315.88	2.39	312.75	2.54	312.60	2.30	312.84	2.20	312.94	2.01	313.13	2.36	312.78	1.79	313.35	2.36	312.78	2.02	313.12	2.33	312.81
OW17	Overburden and Bedrock Contact Zone	1.79	4.84	315.62	316.36	1.48	314.14	2.02	313.60	1.88	313.74	1.70	313.92	1.56	314.06	2.40	313.22	1.41	314.21	2.20	313.42	1.66	313.96	1.99	313.63
OW18-I	Overburden and Bedrock Contact Zone	1.81	4.86	316.47	316.35	2.40	314.07	2.65	313.82	2.66	313.81	2.67	313.80	2.53	313.94	3.28	313.19	2.24	314.23	2.99	313.48	2.57	313.90	3.00	313.47
OW18-II	Eramosa Formation	6.32	7.84	316.47	316.36	2.90	313.57	3.43	313.04	3.36	313.11	3.28	313.19	2.97	313.50	3.61	312.86	2.94	313.53	3.45	313.02	3.11	313.36	3.51	312.96
OW19	Overburden and Bedrock Contact Zone	1.77	4.82	316.48	316.39	2.25	314.23	--	--	2.71	313.77	2.51	313.97	2.34	314.14	3.36	313.12	2.17	314.31	3.03	313.45	2.47	314.01	2.95	313.53
OW20-I	Decommissioned	2.53	5.58	316.30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OW21-I	Decommissioned	2.02	5.07	315.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OW22S	Overburden and Bedrock Contact Zone	1.36	4.10	315.20	316.03	--	--	1.49	313.71	1.41	313.79	1.17	314.03	--	--	2.06	313.14	0.93	314.27	1.68	313.52	1.21	313.99	1.45	313.75
OW22D	Eramosa Formation	6.71	7.47	315.18	315.96	2.33	312.85	2.68	312.50	2.56	312.62	2.43	312.75	2.23	312.95	2.45	312.73	2.05	313.13	2.47	312.71	2.25	312.93	2.56	312.62
OW23S	Overburden and Bedrock Contact Zone	2.52	5.26	316.48	316.37	--	--	3.20	313.28	3.07	313.41	3.02	313.46	2.59	313.89	3.53	312.95	--	--	3.32	313.16	2.74	313.74	3.25	313.23
OW23D	Overburden and Bedrock Contact Zone	6.55	7.77	316.49	316.42	3.59	312.90	4.97	311.52	3.86	312.63	--	--	4.51	311.98	3.75	312.74	2.58	313.91	3.77	312.72	3.54	312.95	3.85	312.64
OW24S	Overburden and Bedrock Contact Zone	2.60	5.34	316.47	316.40	2.86	313.61	3.31	313.16	3.26	313.21	3.23	313.24	2.98	313.49	3.73	312.74	3.00	313.47	3.52	312.95	3.18	313.29	3.54	312.93
OW24D	Overburden and Bedrock Contact Zone	6.55	7.77	316.46	316.40	2.93	313.53	3.42	313.04	3.33	313.13	3.31	313.15	3.03	313.43	3.68	312.78	2.81	313.65	3.52	312.94	3.35	313.11	3.20	313.26
OW25	Overburden and Bedrock Contact Zone	1.98	4.72	315.32	316.08	2.50	312.82	3.84	311.48	2.61	312.71	2.52	312.80	2.36	312.96	2.59	312.73	2.21	313.11	2.63	312.69	2.35	312.97	2.62	312.70
OW26S	Overburden and Bedrock Contact Zone	3.08	4.60	315.53	316.34	2.73	312.80	3.06	312.47	2.79	312.74	2.74	312.79	2.57	312.96	2.77	312.76	2.44	313.09	2.85	312.68	2.52	313.01	2.85	312.68
OW26D	Eramosa Formation	10.28	11.80	315.48	316.26	2.73	312.75	4.07	311.41	2.80	312.68	2.75	312.73	2.58	312.90	2.83	312.65	2.44	313.04	2.86	312.62	2.57	312.91	2.86	312.62
OW31	Goat Island Formation	28.90	33.32	316.46	317.60	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OW07-31*	Overburden and Bedrock Contact Zone	1.50	6.22	315.00	315.80	--	--	--	--	--	--	--	--	1.79	313.21	2.06	312.94	1.67	313.33	2.08	312.92	1.79	313.21	2.08	312.92
OW07-32*	Overburden and Bedrock Contact Zone	3.17	6.22	315.55	316.22	2.27	313.28	2.60	312.95	2.38	313.17	2.28	313.27	2.11	313.44	2.36	313.19	1.96	313.59	2.38	313.17	2.11	313.44	2.39	313.16
OW07-33*	Overburden and Bedrock Contact Zone	3.10	6.15	315.36	316.23	2.52	312.84	2.85	312.51	2.63	312.73	2.53	312.83	2.36	313.00	2.61	312.75	2.21	313.15	2.62	312.74	2.35	313.01	2.64	312.72
OW07-34S	Overburden and Bedrock Contact Zone	1.55	4.60	315.65	316.45	2.75	312.90	3.09	312.56	2.89	312.76	2.77	312.88	2.60	313.05	2.85	312.80	2.46	313.19	2.87	312.78	2.60	313.05	2.87	312.78
OW07-34D*	Overburden and Bedrock Contact Zone	6.12	9.17	315.53	316.31	2.41	313.12	2.74	312.79	2.54	312.99	2.42	313.11	2.25	313.28	2.49	313.04	2.11	313.42	2.52	313.01	2.25	313.28	2.53	313.00
OW07-37*	Overburden and Bedrock Contact Zone	3.10	6.15	315.63	316.35	2.60	313.03	2.95	312.68	2.71	312.92	2.61	313.02	2.44	313.19	2.70	312.93	2.29	313.34	2.72	312.91	2.43	313.20	2.72	312.91
OW07-38	Overburden and Bedrock Contact Zone	1.79	4.84	315.79	316.61	1.64	314.15	2.24	313.55	2.15	313.64	1.94	313.85	1.79	314.00	--	--	1.57	314.22	2.49	313.30	1.91	313.88	2.36	313.43
OW13-39S	Overburden and Bedrock Contact Zone	3.04	6.09	316.50	317.40	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OW13-39D	Eramosa Formation	10.68	12.20	316.51	317.28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW17-100S	Overburden and Bedrock Contact Zone	3.38	4.90	315.56	316.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW17-101D	Overburden and Bedrock Contact Zone	6.30	7.82	315.25	316.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW17-101S	Overburden and Bedrock Contact Zone	1.22	4.27	315.24	316.13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW17-102D	Eramosa Formation	13.77	15.29	315.41	316.21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW17-103D	Overburden and Bedrock Contact Zone	7.32	8.84	315.54	316.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-2b. Groundwater Measurements

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Well ID	Unit	Top of Screen (mbgs)	Bottom of Screen (mbgs)	Ground Elevation (masl)	Top of Riser Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)
						10/24/2013		7/8/2014		10/21/2014		9/21/2015		9/29/2015		11/19/2015		8/25/2016		10/24/2016		8/28/2017		12/1/2017	
OW01-I	Decommissioned	1.52	3.96	315.75	316.46	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OW01-II	Decommissioned	6.31	7.83	315.60	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OW02	Overburden and Bedrock Contact Zone	0.91	3.96	315.26	315.95	1.49	313.77	--	--	1.50	313.76	1.83	313.43	--	--	1.58	313.68	1.80	313.46	2.00	313.26	1.91	313.35	1.74	313.52
OW03-I	Overburden and Bedrock Contact Zone	1.07	3.35	315.39	316.15	1.93	313.46	2.18	313.21	2.04	313.35	2.44	312.95	--	--	2.10	313.29	2.60	312.79	2.74	312.65	2.61	312.79	2.38	313.01
OW03-II	Overburden and Bedrock Contact Zone	6.33	7.85	315.55	316.17	2.47	313.08	2.37	313.18	2.44	313.11	2.67	312.88	--	--	2.50	313.05	2.75	312.80	2.91	312.64	2.82	312.73	2.80	312.75
OW04	Overburden and Bedrock Contact Zone	1.27	3.10	315.93	316.58	2.86	313.07	--	--	2.84	313.09	3.09	312.84	--	--	2.87	313.06	3.22	312.71	--	--	--	--	--	--
OW05	Decommissioned	2.06	4.34	314.90	315.82	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OW09-I	Overburden and Bedrock Contact Zone	1.79	4.84	316.27	316.96	3.17	313.10	3.23	313.04	3.18	313.09	3.46	312.81	--	--	3.21	313.06	3.56	312.71	3.73	312.54	3.66	312.61	3.63	312.64
OW09-II	Overburden and Bedrock Contact Zone	6.33	7.85	316.19	316.94	3.16	313.03	3.85	312.34	3.10	313.09	3.33	312.86	--	--	3.15	313.04	--	--	3.62	312.57	3.57	312.62	3.56	312.64
OW10	Overburden and Bedrock Contact Zone	1.80	4.85	315.53	316.22	2.48	313.05	2.57	312.96	2.50	313.03	2.73	312.80	--	--	2.56	312.97	2.84	312.69	3.00	312.53	2.89	312.64	2.87	312.66
OW11-I	Overburden and Bedrock Contact Zone	1.60	4.65	315.41	316.04	2.38	313.03	2.42	312.99	2.38	313.03	2.71	312.70	--	--	2.41	313.00	2.76	312.65	2.90	312.51	2.80	312.61	2.71	312.70
OW11-II	Overburden and Bedrock Contact Zone	6.28	7.80	315.45	316.13	2.50	312.95	2.29	313.16	2.43	313.02	2.67	312.78	--	--	2.48	312.97	2.72	312.73	2.86	312.59	2.79	312.66	2.75	312.70
OW12	Overburden and Bedrock Contact Zone	1.76	4.81	315.53	316.22	2.42	313.11	1.42	314.11	2.45	313.08	2.73	312.80	--	--	2.49	313.04	2.72	312.81	2.90	312.63	2.83	312.70	2.74	312.79
OW13	Overburden and Bedrock Contact Zone	6.48	8.00	316.52	317.30	3.47	313.05	3.51	313.01	3.43	313.09	3.68	312.84	--	--	3.49	313.03	3.81	312.71	3.97	312.55	3.92	312.60	3.88	312.64
OW14	Overburden and Bedrock Contact Zone	6.29	7.81	316.43	317.25	3.22	313.21	--	--	3.22	313.21	3.56	312.87	--	--	3.34	313.09	3.63	312.80	3.89	312.54	3.86	312.58	3.78	312.65
OW15	Overburden and Bedrock Contact Zone	1.75	4.80	315.15	315.85	2.02	313.13	1.90	313.25	1.98	313.17	2.23	312.92	--	--	2.10	313.05	2.26	312.89	2.39	312.76	2.33	312.82	2.30	312.85
OW16	Overburden and Bedrock Contact Zone	1.82	4.87	315.14	315.88	1.98	313.16	1.33	313.81	2.06	313.09	2.24	312.90	--	--	2.07	313.07	2.27	312.87	2.40	312.74	2.33	312.81	2.31	312.83
OW17	Overburden and Bedrock Contact Zone	1.79	4.84	315.62	316.36	1.66	313.96	1.98	313.64	1.68	313.94	2.09	313.53	--	--	1.74	313.88	--	--	2.45	313.17	2.29	313.33	1.93	313.69
OW18-I	Overburden and Bedrock Contact Zone	1.81	4.86	316.47	316.35	2.66	313.81	2.65	313.82	2.71	313.76	2.91	313.56	--	--	2.74	313.73	2.86	313.61	2.98	313.49	3.30	313.17	2.97	313.51
OW18-II	Eramosa Formation	6.32	7.84	316.47	316.36	3.08	313.39	3.13	313.34	3.06	313.41	3.46	313.01	--	--	3.21	313.26	3.52	312.95	3.84	312.63	3.86	312.62	3.81	312.66
OW19	Overburden and Bedrock Contact Zone	1.77	4.82	316.48	316.39	2.53	313.95	2.67	313.81	2.56	313.92	2.97	313.51	--	--	2.63	313.85	2.90	313.58	2.85	313.63	3.28	313.20	2.82	313.66
OW20-I	Decommissioned	2.53	5.58	316.30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OW21-I	Decommissioned	2.02	5.07	315.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OW22S	Overburden and Bedrock Contact Zone	1.36	4.10	315.20	316.03	1.22	313.98	1.69	313.51	1.29	313.91	1.66	313.54	--	--	1.32	313.88	1.93	313.27	2.17	313.03	1.98	313.22	1.47	313.73
OW22D	Eramosa Formation	6.71	7.47	315.18	315.96	2.17	313.01	--	--	2.19	312.99	2.41	312.77	--	--	2.27	312.91	2.57	312.61	2.73	312.45	2.63	312.56	2.62	312.56
OW23S	Overburden and Bedrock Contact Zone	2.52	5.26	316.48	316.37	2.73	313.75	2.81	313.67	2.65	313.83	3.05	313.43	--	--	2.67	313.81	3.11	313.37	3.71	312.77	3.75	312.73	3.55	312.93
OW23D	Overburden and Bedrock Contact Zone	6.55	7.77	316.49	316.42	3.46	313.03	3.42	313.07	3.46	313.03	3.69	312.80	--	--	3.54	312.95	3.84	312.65	3.98	312.51	3.86	312.63	3.84	312.65
OW24S	Overburden and Bedrock Contact Zone	2.60	5.34	316.47	316.40	3.10	313.37	3.14	313.33	3.13	313.34	--	--	3.38	313.09	3.30	313.17	3.40	313.07	3.69	312.78	3.79	312.68	3.64	312.83
OW24D	Overburden and Bedrock Contact Zone	6.55	7.77	316.46	316.40	--	--	--	--	3.36	313.10	--	--	3.46	313.00	3.36	313.10	3.49	312.97	3.81	312.65	3.77	312.69	3.82	312.64
OW25	Overburden and Bedrock Contact Zone	1.98	4.72	315.32	316.08	2.29	313.03	1.93	313.39	2.27	313.05	2.48	312.84	--	--	3.04	312.28	2.57	312.75	2.72	312.60	2.64	312.68	2.53	312.79
OW26S	Overburden and Bedrock Contact Zone	3.08	4.60	315.53	316.34	2.47	313.06	2.52	313.01	2.56	312.97	2.77	312.76	--	--	2.93	312.60	--	--	3.01	312.52	2.89	312.64	2.92	312.61
OW26D	Eramosa Formation	10.28	11.80	315.48	316.26	2.47	313.01	3.27	312.21	2.51	312.97	2.72	312.76	--	--	2.50	312.98	2.81	312.67	2.96	312.52	2.83	312.65	2.87	312.61
OW31	Goat Island Formation	28.90	33.32	316.46	317.60	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.71	312.75	3.74	312.72
OW07-31*	Overburden and Bedrock Contact Zone	1.50	6.22	315.00	315.80	1.75	313.25	1.38	313.62	1.89	313.11	2.12	312.88	--	--	1.96	313.04	2.17	312.83	2.34	312.66	2.24	312.76	2.22	312.78
OW07-32*	Overburden and Bedrock Contact Zone	3.17	6.22	315.55	316.22	2.05	313.50	2.39	313.16	2.51	313.04	2.72	312.83	--	--	2.56	312.99	2.81	312.74	2.96	312.59	2.88	312.67	2.88	312.67
OW07-33*	Overburden and Bedrock Contact Zone	3.10	6.15	315.36	316.23	2.30	313.06	2.13	313.23	2.30	313.06	2.52	312.84	--	--	2.37	312.99	2.62	312.74	2.77	312.59	2.69	312.68	2.68	312.68
OW07-34S	Overburden and Bedrock Contact Zone	1.55	4.60	315.65	316.45	2.54	313.11	2.63	313.02	2.74	312.91	2.95	312.70	--	--	2.79	312.86	3.04	312.61	3.18	312.47	2.98	312.67	2.96	312.69
OW07-34D*	Overburden and Bedrock Contact Zone	6.12	9.17	315.53	316.31	2.19	313.34	3.35	312.18	2.48	313.05	2.69	312.84	--	--	2.54	312.99	2.78	312.75	2.93	312.60	2.88	312.65	2.87	312.66
OW07-37*	Overburden and Bedrock Contact Zone	3.10	6.15	315.63	316.35	2.38	313.25	2.21	313.42	2.39	313.24	2.61	313.02	--	--	2.44	313.19	2.69	312.94	2.85	312.78	2.95	312.68	2.94	312.69
OW07-38	Overburden and Bedrock Contact Zone	1.79	4.84	315.79	316.61	1.89	313.90	1.23	314.56	1.99	313.80	2.42	313.37	--	--	2.05	313.74	--	--	2.75	313.04	2.63	313.17	2.30	313.49
OW13-39S	Overburden and Bedrock Contact Zone	3.04	6.09	316.50	317.40	--	--	--	--	2.91	313.59	3.37	313.13	2.50	314.00	2.96	313.54	3.81	312.69	3.97	312.53	3.57	312.93	3.40	313.10
OW13-39D	Eramosa Formation	10.68	12.20	316.51	317.28	--	--	--	--	3.40	313.11	--	--	3.62	312.89	3.48	313.03	3.23	313.28	3.52	312.99	4.01	312.50	3.99	312.52
MW17-100S	Overburden and Bedrock Contact Zone	3.38	4.90	315.56	316.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.19	313.37
MW17-101D	Overburden and Bedrock Contact Zone	6.30	7.82	315.25	316.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.65	312.60
MW17-101S	Overburden and Bedrock Contact Zone	1.22	4.27	315.24	316.13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.30	312.94
MW17-102D	Eramosa Formation	13.77	15.29	315.41	316.21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.76	312.66
MW17-103D	Overburden and Bedrock Contact Zone	7.32	8.84	315.54	316.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.88	312.67

Table 6-2b. Groundwater Measurements

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Well ID	Unit	Top of Screen (mbgs)	Bottom of Screen (mbgs)	Ground Elevation (masl)	Top of Riser Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)
						8/20/2018		12/18/2018		3/26/2019		7/3/2019		10/1/2019		12/3/2019		2/21/2020	
OW01-I	Decommissioned	1.52	3.96	315.75	316.46	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OW01-II	Decommissioned	6.31	7.83	315.60	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OW02	Overburden and Bedrock Contact Zone	0.91	3.96	315.26	315.95	1.92	313.34	1.65	313.61	1.39	313.87	1.68	313.58	2.18	313.08	1.55	313.71	1.75	313.51
OW03-I	Overburden and Bedrock Contact Zone	1.07	3.35	315.39	316.15	2.68	312.71	2.27	313.12	1.78	313.61	2.33	313.06	2.72	312.67	2.06	313.33	2.35	313.04
OW03-II	Overburden and Bedrock Contact Zone	6.33	7.85	315.55	316.17	2.90	312.65	2.41	313.14	2.50	313.05	2.63	312.92	2.96	312.59	2.54	313.01	--	--
OW04	Overburden and Bedrock Contact Zone	1.27	3.10	315.93	316.58	--	--	--	--	2.96	312.97	3.13	312.80	--	--	3.02	312.91	3.13	312.80
OW05	Decommissioned	2.06	4.34	314.90	315.82	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OW09-I	Overburden and Bedrock Contact Zone	1.79	4.84	316.27	316.96	3.74	312.54	3.50	312.77	3.29	312.98	3.47	312.80	3.70	312.57	3.37	312.90	3.43	312.85
OW09-II	Overburden and Bedrock Contact Zone	6.33	7.85	316.19	316.94	3.64	312.55	3.44	312.75	3.27	312.92	3.41	312.78	3.62	312.57	3.30	312.89	3.37	312.83
OW10	Overburden and Bedrock Contact Zone	1.80	4.85	315.53	316.22	2.97	312.56	2.75	312.78	2.57	312.96	2.71	312.82	2.95	312.58	2.61	312.92	2.72	312.81
OW11-I	Overburden and Bedrock Contact Zone	1.60	4.65	315.41	316.04	2.87	312.55	2.50	312.91	2.08	313.33	2.58	312.83	2.85	312.56	2.39	313.02	2.50	312.91
OW11-II	Overburden and Bedrock Contact Zone	6.28	7.80	315.45	316.13	2.87	312.58	2.63	312.82	2.51	312.94	2.62	312.83	2.84	312.61	2.52	312.93	2.62	312.83
OW12	Overburden and Bedrock Contact Zone	1.76	4.81	315.53	316.22	2.90	312.63	2.59	312.94	2.34	313.19	2.59	312.94	2.89	312.64	2.48	313.05	2.60	312.93
OW13	Overburden and Bedrock Contact Zone	6.48	8.00	316.52	317.30	3.98	312.54	3.77	312.75	3.49	313.03	3.75	312.77	3.95	312.57	3.63	312.89	3.73	312.79
OW14	Overburden and Bedrock Contact Zone	6.29	7.81	316.43	317.25	3.94	312.50	3.66	312.77	3.43	313.00	3.63	312.80	3.90	312.53	3.51	312.92	3.64	312.79
OW15	Overburden and Bedrock Contact Zone	1.75	4.80	315.15	315.85	2.42	312.73	2.18	312.97	1.99	313.16	2.14	313.01	2.38	312.77	2.05	313.10	2.17	312.98
OW16	Overburden and Bedrock Contact Zone	1.82	4.87	315.14	315.88	2.43	312.71	2.18	312.96	1.95	313.19	2.15	312.99	2.40	312.74	2.04	313.10	2.17	312.97
OW17	Overburden and Bedrock Contact Zone	1.79	4.84	315.62	316.36	2.28	313.34	1.78	313.84	1.54	314.08	1.88	313.74	2.41	313.21	1.70	313.92	1.87	313.75
OW18-I	Overburden and Bedrock Contact Zone	1.81	4.86	316.47	316.35	3.42	313.05	2.84	313.63	2.64	313.83	2.93	313.54	3.39	313.08	--	--	--	--
OW18-II	Eramosa Formation	6.32	7.84	316.47	316.36	3.93	312.54	3.76	312.71	3.48	312.99	3.65	312.82	3.88	312.59	3.55	312.92	3.62	312.85
OW19	Overburden and Bedrock Contact Zone	1.77	4.82	316.48	316.39	3.38	313.11	2.68	313.80	2.39	314.09	2.81	313.67	3.34	313.14	2.58	313.90	2.70	313.78
OW20-I	Decommissioned	2.53	5.58	316.30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OW21-I	Decommissioned	2.02	5.07	315.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OW22S	Overburden and Bedrock Contact Zone	1.36	4.10	315.20	316.03	1.94	313.26	1.36	313.84	1.12	314.08	1.49	313.71	2.17	313.03	1.32	313.88	1.41	313.79
OW22D	Eramosa Formation	6.71	7.47	315.18	315.96	2.71	312.48	2.53	312.65	2.44	312.74	2.47	312.71	2.68	312.50	2.36	312.82	2.46	312.72
OW23S	Overburden and Bedrock Contact Zone	2.52	5.26	316.48	316.37	3.88	312.61	3.40	313.08	3.06	313.42	2.36	314.12	3.39	313.09	2.61	313.87	3.37	313.11
OW23D	Overburden and Bedrock Contact Zone	6.55	7.77	316.49	316.42	3.95	312.54	3.72	312.77	3.53	312.96	3.70	312.79	3.90	312.59	3.57	312.92	3.69	312.80
OW24S	Overburden and Bedrock Contact Zone	2.60	5.34	316.47	316.40	3.88	312.60	3.52	312.95	3.32	313.15	3.50	312.97	3.84	312.63	3.41	313.06	3.52	312.95
OW24D	Overburden and Bedrock Contact Zone	6.55	7.77	316.46	316.40	3.85	312.61	3.65	312.81	3.38	313.08	3.63	312.83	3.82	312.64	3.49	312.97	3.50	312.96
OW25	Overburden and Bedrock Contact Zone	1.98	4.72	315.32	316.08	2.73	312.59	2.51	312.81	2.39	312.93	2.47	312.85	2.71	312.61	2.37	312.95	2.50	312.82
OW26S	Overburden and Bedrock Contact Zone	3.08	4.60	315.53	316.34	2.97	312.56	2.80	312.73	2.65	312.88	2.71	312.82	--	--	2.62	312.91	2.76	312.77
OW26D	Eramosa Formation	10.28	11.80	315.48	316.26	2.91	312.58	2.70	312.78	2.60	312.88	2.65	312.83	2.88	312.60	2.57	312.91	2.68	312.80
OW31	Goat Island Formation	28.90	33.32	316.46	317.60	3.80	312.67	3.70	312.76	3.45	313.01	3.86	312.60	3.78	312.68	3.55	312.91	3.57	312.89
OW07-31*	Overburden and Bedrock Contact Zone	1.50	6.22	315.00	315.80	2.33	312.67	2.11	312.89	1.95	313.05	2.08	312.92	2.32	312.68	1.99	313.01	2.10	312.90
OW07-32*	Overburden and Bedrock Contact Zone	3.17	6.22	315.55	316.22	2.97	312.58	2.75	312.80	2.59	312.96	2.71	312.84	2.94	312.61	2.61	312.94	2.73	312.82
OW07-33*	Overburden and Bedrock Contact Zone	3.10	6.15	315.36	316.23	2.76	312.60	2.55	312.81	2.39	312.97	2.51	312.85	2.74	312.62	2.41	312.95	2.54	312.82
OW07-34S	Overburden and Bedrock Contact Zone	1.55	4.60	315.65	316.45	3.06	312.60	2.84	312.81	2.69	312.96	2.80	312.86	3.03	312.62	2.71	312.94	2.83	312.82
OW07-34D*	Overburden and Bedrock Contact Zone	6.12	9.17	315.53	316.31	2.97	312.56	2.75	312.78	2.59	312.94	2.71	312.82	2.94	312.59	2.61	312.92	2.73	312.80
OW07-37*	Overburden and Bedrock Contact Zone	3.10	6.15	315.63	316.35	3.03	312.60	2.81	312.82	2.65	312.98	2.77	312.86	3.01	312.62	2.67	312.96	2.80	312.83
OW07-38	Overburden and Bedrock Contact Zone	1.79	4.84	315.79	316.61	2.73	313.06	2.14	313.65	1.75	314.04	2.24	313.55	2.78	313.01	2.00	313.79	2.26	313.53
OW13-39S	Overburden and Bedrock Contact Zone	3.04	6.09	316.50	317.40	--	--	3.23	313.27	2.99	313.51	3.27	313.23	--	--	3.15	313.35	3.27	313.23
OW13-39D	Eramosa Formation	10.68	12.20	316.51	317.28	4.09	312.43	3.90	312.61	3.70	312.81	3.89	312.62	4.05	312.46	3.75	312.76	3.84	312.68
MW17-100S	Overburden and Bedrock Contact Zone	3.38	4.90	315.56	316.22	2.66	312.90	2.30	313.26	1.57	313.99	2.12	313.44	2.73	312.83	1.87	313.69	2.14	313.42
MW17-101D	Overburden and Bedrock Contact Zone	6.30	7.82	315.25	316.01	2.74	312.51	2.55	312.70	2.36	312.89	2.51	312.74	2.71	312.54	2.38	312.87	2.14	313.11
MW17-101S	Overburden and Bedrock Contact Zone	1.22	4.27	315.24	316.13	2.47	312.78	1.98	313.26	1.63	313.61	2.03	313.21	2.51	312.73	1.82	313.42	2.38	312.86
MW17-102D	Eramosa Formation	13.77	15.29	315.41	316.21	2.85	312.56	2.63	312.78	2.38	313.03	--	--	--	--	2.50	312.91	2.61	312.80
MW17-103D	Overburden and Bedrock Contact Zone	7.32	8.84	315.54	316.31	2.97	312.58	2.75	312.79	2.58	312.96	2.72	312.82	2.95	312.59	2.61	312.93	2.74	312.80

Table 6-2b. Groundwater Measurements

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Well ID	Unit	Top of Screen (mbgs)	Bottom of Screen (mbgs)	Ground Elevation (masl)	Top of Riser Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)
						3/23/2010		6/3/2010		10/6/2010		12/9/2010		6/16/2011		9/19/2011		12/5/2011		6/28/2012		12/10/2012		8/23/2013	
MW17-103S	Overburden and Bedrock Contact Zone	2.44	3.96	315.54	316.30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW17-104D	Overburden and Bedrock Contact Zone	6.10	7.62	315.60	316.40	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW17-104S	Overburden and Bedrock Contact Zone	1.22	3.66	315.61	316.39	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW17-105D	Overburden and Bedrock Contact Zone	6.93	8.46	316.02	316.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW17-105S	Overburden and Bedrock Contact Zone	3.20	4.72	316.06	316.84	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-105G	Eramosa Formation	16.97	18.49	315.91	316.76	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW17-106D	Eramosa Formation	7.01	8.53	315.40	316.34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW17-106S	Overburden and Bedrock Contact Zone	3.05	4.57	315.43	316.30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW17-107S	Overburden and Bedrock Contact Zone	2.72	4.85	315.30	316.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-107D	Eramosa Formation	18.59	20.12	315.39	316.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW17-108S	Overburden and Bedrock Contact Zone	1.93	4.98	316.36	317.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW17-109S	Overburden and Bedrock Contact Zone	2.79	4.32	315.47	316.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW17-110S	Overburden and Bedrock Contact Zone	3.00	4.52	315.70	316.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW17-111S	Overburden and Bedrock Contact Zone	3.43	4.95	315.42	316.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-112S	Overburden and Bedrock Contact Zone	3.42	4.95	314.98	315.90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-112D	Overburden and Bedrock Contact Zone	6.40	7.92	315.00	315.95	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-112G	Eramosa Formation	19.35	20.88	315.00	315.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-113S	Overburden and Bedrock Contact Zone	3.37	4.90	315.12	316.09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-113D	Eramosa Formation	18.29	19.81	315.10	315.90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-114S	Overburden and Bedrock Contact Zone	3.37	4.90	315.15	316.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-114D	Eramosa Formation	19.20	20.73	315.13	315.89	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-115S	Overburden and Bedrock Contact Zone	3.20	4.72	315.26	316.25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-115D	Eramosa Formation	19.20	20.73	315.17	315.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-116S	Overburden and Bedrock Contact Zone	2.51	4.03	315.45	316.51	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-116D	Eramosa Formation	6.50	8.02	315.45	316.51	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-117S	Overburden and Bedrock Contact Zone	3.35	4.87	315.36	316.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-118S	Overburden and Bedrock Contact Zone	3.25	4.77	315.65	316.66	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-119S	Overburden and Bedrock Contact Zone	3.45	4.97	315.61	316.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-119D	Eramosa Formation	16.89	18.42	315.58	316.47	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-120D	Eramosa Formation	18.59	20.11	315.55	316.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-121S	Overburden and Bedrock Contact Zone	3.12	4.64	315.37	316.34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-121D	Eramosa Formation	16.33	17.85	315.38	316.40	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-122D	Eramosa Formation	12.44	13.96	315.39	316.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-122G	Eramosa Formation	19.51	21.03	315.36	316.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-123S	Overburden and Bedrock Contact Zone	3.40	4.92	315.69	316.62	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-123D	Eramosa Formation	18.79	20.32	315.60	316.58	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-124S	Overburden and Bedrock Contact Zone	3.55	5.08	315.68	316.67	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-125S	Overburden and Bedrock Contact Zone	4.26	5.79	315.33	316.29	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-126D	Overburden and Bedrock Contact Zone	6.45	7.97	315.30	316.28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-127S	Overburden and Bedrock Contact Zone	3.42	4.95	315.33	316.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-128D	Eramosa Formation	18.74	20.26	316.46	317.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-129D	Overburden and Bedrock Contact Zone	7.97	9.49	316.31	317.27	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-130D	Eramosa Formation	6.40	7.92	316.44	317.52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-131S	Overburden and Bedrock Contact Zone	3.20	4.72	315.47	316.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-132D	Eramosa Formation	7.97	9.49	316.44	317.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-133D	Eramosa Formation	17.17	18.69	315.41	316.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-134S	Overburden and Bedrock Contact Zone	2.74	4.27	315.41	316.24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-2b. Groundwater Measurements

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Well ID	Unit	Top of Screen (mbgs)	Bottom of Screen (mbgs)	Ground Elevation (masl)	Top of Riser Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)
						10/24/2013		7/8/2014		10/21/2014		9/21/2015		9/29/2015		11/19/2015		8/25/2016		10/24/2016		8/28/2017		12/1/2017	
MW17-103S	Overburden and Bedrock Contact Zone	2.44	3.96	315.54	316.30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.74	312.80
MW17-104D	Overburden and Bedrock Contact Zone	6.10	7.62	315.60	316.40	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.42	313.18
MW17-104S	Overburden and Bedrock Contact Zone	1.22	3.66	315.61	316.39	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.97	313.64
MW17-105D	Overburden and Bedrock Contact Zone	6.93	8.46	316.02	316.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.41	312.61
MW17-105S	Overburden and Bedrock Contact Zone	3.20	4.72	316.06	316.84	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.46	312.61
MW18-105G	Eramosa Formation	16.97	18.49	315.91	316.76	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW17-106D	Eramosa Formation	7.01	8.53	315.40	316.34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.48	312.92
MW17-106S	Overburden and Bedrock Contact Zone	3.05	4.57	315.43	316.30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.26	313.17
MW17-107S	Overburden and Bedrock Contact Zone	2.72	4.85	315.30	316.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.57	312.73
MW18-107D	Eramosa Formation	18.59	20.12	315.39	316.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW17-108S	Overburden and Bedrock Contact Zone	1.93	4.98	316.36	317.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.59	312.77
MW17-109S	Overburden and Bedrock Contact Zone	2.79	4.32	315.47	316.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.90	313.57
MW17-110S	Overburden and Bedrock Contact Zone	3.00	4.52	315.70	316.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.16	313.54
MW17-111S	Overburden and Bedrock Contact Zone	3.43	4.95	315.42	316.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.66	312.76
MW18-112S	Overburden and Bedrock Contact Zone	3.42	4.95	314.98	315.90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-112D	Overburden and Bedrock Contact Zone	6.40	7.92	315.00	315.95	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-112G	Eramosa Formation	19.35	20.88	315.00	315.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-113S	Overburden and Bedrock Contact Zone	3.37	4.90	315.12	316.09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-113D	Eramosa Formation	18.29	19.81	315.10	315.90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-114S	Overburden and Bedrock Contact Zone	3.37	4.90	315.15	316.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-114D	Eramosa Formation	19.20	20.73	315.13	315.89	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-115S	Overburden and Bedrock Contact Zone	3.20	4.72	315.26	316.25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-115D	Eramosa Formation	19.20	20.73	315.17	315.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-116S	Overburden and Bedrock Contact Zone	2.51	4.03	315.45	316.51	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-116D	Eramosa Formation	6.50	8.02	315.45	316.51	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-117S	Overburden and Bedrock Contact Zone	3.35	4.87	315.36	316.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-118S	Overburden and Bedrock Contact Zone	3.25	4.77	315.65	316.66	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-119S	Overburden and Bedrock Contact Zone	3.45	4.97	315.61	316.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-119D	Eramosa Formation	16.89	18.42	315.58	316.47	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-120D	Eramosa Formation	18.59	20.11	315.55	316.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-121S	Overburden and Bedrock Contact Zone	3.12	4.64	315.37	316.34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-121D	Eramosa Formation	16.33	17.85	315.38	316.40	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-122D	Eramosa Formation	12.44	13.96	315.39	316.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-122G	Eramosa Formation	19.51	21.03	315.36	316.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-123S	Overburden and Bedrock Contact Zone	3.40	4.92	315.69	316.62	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-123D	Eramosa Formation	18.79	20.32	315.60	316.58	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-124S	Overburden and Bedrock Contact Zone	3.55	5.08	315.68	316.67	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-125S	Overburden and Bedrock Contact Zone	4.26	5.79	315.33	316.29	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-126D	Overburden and Bedrock Contact Zone	6.45	7.97	315.30	316.28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-127S	Overburden and Bedrock Contact Zone	3.42	4.95	315.33	316.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-128D	Eramosa Formation	18.74	20.26	316.46	317.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-129D	Overburden and Bedrock Contact Zone	7.97	9.49	316.31	317.27	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-130D	Eramosa Formation	6.40	7.92	316.44	317.52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-131S	Overburden and Bedrock Contact Zone	3.20	4.72	315.47	316.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-132D	Eramosa Formation	7.97	9.49	316.44	317.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-133D	Eramosa Formation	17.17	18.69	315.41	316.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-134S	Overburden and Bedrock Contact Zone	2.74	4.27	315.41	316.24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-2b. Groundwater Measurements

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Well ID	Unit	Top of Screen (mbgs)	Bottom of Screen (mbgs)	Ground Elevation (masl)	Top of Riser Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)
						8/20/2018		12/18/2018		3/26/2019		7/3/2019		10/1/2019		12/3/2019		2/21/2020	
MW17-103S	Overburden and Bedrock Contact Zone	2.44	3.96	315.54	316.30	2.93	312.61	2.58	312.96	2.31	313.23	2.61	312.93	2.94	312.60	2.41	313.13	2.64	312.90
MW17-104D	Overburden and Bedrock Contact Zone	6.10	7.62	315.60	316.40	2.71	312.89	2.33	313.27	2.02	313.59	2.34	313.26	2.78	312.82	2.19	313.41	2.34	313.27
MW17-104S	Overburden and Bedrock Contact Zone	1.22	3.66	315.61	316.39	2.43	313.18	1.81	313.80	1.52	314.09	1.94	313.67	2.55	313.06	1.75	313.86	1.90	313.71
MW17-105D	Overburden and Bedrock Contact Zone	6.93	8.46	316.02	316.80	3.53	312.49	3.34	312.68	3.16	312.86	3.26	312.76	3.50	312.52	3.20	312.82	3.29	312.73
MW17-105S	Overburden and Bedrock Contact Zone	3.20	4.72	316.06	316.84	3.51	312.56	3.29	312.77	3.09	312.97	3.32	312.74	3.49	312.57	3.15	312.91	3.25	312.81
MW18-105G	Eramosa Formation	16.97	18.49	315.91	316.76	--	--	3.29	312.62	3.10	312.81	3.25	312.66	3.42	312.49	3.14	312.77	3.23	312.69
MW17-106D	Eramosa Formation	7.01	8.53	315.40	316.34	2.69	312.71	2.36	313.04	2.07	313.33	2.09	313.31	2.72	312.68	1.89	313.51	2.36	313.04
MW17-106S	Overburden and Bedrock Contact Zone	3.05	4.57	315.43	316.30	2.64	312.79	2.08	313.35	1.71	313.72	2.43	313.00	2.66	312.77	2.27	313.16	2.23	313.21
MW17-107S	Overburden and Bedrock Contact Zone	2.72	4.85	315.30	316.05	2.71	312.59	2.40	312.90	2.13	313.17	2.40	312.90	2.68	312.62	2.23	313.07	2.41	312.89
MW18-107D	Eramosa Formation	18.59	20.12	315.39	316.44	2.79	312.60	2.58	312.81	2.41	312.98	--	--	--	--	2.44	312.95	2.35	313.04
MW17-108S	Overburden and Bedrock Contact Zone	1.93	4.98	316.36	317.10	3.80	312.57	3.53	312.83	3.33	313.03	3.50	312.86	3.79	312.57	3.25	313.11	3.49	312.87
MW17-109S	Overburden and Bedrock Contact Zone	2.79	4.32	315.47	316.26	2.27	313.21	1.79	313.68	1.52	313.95	1.86	313.61	2.40	313.07	1.71	313.76	1.84	313.63
MW17-110S	Overburden and Bedrock Contact Zone	3.00	4.52	315.70	316.49	2.58	313.12	1.99	313.71	1.65	314.05	2.11	313.59	2.70	313.00	1.88	313.82	2.11	313.59
MW17-111S	Overburden and Bedrock Contact Zone	3.43	4.95	315.42	316.31	2.80	312.63	2.48	312.94	2.17	313.25	2.48	312.94	2.76	312.66	2.30	313.12	2.48	312.94
MW18-112S	Overburden and Bedrock Contact Zone	3.42	4.95	314.98	315.90	2.39	312.59	2.17	312.81	2.00	312.98	2.13	312.85	2.36	312.62	2.03	312.95	2.16	312.82
MW18-112D	Overburden and Bedrock Contact Zone	6.40	7.92	315.00	315.95	2.37	312.63	2.16	312.84	1.99	313.01	2.12	312.88	2.35	312.65	2.02	312.98	2.13	312.87
MW18-112G	Eramosa Formation	19.35	20.88	315.00	315.80	--	--	2.20	312.80	2.01	312.99	2.15	312.85	2.38	312.62	2.06	312.94	2.17	312.83
MW18-113S	Overburden and Bedrock Contact Zone	3.37	4.90	315.12	316.09	2.48	312.64	2.27	312.85	2.11	313.01	2.21	312.91	2.45	312.67	2.13	312.99	2.25	312.87
MW18-113D	Eramosa Formation	18.29	19.81	315.10	315.90	--	--	2.32	312.78	2.15	312.95	2.26	312.84	2.50	312.60	2.18	312.92	2.30	312.80
MW18-114S	Overburden and Bedrock Contact Zone	3.37	4.90	315.15	316.19	2.55	312.60	2.33	312.82	2.00	313.15	2.28	312.87	2.53	312.62	2.19	312.96	2.31	312.85
MW18-114D	Eramosa Formation	19.20	20.73	315.13	315.89	--	--	2.34	312.79	2.16	312.97	2.29	312.84	2.53	312.60	2.20	312.93	2.30	312.83
MW18-115S	Overburden and Bedrock Contact Zone	3.20	4.72	315.26	316.25	2.42	312.84	2.03	313.23	1.93	313.33	2.14	313.12	2.46	312.80	2.02	313.24	2.15	313.11
MW18-115D	Eramosa Formation	19.20	20.73	315.17	315.98	--	--	2.58	312.59	2.39	312.78	2.49	312.68	2.70	312.47	2.43	312.74	2.54	312.63
MW18-116S	Overburden and Bedrock Contact Zone	2.51	4.03	315.45	316.51	2.89	312.56	2.66	312.79	2.49	312.96	2.61	312.84	2.85	312.60	2.53	312.93	2.65	312.81
MW18-116D	Eramosa Formation	6.50	8.02	315.45	316.51	2.88	312.57	2.66	312.79	2.50	312.95	2.62	312.83	2.86	312.59	2.52	312.93	2.64	312.81
MW18-117S	Overburden and Bedrock Contact Zone	3.35	4.87	315.36	316.36	2.74	312.62	2.50	312.86	2.30	313.06	2.47	312.89	2.73	312.63	2.35	313.01	2.50	312.86
MW18-118S	Overburden and Bedrock Contact Zone	3.25	4.77	315.65	316.66	3.07	312.58	2.85	312.80	2.69	312.96	2.80	312.85	3.04	312.61	2.71	312.94	2.83	312.82
MW18-119S	Overburden and Bedrock Contact Zone	3.45	4.97	315.61	316.57	3.02	312.59	2.70	312.91	2.39	313.22	2.70	312.91	2.99	312.62	2.51	313.10	2.70	312.91
MW18-119D	Eramosa Formation	16.89	18.42	315.58	316.47	--	--	2.81	312.77	2.64	312.94	2.76	312.82	3.00	312.58	2.68	312.90	2.78	312.80
MW18-120D	Eramosa Formation	18.59	20.11	315.55	316.50	2.93	312.62	2.73	312.82	2.55	313.00	2.67	312.88	2.90	312.65	2.58	312.97	2.68	312.87
MW18-121S	Overburden and Bedrock Contact Zone	3.12	4.64	315.37	316.34	2.76	312.61	2.43	312.94	2.15	313.22	2.45	312.92	2.75	312.62	2.27	313.10	2.45	312.92
MW18-121D	Eramosa Formation	16.33	17.85	315.38	316.40	2.81	312.58	2.63	312.75	2.44	312.94	2.56	312.82	2.79	312.59	2.47	312.91	2.58	312.81
MW18-122D	Eramosa Formation	12.44	13.96	315.39	316.33	2.68	312.71	2.64	312.75	2.47	312.92	2.59	312.80	2.82	312.57	2.50	312.89	2.52	312.88
MW18-122G	Eramosa Formation	19.51	21.03	315.36	316.14	--	--	2.59	312.77	2.41	312.95	2.53	312.83	2.76	312.60	2.45	312.91	2.54	312.82
MW18-123S	Overburden and Bedrock Contact Zone	3.40	4.92	315.69	316.62	3.11	312.58	2.89	312.80	2.74	312.95	2.85	312.84	3.09	312.60	2.76	312.93	2.87	312.82
MW18-123D	Eramosa Formation	18.79	20.32	315.60	316.58	3.05	312.55	2.86	312.74	2.68	312.92	2.81	312.79	3.02	312.58	2.71	312.89	2.81	312.79
MW18-124S	Overburden and Bedrock Contact Zone	3.55	5.08	315.68	316.67	2.64	313.04	2.27	313.41	2.01	313.67	2.30	313.38	2.72	312.96	2.14	313.54	2.36	313.32
MW18-125S	Overburden and Bedrock Contact Zone	4.26	5.79	315.33	316.29	2.77	312.56	2.53	312.80	2.37	312.96	2.49	312.84	2.73	312.60	2.40	312.93	2.53	312.80
MW18-126D	Overburden and Bedrock Contact Zone	6.45	7.97	315.30	316.28	2.76	312.54	2.55	312.75	2.39	312.91	2.51	312.79	2.75	312.55	2.41	312.89	2.54	312.76
MW18-127S	Overburden and Bedrock Contact Zone	3.42	4.95	315.33	316.37	2.61	312.72	2.21	313.12	1.91	313.42	2.17	313.16	2.62	312.71	2.08	313.25	2.28	313.05
MW18-128D	Eramosa Formation	18.74	20.26	316.46	317.49	3.95	312.52	3.76	312.70	3.65	312.81	3.75	312.71	3.92	312.54	3.63	312.83	3.71	312.75
MW18-129D	Overburden and Bedrock Contact Zone	7.97	9.49	316.31	317.27	3.80	312.51	3.61	312.70	3.38	312.93	3.58	312.73	3.77	312.54	3.47	312.84	3.57	312.74
MW18-130D	Eramosa Formation	6.40	7.92	316.44	317.52	3.90	312.54	3.69	312.75	3.50	312.94	3.67	312.77	3.87	312.57	3.55	312.89	3.64	312.80
MW18-131S	Overburden and Bedrock Contact Zone	3.20	4.72	315.47	316.49	2.67	312.80	2.40	313.07	2.12	313.35	2.30	313.17	2.63	312.84	2.13	313.34	2.25	313.22
MW18-132D	Eramosa Formation	7.97	9.49	316.44	317.49	3.92	312.52	3.71	312.73	3.42	313.02	3.69	312.75	3.89	312.55	3.58	312.86	3.67	312.77
MW18-133D	Eramosa Formation	17.17	18.69	315.41	316.50	2.84	312.57	2.76	312.65	2.53	312.88	2.65	312.76	2.87	312.54	2.57	312.84	2.67	312.74
MW18-134S	Overburden and Bedrock Contact Zone	2.74	4.27	315.41	316.24	--	--	2.63	312.78	2.35	313.06	2.57	312.84	2.87	312.54	2.43	312.98	2.56	312.86

Table 6-2b. Groundwater Measurements

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Well ID	Unit	Top of Screen (mbgs)	Bottom of Screen (mbgs)	Ground Elevation (masl)	Top of Riser Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)
						3/23/2010		6/3/2010		10/6/2010		12/9/2010		6/16/2011		9/19/2011		12/5/2011		6/28/2012		12/10/2012		8/23/2013	
MW18-134D	Overburden and Bedrock Contact Zone	6.40	7.92	315.45	316.28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-135S	Overburden and Bedrock Contact Zone	4.27	5.79	316.53	317.34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-135D	Eramosa Formation	9.75	11.28	316.44	317.24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-136D	Eramosa Formation	11.58	13.11	315.58	316.34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-136G	Goat Island Formation	23.80	25.32	315.56	316.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW19-137S	Overburden and Bedrock Contact Zone	2.21	5.26	316.44	317.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Wells installed prior to 2017 were surveyed in 2004 by the City of Guelph; remaining wells were surveyed in 2018 and 2020 by Jacobs.

Historical water level data obtained from historical reports. See Table 3-1 for report details.
Historical depth to water measurements are based off calculated or reported water level elevations from previous reports and current ground surface elevations.

Wells noted as screened in overburden are partially or wholly screened in the overburden.

Notes:

* Monitoring wells OW07-31, OW07-32, OW07-33, OW07-34D, and OW07-37 are excluded from potentiometric contour maps as they are screened in deeper bedrock and the sand pack extends to the overburden. Therefore, the water levels in the monitoring wells are mixing shallow and deep groundwater zones and are not comparable to other monitoring wells.

Grey shading indicates wells that have been decomissioned or excavated
Orange shading indicates wells that have recorded NAPL. See Table 6-2b

ID = identification
m = metre(s)
masl = metre(s) above sea level
mbgs = metre(s) below ground surface
MW = monitoring well
OW = observation well

Table 6-2b. Groundwater Measurements

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Well ID	Unit	Top of Screen (mbgs)	Bottom of Screen (mbgs)	Ground Elevation (masl)	Top of Riser Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)
						10/24/2013		7/8/2014		10/21/2014		9/21/2015		9/29/2015		11/19/2015		8/25/2016		10/24/2016		8/28/2017		12/1/2017	
MW18-134D	Overburden and Bedrock Contact Zone	6.40	7.92	315.45	316.28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-135S	Overburden and Bedrock Contact Zone	4.27	5.79	316.53	317.34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-135D	Eramosa Formation	9.75	11.28	316.44	317.24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-136D	Eramosa Formation	11.58	13.11	315.58	316.34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-136G	Goat Island Formation	23.80	25.32	315.56	316.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW19-137S	Overburden and Bedrock Contact Zone	2.21	5.26	316.44	317.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Wells installed prior to 2017 were surveyed in 2004 by the City of Guelph; remaining wells were surveyed in 2018 and 2020 by Jacobs.

Historical water level data obtained from historical reports. See Table 3-1 for report details.
Historical depth to water measurements are based off calculated or reported water level elevations from previous reports and current ground surface elevations.

Wells noted as screened in overburden are partially or wholly screened in the overburden.

Notes:

* Monitoring wells OW07-31, OW07-32, OW07-33, OW07-34D, and OW07-37 are excluded from potentiometric contour maps as they are screened in deeper bedrock and the sand pack extends to the overburden. Therefore, the water levels in the monitoring wells are mixing shallow and deep groundwater zones and are not comparable to other monitoring wells.

Grey shading indicates wells that have been decomissioned or excavated
Orange shading indicates wells that have recorded NAPL. See Table 6-2b

ID = identification
m = metre(s)
masl = metre(s) above sea level
mbgs = metre(s) below ground surface
MW = monitoring well
OW = observation well

Table 6-2b. Groundwater Measurements

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Well ID	Unit	Top of Screen (mbgs)	Bottom of Screen (mbgs)	Ground Elevation (masl)	Top of Riser Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)	Water Level (mbgs)	Water Elevation (masl)
						8/20/2018		12/18/2018		3/26/2019		7/3/2019		10/1/2019		12/3/2019		2/21/2020	
MW18-134D	Overburden and Bedrock Contact Zone	6.40	7.92	315.45	316.28	--	--	2.78	312.67	2.59	312.86	2.72	312.73	2.94	312.52	2.64	312.81	2.73	312.72
MW18-135S	Overburden and Bedrock Contact Zone	4.27	5.79	316.53	317.34	--	--	3.73	312.80	3.45	313.08	4.54	311.99	3.97	312.56	3.52	313.01	3.54	312.99
MW18-135D	Eramosa Formation	9.75	11.28	316.44	317.24	--	--	3.79	312.65	3.59	312.85	3.74	312.70	3.92	312.52	3.62	312.82	3.72	312.72
MW18-136D	Eramosa Formation	11.58	13.11	315.58	316.34	--	--	2.88	312.70	2.71	312.87	2.83	312.75	3.04	312.54	2.73	312.85	2.84	312.75
MW18-136G	Goat Island Formation	23.80	25.32	315.56	316.36	--	--	2.67	312.89	2.70	312.86	2.86	312.70	3.04	312.52	2.74	312.83	2.83	312.73
MW19-137S	Overburden and Bedrock Contact Zone	2.21	5.26	316.44	317.31	--	--	--	--	--	--	3.55	312.89	3.90	312.54	3.46	312.98	3.57	312.87

Wells installed prior to 2017 were surveyed in 2004 by the City of Guelph; remaining wells were surveyed in 2018 and 2020 by Jacobs.

Historical water level data obtained from historical reports. See Table 3-1 for report details.
Historical depth to water measurements are based off calculated or reported water level elevations from previous reports and current ground surface elevations.

Wells noted as screened in overburden are partially or wholly screened in the overburden.

Notes:

* Monitoring wells OW07-31, OW07-32, OW07-33, OW07-34D, and OW07-37 are excluded from potentiometric contour maps as they are screened in deeper bedrock and the sand pack extends to the overburden. Therefore, the water levels in the monitoring wells are mixing shallow and deep groundwater zones and are not comparable to other monitoring wells.

Grey shading indicates wells that have been decomissioned or excavated
Orange shading indicates wells that have recorded NAPL. See Table 6-2b

ID = identification
m = metre(s)
masl = metre(s) above sea level
mbgs = metre(s) below ground surface
MW = monitoring well
OW = observation well

Table 6-2c. NAPL Measurements

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Well ID	Top of Screen (masl)	Bottom of Screen (masl)	Ground Elevation (masl)	Top of Riser Elevation (masl)	Water Level	NAPL Thickness	Water Level	NAPL Thickness	Water Level	NAPL Thickness	Water Level	NAPL Thickness	Water Level	NAPL Thickness	Water Level	NAPL Thickness	Water Level	NAPL Thickness	Water Level	NAPL Thickness	Water Level	NAPL Thickness	Water Level	NAPL Thickness	Water Level	NAPL Thickness	Water Level	NAPL Thickness
					(mbgs)	(m)	(mbgs)	(m)	(mbgs)	(m)	(mbgs)	(m)	(mbgs)	(m)	(mbgs)	(m)	(mbgs)	(m)	(mbgs)	(m)	(mbgs)	(m)	(mbgs)	(m)	(mbgs)	(m)	(mbgs)	(m)
					6/3/2010		10/6/2010		12/9/2010		6/16/2011		9/19/2011		6/28/2012		12/10/2012		8/23/2013		10/24/2013		7/8/2014		10/21/2014		9/21/2015	
OW23S	2.52	5.26	316.48	316.37	3.20	0.15	3.07	0.06	3.02	0.14	2.59	0.04	3.53	0.05	3.32	0.07	2.74	0.08	3.25	0.03	2.73	0.04	2.81	0.05	2.65	0.03	3.05	0.14
MW17-108S	1.93	4.98	316.36	317.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW18-135S	4.27	5.79	316.53	317.34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Wells installed prior to 2017 were surveyed in 2004 by the City of Guelph.
Historical water level and NAPL data obtained from reports (See list in Table 3-1).
Shallow aquifer is the overburden/bedrock contact to max of 5 mbgs.
Wells noted as screened in overburden are partially or wholly screened in the overburden.

Deeper groundwater zone is fractured bedrock.

Notes:

< = less than
ID = identification
m = metre(s)
masl = metre(s) above sea level
mbgs = metre(s) below ground surface
MW = monitoring well
OW = observation well

Table 6-2c. NAPL Measurements

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Well ID	Top of Screen (masl)	Bottom of Screen (masl)	Ground Elevation (masl)	Top of Riser Elevation (masl)	Water Level	NAPL Thickness	Water Level	NAPL Thickness	Water Level	NAPL Thickness	Water Level	NAPL Thickness	Water Level	NAPL Thickness	Water Level	NAPL Thickness	Water Level	NAPL Thickness	Water Level	NAPL Thickness	Water Level	NAPL Thickness	Water Level	NAPL Thickness	Water Level	NAPL Thickness	Water Level	NAPL Thickness
					(mbgs)	(m)	(mbgs)	(m)	(mbgs)	(m)	(mbgs)	(m)	(mbgs)	(m)	(mbgs)	(m)	(mbgs)	(m)	(mbgs)	(m)	(mbgs)	(m)	(mbgs)	(m)	(mbgs)	(m)	(mbgs)	(m)
					11/19/2015		8/25/2016		10/24/2016		8/28/2017		12/1/2017		8/20/2018		12/18/2018		3/26/2019		7/3/2019		10/1/2019		12/3/2019		2/21/2020	
OW23S	2.52	5.26	316.48	316.37	2.67	0.09	3.11	0.04	3.71	0.02	3.75	0.03	3.55	0.01	3.88	0.39	3.40	<0.005	3.06	--	2.36	0.02	3.39	0.50	2.61	0.97	3.37	<0.005
MW17-108S	1.93	4.98	316.36	317.10	--	--	--	--	--	--	--	--	3.59	0.00	3.80	0.13	3.53	<0.001	3.33	0.13	3.50	0.04	3.79	0.18	3.25	0.07	3.49	<0.001
MW18-135S	4.27	5.79	316.53	317.34	--	--	--	--	--	--	--	--	--	--	--	--	3.73	--	3.45	0.01	4.54	0.93	3.97	0.56	3.52	0.75	3.54	0.02

Wells installed prior to 2017 were surveyed in 2004 by the City of Guelph.
Historical water level and NAPL data obtained from reports (See list in Table 3-1).
Shallow aquifer is the overburden/bedrock contact to max of 5 mbgs.
Wells noted as screened in overburden are partially or wholly screened in the overburden.

Deeper groundwater zone is fractured bedrock.

Notes:

< = less than
ID = identification
m = metre(s)
masl = metre(s) above sea level
mbgs = metre(s) below ground surface
MW = monitoring well
OW = observation well

Table 6-3a. Single Well Response Test Results

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Well ID	Date of Test	Screen Top (mbgs)	Screen Bottom (mbgs)	Type of Test	Confined or Unconfined	Lithology	Analytical Test	Hydraulic Conductivity (m/s)	Average Well Hydraulic Conductivity (m/s)	Geometric Average - Unit Hydraulic Conductivity (m/s)	Geometric Average - Unit Hydraulic Conductivity (m/d)
MW17-101S	October 9, 2018	1.22	4.27	Falling	Unconfined	Guelph/StoneRoad	Bouwer & Rice, 1976	3.30E-05	5.17E-05	3.91E-05	3.38E+00
	October 9, 2018	1.22	4.27	Falling	Unconfined		Bouwer & Rice, 1976	3.20E-05			
	October 9, 2018	1.22	4.27	Falling	Unconfined		Bouwer & Rice, 1976	3.30E-05			
	October 9, 2018	1.22	4.27	Falling	Unconfined		Bouwer & Rice, 1976	3.30E-05			
	October 9, 2018	1.22	4.27	Rising	Unconfined	Guelph/StoneRoad	Bouwer & Rice, 1976	7.10E-05			
	October 9, 2018	1.22	4.27	Rising	Unconfined		Bouwer & Rice, 1976	7.20E-05			
	October 9, 2018	1.22	4.27	Rising	Unconfined		Bouwer & Rice, 1976	6.80E-05			
	October 9, 2018	1.22	4.27	Rising	Unconfined		Bouwer & Rice, 1976	7.20E-05			
MW17-104D	October 9, 2018	6.1	7.62	Falling	Unconfined	Guelph/StoneRoad	Bouwer & Rice, 1976	7.90E-07	7.05E-07		
	October 9, 2018	6.1	7.62	Rising	Unconfined		Bouwer & Rice, 1976	6.30E-07			
MW17-105D	October 9, 2018	6.93	8.46	Falling	Unconfined	Upper Reformatory Quarry (Eramosa)	Bouwer & Rice, 1976	9.20E-05	1.11E-04		
	October 9, 2018	6.93	8.46	Falling	Unconfined		Bouwer & Rice, 1976	1.10E-04			
	October 9, 2018	6.93	8.46	Falling	Unconfined		Bouwer & Rice, 1976	1.10E-04			
	October 9, 2018	6.93	8.46	Falling	Unconfined		Bouwer & Rice, 1976	1.10E-04			
	October 9, 2018	6.93	8.46	Rising	Unconfined	Upper Reformatory Quarry (Eramosa)	Bouwer & Rice, 1976	1.20E-04			
	October 9, 2018	6.93	8.46	Rising	Unconfined		Bouwer & Rice, 1976	1.20E-04			
	October 9, 2018	6.93	8.46	Rising	Unconfined		Bouwer & Rice, 1976	1.20E-04			
	October 9, 2018	6.93	8.46	Rising	Unconfined		Bouwer & Rice, 1976	1.10E-04			
MW17-101D	October 10, 2018	6.3	7.82	Falling	Unconfined	Upper Reformatory Quarry (Eramosa)	Bouwer & Rice, 1976	1.40E-04	2.88E-04		
	October 10, 2018	6.3	7.82	Falling	Unconfined		Bouwer & Rice, 1976	2.40E-04			
	October 10, 2018	6.3	7.82	Falling	Unconfined		Bouwer & Rice, 1976	2.60E-04			
	October 10, 2018	6.3	7.82	Rising	Unconfined	Upper Reformatory Quarry (Eramosa)	Bouwer & Rice, 1976	3.70E-04			
	October 10, 2018	6.3	7.82	Rising	Unconfined		Bouwer & Rice, 1976	3.70E-04			
	October 10, 2018	6.3	7.82	Rising	Unconfined		Bouwer & Rice, 1976	3.70E-04			
MW17-109S	October 9, 2018	2.79	4.32	Falling	Unconfined	Guelph/StoneRoad	Bouwer & Rice, 1976	1.70E-05	1.79E-05		
	October 9, 2018	2.79	4.32	Falling	Unconfined		Bouwer & Rice, 1976	1.80E-05			
	October 9, 2018	2.79	4.32	Rising	Unconfined	Guelph/StoneRoad	Bouwer & Rice, 1976	1.70E-05			
	October 9, 2018	2.79	4.32	Rising	Unconfined		Bouwer & Rice, 1976	1.80E-05			
	October 9, 2018	2.79	4.32	Rising	Unconfined		Bouwer & Rice, 1976	2.00E-05			
MW18-114S	October 9, 2018	3.37	4.9	Falling	Unconfined	Guelph/StoneRoad	Bouwer & Rice, 1976	1.60E-04	2.50E-04		
	October 9, 2018	3.37	4.9	Falling	Unconfined		Bouwer & Rice, 1976	2.40E-04			
	October 9, 2018	3.37	4.9	Rising	Unconfined	Guelph/StoneRoad	Bouwer & Rice, 1976	3.60E-04			
	October 9, 2018	3.37	4.9	Rising	Unconfined		Bouwer & Rice, 1976	2.60E-04			
	October 9, 2018	3.37	4.9	Rising	Unconfined		Bouwer & Rice, 1976	3.00E-04			
MW18-121S	October 9, 2018	3.12	4.64	Falling	Unconfined	Guelph/StoneRoad	Bouwer & Rice, 1976	1.00E-05	1.30E-05		
	October 9, 2018	3.12	4.64	Falling	Unconfined		Bouwer & Rice, 1976	7.80E-06			
	October 9, 2018	3.12	4.64	Falling	Unconfined		Bouwer & Rice, 1976	8.50E-06			
	October 9, 2018	3.12	4.64	Rising	Unconfined	Guelph/StoneRoad	Bouwer & Rice, 1976	1.60E-05			
	October 9, 2018	3.12	4.64	Rising	Unconfined		Bouwer & Rice, 1976	1.80E-05			
	October 9, 2018	3.12	4.64	Rising	Unconfined		Bouwer & Rice, 1976	1.80E-05			
OW09-I	October 10, 2018	1.79	4.84	Falling	Unconfined	Overburden/Guelph	Bouwer & Rice, 1976	7.10E-05	7.98E-05		
	October 10, 2018	1.79	4.84	Falling	Unconfined		Bouwer & Rice, 1976	8.20E-05			
	October 10, 2018	1.79	4.84	Rising	Unconfined	Overburden/Guelph	Bouwer & Rice, 1976	7.90E-05			
	October 10, 2018	1.79	4.84	Rising	Unconfined		Bouwer & Rice, 1976	9.00E-05			
	October 10, 2018	1.79	4.84	Rising	Unconfined		Bouwer & Rice, 1976	8.10E-05			

Table 6-3a. Single Well Response Test Results

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Well ID	Date of Test	Screen Top (mbgs)	Screen Bottom (mbgs)	Type of Test	Confined or Unconfined	Lithology	Analytical Test	Hydraulic Conductivity (m/s)	Average Well Hydraulic Conductivity (m/s)	Geometric Average - Unit Hydraulic Conductivity (m/s)	Geometric Average - Unit Hydraulic Conductivity (m/d)
OW09-II	October 10, 2018	6.33	7.85	Falling	Unconfined	Upper Reformatory Quarry (Eramosa)	Bouwer & Rice, 1976	8.20E-05	8.17E-05		
	October 10, 2018	6.33	7.85	Falling	Unconfined		Bouwer & Rice, 1976	8.20E-05			
	October 10, 2018	6.33	7.85	Falling	Unconfined		Bouwer & Rice, 1976	8.50E-05			
	October 10, 2018	6.33	7.85	Falling	Unconfined		Bouwer & Rice, 1976	8.60E-05			
	October 10, 2018	6.33	7.85	Rising	Unconfined	Upper Reformatory Quarry (Eramosa)	Bouwer & Rice, 1976	7.40E-05			
	October 10, 2018	6.33	7.85	Rising	Unconfined		Bouwer & Rice, 1976	7.90E-05			
	October 10, 2018	6.33	7.85	Rising	Unconfined		Bouwer & Rice, 1976	8.30E-05			
	October 10, 2018	6.33	7.85	Rising	Unconfined		Bouwer & Rice, 1976	8.30E-05			
OW23D	October 10, 2018	6.55	7.77	Falling	Unconfined	Upper Reformatory Quarry (Eramosa)	Bouwer & Rice, 1976	2.10E-04	3.06E-04		
	October 10, 2018	6.55	7.77	Falling	Unconfined		Bouwer & Rice, 1976	2.90E-04			
	October 10, 2018	6.55	7.77	Falling	Unconfined		Bouwer & Rice, 1976	2.80E-04			
	October 10, 2018	6.55	7.77	Rising	Unconfined	Upper Reformatory Quarry (Eramosa)	Bouwer & Rice, 1976	4.30E-04			
	October 10, 2018	6.55	7.77	Rising	Unconfined		Bouwer & Rice, 1976	4.30E-04			
	October 10, 2018	6.55	7.77	Rising	Unconfined		Bouwer & Rice, 1976	2.40E-04			
OW22D	October 10, 2018	6.71	7.47	Falling	Unconfined	Upper Reformatory Quarry (Eramosa)	Bouwer & Rice, 1976	8.30E-05	9.23E-05		
	October 10, 2018	6.71	7.47	Falling	Unconfined		Bouwer & Rice, 1976	9.60E-05			
	October 10, 2018	6.71	7.47	Falling	Unconfined		Bouwer & Rice, 1976	9.70E-05			
	October 10, 2018	6.71	7.47	Falling	Unconfined		Bouwer & Rice, 1976	9.70E-05			
	October 10, 2018	6.71	7.47	Rising	Unconfined	Upper Reformatory Quarry (Eramosa)	Bouwer & Rice, 1976	8.90E-05			
	October 10, 2018	6.71	7.47	Rising	Unconfined		Bouwer & Rice, 1976	9.10E-05			
	October 10, 2018	6.71	7.47	Rising	Unconfined		Bouwer & Rice, 1976	9.50E-05			
MW18-115D	December 20, 2018	19.2	20.73	Rising	Unconfined	Vinemount (Eramosa)	Bouwer & Rice, 1976	4.20E-08	4.20E-08	5.66E-07	4.89E-02
MW18-122D	October 9, 2018	12.44	13.96	Falling	Unconfined	Competent Reformatory Quarry (Eramosa)	Bouwer & Rice, 1976	8.00E-06	7.64E-06		
	October 9, 2018	12.44	13.96	Falling	Unconfined		Bouwer & Rice, 1976	7.50E-06			
	October 9, 2018	12.44	13.96	Falling	Unconfined		Bouwer & Rice, 1976	8.30E-06			
	October 9, 2018	12.44	13.96	Rising	Unconfined	Competent Reformatory Quarry (Eramosa)	Bouwer & Rice, 1976	6.80E-06			
	October 9, 2018	12.44	13.96	Rising	Unconfined		Bouwer & Rice, 1976	7.20E-06			
	October 9, 2018	12.44	13.96	Rising	Unconfined		Bouwer & Rice, 1976	8.10E-06			
MW18-136G	December 20, 2018	23.8	25.32	Falling	Confined	Goat Island Formation / Vinemount (Eramosa)	Bouwer & Rice, 1976	3.70E-05	3.68E-05	3.68E-05	3.18E+00
	December 20, 2018	23.8	25.32	Falling	Confined		Bouwer & Rice, 1976	3.70E-05			
	December 20, 2018	23.8	25.32	Falling	Confined		Bouwer & Rice, 1976	3.70E-05			
	December 20, 2018	23.8	25.32	Rising	Confined	Goat Island Formation / Vinemount (Eramosa)	Bouwer & Rice, 1976	3.60E-05			
	December 20, 2018	23.8	25.32	Rising	Confined		Bouwer & Rice, 1976	3.70E-05			
	December 20, 2018	23.8	25.32	Rising	Confined		Bouwer & Rice, 1976	3.70E-05			
OW31	June 4, 2018	28.9	33.32	Packer	Confined	Goat Island Formation	Bouwer & Rice, 1976	4.36E-07	3.39E-07	3.39E-07	2.93E-02
	June 4, 2018	28.9	33.32	Packer	Confined		Bouwer & Rice, 1976	2.77E-07			
	June 4, 2018	28.9	33.32	Packer	Confined		Bouwer & Rice, 1976	3.24E-07			

Notes:

ID = identification

m/s = metres per second

m/d = metres per day

mbgs = metre(s) below ground surface

Table 6-3b. Vertical Hydraulic Gradients

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Well Name	Scn Top Depth (m)	Scn Bot Depth (m)	Screened Unit	Z_Midpoint	Ztop	Zbottom	Head (masl) Dec 2017	Head Difference (m)	Gradient (m/m)	Head (masl) Aug 2018	Head Difference (m)	Gradient (m/m)	Head (masl) Dec 2018	Head Difference (m)	Gradient (m/m)	Head (masl) March 2019	Head Difference (m)	Gradient (m/m)
MW17-101S	1.22	4.27	Guelph/StoneRoad	312.50	314.02	310.97	312.94	0.34	0.080	312.78	0.26	0.062	313.26	0.56	0.130	313.61	0.72	0.167
MW17-101D	6.30	7.82	Reformatory Quarry (Eramosa)	308.19	308.95	307.43	312.60			312.51			312.70			312.89		
MW17-103S	2.44	3.96	Guelph/StoneRoad	312.34	313.10	311.58	312.80	0.14	0.028	312.61	0.04	0.007	312.96	0.17	0.035	313.23	0.27	0.055
MW17-103D	7.32	8.84	Reformatory Quarry (Eramosa)	307.46	308.22	306.70	312.67			312.58			312.79			312.96		
MW17-104S	1.22	3.66	Overburden/Guelph	313.17	314.39	311.95	313.64	0.46	0.105	313.18	0.29	0.065	313.80	0.53	0.120	314.09	0.50	0.114
MW17-104D	6.10	7.62	Guelph/StoneRoad	308.74	309.50	307.98	313.18			312.89			313.27			313.59		
MW17-105S	3.20	4.72	Guelph/StoneRoad	312.10	312.86	311.34	312.61	-0.01	-0.001	312.56	0.06	0.017	312.77	0.09	0.024	312.97	0.11	0.029
MW17-105D	6.93	8.46	Reformatory Quarry (Eramosa)	308.33	309.09	307.56	312.61			312.49			312.68			312.86		
MW18-105G	16.97	18.49	Vinemount (Eramosa)	298.18	298.94	297.42	-	-	-	-	-	-	312.62	0.15	0.011	312.81	0.16	0.011
MW17-106S	3.05	4.57	Guelph/StoneRoad	311.62	312.38	310.86	313.17	0.24	0.061	312.79	0.08	0.020	313.35	0.31	0.078	313.72	0.39	0.078
MW17-106D	7.01	8.53	Guelph/StoneRoad (Reformatory Quarry (Eramosa))	307.63	308.39	306.87	312.92			312.71			313.04			313.33		
MW17-107S	2.72	4.85	Guelph/StoneRoad	311.52	312.58	310.45	312.73	-	-	312.59	-0.01	-0.001	312.90	0.09	0.006	313.17	0.19	0.012
MW18-107D	18.59	20.12	Vinemount (Eramosa)	296.04	296.80	295.27	0.00			312.60			312.81			312.98		
MW18-112S	3.42	4.95	Guelph/StoneRoad	310.80	311.56	310.03	-	-		312.59	-0.04	-0.014	312.81	-0.03	-0.010	312.98	-0.03	-0.010
MW18-112D	6.40	7.92	Reformatory Quarry (Eramosa)	307.84	308.60	307.08	-			312.63			312.84			313.01		
MW18-112G	19.35	20.88	Vinemount (Eramosa)	294.88	295.65	294.12	-	-	-	-	-	-	312.80	0.01	0.001	312.99	-0.01	-0.001
MW18-113S	3.37	4.90	Guelph/StoneRoad	310.99	311.75	310.22	-	-	-	312.64	-	-	312.85	0.07	0.005	313.01	0.06	0.004
MW18-113D	18.29	19.81	Vinemount (Eramosa)	296.05	296.81	295.29	-			-			312.78			312.95		
MW18-114S	3.37	4.90	Guelph/StoneRoad	311.02	311.78	310.25	-	-	-	312.60	-	-	312.82	0.03	0.002	313.15	0.18	0.011
MW18-114D	19.20	20.73	Vinemount (Eramosa)	295.17	295.93	294.40	-			-			312.79			312.97		
MW18-115S	3.20	4.72	Guelph/StoneRoad	311.30	312.06	310.54	-	-	-	312.84	-	-	313.23	0.64	0.040	313.33	0.54	0.034
MW18-115D	19.20	20.73	Vinemount (Eramosa)	295.21	295.97	294.44	-			-			312.59			312.78		
MW18-116S	2.51	4.03	Guelph/StoneRoad	312.18	312.94	311.42	-	-	-	312.56	-0.01	-0.003	312.79	0.00	0.000	312.96	0.01	0.003
MW18-116D	6.50	8.02	Reformatory Quarry (Eramosa) (Guelph/ StoneRoad)	308.19	308.95	307.43	-			312.57			312.79			312.95		
MW18-119S	3.45	4.97	Guelph/StoneRoad	311.40	312.16	310.64	-	-	-	312.59	-	-	312.91	0.14	0.010	313.22	0.28	0.021
MW18-119D	16.89	18.42	Vinemount (Eramosa)	297.93	298.69	297.16	-			-			312.77			312.94		
MW18-121S	3.12	4.64	Guelph/StoneRoad	311.49	312.25	310.73	-	-	-	312.61	-	-	312.94	0.19	0.014	313.22	0.28	0.021
MW18-121D	16.33	17.85	Vinemount (Eramosa)	298.29	299.05	297.53	-			312.58			312.75			312.94		
MW18-122D	12.44	13.96	Reformatory Quarry (Eramosa)	302.19	302.95	301.43	-	-	-	312.54	-	-	312.75	-0.02	-0.003	312.92	-0.03	-0.004
MW18-122G	19.51	21.03	Vinemount (Eramosa)	295.09	295.85	294.33	-			-			312.77			312.95		
MW18-123S	3.40	4.92	Guelph/StoneRoad	311.53	312.29	310.77	-	-	-	312.58	-	-	312.80	0.06	0.004	312.95	0.03	0.002
MW18-123D	18.79	20.32	Vinemount (Eramosa)	296.04	296.81	295.28	-			312.55			312.74			312.92		
MW18-134S	2.74	4.27	Guelph/StoneRoad	311.90	312.67	311.14	-	-	-	-	-	-	312.78	0.11	0.030	313.06	0.20	0.055
MW18-134D	6.40	7.92	Reformatory Quarry (Eramosa)	308.29	309.05	307.53	-			-			312.67			312.86		
MW18-135S	4.27	5.79	Guelph/StoneRoad	311.50	312.26	310.74	-	-	-	-	-	-	312.80	0.15	0.027	313.09	0.24	0.043
MW18-135D	9.75	11.28	Reformatory Quarry (Eramosa)	305.92	306.69	305.16	-			-			312.65			312.85		
MW18-136D	11.58	13.11	Reformatory Quarry (Eramosa)	303.24	304.00	302.47	-	-	-	-	-	-	312.70	-0.19	-0.016	312.87	0.01	0.001
MW18-136G	23.80	25.32	Vinemount (Eramosa)/Goat Island	291.00	291.76	290.24	-			-			312.89			312.86		

Notes:
m = metre(s)
masl = metre(s) above sea level
m/m = metre(s) per metre

Table 6-3b. Vertical Hydraulic Gradients

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Well Name	Scn Top Depth (m)	Scn Bot Depth (m)	Screened Unit	Head (masl) July 2019	Head Difference (m)	Gradient (m/m)	Head (masl) September 2019	Head Difference (m)	Gradient (m/m)	Head (masl) December 2019	Head Difference (m)	Gradient (m/m)	Head (masl) February 2020	Head Difference (m)	Gradient (m/m)
MW17-101S	1.22	4.27	Guelph/StoneRoad	313.21	0.47	0.109	312.73	0.19	0.044	313.42	0.56	0.129	312.86	-0.25	-0.058
MW17-101D	6.30	7.82	Reformatory Quarry (Eramosa)	312.74			312.54			312.87			313.11		
MW17-103S	2.44	3.96	Guelph/StoneRoad	312.93	0.11	0.023	312.60	0.01	0.002	313.13	0.20	0.041	312.90	0.10	0.020
MW17-103D	7.32	8.84	Reformatory Quarry (Eramosa)	312.82			312.59			312.93			312.80		
MW17-104S	1.22	3.66	Overburden/Guelph	313.67	0.41	0.093	313.06	0.24	0.054	313.86	0.45	0.102	313.71	0.44	0.100
MW17-104D	6.10	7.62	Guelph/StoneRoad	313.26			312.82			313.41			313.27		
MW17-105S	3.20	4.72	Guelph/StoneRoad	312.74	-0.02	-0.005	312.57	0.05	0.013	312.91	0.09	0.024	312.81	0.08	0.023
MW17-105D	6.93	8.46	Reformatory Quarry (Eramosa)	312.76			312.52			312.82			312.73		
MW18-105G	16.97	18.49	Vinemount (Eramosa)	312.66	0.08	0.006	312.49	0.08	0.006	312.77	0.14	0.010	312.69	0.13	0.009
MW17-106S	3.05	4.57	Guelph/StoneRoad	313.00	-0.31	-0.078	312.77	0.09	0.023	313.16	-0.35	-0.087	313.21	0.17	0.041
MW17-106D	7.01	8.53	Guelph/StoneRoad (Reformatory Quarry (Eramosa))	313.31			312.68			313.51			313.04		
MW17-107S	2.72	4.85	Guelph/StoneRoad	312.90	-	-	312.62	-	-	313.07	0.12	0.008	312.89	-0.15	-0.010
MW18-107D	18.59	20.12	Vinemount (Eramosa)	-			-			312.95			313.04		
MW18-112S	3.42	4.95	Guelph/StoneRoad	312.85	-0.03	-0.010	312.62	-0.03	-0.010	312.95	-0.03	-0.010	312.82	-0.05	-0.015
MW18-112D	6.40	7.92	Reformatory Quarry (Eramosa)	312.88			312.65			312.98			312.87		
MW18-112G	19.35	20.88	Vinemount (Eramosa)	312.85	0.00	0.000	312.62	0.00	0.000	312.94	0.01	0.001	312.83	-0.01	-0.001
MW18-113S	3.37	4.90	Guelph/StoneRoad	312.91	0.07	0.005	312.67	0.07	0.005	312.99	0.07	0.005	312.87	0.07	0.005
MW18-113D	18.29	19.81	Vinemount (Eramosa)	312.84			312.60			312.92			312.80		
MW18-114S	3.37	4.90	Guelph/StoneRoad	312.87	0.03	0.002	312.62	0.02	0.001	312.96	0.03	0.002	312.85	0.01	0.001
MW18-114D	19.20	20.73	Vinemount (Eramosa)	312.84			312.60			312.93			312.83		
MW18-115S	3.20	4.72	Guelph/StoneRoad	313.12	0.44	0.027	312.80	0.33	0.021	313.24	0.50	0.031	313.11	0.48	0.030
MW18-115D	19.20	20.73	Vinemount (Eramosa)	312.68			312.47			312.74			312.63		
MW18-116S	2.51	4.03	Guelph/StoneRoad	312.84	0.01	0.003	312.60	0.01	0.003	312.93	0.00	0.000	312.81	0.00	-0.001
MW18-116D	6.50	8.02	Reformatory Quarry (Eramosa) (Guelph/ StoneRoad)	312.83			312.59			312.93			312.81		
MW18-119S	3.45	4.97	Guelph/StoneRoad	312.91	0.09	0.007	312.62	0.04	0.003	313.10	0.20	0.015	312.91	0.11	0.009
MW18-119D	16.89	18.42	Vinemount (Eramosa)	312.82			312.58			312.90			312.80		
MW18-121S	3.12	4.64	Guelph/StoneRoad	312.92	0.10	0.008	312.62	0.03	0.002	313.10	0.19	0.014	312.92	0.12	0.009
MW18-121D	16.33	17.85	Vinemount (Eramosa)	312.82			312.59			312.91			312.81		
MW18-122D	12.44	13.96	Reformatory Quarry (Eramosa)	312.80	-0.03	-0.004	312.57	-0.03	-0.004	312.89	-0.02	-0.003	312.88	0.06	0.008
MW18-122G	19.51	21.03	Vinemount (Eramosa)	312.83			312.60			312.91			312.82		
MW18-123S	3.40	4.92	Guelph/StoneRoad	312.84	0.05	0.003	312.60	0.02	0.001	312.93	0.04	0.003	312.82	0.03	0.002
MW18-123D	18.79	20.32	Vinemount (Eramosa)	312.79			312.58			312.89			312.79		
MW18-134S	2.74	4.27	Guelph/StoneRoad	312.84	0.11	0.030	312.54	0.03	0.007	312.98	0.17	0.047	312.86	0.14	0.037
MW18-134D	6.40	7.92	Reformatory Quarry (Eramosa)	312.73			312.52			312.81			312.72		
MW18-135S	4.27	5.79	Guelph/StoneRoad	311.99	-0.71	-0.127	312.56	0.04	0.006	313.01	0.19	0.034	312.99	0.27	0.048
MW18-135D	9.75	11.28	Reformatory Quarry (Eramosa)	312.70			312.52			312.82			312.72		
MW18-136D	11.58	13.11	Reformatory Quarry (Eramosa)	312.75	0.05	0.004	312.54	0.02	0.002	312.85	0.03	0.002	312.75	0.01	0.001
MW18-136G	23.80	25.32	Vinemount (Eramosa)/Goat Island	312.70			312.52			312.83			312.73		

Notes:
m = metre(s)
masl = metre(s) above sea level
m/m = metre(s) per metre

Table 6-4. APEC Disposition Table

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Areas of Potential Environmental Concern (APEC)		PCA [a.]		COPCs (based on AP method groups [b,c])	Location Associated with APEC Area	Location Type	List of Parameter Groups Tested (soil) [b.]	List of Parameter Groups Tested (GW) [b.]
APEC-1	Foundry – A foundry was operated on the site by IMICO from 1913 to 1989, when the plant closed and was abandoned. The foundry operated as an iron-jobbing facility for the production of various metallic forms, using malleable and ductile iron (DCS 2014). Foundry sands were predominantly located in the concrete pits and sumps of the main foundry building. Foundry sands, sludge materials, and process waste were removed from the site, and buildings were demolished in 1999 (Earth Tech 1999). The P&R investigation also reported that moulding sands and dust collector waste was stored at the northwestern corner of the building and drained to the truck bay (P&R 1991).	32	Iron and Steel Manufacturing and Processing	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, Metals	7	TP	PAHs, Metals*, CN-, CrVI, Hg, EC, pH	--
					BH07-49	BH	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals	--
					BH07-50	BH	PCBs, PHCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	--
					BH07-57	BH	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	--
					BH17-201	BH	PAHs, PCBs, PHCs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
					BH18-206	BH	PHCs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
					BH19-102i	BH	BTEX, VOCs, THMs	--
					BH19-102ii	BH	BTEX, VOCs, THMs	--
					C11	CH	PCBs, Metals*	--
					C2	CH	Metals*	--
					CS-58	SS	PCBs	--
					CS-60	SS	PCBs	--
					MW17-102D	MW	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, PHCs, VOCs, THMs
					MW17-106D	MW	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, PHCs, VOCs, THMs
					MW17-106S	MW	--	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					MW17-107S	MW	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					MW18-107D	MW	--	BTEX, VOCs, THMs
					MW18-125S	MW	PAHs, PCBs, PHCs, Metals, HF Metals	BTEX, PAHs, PCBs, PHCs, VOCs, THMs
					MW18-126D	MW	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals	BTEX, PHCs, VOCs, THMs
					MW18-127S	MW	--	BTEX, PHCs, VOCs, THMs
					MW18-136D	MW	--	BTEX, VOCs, THMs
					MW18-136G	MW	--	BTEX, VOCs, THMs
					OW07-33	MW	BTEX, PCBs, PHCs, VOCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	ABNs, BTEX, CPs, PAHs, PCBs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					OW07-34D	MW	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					OW07-34S	MW	--	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					OW25	MW	--	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					SS-40	SS	PCBs	--
					SS-41	SS	PCBs	--
					SS-42	SS	PCBs	--
					SS-43	SS	PCBs	--
					SS-44	SS	PCBs	--
					SS-45	SS	PCBs	--
					TP13-11	TP	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Hg	--
					TP17-306	TP	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
					TP17-307	TP	BTEX, PHCs, VOCs, THMs	--
					TP17-308	TP	Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
					TP18-315	TP	BTEX, PAHs, PHCs	--
APEC-2	Machine Shop – A machine shop was shown on the 1916 FIP, east of the original foundry. The northern one-third of the machine shop was identified for "Tumbling and Cleaning" operations, inferred to be in association with the adjacent "Annealing Room" to the north. FIPs prepared in 1929, 1945, and 1960 showed this area changed operations to "Shipping" and a "Pattern Shop."	34	Metal Fabrication	BTEX, PAHs, PHCs, VOCs, Metals	BH07-47	BH	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals	--
					BH07-48	BH	BTEX, PAHs, PCBs, PHCs, Metals*, HF Metals	--
					BH07-52	BH	BTEX, PAHs, PCBs, PHCs, Metals*, HF Metals	--
					BH18-206	BH	PHCs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
					ES-14	CS	PAHs	--
					MW17-101D	MW	ABNs, BTEX, CPs, PAHs, PCBs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, PAHs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					MW17-101S	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					TP13-08	TP	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Hg	--
					TP18-316	TP	PAHs, PCBs, PHCs	--

Table 6-4. APEC Disposition Table

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Areas of Potential Environmental Concern (APEC)		PCA [a.]		COPCs (based on AP method groups [b,c])	Location Associated with APEC Area	Location Type	List of Parameter Groups Tested (soil) [b.]	List of Parameter Groups Tested (GW) [b.]
APEC-3	Annealing – An "Annealing Room" with four furnaces is shown on the 1916 FIP. A brick chimney is located on the northern wall. The 1929 FIP shows nine furnaces, with the Annealing Room extended westward with an additional chimney on the northern wall within the extended area; the southern portion of the Annealing Room is identified as the "Tumbling Dep't." The 1946 FIP shows a structural addition on the eastern side of the Annealing Room, with two additional furnaces. The 1960 FIP shows further eastward expansion and the addition of a third furnace. Tumbling Dep't operations appear consistent in location and footprint, from 1929 through to 1960. The furnaces are inferred to be coal fired from 1916 through to 1960, based on the nearby coal storage areas shown on the 1946 and 1960 FIPs, and the absence of ASTs or USTs for fuel oil storage on the FIPs. The furnace fuel from after 1960 to the end of operations in 1989 is not known, but a period of fuel-oil-fired operation of the furnaces is suspected; see APEC 7. No information was identified to suggest coal or fuel oil storage within the Annealing Room; however, no information regarding temporary furnace fuel storage, transmission, or waste disposal was identified. Dust control equipment is shown on Figure 4 of the 1991 P&R report, on the northern side of the Annealing Room.	32	Iron and Steel Manufacturing and Processing	BTEX, PAHs, PHCs, VOCs, Metals	BH07-46	BH	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals	--
					BH18-208	BH	PAHs, Metals, HF Metals	--
					BH20-212	BH	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR	--
					ES-11	CS	PAHs	--
					ES-12	CS	PAHs	--
					ES-15	CS	PAHs	--
					ES-16	CS	PAHs	--
					MW17-104D	MW	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					MW17-104S	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					MW17-109S	MW	BTEX, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					OW22D	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					OW22S	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					TP13-05	TP	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Hg	--
					TP20-321	TP	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR	--
APEC-4	Sand Storage – The 1916 FIP shows a "Sand Shed." The 1929 and 1946 FIPs again show the Sand Shed, plus a second smaller building to the west labelled "Sand." The 1960 FIP shows the original "Sand Shed" as "Bricks" and the second smaller building to the west labelled as "Sand & Bricks," and an additional area to the north labelled "Sand." No information was identified as to whether only clean process, spent foundry sands, or both were stored in these buildings; therefore, the potential storage of spent foundry sand in these buildings is considered. The purpose and types of bricks stored was not identified. The potential for new and used refractory brick and associated process materials is considered possible.	32	Iron and Steel Manufacturing and Processing	ABNs, CPs, PAHs, Metals	BH07-58	BH	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals	--
					I	TP	PAHs, Metals*, EC, pH	--
					IE15	TP	Metals*, CN-	--
					INE15	TP	Metals*	--
					OW03-I	MW	--	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					OW03-II	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					TP17-301	TP	ABNs, BTEX, CPs, PAHs, PHCs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
APEC-5	Galvanizing Building – A small free-standing building for "Galvanizing" was present on the southeastern portion of the Site as shown on the 1916, 1929, and 1946 FIPs. The Galvanizing building was not shown on the 1960 FIP, with the area occupied by a larger new structure identified as "Fittings Whse" (warehouse). No information was identified regarding process chemical use and storage, or waste management practices in association with the galvanizing operations conducted.	33	Metal Treatment, Coating, Plating, and Finishing	BTEX, PAHs, PHCs, VOCs, Metals	BH18-207	BH	PHCs, Metals, HF Metals	--
					BH18-207i	BH	BTEX, PAHs, VOCs, THMs, Metals, HF Metals	--
					BH19-211	BH	BTEX, VOCs, THMs	--
					MW17-108S	MW	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					TP18-309	TP	PHCs, Metals, HF Metals	--
					TP18-310	TP	PHCs, Metals, HF Metals	--
APEC-6	Chipping/Grinding Room – A "Chipping Room" was shown on the FIPs prepared in 1929, 1946, and 1960, located west of the Annealing area. The 1916 FIP shows this as exterior yard area west of the "Annealing Rm," with a small outbuilding that appears to be connected to the Annealing Room with a linear underground feature. The 1991 P&R report identified this as a "Trimming and Grinding" area; this information is inferred to be based on the interview of historical IMICO employees. "Dust control equipment" is shown on Figure 4 of the 1991 P&R report, on the exterior western side of the building.	34	Metal Fabrication	Metals	BH18-208	BH	PAHs, Metals, HF Metals	--
					BH19-100i	BH	pH	--
					MW17-100S	MW	BTEX, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg

Table 6-4. APEC Disposition Table

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Areas of Potential Environmental Concern (APEC)		PCA [a.]		COPCs (based on AP method groups [b,c])	Location Associated with APEC Area	Location Type	List of Parameter Groups Tested (soil) [b.]	List of Parameter Groups Tested (GW) [b.]
APEC-7	Oil Houses, Boiler House and ASTs – A building is shown on the 1929 FIP to the north of the Foundry and east of the power house that is labelled "Oil," and an additional building with the same label is shown to the north of this original building on the 1946 FIP. The 1960 FIP shows the northern building remaining, but it is not labelled as an oil house. The 1916 FIP shows this as empty exterior yard area north of the foundry. The P&R Investigation figures show a boiler house to the east of the power house and two 45,000-L (10,000 gallon) oil tanks to the east of the building with "no history of leaks or spills" (P&R 1991). One 45,000-L AST was reported removed in 1998 during demolition activities and had been used to store Bunker C fuel. The AST removed had been located east of the Core Room (Earth Tech 1999).	28	Gasoline and Associated Products Storage in Fixed Tanks	BTEX, PHCs	BH07-56	BH	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals	--
					JS15	TP	PAHs, PCBs, Metals*, CN-, CrVI, Hg	--
					MW17-103D	MW	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, VOCs, THMs
					MW17-103S	MW	--	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					OW07-32	MW	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					TP13-03	TP	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Hg	--
					TP13-04	TP	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Hg	--
APEC-8	Gasoline UST – As indicated on the 1960 FIP, a gasoline UST is shown north of a small office building, and west of "scales" at the corner of Kingsmill Avenue and Beverley Street. The area is empty exterior yard area on the 1916 FIP, and the 1929 and 1946 FIPs show the office (labelled as a "time office"), but it does not show the UST. The gasoline use is not known; however, it is inferred to be for fueling gasoline-powered equipment/vehicles used at the plant. The 1991 Proctor & Redfern investigation reported that an IMICO employee indicated the UST was removed in the mid-1980s in response to a request from the City due to gasoline vapours in the sewers along Beverley and York Streets. No significant contamination was reported (P&R 1991).	28	Gasoline and Associated Products Storage in Fixed Tanks	BTEX, PAHs, PHCs, VOCs, Metals	B	TP	Metals*, CrVI, EC, pH	--
					BW11	TP	Metals*, CrVI	--
					MW17-105D	MW	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					MW17-105S	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					MW18-105G	MW	--	BTEX, VOCs, THMs
APEC-9	Oil House – A building is shown on the 1929 and 1949 FIP to the south of the foundry and west of the galvanizing building with a label "Oil." The building/structure is not on 1916 FIP where the area is shown as exterior yard area and is not present on the 1960 FIP where the area is occupied.	28	Gasoline and Associated Products Storage in Fixed Tanks	BTEX, PHCs	B	TP	Metals*, CrVI, EC, pH	--
					BH07-54	BH	BTEX, PAHs, PHCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	--
					MW17-105D	MW	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					MW17-105S	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					MW18-105G	MW	--	BTEX, VOCs, THMs
APEC-10	Machine Shop – A machine shop is shown on the 1929, 1946, and 1960 FIP, east of the original foundry building. The floor is indicated as concrete. Machine shop cuttings were stored on the ground north of the building, and two small ceiling-mounted oil tanks were present in the building as noted in the P&R investigation (1991). The area is shown on the 1916 FIP as exterior yard area, with a small unidentified building in the central area of the future machine shop. The northern portion of the machine shop was removed during the 1999 excavation based on the excavation footprint (EarthTech 1999).	34	Metal Fabrication	BTEX, PAHs, PHCs, VOCs, Metals	BH07-40	BH	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	--
					BH07-52	BH	BTEX, PAHs, PCBs, PHCs, Metals*, HF Metals	--
					BH13-40	BH	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals	--
					BH17-203	BH	BTEX, PHCs, VOCs, THMs	--
					BH18-204	BH	BTEX, VOCs, THMs	--
					BH19-209	BH	BTEX, VOCs, THMs	--
					BH19-210	BH	BTEX, VOCs, THMs	--
					C7	CH	Metals*	--
					C8	CH	Metals*	--
					ES-14	CS	PAHs	--
					ES-17	CS	PAHs	--
					L	TP	Metals*, CrVI, Hg	--
					MW18-128D	MW	--	BTEX, PHCs, VOCs, THMs
					MW18-130D	MW	--	BTEX, PHCs, VOCs, THMs, Metals, HF Metals, Na
					MW18-132D	MW	--	BTEX, PHCs, VOCs, THMs, Metals, HF Metals, Na
					MW18-135D	MW	--	BTEX, PAHs, PHCs, VOCs, THMs
					MW18-135S	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na
					OW18-I	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					OW18-II	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					OW19	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					OW23D	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					OW23S	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					TP13-08	TP	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Hg	--
					TP18-316	TP	PAHs, PCBs, PHCs	--

Table 6-4. APEC Disposition Table

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Areas of Potential Environmental Concern (APEC)		PCA [a.]		COPCs (based on AP method groups [b,c])	Location Associated with APEC Area	Location Type	List of Parameter Groups Tested (soil) [b.]	List of Parameter Groups Tested (GW) [b.]
APEC-11	Plating/Galvanizing Building – A galvanizing building was present on the Site as shown on the 1946 and 1960 FIP. The previous FIPs (1916 and 1929) show this as exterior yard area. On subsequent site plans (P&R 1991; Earth Tech 1999), the building was identified as a storage shed and was reported as having been used for dip galvanizing before 1975, with rinse water discharged into "dry wells" north of the building (P&R 1991). Investigations by P&R and Gartner Lee indicated high concentrations of zinc, other metals, and oil & grease. Free product was observed wells (OW01-I, OW20, OW21). The area was excavated to bedrock (ranging from 1.3 to 2.0 mbgs and approximately 9,400 tonnes of contaminated soil and 925 tonnes of contaminated concrete were removed. Soil samples were collected from the final limits of the excavation walls and indicated most locations having zinc and TPH concentrations above the Table A Guidelines. The excavation was backfilled with granular "B" materials. A single sample was collected from the backfill and met the guidelines applicable at the time of the report (Earth Tech, 1999). A well nest (OW22S/D) was installed within the excavation area (the report for this installation was not available, and therefore, the soil conditions are unknown if analyzed as part of the investigation). Test pits and boreholes installed in the area in 2013 by DCS indicated soils having high zinc and other metal concentrations. Groundwater conditions at OW22S reported free product, which was highly weathered with a slight oil/diesel odour (as reported in the summary of the Gartner Lee 2000/2001 investigation in DCS 2007a). Borehole logs for OW22S/D indicate the presence of fuel/diesel type odour in the fill which extends to approximately 1.5 mbgs; and hydrocarbon odour extending into the underlying bedrock with black staining on fractures. Groundwater sampled from OW22S has not since reported free product but has had concentrations of PHCs increasing since the annual monitoring at this location began in 2016, up to 850,000 ug/L of F3. Zinc concentrations have widely fluctuated over the years and have exceeded in approximately 25 percent of the sampling events between 2005 and 2016.	33	Metal Treatment, Coating, Plating, and Finishing	BTEX, PAHs, PHCs, VOCs, Metals	BH07-42	BH	BTEX, PCBs, PHCs, VOCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	--
					BH07-45	BH	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals	--
					BH07-46	BH	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals	--
					BH07-51	BH	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals	--
					ES-11	CS	PAHs	--
					ES-12	CS	PAHs	--
					KE13	TP	PCBs	--
					L	TP	Metals*, CrVI, Hg	--
					LN2	TP	PAHs, Metals*, EC, pH	--
					MW17-109S	MW	BTEX, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					MW18-131S	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na
					MW18-133D	MW	--	BTEX, VOCs, THMs, Metals, HF Metals, Na
					OW22D	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					OW22S	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					TP13-05	TP	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Hg	--
					TP13-06	TP	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Hg	--
					TP17-304	TP	BTEX, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
					TP17-305	TP	BTEX, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
					TP20-320	TP	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR	--
					TP20-321	TP	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR	--
APEC-12	Coal Storage – A coal shed is shown on the 1946 FIP to the north of the foundry and west of the powerhouse. A larger coal storage area is shown on the 1960 FIP, and the building is extended south to connect with the foundry on subsequent site plans (P&R 1991; GLL 1999; Earth Tech 1999) without an indication of its use. The previous FIPs (1916 and 1929) show this area as exterior yard area.	8	Chemical Manufacturing, Processing, and Bulk Storage	PAHs	BH20-213	BH	ABNs, CPs, PAHs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR	--
					OW07-37	MW	BTEX, PAHs, PHCs, VOCs, Metals*, HF Metals	ABNs, BTEX, CPs, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg

Table 6-4. APEC Disposition Table

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Areas of Potential Environmental Concern (APEC)		PCA [a.]		COPCs (based on AP method groups [b,c])	Location Associated with APEC Area	Location Type	List of Parameter Groups Tested (soil) [b.]	List of Parameter Groups Tested (GW) [b.]
APEC-13	Rail Line – A former rail line was shown onsite north of the buildings on the 1916, 1929, and 1946 FIPs, running east to west for the full length of the foundry building. On the 1960 FIP, the western portion was shown to have been removed to accommodate the newly constructed shipping/stock room; the rail siding ended at the eastern side of the building. It is inferred that raw materials and finished products were shipped by rail.	46	Rail Yards, Tracks, and Spurs	PAHs, Metals	11	TP	Metals*, CrVI, Hg, EC, pH	--
					BH07-42	BH	BTEX, PCBs, PHCs, VOCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	--
					BH07-45	BH	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals	--
					BH07-51	BH	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals	--
					ES-11	CS	PAHs	--
					INE15	TP	Metals*	--
					K	TP	Metals*, EC, pH	--
					KE13	TP	PCBs	--
					LN2	TP	PAHs, Metals*, EC, pH	--
					MW17-110S	MW	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					MW18-131S	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na
					OW02	MW	--	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					OW07-37	MW	BTEX, PAHs, PHCs, VOCs, Metals*, HF Metals	ABNs, BTEX, CPs, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					OW07-38S	MW	BTEX, PHCs, VOCs, Metals*, HF Metals	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					TP17-301	TP	ABNs, BTEX, CPs, PAHs, PHCs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
					TP20-322	TP	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR	--
					TP20-323	TP	PAHs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR	--
APEC-14	Possible Automobile Storage, Maintenance and Repair – An addition south of the foundry building on the eastern side of the offices is labelled "Auto" on the 1960 FIP. Previous FIPs (1916, 1929, 1946) show this as exterior yard area.	27	Garages and Maintenance and Repair of Railcars, Marine Vehicles, and Aviation Vehicles	BTEX, PAHs, PHCs, VOCs, Metals	BH17-202	BH	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
					MW18-136D	MW	--	BTEX, VOCs, THMs
					OW10	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
APEC-15	Sand Mixing/Storage – Sand mixing is shown in a building north of the foundry as shown on the 1960 FIP. Previous FIPs (1916, 1929, 1946) show this as exterior yard area, north of the foundry. Subsequent site plans (P&R 1991; GLL 1999; Earth Tech 1999) do not have an indication of the buildings use.	8	Chemical Manufacturing, Processing, and Bulk Storage	ABNs, CPs, PAHs, PHCs, Metals	BH17-200	BH	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
					OW07-37	MW	BTEX, PAHs, PHCs, VOCs, Metals*, HF Metals	ABNs, BTEX, CPs, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
APEC-16	Transformers – Transformers are first shown on the 1960 FIP, north of the powerhouse. Previous FIPS (1916, 1929, 1946) show this as exterior yard area north of the power house. Transformers of this era may have contained PCBs.	55	Transformer Manufacturing, Processing and Use	PCBs, PHCs	OW07-32	MW	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					TP13-03	TP	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Hg	--
APEC-17	Capacitor Room – PCB-containing capacitors were present in the centre of the foundry, as first shown on the P&R investigation site plan, and later remediated as part of the Earth Tech demolition (P&R 1991; EarthTech 1999). Activities included removal of a concrete floor, a utility trench located in the eastern section (concrete walls, granular base) that was heavily stained, a subfloor that was present in the central section, and a sump located in on the eastern portion of the capacitor room that were each indicated as PCB-impacted and excavated and disposed offsite. The area was excavated to bedrock (1.0 – 1.3 mbgs) to remove concentrations above 5 µg/g. Final samples (composite soil, soil, concrete, and bedrock) from the limits of excavation in the capacitor room reported PCB concentrations under 5 µg/g, with the exception of two bedrock samples within the eastern sump area that had concentrations around 10 µg/g. A well (OW25) was installed within the excavation area (the report for this installation was not available, and therefore, the soil conditions are unknown if analyzed as part of the investigation), and subsequent groundwater monitoring of the area has indicated concentrations of chlorinated VOCs and PHCs (mainly F3) above the applicable potable water criteria (Table 6 Standards) (DCS 2007b, 2014b; AECOM 2017a and 2017b).	55	Transformer Manufacturing, Processing, and Use	PCBs, PHCs	C11	CH	PCBs, Metals*	--
					CS-58	SS	PCBs	--
					CS-60	SS	PCBs	--
					MW18-125S	MW	PAHs, PCBs, PHCs, Metals, HF Metals	BTEX, PAHs, PCBs, PHCs, VOCs, THMs
					MW18-126D	MW	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals	BTEX, PHCs, VOCs, THMs
					OW25	MW	--	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					SS-40	SS	PCBs	--
					SS-41	SS	PCBs	--
					SS-42	SS	PCBs	--
					SS-43	SS	PCBs	--
					SS-44	SS	PCBs	--
					SS-45	SS	PCBs	--
					TP17-306	TP	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
					TP17-307	TP	BTEX, PHCs, VOCs, THMs	--
					TP17-308	TP	Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--

Table 6-4. APEC Disposition Table

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Areas of Potential Environmental Concern (APEC)		PCA [a.]		COPCs (based on AP method groups [b,c])	Location Associated with APEC Area	Location Type	List of Parameter Groups Tested (soil) [b.]	List of Parameter Groups Tested (GW) [b.]
APEC-18	Coal Storage – A building for coal storage is shown on the 1960 FIP to the north of the annealing room, with additional "coal piled" to the west of the building. Previous FIPs (1916, 1929, 1946) show this as exterior yard area to the north of the annealing room. The coal is inferred to be used in the furnaces in the annealing room. Subsequent site plans show this as a storage area (P&R 1991, DCS 2007a).	8	Chemical Manufacturing, Processing, and Bulk Storage	PAHs	12SE10	TP	Metals*, HF Metals, CrVI, Hg	--
					BH20-214	BH	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR	--
					C14	CH	Metals*	--
					MW17-110S	MW	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					OW07-38S	MW	BTEX, PHCs, VOCs, Metals*, HF Metals	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
APEC-19	Coal Storage – A small building for coal storage is shown on the 1960 FIP, east of the time keepers office at the Beverley Street entrance. The building is not present on previous FIPs (1916, 1929, 1946) and is shown as exterior yard area.	8	Chemical Manufacturing, Processing, and Bulk Storage	PAHs	B	TP	Metals*, CrVI, EC, pH	--
					MW17-105D	MW	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					MW17-105S	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					MW18-105G	MW	--	BTEX, VOCs, THMs
					OW09-I	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					OW09-II	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
APEC-20	Garage – A garage was shown on the 1946 and 1960 FIP along Stevenson, on the western side of the property. The building is not present on previous FIPs (1916, 1929) and is shown as exterior yard area. The site investigation by P&R (1991) identified visual impacts to the soils south of the garage. Some elevated PCB concentrations were found in soil during subsequent investigations.	27	Garages and Maintenance and Repair of Railcars, Marine Vehicles, and Aviation Vehicles	BTEX, PAHs, PCBs, PHCs, VOCs, Metals	BH07-67	BH	BTEX, PCBs, PHCs, VOCs, Metals*, HF Metals	--
					ESW8	TP	PCBs, Metals*, EC, pH	--
					EW8	TP	PCBs, Metals*	--
					OW15	MW	--	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					OW16	MW	--	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					TP17-300	TP	ABNs, BTEX, CPs, Dioxins/Furans, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
					TP18-318	TP	BTEX, PAHs, PCBs, PHCs, Metals, HF Metals	--
APEC-21	Coal Storage – The 1960 FIP indicates coal storage south of the garage on the western side of the Site. The building is not present on previous FIPs (1916, 1929) and is shown as exterior yard area, and on the 1946 FIP, the building is not labelled as coal.	8	Chemical Manufacturing, Processing, and Bulk Storage	PAHs	ESW8	TP	PCBs, Metals*, EC, pH	--
					OW15	MW	--	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					OW16	MW	--	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					TP17-300	TP	ABNs, BTEX, CPs, Dioxins/Furans, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
APEC-22	Transformer – A 1200-volt transformer is shown on the 1991 Site Plan (P&R 1991).	55	Transformer Manufacturing, Processing, and Use	PCBs, PHCs	BH17-201	BH	PAHs, PCBs, PHCs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
					OW07-33	MW	BTEX, PCBs, PHCs, VOCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	ABNs, BTEX, CPs, PAHs, PCBs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
APEC-23	Paint Shop – First shown on the P&R Site plan, a paint shop was located at the northern end of the site between the shipping building and the storage area (P&R 1991). Drums were stored against the northern wall for materials used in the paint shop. The FIPs show this area as exterior yard area in the early FIPs (1916, 1929, 1946) and empty space between existing buildings in the 1960 FIP.	39	Paints Manufacturing, Processing, and Bulk Storage	BTEX, PAHs, PHCs, VOCs, Metals	12SE10	TP	Metals*, HF Metals, CrVI, Hg	--
					BH20-214	BH	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR	--
					C14	CH	Metals*	--
					MW17-110S	MW	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					OW07-38S	MW	BTEX, PHCs, VOCs, Metals*, HF Metals	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
APEC-24	PCB Storage Area – An area located at the northeastern corner of the finishing and annealing room with a concrete pad was identified in the Earth Tech investigation as a former PCB storage area. Concentrations above 50 ppm of PCBs were identified. Previous site maps showed this area as "storage" (P&R 1991) or part of the Annealing Room (1946 and 1960 FIPs). During the demolition activities, approximately 250 kg of PCB-containing ash residue from the top of the concrete pad and the concrete pad itself was removed and taken for offsite disposal (Earth Tech 1999). Confirmatory samples below the pad were 0.63 and <0.05 µg/g. The soil was later excavated to bedrock as part of the soil remediation in the northeastern corner of the property (see APEC-11).	55	Transformer Manufacturing, Processing, and Use	PCBs, PHCs	BH07-46	BH	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals	--
					ES-11	CS	PAHs	--
					ES-12	CS	PAHs	--
					MW17-109S	MW	BTEX, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					TP13-05	TP	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Hg	--

Table 6-4. APEC Disposition Table

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Areas of Potential Environmental Concern (APEC)		PCA [a.]		COPCs (based on AP method groups [b,c])	Location Associated with APEC Area	Location Type	List of Parameter Groups Tested (soil) [b.]	List of Parameter Groups Tested (GW) [b.]
APEC-25	Drum Storage – Interviews with former employees as part of the P&R investigation identified drum storage activities that occurred along the northern property boundary (P&R 1991). No additional information was provided on the nature of what was stored and whether there was any associated contamination as a result of the materials.	8	Chemical Manufacturing, Processing, and Bulk Storage	BTEX, PAHs, PHCs, VOCs, Metals	10	TP	Metals*, CrVI, Hg, EC, pH	--
					12	TP	PCBs, Metals*, CrVI, Hg	--
					12SE10	TP	Metals*, HF Metals, CrVI, Hg	--
					BH07-51	BH	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals	--
					HNE19	TP	Metals*, CrVI	--
					KE13	TP	PCBs	--
					MW18-112D	MW	--	BTEX, VOCs, THMs, Metals, HF Metals
					MW18-112G	MW	--	BTEX, VOCs, THMs, HF Metals
					MW18-112S	MW	--	BTEX, VOCs, THMs, Metals, HF Metals
					MW18-114D	MW	--	BTEX, VOCs, THMs, Metals, HF Metals
					MW18-115D	MW	--	BTEX, VOCs, THMs, Metals, HF Metals, Na
					MW18-115S	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals
					OW02	MW	--	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					OW07-31	MW	BTEX, PHCs, VOCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	ABNs, BTEX, CPs, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					OW17	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					TP17-302	TP	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
					TP18-319	TP	PAHs, Metals, HF Metals	--
					TP20-322	TP	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR	--
APEC-26	Former Substation – A former substation is indicated on the P&R (1991) and Earth Tech (1999) site plans. A sample of transformer oil from the former substation analyzed in the Earth Tech report indicated nondetect concentrations of PCBs. Similarly, one location installed during the DCS Phase II ESA (2007) indicated nondetect PCB concentration. Previous site plans (FIPs) show this area as exterior yard areas.	55	Transformer Manufacturing, Processing, and Use	PCBs, PHCs	BH07-65	BH	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals	--
					MW17-111S	MW	BTEX, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					TP18-311	TP	Metals, HF Metals	--
					TP18-312	TP	Metals, HF Metals	--
					TP18-313	TP	Metals, HF Metals	--
					TP18-314	TP	Metals, HF Metals	--
APEC-27	Former Electrical Shop – A small electrical shop was noted to be on the southwestern corner of the foundry (P&R 1991). This addition was not shown on the FIPs from previous years and was shown as the exterior yard area west of the foundry.	34	Metal Fabrication	BTEX, PAHs, PHCs, VOCs, Metals	6	TP	Metals*, CrVI, Hg, EC, pH	--
					DSW7	TP	Metals*, CN-	--
					MW18-120D	MW	Metals, HF Metals	BTEX, VOCs, THMs, Metals, HF Metals, Na
					OW12	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					TP17-303	TP	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
					TP20-324	TP	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR	--
APEC-28	Waste Oil Storage – Used oil was stored above ground on the southwestern end of the foundry as shown on the P&R Site Plan (P&R 1991).	28	Gasoline and Associated Products Storage in Fixed Tanks	BTEX, PAHs, PHCs, VOCs, Metals	6	TP	Metals*, CrVI, Hg, EC, pH	--
					MW18-120D	MW	Metals, HF Metals	BTEX, VOCs, THMs, Metals, HF Metals, Na
					OW12	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					TP17-303	TP	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
APEC-29	Fill of Unknown Quality – The areas of the Site have a layer of fill above the native silty sands. Previous investigations have indicated a layer of fill consisting of foundry sands, slag, and cinders (up to 1.0 m) was found across the site (P&R 1991) and the fill to be mix of foundry operation waste such as "coal, clinker, ash, metals, and detritus from the former foundry operations" and reworked native from "reworking onsite soils as a result of initial construction and subsequent expansion activities" (DCS 2007b). The yard areas were additionally noted to have been oiled (presumably engine oil) (P&R 1991).	30	Importation of Fill Material of Unknown Quality	ABNs, BTEX, CPs, PAHs, PCBs, PHCs, Metals	1	TP	Metals*, CrVI, Hg, EC, pH	--
					2	TP	Metals*, CrVI, Hg, EC, pH	--
					3	TP	Metals*, CrVI, Hg, EC, pH	--
					4	TP	Metals*, CrVI, Hg, EC, pH	--
					5	TP	Metals*, CrVI, Hg, EC, pH	--
					6	TP	Metals*, CrVI, Hg, EC, pH	--
					7	TP	PAHs, Metals*, CN-, CrVI, Hg, EC, pH	--
					8	TP	Metals*, CN-, CrVI, Hg, EC, pH	--
					9	TP	Metals*, CrVI, Hg, EC, pH	--
					10	TP	Metals*, CrVI, Hg, EC, pH	--
					11	TP	Metals*, CrVI, Hg, EC, pH	--
					12	TP	PCBs, Metals*, CrVI, Hg	--
					12SE10	TP	Metals*, HF Metals, CrVI, Hg	--
					A	TP	Metals*, CrVI, EC, pH	--
					AN21	TP	Metals*	--
					ASW14	TP	Metals*, CrVI	--
					B	TP	Metals*, CrVI, EC, pH	--
					BH07-40	BH	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	--
					BH07-41	BH	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals, CN-, CrVI, Hg	--
					BH07-42	BH	BTEX, PCBs, PHCs, VOCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	--
					BH07-45	BH	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals	--
					BH07-46	BH	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals	--
					BH07-47	BH	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals	--
					BH07-48	BH	BTEX, PAHs, PCBs, PHCs, Metals*, HF Metals	--
					BH07-49	BH	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals	--
					BH07-50	BH	PCBs, PHCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	--

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Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Areas of Potential Environmental Concern (APEC)		PCA [a.]		COPCs (based on AP method groups [b,c])	Location Associated with APEC Area	Location Type	List of Parameter Groups Tested (soil) [b.]	List of Parameter Groups Tested (GW) [b.]
					BH07-51	BH	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals	--
					BH07-52	BH	BTEX, PAHs, PCBs, PHCs, Metals*, HF Metals	--
					BH07-53	BH	BTEX, PAHs, PHCs, VOCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	--
					BH07-54	BH	BTEX, PAHs, PHCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	--
					BH07-55	BH	BTEX, PAHs, PHCs, VOCs, Metals*, HF Metals	--
					BH07-56	BH	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals	--
					BH07-57	BH	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	--
					BH07-58	BH	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals	--
					BH07-59	BH	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals	--
					BH07-60	BH	BTEX, PAHs, PHCs, VOCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	--
					BH07-61	BH	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals	--
					BH07-62	BH	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	--
					BH07-63	BH	BTEX, PHCs, VOCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	--
					BH07-64	BH	BTEX, PAHs, PHCs, VOCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	--
					BH07-65	BH	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals	--
					BH07-66	BH	BTEX, PAHs, PCBs, PHCs, Metals*, HF Metals	--
					BH07-67	BH	BTEX, PCBs, PHCs, VOCs, Metals*, HF Metals	--
					BH07-68	BH	BTEX, PAHs, PCBs, PHCs, Metals*, HF Metals	--
					BH07-69	BH	BTEX, PAHs, PHCs, VOCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	--
					BH07-70	BH	BTEX, PAHs, PCBs, PHCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	--
					BH07-71	BH	BTEX, PAHs, PHCs, VOCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	--
					BH13-40	BH	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals	--
					BH17-200	BH	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
					BH17-201	BH	PAHs, PCBs, PHCs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
					BH17-202	BH	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
					BH17-203	BH	BTEX, PHCs, VOCs, THMs	--
					BH18-204	BH	BTEX, VOCs, THMs	--
					BH18-205	BH	BTEX, PHCs, VOCs, THMs	--
					BH18-206	BH	PHCs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
					BH18-207	BH	PHCs, Metals, HF Metals	--
					BH18-207i	BH	BTEX, PAHs, VOCs, THMs, Metals, HF Metals	--
					BH18-208	BH	PAHs, Metals, HF Metals	--
					BH19-100i	BH	pH	--
					BH19-100i	BH	pH	--
					BH19-102i	BH	BTEX, VOCs, THMs	--
					BH19-102ii	BH	BTEX, VOCs, THMs	--
					BH19-209	BH	BTEX, VOCs, THMs	--
					BH19-210	BH	BTEX, VOCs, THMs	--
					BH19-211	BH	BTEX, VOCs, THMs	--
					BH20-212	BH	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR	--
					BH20-213	BH	ABNs, CPs, PAHs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR	--
					BH20-214	BH	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR	--
					BW11	TP	Metals*, CrVI	--
					C	TP	Metals*, CrVI, EC, pH	--
					C11	CH	PCBs, Metals*	--
					C14	CH	Metals*	--
					C2	CH	Metals*	--
					C7	CH	Metals*	--
					C8	CH	Metals*	--
					CE10	TP	Metals*	--
					CS-58	SS	PCBs	--
					CS-60	SS	PCBs	--
					CW10	TP	PAHs, Metals*	--
					D	TP	PAHs, Metals*, CrVI, EC, pH	--
					DSW7	TP	Metals*, CN-	--
					ES-11	CS	PAHs	--
					ES-12	CS	PAHs	--
					ES-14	CS	PAHs	--
					ES-15	CS	PAHs	--
					ES-16	CS	PAHs	--
					ES-17	CS	PAHs	--
					ESW8	TP	PCBs, Metals*, EC, pH	--

Table 6-4. APEC Disposition Table

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Areas of Potential Environmental Concern (APEC)	PCA [a.]	COPCs (based on AP method groups [b,c])	Location Associated with APEC Area	Location Type	List of Parameter Groups Tested (soil) [b.]	List of Parameter Groups Tested (GW) [b.]
			EW8	TP	PCBs, Metals*	--
			H	TP	Metals*, CrVI	--
			HNE19	TP	Metals*, CrVI	--
			HW16	TP	Metals*	--
			I	TP	PAHs, Metals*, EC, pH	--
			IE15	TP	Metals*, CN-	--
			INE15	TP	Metals*	--
			JE15	TP	Metals*, CrVI, Hg	--
			JS15	TP	PAHs, PCBs, Metals*, CN-, CrVI, Hg	--
			K	TP	Metals*, EC, pH	--
			KE13	TP	PCBs	--
			KNW10	TP	Metals*	--
			KW32	TP	Metals*	--
			L	TP	Metals*, CrVI, Hg	--
			LN2	TP	PAHs, Metals*, EC, pH	--
			MW17-100S	MW	BTEX, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			MW17-101D	MW	ABNs, BTEX, CPs, PAHs, PCBs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, PAHs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			MW17-101S	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			MW17-102D	MW	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, PHCs, VOCs, THMs
			MW17-103D	MW	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, VOCs, THMs
			MW17-103S	MW	--	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			MW17-104D	MW	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			MW17-104S	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			MW17-105D	MW	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			MW17-105S	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			MW17-106D	MW	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR,	BTEX, PHCs, VOCs, THMs
			MW17-106S	MW	--	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			MW17-107S	MW	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			MW17-108S	MW	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			MW17-109S	MW	BTEX, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			MW17-110S	MW	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			MW17-111S	MW	BTEX, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			MW18-105G	MW	--	BTEX, VOCs, THMs
			MW18-107D	MW	--	BTEX, VOCs, THMs
			MW18-112D	MW	--	BTEX, VOCs, THMs, Metals, HF Metals
			MW18-112G	MW	--	BTEX, VOCs, THMs, HF Metals
			MW18-112S	MW	--	BTEX, VOCs, THMs, Metals, HF Metals
			MW18-113D	MW	--	BTEX, VOCs, THMs, HF Metals
			MW18-113S	MW	--	BTEX, VOCs, THMs, Metals, HF Metals, Na
			MW18-114D	MW	--	BTEX, VOCs, THMs, Metals, HF Metals
			MW18-114S	MW	--	BTEX, VOCs, THMs, Metals, HF Metals
			MW18-115D	MW	--	BTEX, VOCs, THMs, Metals, HF Metals, Na
			MW18-115S	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals
			MW18-116D	MW	--	BTEX, VOCs, THMs, Metals, HF Metals, Na
			MW18-116S	MW	--	BTEX, VOCs, THMs, Metals, HF Metals, Na
			MW18-117S	MW	BTEX, PHCs, Metals, HF Metals	BTEX, PHCs, VOCs, THMs, Metals, HF Metals, Na
			MW18-118S	MW	--	BTEX, PAHs, VOCs, THMs, Metals, HF Metals, Na
			MW18-119D	MW	--	BTEX, VOCs, THMs
			MW18-119S	MW	--	BTEX, VOCs, THMs, Metals, HF Metals, Na
			MW18-120D	MW	Metals, HF Metals	BTEX, VOCs, THMs, Metals, HF Metals, Na
			MW18-121D	MW	--	BTEX, VOCs, THMs
			MW18-121S	MW	Metals, HF Metals	BTEX, VOCs, THMs, Metals, HF Metals, Na
			MW18-122D	MW	PAHs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, VOCs, THMs
			MW18-122D	MW	PAHs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, VOCs, THMs

Table 6-4. APEC Disposition Table

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Areas of Potential Environmental Concern (APEC)	PCA [a.]	COPCs (based on AP method groups [b,c])	Location Associated with APEC Area	Location Type	List of Parameter Groups Tested (soil) [b.]	List of Parameter Groups Tested (GW) [b.]
			MW18-122G	MW	--	BTEX, VOCs, THMs
			MW18-123D	MW	BTEX, PAHs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, VOCs, THMs
			MW18-123S	MW	--	BTEX, VOCs, THMs
			MW18-124S	MW	PAHs, Metals, HF Metals	BTEX, PAHs, VOCs, THMs
			MW18-125S	MW	PAHs, PCBs, PHCs, Metals, HF Metals	BTEX, PAHs, PCBs, PHCs, VOCs, THMs
			MW18-126D	MW	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals	BTEX, PHCs, VOCs, THMs
			MW18-127S	MW	--	BTEX, PHCs, VOCs, THMs
			MW18-128D	MW	--	BTEX, PHCs, VOCs, THMs
			MW18-129D	MW	PAHs, PHCs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, VOCs, THMs, Metals, HF Metals, Na
			MW18-130D	MW	--	BTEX, PHCs, VOCs, THMs, Metals, HF Metals, Na
			MW18-131S	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na
			MW18-132D	MW	--	BTEX, PHCs, VOCs, THMs, Metals, HF Metals, Na
			MW18-133D	MW	--	BTEX, VOCs, THMs, Metals, HF Metals, Na
			MW18-134D	MW	--	BTEX, VOCs, THMs
			MW18-134S	MW	--	BTEX, VOCs, THMs
			MW18-135D	MW	--	BTEX, PAHs, PHCs, VOCs, THMs
			MW18-135S	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na
			MW18-136D	MW	--	BTEX, VOCs, THMs
			MW18-136G	MW	--	BTEX, VOCs, THMs
			MW19-137S	MW	--	BTEX, PHCs, VOCs, THMs
			OW02	MW	--	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW03-I	MW	--	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW03-II	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW07-31	MW	BTEX, PHCs, VOCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	ABNs, BTEX, CPs, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW07-32	MW	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW07-33	MW	BTEX, PCBs, PHCs, VOCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	ABNs, BTEX, CPs, PAHs, PCBs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW07-34D	MW	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW07-34S	MW	--	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW07-37	MW	BTEX, PAHs, PHCs, VOCs, Metals*, HF Metals	ABNs, BTEX, CPs, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW07-38S	MW	BTEX, PHCs, VOCs, Metals*, HF Metals	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW09-I	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW09-II	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW10	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW11-I	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW11-II	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW12	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW13	MW	--	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW13-39D	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW13-39S	MW	BTEX, VOCs, THMs, Metals, HF Metals	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW14	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW15	MW	--	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW16	MW	--	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW17	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW18-I	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW18-II	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW19	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW22D	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW22S	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW23D	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW23S	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW24D	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW24S	MW	--	ABNs, BTEX, CPs, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW25	MW	--	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW26D	MW	--	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW26S	MW	--	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
			OW31	MW	--	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, Na, Cl, CrVI, Hg
			SS-40	SS	PCBs	--
			SS-41	SS	PCBs	--
			SS-42	SS	PCBs	--
			SS-43	SS	PCBs	--

Table 6-4. APEC Disposition Table

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Areas of Potential Environmental Concern (APEC)		PCA [a.]		COPCs (based on AP method groups [b,c])	Location Associated with APEC Area	Location Type	List of Parameter Groups Tested (soil) [b.]	List of Parameter Groups Tested (GW) [b.]
					SS-44	SS	PCBs	--
					SS-45	SS	PCBs	--
					TP13-01	TP	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Hg	--
					TP13-02	TP	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Hg	--
					TP13-03	TP	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Hg	--
					TP13-04	TP	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Hg	--
					TP13-05	TP	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Hg	--
					TP13-06	TP	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Hg	--
					TP13-08	TP	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Hg	--
					TP13-09	TP	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Hg	--
					TP13-10	TP	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Hg	--
					TP13-11	TP	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Hg	--
					TP17-300	TP	ABNs, BTEX, CPs, Dioxins/Furans, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
					TP17-301	TP	ABNs, BTEX, CPs, PAHs, PHCs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
					TP17-302	TP	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
					TP17-303	TP	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
					TP17-304	TP	BTEX, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
					TP17-305	TP	BTEX, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
					TP17-306	TP	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
					TP17-307	TP	BTEX, PHCs, VOCs, THMs	--
					TP17-308	TP	Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
					TP18-309	TP	PHCs, Metals, HF Metals	--
					TP18-310	TP	PHCs, Metals, HF Metals	--
					TP18-311	TP	Metals, HF Metals	--
					TP18-312	TP	Metals, HF Metals	--
					TP18-313	TP	Metals, HF Metals	--
					TP18-314	TP	Metals, HF Metals	--
					TP18-315	TP	BTEX, PAHs, PHCs	--
					TP18-316	TP	PAHs, PCBs, PHCs	--
					TP18-317	TP	BTEX, PHCs	--
					TP18-318	TP	BTEX, PAHs, PCBs, PHCs, Metals, HF Metals	--
					TP18-319	TP	PAHs, Metals, HF Metals	--
					TP20-320	TP	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR	--
					TP20-321	TP	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR	--
					TP20-322	TP	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR	--
					TP20-323	TP	PAHs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR	--
					TP20-324	TP	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR	--

Table 6-4. APEC Disposition Table

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Areas of Potential Environmental Concern (APEC)		PCA [a.]		COPCs (based on AP method groups [b,c])	Location Associated with APEC Area	Location Type	List of Parameter Groups Tested (soil) [b.]	List of Parameter Groups Tested (GW) [b.]
APECs from Offsite PCAs to the North								
APEC-30 (Offsite North)	Rail Lines – Bordering the northern side of the Site, rail lines are present (owned by Guelph Rail Line) and have existed since at least the early 1900s. Has historically been indicated as the Canadian Pacific Railway (1916, 1929, 1946, 1960 FIPs and P&R [1991]), Guelph Junction Railway (EarthTech 1999; DCS 2007a).	46	Rail Yards, Tracks, and Spurs	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, Metals	10	TP	Metals*, CrVI, Hg, EC, pH	--
					12	TP	PCBs, Metals*, CrVI, Hg	--
	Paper Manufacturing – Companies at 309 Elizabeth Street have been listed in the Scott's Manufacturing Directory for paper-related manufacturing: Trinity Graphics was established in 1977 and 1978 with plant sizes of 3,000 and 50,000 m^3 for paper bag and coated and treated paper manufacturing, other converted paper product manufacturing, platemaking and related services; Independent Paper Converters was established in 1978 with a plant size of 56,000 m^3 for manufacturing, including paper bag, coated and treated paper, plastic film and sheet. The 1960 FIP indicated gummed paper manufacturing (Top Paper Products).	45	Pulp, Paper, and Paperboard Manufacturing and Processing		12SE10	TP	Metals*, HF Metals, CrVI, Hg	--
					BH07-42	BH	BTEX, PCBs, PHCs, VOCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	--
					BH07-45	BH	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals	--
					BH07-51	BH	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals	--
					C7	CH	Metals*	--
	Auto Body Repair Shop – An automobile wrecking and recycling record was listed in the ERIS report for Sutton Auto Collision at 349 Elizabeth Street, which is an autobody repair facility. Additionally Top Gun Auto Painting & Collision is listed at this address from the City Directory.	10	Commercial Autobody Shops		ES-11	CS	PAHs	--
					ES-12	CS	PAHs	--
	Automobile Repair – Two automotive repair shops are listed in the City Directory at 349 Elizabeth Street from approximately 2005.	27	Garages and Maintenance and Repair of Railcars, Marine Vehicles, and Aviation Vehicles		K	TP	Metals*, EC, pH	--
					KE13	TP	PCBs	--
	Gasoline Station – A private fuel outlet with a 2,250 L liquid-fuel double-walled AST for gasoline is listed in the ERIS report for Oaks Precast Ind. Div. Standard Ind. at 351 Elizabeth Street, with a licence issue date of 1990. An additional record indicates a tank capacity of 36,500 L.	28	Gasoline and Associated Products Storage in Fixed Tanks		KNW10	TP	Metals*	--
					L	TP	Metals*, CrVI, Hg	--
	Trucking Company – A general freight trucking company (Polymer Distribution Inc.) is listed at 351 Elizabeth Street.	11	Commercial Trucking and Container Terminals		LN2	TP	PAHs, Metals*, EC, pH	--
					MW18-112D	MW	--	BTEX, VOCs, THMs, Metals, HF Metals
	Concrete Products Manufacturing – Lafarge Canada Inc. is listed at 351 Elizabeth Street, with a Scott's Manufacturing directory listing indicating an established date of 1933 and plant size of 50,000 ft^3.	12	Concrete, Cement, and Lime Manufacturing		MW18-112G	MW	--	BTEX, VOCs, THMs, HF Metals
					MW18-112S	MW	--	BTEX, VOCs, THMs, Metals, HF Metals

Table 6-4. APEC Disposition Table

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Areas of Potential Environmental Concern (APEC)		PCA [a.]		COPCs (based on AP method groups [b,c])	Location Associated with APEC Area	Location Type	List of Parameter Groups Tested (soil) [b.]	List of Parameter Groups Tested (GW) [b.]
	Plastic Products Manufacturing – ERIS and the City Directory searches indicate plastic products manufacturing at 53 Victoria Rd S. Scott's Manufacturing directory listings indicate Sterling Creations was established in 1983 with a 5,000 ft^2 plant size, as well as Clear Choice Window Manufacturing established in 1990 with a 1,600 ft^2 plant size.	43	Plastics (including Fibreglass) Manufacturing and Processing		MW18-113D	MW	--	BTEX, VOCs, THMs, HF Metals
					MW18-113S	MW	--	BTEX, VOCs, THMs, Metals, HF Metals, Na
					MW18-130D	MW	--	BTEX, PHCs, VOCs, THMs, Metals, HF Metals, Na
	Wire/Spring Manufacturing – ERIS searches list records for Guelph Wire Products, which was established in 1974 with a plant size of 4,000 ft^2 and manufactures steel springs, wire springs, and miscellaneous fabricated wire products.	34	Metal Fabrication		MW18-131S	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na
					MW18-133D	MW	--	BTEX, VOCs, THMs, Metals, HF Metals, Na
	Metal Valve Manufacturing – ERIS searches list records for DeNardis Industrial Sales Ltd. at 61 Victoria Rd S Unit C for metal valve manufacturing, established in 1985, plant size 4000 ft^2.	34	Metal Fabrication		OW02	MW	--	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					OW07-31	MW	BTEX, PHCs, VOCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	ABNs, BTEX, CPs, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
	Former Spill – Spill records from ERIS indicated a release of diesel fuel in 2005 at 65 Victoria South.				OW17	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
	Electro-plating company – Holody Electro-Plating Limited is listed at 66 Victoria associated with metal product coating, iron and steel mills and ferro-alloy manufacturing since 1955, with a plant size of 40,000 $ft^{2,}$ according to available records from ERIS. The 1960 FIP showed labelled buildings for plating, polishing, and an office.	33	Metal Treatment, Coating, Plating, and Finishing		OW19	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					TP13-05	TP	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Hg	--
					TP13-06	TP	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Hg	--
	Window and Door Manufacturing – Clear Choice Window Manufacturing Inc. and Richview Doors Ltd. are listed in the Scott's Manufacturing Directory; established in 1990 with a 1,600-ft plant size. A spill at 75 Victoria Road South of a polymer emulsion (100 lbs) in 2016 was reported.	43	Plastics (including Fibreglass) Manufacturing and Processing		TP17-304	TP	BTEX, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
					TP17-305	TP	BTEX, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
	Scrap Yard – B&F Scrap Dealers is listed at 100 Victoria Road South, with an automobile wrecking and recycling record in ERIS and listings in the city directory search from 1970 to 2011. A spill was reported at the property of a gasoline and water mixture (quantity not specified) in 2006 from cargo leaking to the ground.	49	Salvage Yard, including automobile wrecking		TP18-319	TP	PAHs, Metals, HF Metals	--
					TP20-320	TP	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR	--
					TP20-322	TP	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR	--

Table 6-4. APEC Disposition Table

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Areas of Potential Environmental Concern (APEC)		PCA [a.]		COPCs (based on AP method groups [b,c])	Location Associated with APEC Area	Location Type	List of Parameter Groups Tested (soil) [b.]	List of Parameter Groups Tested (GW) [b.]
APECs from Offsite PCAs to the East								
APEC-31 (Offsite East)	Steel Valve Manufacturing – Guelph Engineering Co. was shown located at 10 Kingsmill Avenue; buildings on the 1960 FIP indicate steel valve manufacturing with a machine shop, pattern shop, and oil house. Previous FIPs (1916, 1929, and 1946) show residences in this area.	32	Iron and Steel Manufacturing and Processing	ABNs, BTEX, CPs, PAHs, PCBs, PHCs, VOCs, Metals	ASW14	TP	Metals*, CrVI	--
					BH07-53	BH	BTEX, PAHs, PHCs, VOCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	--
	Former Stove Manufacturer/Foundry – Guelph Stove Company was shown at 490 York Road on the 1916, 1929, 1946, and 1960 FIPs. Buildings included a foundry, storage (coke, coal, sand), milling room, pattern shops, plating and buffing, offices, warehouses, steel mounting room & blacksmith, crating, stove mounting, and oil. Transformers are shown on the enamel building. Operations existed until approximately the mid-1960s where the city directory listings indicate Franklin Manufacturing Co (Canada) Ltd. and then Resco Refrigeration Supplies Co Ltd. from approximately 1970. The facility became multi-tenant commercial companies from the 1990s to present.	32	Iron and Steel Manufacturing and Processing		BH18-205	BH	BTEX, PHCs, VOCs, THMs	--
					BH19-209	BH	BTEX, VOCs, THMs	--
					BH19-211	BH	BTEX, VOCs, THMs	--
					C7	CH	Metals*	--
					L	TP	Metals*, CrVI, Hg	--
	Box Manufacturing – Packing manufacturers are listed at 136 Victoria Road South: Ellis Packing West Inc. listed as a corrugated and solid fibre box manufacturer; and ABCO Box and Carton Ltd. listed as a folding paperboard box manufacturer, established in 1946 with a plant size of 40,000 ft^2. The 1960 FIP shows ABCO Box and Carton Co. Ltd., with buildings labelled for office, pattern making, cutting, raw stock, stripping, gluing, and finished stock. ABCO Box and Carton Ltd. was present until approximately 2000, when Ellis Packing West replaced them as listed in the city directory.	45	Pulp, Paper and Paperboard Manufacturing and Processing		LN2	TP	PAHs, Metals*, EC, pH	--
					MW18-129D	MW	PAHs, PHCs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, VOCs, THMs, Metals, HF Metals, Na
					MW18-130D	MW	--	BTEX, PHCs, VOCs, THMs, Metals, HF Metals, Na
					MW18-132D	MW	--	BTEX, PHCs, VOCs, THMs, Metals, HF Metals, Na
	Potential USTs – On the 1960 FIP, McGregor Sportswear of Canada was shown to have two fuel oil USTs (2,500 gal each) on the property at 136 Victoria Road South.	28	Gasoline and Associated Products Storage in Fixed Tanks		MW19-137S	MW	--	BTEX, PHCs, VOCs, THMs
					OW09-I	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
	Scrap Yard – Joe Brown & Son Ltd., a junk yard, is shown on the 1960 FIP at 150 Victoria; ERIS records include Henderson's Disposal Systems Ltd. as the owner and list the facility as a transfer service from 2000 to 2004, and 2005 as an Ontario numbered company.	49	Salvage Yard, including automobile wrecking		OW09-II	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					OW13	MW	--	ABNs, BTEX, CPs, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
	Former Fuel Storage Facility – Multiple companies have been listed at 154 Victoria Road South (Shell Canada Products, Doug Pollock Fuels Ltd., Granger Fuels) as an expired TSSA fuel storage facility with gasoline and diesel. A spill was reported in 1988 caused by container overflow of 150 L of gasoline to the gravel surface. The 1946 FIP shows 6 gasoline USTs, and the 1960 FIP shows 13 gasoline USTs and an oil warehouse; both listed as Canadian Oil Companies Ltd.	28	Gasoline and Associated Products Storage in Fixed Tanks		OW13-39D	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					OW13-39S	MW	BTEX, VOCs, THMs, Metals, HF Metals	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					OW14	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg

Table 6-4. APEC Disposition Table

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Areas of Potential Environmental Concern (APEC)		PCA [a.]		COPCs (based on AP method groups [b,c])	Location Associated with APEC Area	Location Type	List of Parameter Groups Tested (soil) [b.]	List of Parameter Groups Tested (GW) [b.]
	Former Paint Application – A cabinet manufacturer was shown on the 1960 FIP, Gilson Manufacturing Co. Ltd. Cabinet Division at 57 Victoria Road South, with buildings labelled for steel storage, tubing room, steel room, washer, dryer, office, paint spray, transformer.	39	Paints Manufacturing, Processing, and Bulk Storage		OW18-I	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					OW18-II	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
	Chemical Manufacturer or Distributor – Robert On Guard Products was listed in the chemical facilities records.	8	Chemical Manufacturing, Processing, and Bulk Storage		OW19	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					OW24D	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
	Transformers – The National PCB records list up to 7 transformers on 490 York Road associated with Sherwood Forest Investments (formerly Hamril Investments). The volumes listed total approximately 1,600 L. Transformers (7 total) are shown on the 1960 FIP on the enameling building of Guelph Stove Co. Ltd.	55	Transformer Manufacturing, Processing, and Use		OW24S	MW	--	ABNs, BTEX, CPs, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					OW31	MW	--	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, Na, Cl, CrVI, Hg
					TP17-305	TP	BTEX, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--
APECs from Offsite PCAs to the South								
APEC-32 (Offsite South)	Screw Manufacturing – Linread Canada Ltd. is shown on the 1960 FIP as a screw manufacturer and is listed in ERIS reports as a industrial fastener at 24 Hayes with records until 1998. "Jet" is listed as a manufacturer of metal dies at this location with records between 1993 and 1998. Multiple Scott's Directory listings are reported for this address for machinery/equipment/ industrial fan and fabricated metal tools/product manufacturing (Daltec Industries, Allen Simpson Marketing and Design) with established dates of 1984 and 1975, and records up to 2006. A spill was reported of slurry to the road in 2014.	34	Metal Fabrication	BTEX, PAHS, PHCs, VOCs, Metals	2	TP	Metals*, CrVI, Hg, EC, pH	--
					3	TP	Metals*, CrVI, Hg, EC, pH	--
					4	TP	Metals*, CrVI, Hg, EC, pH	--
					BH07-55	BH	BTEX, PAHs, PHCs, VOCs, Metals*, HF Metals	--
					BH07-62	BH	BTEX, PAHs, PCBs, PHCs, VOCs, Metals*, HF Metals, CN-, CrVI, Hg, EC, SAR, pH	--
					BW11	TP	Metals*, CrVI	--
					MW18-122D	MW	PAHs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, VOCs, THMs
					MW18-122D	MW	PAHs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, VOCs, THMs
					MW18-122G	MW	--	BTEX, VOCs, THMs
	Former USTs – One gasoline UST is shown on the 1960 FIP on the southern side of the building at Traders' Plumbing and Heating Supplies Limited at 150 Stevenson Street South.	28	Gasoline and Associated Products Storage in Fixed Tanks		MW18-123D	MW	BTEX, PAHs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	BTEX, VOCs, THMs
					MW18-123S	MW	--	BTEX, VOCs, THMs
					OW10	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					OW11-I	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
	Former Transportation Company – The 1960 FIP indicates a transportation company (Direct Winter's Transport) at 101 Beverley, and city directories show that the company was present from the early 1950s to 1960s.	11	Commercial Trucking and Container Terminals		OW11-II	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					OW26D	MW	--	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					OW26S	MW	--	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					TP13-10	TP	BTEX, PAHs, PHCs, VOCs, THMs, Metals, HF Metals, Hg	--

Table 6-4. APEC Disposition Table

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Areas of Potential Environmental Concern (APEC)		PCA [a.]		COPCs (based on AP method groups [b,c])	Location Associated with APEC Area	Location Type	List of Parameter Groups Tested (soil) [b.]	List of Parameter Groups Tested (GW) [b.]
APECs from Offsite PCAs to the West								
APEC-33 (Offsite West)	Window Manufacturing – Clear Choice Window Manufacturing Inc. is listed in the Scott's Manufacturing Directory; established in 1990, and a 1,600-ft plant size.	43	Plastics (including Fibreglass) Manufacturing and Processing	BTEX, PAHs, PHCs, VOCs, Metals	4	TP	Metals*, CrVI, Hg, EC, pH	--
	Metal Treatment – Choice Enterprises is listed in the Scott's Manufacturing Directory as carrying out coating, engraving, heat treating, and allied activities; established in 1998.	33	Metal Treatment, Coating, Plating, and Finishing		6	TP	Metals*, CrVI, Hg, EC, pH	--
	Spring Manufacturing – ERIS records indicate heavy gauge spring manufacturing at 60 Johnston Street as Steele Bros. Ltd., the Scott's Manufacturing Directory record indicates the company was established in 1986 with a plant size of 6,500 ft^2. The 1960 FIP shows the H.I. Thompson Co. of Canada Limited (Aircraft Insulation) with a factory, spring room, spray room, transformer, and cement storage.	34	Metal Fabrication		BH07-67	BH	BTEX, PCBs, PHCs, VOCs, Metals*, HF Metals	--
					ESW8	TP	PCBs, Metals*, EC, pH	--
	Former Refractory Facility – Former Foundry Services of Canada (FOSECO) facility operated at 201 Alice Street until approximately the late 1990s and had a known contaminated plume in the shallow groundwater occurring at the bedrock/overburden interface, migrating northward and a groundwater treatment system for toluene (P&R 1991). A certificate of approval record was issued in 1989 to FOSECO for the toluene stripper for groundwater. The 1960 FIP indicates the following buildings: tablet making, lab, shipping, mixing, warehouse, ball mill, elevator, transformer, oil storage, blending, mouldable exothermic feeding compound, incinerator.	34	Metal Fabrication		EW8	TP	PCBs, Metals*	--
					MW18-120D	MW	Metals, HF Metals	BTEX, VOCs, THMs, Metals, HF Metals, Na
					OW12	MW	--	BTEX, PAHs, PHCs, VOCs, THMs, 1,4-dioxane, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
					OW15	MW	--	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
	Motor Vehicle Parts Manufacturing FOSECO BP Canada Energy Company is listed in ERIS operating at 201 Alice Street.	57	Vehicles and Associated Parts Manufacturing		OW16	MW	--	BTEX, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, Na, Cl, CN-, CrVI, Hg
	Former Spill – At the corner of Alice and Stevenson Street, a spill was reported of 15 L of windshield washer fluid and antifreeze to a catch basin caused by a motor vehicle accident in 2016.	27	Garages and Maintenance and Repair of Railcars, Marine Vehicles, and		TP17-300	TP	ABNs, BTEX, CPs, Dioxins/Furans, PAHs, PCBs, PHCs, VOCs, THMs, Metals, HF Metals, B-HWS, CN-, CrVI, Hg, EC, SAR, pH	--

Notes:

Information provided in this table is limited to detected parameters exceeding the MECP Standards. MDLs that exceed the MECP Standards can be found in the results tables provided in Section 6.

[a] PCA – Potentially contaminating activity (as defined by O. Reg 153/04, as amended), (*) best fit available where starred.

[b] AP Method groups as defined in the "*Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act* " dated July 1, 2011.

*Based on the O. Reg. 153/04 AP method group for metals, boron and uranium are missing from metals analyses from samples collected in the 1990s and 2007; parameters based on historical laboratory parameter groups. Similarly, where arsenic was missing, HF metals was not listed as a parameter tested.

"--" = no data for the specified media

ABNs = acid base neutral compounds
APEC = area of potential environmental concern
AST = aboveground storage tank
BH = borehole
B-HWS = boron - hot water soluble
BTEX = benzene, toluene, ethylbenzene, xylene
CH = corehole
Cl = chloride
CN- = cyanide
COC = contaminant of concern
CPs = chlorophenols
CrVI = hexavalent chromium
CS = confirmatory sample
EC = electrical conductivity
ERIS = environmental risk information services
FIP = fire insurance plan
GW = groundwater
HF Metals = hydride forming metals
Hg = mercury
MDL = method detection limit
MECP = Ontario Ministry of Environment, Conservation and Parks
Metals* = incomplete metals suite missing boron and uranium
MW = monitoring well
PAHs = polyaromatic hydrocarbons
PCA = potentially contaminating activity
PCBs = polychlorinated biphenyls
PHCs = petroleum hydrocarbons
SAR = sodium adsorption ratio
SS = soil sample
TP = test pit
TSSA = technical standards and safety authority
UST = underground storage tank
VOCs = volatile organic compounds

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	1	10	11	12			12SE10		2	3	4	5	6	7		8	9		A
		Sample ID	1-1	10-2 (11-2)	11-1 (12-1)	12-1 (OW7 SW7-1)	12-P1 (OWSW7-P1)	12-2 (OW7-SW7-2)	12SE10-1 (OW7-SE10-1)	12SE10-2 (OW7SE10-2)	2-1	3-1	4-1	5-1	6-1	7-2	7-4	8-2	9-1	9-3	A-1
		Start Depth (m)	0.3	0.2	0.5	0.2	0.2	0.4	0.2	0.4	0.2	0.3	0	0.4	0.2	0.4	1	0.2	0.3	0.8	0.3
		End Depth (m)	1	1	0.5	0.4	0.4	1	0.4	1.4	0.5	0.3	0.8	1.1	0.9	0.9	1.2	1	0.6	1.4	1
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991
Analyte	**Table 6 SCS [a]**	**Unit**																			
ABNs																					
1,1'-Biphenyl	0.31	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	0.36	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--
2,2'-oxybis(1-chloropropane)	0.67	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--
2,4-Dimethylphenol	38	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	2	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--
3,3'-Dichlorobenzidine	1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	--	--	--	--	--
4-Chloroaniline	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--
Diethylphthalate	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--
Dimethylphthalate	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--
Phenol	9.4	µg/g	0.01 U	--	0.01 U	--	--	--	--	--	--	--	--	--	--	0.01 U	--	0.01 U	0.01 U	--	--
BTEX																					
Benzene	0.21	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	1.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	2.3	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylene, o	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes, m & p	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes, Total	3.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chlorophenols																					
2,4,5-Trichlorophenol	4.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	0.19	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	1.6	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	0.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxins and Furans																					
Lower Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mid Point PCDD/F TEQ (WHO 2005)	13	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Upper Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																					
Average Fraction Organic Carbon	NV	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fraction Organic Carbon	NV	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Moisture	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
pH	NV	pH UNITS	6.6	8.7	7.7	--	--	--	--	--	7.7	8.2	7	8.3	8.2	9	--	7.7	8.8	--	--
Phosphorus	NV	µg/g	--	--	--	--	--	--	--	470	--	--	--	--	--	--	160	--	--	20 U	440
Calcium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																					
Antimony	7.5	µg/g	1.76	0.7	0.32	--	--	0.92	3.56	--	1.14	2.21	0.45	0.22	0.22	0.48	--	1.51	0.44	--	--
Arsenic	18	µg/g	--	--	--	--	--	--	--	4.7	--	--	--	--	--	--	--	--	--	--	--
Barium	390	µg/g	28	28	24	--	--	50	62	59.7	43	116	34	21	31	23	13	135	42	67.6	56
Beryllium	4	µg/g	1	2	2	--	--	4	1	1.3 U	3	3	1	2	3	2	0.4	3	2	0.5 U	0.6
Boron	120	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	1.2	µg/g	0.5 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	0.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.3 U	0.5 U	0.5 U	0.3 U	1.1
Calcium	NV	µg/g	--	--	--	--	--	--	--	20600	--	--	--	--	--	--	137000	--	--	152000	11000
Chromium	160	µg/g	7	4.6	5.8	--	--	4.2	18	17.9	3.4	3.9	4.1	5.5	5.9	3.3	16.5	9	6.6	0.3 U	22.7
Cobalt	22	µg/g	1.4	1.9	1.6	--	--	3.8	3.8	13	2.5	1	1.6	1	2.1	1	2 U	2.9	1 U	2 U	7
Copper	140	µg/g	13	22	14	--	--	25	37	322	17	19	10	12	9.2	8.2	11	16	12	8.9	15
Lead	120	µg/g	18	31	17	--	--	13	49	48	26	46	9.8	10	12	30	51	15	6.5	51	101
Magnesium	NV	µg/g	--	--	--	--	--	--	--	7040	--	--	--	--	--	--	83300	--	--	86100	5710
Molybdenum	6.9	µg/g	1 U	1 U	1 U	--	--	3	1 U	7	1 U	1 U	1 U	1 U	1 U	1 U	3 U	1 U	1 U	3 U	8
Nickel	100	µg/g	2.7	3.8	4.5	--	--	8.3	10	27	8.8	4.9	4.1	36	4.5	1.8	2 U	9.4	3.5	2 U	13
Selenium	2.4	µg/g	0.22	0.23	0.22	--	--	0.92	0.22	--	0.23	0.23	0.23	0.22 U	0.22 U	0.24	--	0.23	0.22	--	--
Silver	20	µg/g	1 U	1 U	1 U	--	--	1 U	1 U	0.2 U	1 U	1 U	1 U	1 U	1 U	1 U	0.2 U	1 U	1 U	0.2 U	0.2 U
Thallium	1	µg/g	--	--	--	--	--	--	--	2 U	--	--	--	--	--	--	2 U	--	--	2 U	2

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	1	10	11	12			12SE10		2	3	4	5	6	7		8	9		A
		Sample ID	1-1	10-2 (11-2)	11-1 (12-1)	12-1 (OW7 SW7-1)	12-P1 (OWSW7-P1)	12-2 (OW7-SW7-2)	12SE10-1 (OW7-SE10-1)	12SE10-2 (OW7SE10-2)	2-1	3-1	4-1	5-1	6-1	7-2	7-4	8-2	9-1	9-3	A-1
		Start Depth (m)	0.3	0.2	0.5	0.2	0.2	0.4	0.2	0.4	0.2	0.3	0	0.4	0.2	0.4	1	0.2	0.3	0.8	0.3
		End Depth (m)	1	1	0.5	0.4	0.4	1	0.4	1.4	0.5	0.3	0.8	1.1	0.9	0.9	1.2	1	0.6	1.4	1
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991
Analyte	**Table 6 SCS [a]**	**Unit**																			
Uranium	23	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	86	µg/g	**38**	**20**	**23**	--	--	**16**	**10**	**38.4**	**48**	**21**	**15**	**18**	**27**	**19**	0.3 U	**33**	**18**	**6.8**	**26.2**
Zinc	340	µg/g	**31**	**37**	**47**	--	--	**21**	**356**	**516**	**45**	**231**	**31**	**30**	**42**	**20**	**496**	**92**	**19**	**652**	**2660**
Non-Regulated Metals																					
Aluminum	NV	µg/g	--	--	--	--	--	--	--	**9520**	--	--	--	--	--	--	**4340**	--	--	**5570**	**16000**
Bismuth	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	NV	µg/g	--	--	--	--	--	--	--	**57600**	--	--	--	--	--	--	**10100**	--	--	**22100**	**24900**
Manganese	NV	µg/g	--	--	--	--	--	--	--	**466**	--	--	--	--	--	--	**227**	--	--	**503**	**952**
Potassium	NV	µg/g	--	--	--	--	--	--	--	**880**	--	--	--	--	--	--	**430**	--	--	**440**	**1020**
Strontium	NV	µg/g	--	--	--	--	--	--	--	**78.1**	--	--	--	--	--	--	**41.1**	--	--	**34**	**21.6**
Tin	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/g	--	--	--	--	--	--	--	**532**	--	--	--	--	--	--	**29.8**	--	--	**23.6**	**139**
Zirconium	NV	µg/g	--	--	--	--	--	--	--	**11**	--	--	--	--	--	--	**5**	--	--	**9**	**8**
ORPs																					
Boron (HWS)	1.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloride (Cl)	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium, Hexavalent (Cr6+)	8	µg/g	10 U	10 U	10 U	--	--	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U	--	10 U
Cyanide, Free	0.051	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	--	0.1 U	--	--	--
Cyanide, Weak Acid Dissociable	0.051	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	0.7	mS/cm	**0.015**	**0.043**	**0.034**	--	--	--	--	--	**0.042**	**0.047**	**0.026**	**0.092**	**0.055**	**0.056**	--	**0.137**	**0.06**	--	--
Mercury	0.27	µg/g	**0.02**	0.01 U	**0.02**	--	--	**0.01**	**0.04**	--	**0.02**	**0.06**	**0.01**	0.01 U	**0.01**	**0.03**	--	**0.02**	**0.02**	--	--
Sodium	NV	µg/g	--	--	--	--	--	--	--	**280**	--	--	--	--	--	--	**180**	--	--	**150**	**300**
Sodium Absorption Ratio	5	SAR	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OCPs																					
Hexachlorobenzene	0.52	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--
Hexachlorobutadiene	0.012	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--
Hexachlorocyclopentadiene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	2 U	--	--	--	--	--
Hexachloroethane	0.089	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--
PAHs																					
1-Methylnaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-(1-)Methylnaphthalene	0.99	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	7.9	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--
Acenaphthylene	0.15	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--
Anthracene	0.67	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--
Benzo(a)anthracene	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--
Benzo(a)pyrene	0.3	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--
Benzo(b&j)fluoranthene	0.78	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.78	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--
Benzo(g,h,i)perylene	6.6	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--
Benzo(k)fluoranthene	0.78	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--
Chrysene	7	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--
Dibenzo(a,h)anthracene	0.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--
Fluoranthene	0.69	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--
Fluorene	62	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--
Indeno(1,2,3-Cd)Pyrene	0.38	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--
Naphthalene	0.6	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--
Phenanthrene	6.2	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--
Pyrene	78	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--
PCBs																					
Aroclor 1242	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.35	µg/g	--	--	--	--	0.01 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	1	10	11	12			12SE10		2	3	4	5	6	7		8	9		A
		Sample ID	1-1	10-2 (11-2)	11-1 (12-1)	12-1 (OW7 SW7-1)	12-P1 (OWSW7-P1)	12-2 (OW7-SW7-2)	12SE10-1 (OW7-SE10-1)	12SE10-2 (OW7SE10-2)	2-1	3-1	4-1	5-1	6-1	7-2	7-4	8-2	9-1	9-3	A-1
		Start Depth (m)	0.3	0.2	0.5	0.2	0.2	0.4	0.2	0.4	0.2	0.3	0	0.4	0.2	0.4	1	0.2	0.3	0.8	0.3
		End Depth (m)	1	1	0.5	0.4	0.4	1	0.4	1.4	0.5	0.3	0.8	1.1	0.9	0.9	1.2	1	0.6	1.4	1
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991
Analyte	**Table 6 SCS [a]**	**Unit**																			
PHCs																					
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	55	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F1 (C6-C10)	55	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	98	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16)	98	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	300	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34)	300	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F4 (C34-C50)	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F4G-SG (GHH-Silica)	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Gravimetric Heavy Hydrocarbons	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SVOCs (other)																					
2-Chloronaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--
2-Hexanone	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Bromophenyl Phenyl Ether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--
4-Chlorophenyl Phenylether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--
Bis (2-chloroethoxy) methane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--
Butyl benzyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--
Chloroethane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	NV	µg/g	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-N-Butylphthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--
Di-n-octyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--
Isophorone	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--
Nitrobenzene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--
N-Nitrosodi-N-propylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--
N-Nitrosodiphenylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--
VOCs																					
1,1,1,2-Tetrachloroethane	0.058	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	0.38	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	0.47	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethene	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dibromoethane	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	1.2	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroethane	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloropropane	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	4.8	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichloropropene	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	0.083	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dioxane	1.8	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	16	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Methyl-2-Pentanone	1.7	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acetone	16	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromodichloromethane	1.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromoform	0.27	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromomethane	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chlorobenzene	2.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chlorodibromomethane	2.3	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroform	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	1.9	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dichlorodifluoromethane	16	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dichloromethane	0.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl tert-butyl ether (MTBE)	0.75	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
n-Hexane	2.8	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Styrene	0.7	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethene	0.28	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	0.084	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
trans-1,3-Dichloropropene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	1	10	11	12			12SE10		2	3	4	5	6	7		8	9		A
		Sample ID	1-1	10-2 (11-2)	11-1 (12-1)	12-1 (OW7 SW7-1)	12-P1 (OWSW7-P1)	12-2 (OW7-SW7-2)	12SE10-1 (OW7-SE10-1)	12SE10-2 (OW7SE10-2)	2-1	3-1	4-1	5-1	6-1	7-2	7-4	8-2	9-1	9-3	A-1
		Start Depth (m)	0.3	0.2	0.5	0.2	0.2	0.4	0.2	0.4	0.2	0.3	0	0.4	0.2	0.4	1	0.2	0.3	0.8	0.3
		End Depth (m)	1	1	0.5	0.4	0.4	1	0.4	1.4	0.5	0.3	0.8	1.1	0.9	0.9	1.2	1	0.6	1.4	1
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991
Analyte	**Table 6 SCS [a]**	**Unit**																			
Trichloroethylene	0.061	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Trichlorofluoromethane	4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vinyl Chloride	0.02	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Ministry of the Environment.* April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/g = microgram(s) per gram

ABNs = acid, base and neutral compounds

BH = borehole

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

DUP = duplicate

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mg/kg = milligram(s) per kilogram

mg/l = milligram(s) per litre

mS/cm = milliSiemen(s) per centimetre

MW = monitoring well

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

pg/g = picogram(s) per gram

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	A	AN21	AN21	AN21	ASW14	B	B	BH07	BH07	BH07-40	BH07-40	BH07-41	BH07-41	BH07-41	BH07-41	BH07-42			
		Sample ID	A-2	AN21-1	AN21-2	AN21-3	ASW14-1	B-2	B-3	BH7-SS1	BH7-SS2	BH07-40SS-1A	BH07-40 SS-2A	BH07-41 SS-1	BH07-41	Dup#4	BH07-41 SS-2	OW07-42SS1	OW07-42SS2	DUP#14	BH07-45 SS-1
		Start Depth (m)	1	0	0.9	1.7	0	0.3	1	0	1	0.3	2.13	0	0	0	1.2	0	1.22	1.22	0
		End Depth (m)	2	0.9	1.7	1.7	0.3	1	1.4	0.15	1.15	1.22	2.39	0.61	2.29	0.61	2.29	0.61	1.68	1.68	0.15
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	FD	N
		Sample Date	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	23 Jan 1991	22 Jan 1991	22 Jan 1991	08 May 1998	08 May 1998	08 Feb 2007	08 Feb 2007	08 Feb 2007	07 Mar 2007	08 Feb 2007	08 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	08 Feb 2007
Analyte	**Table 6 SCS [a]**	**Unit**																			
ABNs																					
1,1'-Biphenyl	0.31	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	0.36	µg/g	--	--	--	--	--	--	--	--	--	0.007 U	0.007 U	--	--	--	0.007 U	0.007 U	0.007 U	--	--
2,2'-oxybis(1-chloropropane)	0.67	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	38	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	2	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	9.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BTEX																					
Benzene	0.21	µg/g	--	--	--	--	--	--	--	--	--	0.002 U	0.002 U	--	--	--	**0.003**	**0.006**	**0.011**	--	--
Ethylbenzene	1.1	µg/g	--	--	--	--	--	--	--	--	--	0.002 U	0.002 U	--	--	--	0.002 U	0.002 U	**0.004**	--	--
Toluene	2.3	µg/g	--	--	--	--	--	--	--	--	--	0.002 U	0.002 U	--	--	--	**0.006**	**0.007**	**0.025**	--	--
Xylene, o	NV	µg/g	--	--	--	--	--	--	--	--	--	0.002 U	0.002 U	--	--	--	0.002 U	0.002 U	**0.006**	--	--
Xylenes, m & p	NV	µg/g	--	--	--	--	--	--	--	--	--	0.002 U	0.002 U	--	--	--	0.002 U	0.002 U	**0.008**	--	--
Xylenes, Total	3.1	µg/g	--	--	--	--	--	--	--	--	--	0.002 U	0.002 U	--	--	--	0.002 U	0.002 U	**0.014**	--	--
Chlorophenols																					
2,4,5-Trichlorophenol	4.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	0.19	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	1.6	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	0.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxins and Furans																					
Lower Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mid Point PCDD/F TEQ (WHO 2005)	13	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Upper Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																					
Average Fraction Organic Carbon	NV	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fraction Organic Carbon	NV	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Moisture	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
pH	NV	pH UNITS	**8.2**	--	--	--	--	**7.3**	--	**8.29**	**8.54**	**7.14**	--	--	--	--	--	**7.6**	--	--	--
Phosphorus	NV	µg/g	**630**	**280**	**90**	**460**	--	--	--	--	--	--	--	--	**482**	--	--	--	--	--	--
Calcium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																					
Antimony	7.5	µg/g	--	--	--	--	--	--	--	--	--	0.8 U	0.8 U	0.8 U	--	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Arsenic	18	µg/g	--	--	--	--	--	--	--	--	--	**8.1**	**2.9**	**2.2**	--	**2.9**	**3.3**	**8.5**	**0.9**	**1.1**	**2**
Barium	390	µg/g	**31**	**74**	**21**	**43.9**	--	--	--	--	--	**81.6**	**137**	**17.3**	--	**24.8**	**17.5**	**85.6**	**7.1**	**8.3**	**13**
Beryllium	4	µg/g	**0.5**	**0.5**	**0.3**	0.4 U	--	--	--	--	--	**0.7**	0.2 U	0.2 U	--	0.2 U	0.2 U	**0.6**	0.2 U	0.2 U	0.2 U
Boron	120	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	1.2	µg/g	0.3 U	0.3 U	**0.4**	0.3 U	**0.56**	**0.95**	--	--	--	**3.4**	**1.5**	**0.5**	--	**0.7**	**1.4**	**1.8**	**0.6**	**0.6**	**4**
Calcium	NV	µg/g	**78300**	**65400**	**1450**	**137000**	--	--	--	--	--	--	--	--	**46900**	--	--	--	--	--	--
Chromium	160	µg/g	**20.9**	**28.6**	**25.3**	0.3 U	**7.4**	**11**	--	--	--	**16.6**	**5**	**7.2**	--	**8**	**10.1**	**15.6**	**3.3**	**4.4**	**5.9**
Cobalt	22	µg/g	**4**	**3**	**2**	2 U	**7.6**	**6**	--	--	--	**7.7**	**14.5**	**2.1**	--	**2.5**	**3.5**	**6.6**	**1.1**	**1.4**	**3.9**
Copper	140	µg/g	**34**	**68**	**11**	**54.5**	**34**	**20**	--	--	--	**27.8**	**28.6**	**17.1**	--	**22.8**	**16.6**	**28.4**	**5.1**	**5.8**	**13.6**
Lead	120	µg/g	**167**	**253**	**18**	**145**	**417**	**162**	**70**	--	--	**227**	**25.2**	**75.6**	--	**97.1**	**68.5**	**133**	**25.8**	**34.7**	**138**
Magnesium	NV	µg/g	**36500**	**22300**	**947**	**30700**	--	--	--	--	--	--	--	--	**22800**	--	--	--	--	--	--
Molybdenum	6.9	µg/g	3 U	**4**	**6**	3 U	--	**1.23**	3 U	--	--	**1.2**	**0.4**	**0.9**	--	**1.4**	**2.1**	**1**	0.3 U	0.3 U	**1.3**
Nickel	100	µg/g	**10**	**12**	**4**	2 U	**15**	**14**	--	--	--	**17.8**	**18.8**	**7.5**	--	**11.4**	**6.9**	**15.8**	**2.5**	**3.8**	**9.1**
Selenium	2.4	µg/g	--	--	--	--	--	--	--	--	--	0.8 U	0.8 U	0.8 U	--	0.8 U	0.8 U	**0.7**	0.4 U	0.4 U	0.8 U
Silver	20	µg/g	0.2 U	0.2 U	0.2 U	0.2 U	1 U	1 U	--	--	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Thallium	1	µg/g	2 U	2 U	**6**	2 U	--	--	--	--	--	**0.4**	**0.6**	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.3**

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	A	AN21	AN21	AN21	ASW14	B	B	BH07	BH07	BH07-40	BH07-40	BH07-41	BH07-41	BH07-41	BH07-41	BH07-42			
		Sample ID	A-2	AN21-1	AN21-2	AN21-3	ASW14-1	B-2	B-3	BH7-SS1	BH7-SS2	BH07-40SS-1A	BH07-40 SS-2A	BH07-41 SS-1	BH07-41	Dup#4	BH07-41 SS-2	OW07-42SS1	OW07-42SS2	DUP#14	BH07-45 SS-1
		Start Depth (m)	1	0	0.9	1.7	0	0.3	1	0	1	0.3	2.13	0	0	0	1.2	0	1.22	1.22	0
		End Depth (m)	2	0.9	1.7	1.7	0.3	1	1.4	0.15	1.15	1.22	2.39	0.61	2.29	0.61	2.29	0.61	1.68	1.68	0.15
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	FD	N
		Sample Date	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	23 Jan 1991	22 Jan 1991	22 Jan 1991	08 May 1998	08 May 1998	08 Feb 2007	08 Feb 2007	08 Feb 2007	07 Mar 2007	08 Feb 2007	08 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	08 Feb 2007
Analyte	**Table 6 SCS [a]**	**Unit**																			
Uranium	23	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	**0.5**	--	--	--	--	--	--
Vanadium	86	µg/g	**10.9**	**15.6**	**13**	**7.5**	--	--	--	--	--	**30**	**41.3**	**18.8**	--	**17.9**	**8.8**	**24.5**	**5**	**6.3**	**10.2**
Zinc	340	µg/g	**1920**	**948**	**27**	**2260**	**2375**	**392**	**882**	--	--	**1580**	**2250**	**180**	--	**277**	**572**	**828**	**368**	**416**	**1520**
Non-Regulated Metals																					
Aluminum	NV	µg/g	**8850**	**9060**	**11100**	**6990**	--	--	--	--	--	--	--	--	**9920**	--	--	--	--	--	--
Bismuth	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	NV	µg/g	**18200**	**26900**	**18200**	**21000**	--	--	--	--	--	--	--	--	**37100**	--	--	--	--	--	--
Manganese	NV	µg/g	**1680**	**1090**	**28**	**1430**	--	--	--	--	--	--	--	--	**596**	--	--	--	--	--	--
Potassium	NV	µg/g	**1260**	**810**	**720**	**750**	--	--	--	--	--	--	--	--	**857**	--	--	--	--	--	--
Strontium	NV	µg/g	**58.9**	**55.6**	**8.7**	**114**	--	--	--	--	--	--	--	--	**41.7**	--	--	--	--	--	--
Tin	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/g	**84.3**	**145**	**17.7**	**32.8**	--	--	--	--	--	--	--	--	**130**	--	--	--	--	--	--
Zirconium	NV	µg/g	**15**	**9**	**7**	**13**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																					
Boron (HWS)	1.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloride (Cl)	NV	µg/g	--	--	--	--	--	--	--	--	--	**7.72**	--	--	--	--	--	**9.31**	--	--	--
Chromium, Hexavalent (Cr6+)	8	µg/g	--	--	--	--	10 U	10 U	--	--	--	0.4 U	--	0.4 U	--	--	--	0.4 U	--	--	--
Cyanide, Free	0.051	µg/g	--	--	--	--	--	--	--	--	--	0.08 U	--	0.08 U	--	--	--	0.08 U	--	--	--
Cyanide, Weak Acid Dissociable	0.051	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	0.7	mS/cm	**0.071**	--	--	--	--	**0.024**	--	--	--	**0.384**	--	--	--	--	--	**0.248**	--	--	--
Mercury	0.27	µg/g	--	--	--	--	--	--	--	--	--	**0.125**	--	**0.013**	--	--	--	**0.11**	--	--	--
Sodium	NV	µg/g	**260**	**180**	**4**	**110**	--	--	--	--	--	--	--	--	**133**	--	--	--	--	--	--
Sodium Absorption Ratio	5	SAR	--	--	--	--	--	--	--	--	--	**2**	--	--	--	--	--	**0.067**	--	--	--
OCPs																					
Hexachlorobenzene	0.52	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	0.012	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachloroethane	0.089	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs																					
1-Methylnaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-(1-)Methylnaphthalene	0.99	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	7.9	µg/g	--	--	--	--	--	--	--	--	--	**0.08**	--	0.3 U	--	--	--	--	--	--	--
Acenaphthylene	0.15	µg/g	--	--	--	--	--	--	--	--	--	**0.04**	--	0.2 U	--	--	--	--	--	--	--
Anthracene	0.67	µg/g	--	--	--	--	--	--	--	--	--	**0.42**	--	**0.25**	--	--	--	--	--	--	--
Benzo(a)anthracene	0.5	µg/g	--	--	--	--	--	--	--	--	--	**0.31**	--	**0.36**	--	--	--	--	--	--	--
Benzo(a)pyrene	0.3	µg/g	--	--	--	--	--	--	--	--	--	**0.15**	--	**0.53**	--	--	--	--	--	--	--
Benzo(b&j)fluoranthene	0.78	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.78	µg/g	--	--	--	--	--	--	--	--	--	**0.28**	--	**0.9**	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	6.6	µg/g	--	--	--	--	--	--	--	--	--	**0.12**	--	**0.74**	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.78	µg/g	--	--	--	--	--	--	--	--	--	**0.09**	--	**0.33**	--	--	--	--	--	--	--
Chrysene	7	µg/g	--	--	--	--	--	--	--	--	--	**1.4**	--	**0.51**	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.1	µg/g	--	--	--	--	--	--	--	--	--	**0.04**	--	0.2 U	--	--	--	--	--	--	--
Fluoranthene	0.69	µg/g	--	--	--	--	--	--	--	--	--	**0.35**	--	**1.6**	--	--	--	--	--	--	--
Fluorene	62	µg/g	--	--	--	--	--	--	--	--	--	**0.48**	--	0.2 U	--	--	--	--	--	--	--
Indeno(1,2,3-Cd)Pyrene	0.38	µg/g	--	--	--	--	--	--	--	--	--	**0.1**	--	**0.57**	--	--	--	--	--	--	--
Naphthalene	0.6	µg/g	--	--	--	--	--	--	--	--	--	**0.17**	--	**0.31**	--	--	--	--	--	--	--
Phenanthrene	6.2	µg/g	--	--	--	--	--	--	--	--	--	**3.3**	--	**1.3**	--	--	--	--	--	--	--
Pyrene	78	µg/g	--	--	--	--	--	--	--	--	--	**1.4**	--	**1.2**	--	--	--	--	--	--	--
PCBs																					
Aroclor 1242	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.35	µg/g	--	--	--	--	--	--	--	--	--	0.02 U	0.02 U	0.02 U	--	--	--	0.02 U	--	--	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	A	AN21	AN21	AN21	ASW14	B	B	BH07	BH07	BH07-40	BH07-40	BH07-41	BH07-41	BH07-41	BH07-41	BH07-42			
		Sample ID	A-2	AN21-1	AN21-2	AN21-3	ASW14-1	B-2	B-3	BH7-SS1	BH7-SS2	BH07-40SS-1A	BH07-40 SS-2A	BH07-41 SS-1	BH07-41	Dup#4	BH07-41 SS-2	OW07-42SS1	OW07-42SS2	DUP#14	BH07-45 SS-1
		Start Depth (m)	1	0	0.9	1.7	0	0.3	1	0	1	0.3	2.13	0	0	0	1.2	0	1.22	1.22	0
		End Depth (m)	2	0.9	1.7	1.7	0.3	1	1.4	0.15	1.15	1.22	2.39	0.61	2.29	0.61	2.29	0.61	1.68	1.68	0.15
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	FD	N
		Sample Date	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	23 Jan 1991	22 Jan 1991	22 Jan 1991	08 May 1998	08 May 1998	08 Feb 2007	08 Feb 2007	08 Feb 2007	07 Mar 2007	08 Feb 2007	08 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	08 Feb 2007
Analyte	**Table 6 SCS [a]**	**Unit**																			
PHCs																					
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	55	µg/g	--	--	--	--	--	--	--	--	--	**5**	--	--	--	--	--	**5**	--	--	--
Petroleum Hydrocarbons F1 (C6-C10)	55	µg/g	--	--	--	--	--	--	--	--	--	**5**	--	--	--	--	--	**5**	--	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	98	µg/g	--	--	--	--	--	--	--	--	--	**400**	--	**20**	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16)	98	µg/g	--	--	--	--	--	--	--	--	--	**400**	**290**	**20**	--	--	**10**	**10**	--	--	**16**
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	300	µg/g	--	--	--	--	--	--	--	--	--	**23000**	--	**540**	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34)	300	µg/g	--	--	--	--	--	--	--	--	--	**23000**	**14000**	**550**	--	--	**79**	**110**	--	--	**200**
Petroleum Hydrocarbons F4 (C34-C50)	2800	µg/g	--	--	--	--	--	--	--	--	--	**380**	**270**	**1700**	--	--	**50**	**50**	--	--	**50**
F4G-SG (GHH-Silica)	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Gravimetric Heavy Hydrocarbons	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SVOCs (other)																					
2-Chloronaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Hexanone	NV	µg/g	--	--	--	--	--	--	--	--	--	0.47 U	0.47 U	--	--	--	0.47 U	0.47 U	0.47 U	--	--
4-Bromophenyl Phenyl Ether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chlorophenyl Phenylether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethoxy) methane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Butyl benzyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/g	--	--	--	--	--	--	--	--	--	0.005 U	0.005 U	--	--	--	0.005 U	0.005 U	0.005 U	--	--
Chloromethane	NV	µg/g	--	--	--	--	--	--	--	--	--	0.002 U	0.002 U	--	--	--	0.002 U	0.002 U	0.002 U	--	--
Di-N-Butylphthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Isophorone	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrobenzene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodi-N-propylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																					
1,1,1,2-Tetrachloroethane	0.058	µg/g	--	--	--	--	--	--	--	--	--	0.002 U	0.002 U	--	--	--	0.002 U	0.002 U	0.002 U	--	--
1,1,1-Trichloroethane	0.38	µg/g	--	--	--	--	--	--	--	--	--	0.002 U	0.002 U	--	--	--	0.002 U	0.002 U	0.002 U	--	--
1,1,2,2-Tetrachloroethane	0.05	µg/g	--	--	--	--	--	--	--	--	--	0.002 U	0.002 U	--	--	--	0.002 U	0.002 U	0.002 U	--	--
1,1,2-Trichloroethane	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	0.47	µg/g	--	--	--	--	--	--	--	--	--	0.002 U	0.002 U	--	--	--	0.002 U	0.002 U	0.002 U	--	--
1,1-Dichloroethene	0.05	µg/g	--	--	--	--	--	--	--	--	--	0.002 U	0.002 U	--	--	--	0.002 U	0.002 U	0.002 U	--	--
1,2-Dibromoethane	0.05	µg/g	--	--	--	--	--	--	--	--	--	0.002 U	0.002 U	--	--	--	0.002 U	0.002 U	0.002 U	--	--
1,2-Dichlorobenzene	1.2	µg/g	--	--	--	--	--	--	--	--	--	0.002 U	0.002 U	--	--	--	0.002 U	0.002 U	0.002 U	--	--
1,2-Dichloroethane	0.05	µg/g	--	--	--	--	--	--	--	--	--	0.002 U	0.002 U	--	--	--	0.002 U	0.002 U	0.002 U	--	--
1,2-Dichloropropane	0.05	µg/g	--	--	--	--	--	--	--	--	--	0.002 U	0.002 U	--	--	--	0.002 U	0.002 U	0.002 U	--	--
1,3-Dichlorobenzene	4.8	µg/g	--	--	--	--	--	--	--	--	--	0.002 U	0.002 U	--	--	--	0.002 U	0.002 U	0.002 U	--	--
1,3-Dichloropropene	0.05	µg/g	--	--	--	--	--	--	--	--	--	0.002 U	0.002 U	--	--	--	0.002 U	0.002 U	0.002 U	--	--
1,4-Dichlorobenzene	0.083	µg/g	--	--	--	--	--	--	--	--	--	0.002 U	0.002 U	--	--	--	0.002 U	0.002 U	0.002 U	--	--
1,4-Dioxane	1.8	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	16	µg/g	--	--	--	--	--	--	--	--	--	0.041 U	0.041 U	--	--	--	0.041 U	0.041 U	0.041 U	--	--
4-Methyl-2-Pentanone	1.7	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acetone	16	µg/g	--	--	--	--	--	--	--	--	--	**0.17**	**0.33**	--	--	--	0.13 U	0.13 U	0.13 U	--	--
Bromodichloromethane	1.5	µg/g	--	--	--	--	--	--	--	--	--	0.003 U	0.003 U	--	--	--	0.003 U	0.003 U	0.003 U	--	--
Bromoform	0.27	µg/g	--	--	--	--	--	--	--	--	--	0.002 U	0.002 U	--	--	--	0.002 U	0.002 U	0.002 U	--	--
Bromomethane	0.05	µg/g	--	--	--	--	--	--	--	--	--	0.002 U	0.002 U	--	--	--	0.002 U	0.002 U	0.002 U	--	--
Carbon tetrachloride	0.05	µg/g	--	--	--	--	--	--	--	--	--	0.002 U	0.002 U	--	--	--	0.002 U	0.002 U	0.002 U	--	--
Chlorobenzene	2.4	µg/g	--	--	--	--	--	--	--	--	--	0.002 U	0.002 U	--	--	--	0.002 U	0.002 U	0.002 U	--	--
Chlorodibromomethane	2.3	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroform	0.05	µg/g	--	--	--	--	--	--	--	--	--	0.002 U	0.002 U	--	--	--	0.002 U	0.002 U	0.002 U	--	--
cis-1,2-Dichloroethene	1.9	µg/g	--	--	--	--	--	--	--	--	--	0.002 U	0.002 U	--	--	--	0.002 U	0.002 U	0.002 U	--	--
cis-1,3-Dichloropropene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dichlorodifluoromethane	16	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dichloromethane	0.1	µg/g	--	--	--	--	--	--	--	--	--	0.002 U	0.002 U	--	--	--	0.002 U	0.002 U	0.002 U	--	--
Methyl tert-butyl ether (MTBE)	0.75	µg/g	--	--	--	--	--	--	--	--	--	0.004 U	0.004 U	--	--	--	0.004 U	0.004 U	0.004 U	--	--
n-Hexane	2.8	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Styrene	0.7	µg/g	--	--	--	--	--	--	--	--	--	0.002 U	0.002 U	--	--	--	0.002 U	0.002 U	0.002 U	--	--
Tetrachloroethene	0.28	µg/g	--	--	--	--	--	--	--	--	--	0.002 U	0.002 U	--	--	--	0.002 U	0.002 U	0.002 U	--	--
trans-1,2-Dichloroethene	0.084	µg/g	--	--	--	--	--	--	--	--	--	0.003 U	0.003 U	--	--	--	0.003 U	0.003 U	0.003 U	--	--
trans-1,3-Dichloropropene	NV	µg/g	--	--	--	--	--	--	--	--	--	0.003 U	0.003 U	--	--	--	0.003 U	0.003 U	0.003 U	--	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	A	AN21	AN21	AN21	ASW14	B	B	BH07	BH07	BH07-40	BH07-40	BH07-41	BH07-41	BH07-41	BH07-41	BH07-42			
		Sample ID	A-2	AN21-1	AN21-2	AN21-3	ASW14-1	B-2	B-3	BH7-SS1	BH7-SS2	BH07-40SS-1A	BH07-40 SS-2A	BH07-41 SS-1	BH07-41	Dup#4	BH07-41 SS-2	OW07-42SS1	OW07-42SS2	DUP#14	BH07-45 SS-1
		Start Depth (m)	1	0	0.9	1.7	0	0.3	1	0	1	0.3	2.13	0	0	0	1.2	0	1.22	1.22	0
		End Depth (m)	2	0.9	1.7	1.7	0.3	1	1.4	0.15	1.15	1.22	2.39	0.61	2.29	0.61	2.29	0.61	1.68	1.68	0.15
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	FD	N
		Sample Date	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	23 Jan 1991	22 Jan 1991	22 Jan 1991	08 May 1998	08 May 1998	08 Feb 2007	08 Feb 2007	08 Feb 2007	07 Mar 2007	08 Feb 2007	08 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	08 Feb 2007
Analyte	**Table 6 SCS [a]**	**Unit**																			
Trichloroethylene	0.061	µg/g	--	--	--	--	--	--	--	--	--	0.004 U	0.004 U	--	--	--	0.004 U	0.004 U	0.004 U	--	--
Trichlorofluoromethane	4	µg/g	--	--	--	--	--	--	--	--	--	0.004 U	0.004 U	--	--	--	0.004 U	0.004 U	0.004 U	--	--
Vinyl Chloride	0.02	µg/g	--	--	--	--	--	--	--	--	--	0.002 U	0.002 U	--	--	--	0.002 U	0.002 U	0.002 U	--	--

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Ministry of the Environment.* April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/g = microgram(s) per gram

ABNs = acid, base and neutral compounds

BH = borehole

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

DUP = duplicate

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mg/kg = milligram(s) per kilogram

mg/l = milligram(s) per litre

mS/cm = milliSiemen(s) per centimetre

MW = monitoring well

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

pg/g = picogram(s) per gram

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	BH07-45					BH07-46	BH07-46	BH07-47	BH07-47	BH07-48	BH07-48	BH07-49	BH07-49	BH07-50	BH07-50	BH07-51	BH07-51	BH0	
		Sample ID	BH07-45 SS-1A	BH07-45 SS-2	OW07-45SS2	Dup#2	DUP#2	BH07-46 SS-1A	BH07-46 SS-2	BH07-47 SS-1	BH07-47 SS-2	BH07-48 SS-1	BH07-48 SS-2	BH07-49 SS-1	BH07-49 SS-2	BH07-50 SS-1	BH07-50 SS-2	BH07-51 SS-1	BH07-51 SS-2	BH07-52 SS-1	BH07-52
		Start Depth (m)	0.05	1.22	1.22	1.22	1.22	0.05	1.22	0.05	1.22	0.1	1.22	0.05	1.22	0.05	1.22	0	1.22	0	0
		End Depth (m)	1.22	1.78	1.78	1.78	1.78	1.22	1.68	1.22	1.8	1.22	1.42	0.3	1.83	1	1.67	1.22	2.06	1.22	2.01
		Sample Type	N	N	N	FD	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	08 Feb 2007	08 Feb 2007	22 Feb 2007	08 Feb 2007	22 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	09 Feb 2007	09 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	07 Mar 2007
Analyte	**Table 6 SCS [a]**	**Unit**																			
ABNs																					
1,1'-Biphenyl	0.31	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	0.36	µg/g	--	0.007 U	--	0.007 U	--	--	0.007 U	--	0.007 U	--	--	--	0.007 U	--	--	--	0.007 U	--	--
2,2'-oxybis(1-chloropropane)	0.67	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	38	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	2	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	9.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BTEX																					
Benzene	0.21	µg/g	--	**0.006**	--	**0.007**	--	--	**0.009**	--	**0.004**	0.1 U	0.1 U	--	**0.003**	--	--	--	0.002 U	0.1 U	--
Ethylbenzene	1.1	µg/g	--	**0.003**	--	**0.002**	--	--	**0.003**	--	0.002 U	0.05 U	0.05 U	--	0.002 U	--	--	--	0.002 U	0.05 U	--
Toluene	2.3	µg/g	--	**0.011**	--	**0.011**	--	--	**0.013**	--	**0.009**	0.08 U	0.08 U	--	**0.006**	--	--	--	**0.005**	0.08 U	--
Xylene, o	NV	µg/g	--	**0.002**	--	**0.002**	--	--	**0.004**	--	0.002 U	--	--	--	0.002 U	--	--	--	0.002 U	--	--
Xylenes, m & p	NV	µg/g	--	**0.003**	--	**0.003**	--	--	**0.004**	--	**0.003**	--	--	--	0.002 U	--	--	--	**0.002**	--	--
Xylenes, Total	3.1	µg/g	--	**0.005**	--	**0.005**	--	--	**0.008**	--	**0.003**	0.07 U	0.07 U	--	0.002 U	--	--	--	**0.002**	0.07 U	--
Chlorophenols																					
2,4,5-Trichlorophenol	4.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	0.19	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	1.6	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	0.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxins and Furans																					
Lower Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mid Point PCDD/F TEQ (WHO 2005)	13	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Upper Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																					
Average Fraction Organic Carbon	NV	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fraction Organic Carbon	NV	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Moisture	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	**7.85**	--	--	--	--	--
Phosphorus	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**506**
Calcium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																					
Antimony	7.5	µg/g	0.8 U	0.8 U	--	--	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	**2.1**	0.8 U	**2.9**	--
Arsenic	18	µg/g	**1.5**	**1.9**	--	--	**1.9**	**1.8**	**1.8**	**5.4**	**3.8**	**7.6**	**2.7**	**6.8**	**2.5**	**2.7**	**1.6**	**13.4**	**1.3**	**11.3**	--
Barium	390	µg/g	**12.2**	**17.9**	--	--	**24.3**	**21.2**	**26.1**	**60.6**	**20.2**	**45.7**	**21.2**	**79.9**	**25.7**	**28**	**21.6**	**92.2**	**16.9**	**100**	--
Beryllium	4	µg/g	0.2 U	0.2 U	--	--	0.2 U	0.2 U	**0.2**	0.2 U	0.2 U	**0.3**	**0.2**	**0.6**	**0.3**	**0.3**	**0.3**	**0.4**	**0.2**	**0.3**	--
Boron	120	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	1.2	µg/g	**3**	**4.5**	--	--	**3.6**	0.2 U	**2.9**	**1.4**	**0.9**	**1.5**	**0.8**	**1.2**	**1.5**	0.2 U	**0.6**	**1.4**	**0.5**	**1.7**	--
Calcium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**147000**
Chromium	160	µg/g	**4**	**6.9**	--	--	**4.9**	**5.5**	**7.9**	**6.1**	**8.6**	**8.9**	**9.1**	**12.7**	**8.8**	**7.1**	**7.9**	**59.8**	**7.5**	**20.5**	--
Cobalt	22	µg/g	**3.1**	**3.7**	--	--	**3.6**	**2.8**	**3.9**	**6.2**	**4.2**	**5.6**	**4**	**6.2**	**3.4**	**3.1**	**4.6**	**7.8**	**2.8**	**6.5**	--
Copper	140	µg/g	**10.4**	**12.2**	--	--	**12.4**	**12.9**	**13.5**	**24.9**	**22.9**	**20.2**	**25.5**	**15.1**	**24**	**10.9**	**15**	**129**	**13.1**	**158**	--
Lead	120	µg/g	**131**	**147**	--	--	**121**	**7.3**	**148**	**146**	**51.2**	**102**	**80.1**	**110**	**105**	**45.8**	**59.3**	**131**	**68.2**	**289**	--
Magnesium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**83100**
Molybdenum	6.9	µg/g	**1.1**	**1.7**	--	--	**1.4**	0.3 U	**1.3**	**0.6**	**0.4**	**0.7**	0.3 U	**0.6**	**0.3**	**0.4**	0.3 U	**9.9**	**0.4**	**2.3**	--
Nickel	100	µg/g	**7.3**	**7.9**	--	--	**7.3**	**4.7**	**8.9**	**12**	**12.1**	**13**	**11**	**12.2**	**12.5**	**6.4**	**11.3**	**117**	**12.3**	**33.5**	--
Selenium	2.4	µg/g	**0.8**	0.8 U	--	--	**0.6**	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	--
Silver	20	µg/g	0.2 U	0.2 U	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.9**	--
Thallium	1	µg/g	**0.3**	**0.3**	--	--	**0.3**	0.2 U	**0.3**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	BH07-45					BH07-46	BH07-46	BH07-47	BH07-47	BH07-48	BH07-48	BH07-49	BH07-49	BH07-50	BH07-50	BH07-51	BH07-51	BH0
		Sample ID	BH07-45 SS-1A	BH07-45 SS-2	OW07-45SS2	Dup#2	DUP#2	BH07-46 SS-1A	BH07-46 SS-2	BH07-47 SS-1	BH07-47 SS-2	BH07-48 SS-1	BH07-48 SS-2	BH07-49 SS-1	BH07-49 SS-2	BH07-50 SS-1	BH07-50 SS-2	BH07-51 SS-1	BH07-51 SS-2	BH07-52 SS-1	BH07-52
		Start Depth (m)	0.05	1.22	1.22	1.22	1.22	0.05	1.22	0.05	1.22	0.1	1.22	0.05	1.22	0.05	1.22	0	1.22	0	0
		End Depth (m)	1.22	1.78	1.78	1.78	1.78	1.22	1.68	1.22	1.8	1.22	1.42	0.3	1.83	1	1.67	1.22	2.06	1.22	2.01
		Sample Type	N	N	N	FD	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	08 Feb 2007	08 Feb 2007	22 Feb 2007	08 Feb 2007	22 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	09 Feb 2007	09 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	07 Mar 2007
Analyte	**Table 6 SCS [a]**	**Unit**																			
Uranium	23	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.6**
Vanadium	86	µg/g	**8.4**	**9.8**	--	--	**9.1**	**8.5**	**13.8**	**10.1**	**11.6**	**16.1**	**14.2**	**22.1**	**13.5**	**12.4**	**12.1**	**22.8**	**11.1**	**21.4**	--
Zinc	340	µg/g	**1560**	**1820**	--	--	**1480**	**52.4**	**1470**	**481**	**853**	**483**	**669**	**374**	**899**	**56.6**	**1380**	**1220**	**536**	**1350**	--
Non-Regulated Metals																					
Aluminum	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3760**
Bismuth	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**13800**
Manganese	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1170**
Potassium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**656**
Strontium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**64.7**
Tin	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**45.8**
Zirconium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																					
Boron (HWS)	1.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloride (Cl)	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	**16**	--	--	--	--	--
Chromium, Hexavalent (Cr6+)	8	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	--	--	--	--	--
Cyanide, Free	0.051	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.08 U	--	--	--	--	--
Cyanide, Weak Acid Dissociable	0.051	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	0.7	mS/cm	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.26**	--	--	--	--	--
Mercury	0.27	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.014**	--	--	--	--	--
Sodium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**164**
Sodium Absorption Ratio	5	SAR	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.105**	--	--	--	--	--
OCPs																					
Hexachlorobenzene	0.52	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	0.012	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachloroethane	0.089	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs																					
1-Methylnaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-(1-)Methylnaphthalene	0.99	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	7.9	µg/g	--	--	0.03 U	0.03 U	--	0.03 U	**0.09**	--	0.03 U	0.03 U	--	--	0.03 U	--	--	--	**0.03**	**0.09**	--
Acenaphthylene	0.15	µg/g	--	--	0.02 U	0.02 U	--	0.02 U	**0.02**	--	0.02 U	0.02 U	--	--	0.02 U	--	--	--	0.02 U	0.02 U	--
Anthracene	0.67	µg/g	--	--	0.02 U	0.02 U	--	0.02 U	**0.07**	--	**0.02**	0.02 U	--	--	0.02 U	--	--	--	0.02 U	**0.16**	--
Benzo(a)anthracene	0.5	µg/g	--	--	0.02 U	0.02 U	--	**0.05**	0.02 U	--	**0.03**	0.02 U	--	--	0.02 U	--	--	--	0.02 U	**0.22**	--
Benzo(a)pyrene	0.3	µg/g	--	--	0.02 U	0.02 U	--	**0.04**	0.02 U	--	**0.02**	0.02 U	--	--	0.02 U	--	--	--	0.02 U	**0.15**	--
Benzo(b&j)fluoranthene	0.78	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.78	µg/g	--	--	0.02 U	0.02 U	--	**0.06**	0.02 U	--	**0.03**	0.02 U	--	--	0.02 U	--	--	--	0.02 U	**0.23**	--
Benzo(g,h,i)perylene	6.6	µg/g	--	--	0.02 U	0.02 U	--	**0.07**	0.02 U	--	**0.02**	0.02 U	--	--	0.02 U	--	--	--	0.02 U	**0.17**	--
Benzo(k)fluoranthene	0.78	µg/g	--	--	0.02 U	0.02 U	--	**0.02**	0.02 U	--	0.02 U	0.02 U	--	--	0.02 U	--	--	--	0.02 U	**0.1**	--
Chrysene	7	µg/g	--	--	**0.03**	**0.03**	--	**0.06**	**0.04**	--	**0.06**	**0.02**	--	--	0.02 U	--	--	--	0.02 U	**0.23**	--
Dibenzo(a,h)anthracene	0.1	µg/g	--	--	0.02 U	0.02 U	--	0.02 U	0.02 U	--	0.02 U	0.02 U	--	--	0.02 U	--	--	--	0.02 U	0.02 U	--
Fluoranthene	0.69	µg/g	--	--	0.02 U	0.02 U	--	**0.1**	**0.06**	--	**0.05**	**0.03**	--	--	0.02 U	--	--	--	**0.02**	**0.69**	--
Fluorene	62	µg/g	--	--	0.02 U	0.02 U	--	0.02 U	**0.19**	--	0.02 U	0.02 U	--	--	0.02 U	--	--	--	**0.03**	**0.12**	--
Indeno(1,2,3-Cd)Pyrene	0.38	µg/g	--	--	0.02 U	0.02 U	--	**0.03**	0.02 U	--	0.02 U	0.02 U	--	--	0.02 U	--	--	--	0.02 U	**0.09**	--
Naphthalene	0.6	µg/g	--	--	0.03 U	0.03 U	--	0.03 U	**0.04**	--	**0.03**	0.03 U	--	--	0.03 U	--	--	--	**0.73**	**0.21**	--
Phenanthrene	6.2	µg/g	--	--	**0.06**	**0.06**	--	**0.06**	**0.5**	--	**0.07**	**0.02**	--	--	0.02 U	--	--	--	0.02 U	**0.77**	--
Pyrene	78	µg/g	--	--	**0.02**	**0.02**	--	**0.08**	**0.11**	--	**0.05**	**0.03**	--	--	0.02 U	--	--	--	**0.02**	**0.5**	--
PCBs																					
Aroclor 1242	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.35	µg/g	--	0.02 U	--	0.02 U	--	0.02 U	0.02 U	--	0.02 U	0.02 U	--	--	0.02 U	0.02 U	0.02 U	**0.05**	--	0.02 U	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	BH07-45					BH07-46	BH07-46	BH07-47	BH07-47	BH07-48	BH07-48	BH07-49	BH07-49	BH07-50	BH07-50	BH07-51	BH07-51	BH0
		Sample ID	BH07-45 SS-1A	BH07-45 SS-2	OW07-45SS2	Dup#2	DUP#2	BH07-46 SS-1A	BH07-46 SS-2	BH07-47 SS-1	BH07-47 SS-2	BH07-48 SS-1	BH07-48 SS-2	BH07-49 SS-1	BH07-49 SS-2	BH07-50 SS-1	BH07-50 SS-2	BH07-51 SS-1	BH07-51 SS-2	BH07-52 SS-1	BH07-52
		Start Depth (m)	0.05	1.22	1.22	1.22	1.22	0.05	1.22	0.05	1.22	0.1	1.22	0.05	1.22	0.05	1.22	0	1.22	0	0
		End Depth (m)	1.22	1.78	1.78	1.78	1.78	1.22	1.68	1.22	1.8	1.22	1.42	0.3	1.83	1	1.67	1.22	2.06	1.22	2.01
		Sample Type	N	N	N	FD	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	08 Feb 2007	08 Feb 2007	22 Feb 2007	08 Feb 2007	22 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	09 Feb 2007	09 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	07 Mar 2007
Analyte	**Table 6 SCS [a]**	**Unit**																			
PHCs																					
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	55	µg/g	--	--	--	**5**	--	--	--	--	**5**	**5**	**5**	--	**5**	--	--	--	**5**	**5**	--
Petroleum Hydrocarbons F1 (C6-C10)	55	µg/g	--	--	--	**5**	--	--	--	--	**5**	**5**	**5**	--	**5**	--	--	--	**5**	**5**	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	98	µg/g	--	--	--	**19**	--	--	**3600**	--	**10**	**10**	--	--	**10**	--	--	--	**10**	**38**	--
Petroleum Hydrocarbons F2 (C10-C16)	98	µg/g	--	--	--	**19**	--	--	**3600**	--	**10**	**10**	**10**	--	**10**	**10**	--	**10**	**10**	**38**	--
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	300	µg/g	--	--	--	**130**	--	--	**6200**	--	**360**	**100**	--	--	**50**	--	--	--	**75**	**2400**	--
Petroleum Hydrocarbons F3 (C16-C34)	300	µg/g	--	--	--	**130**	--	--	**6200**	--	**360**	**100**	**450**	--	**50**	**55**	--	**240**	**75**	**2400**	--
Petroleum Hydrocarbons F4 (C34-C50)	2800	µg/g	--	--	--	**50**	--	--	**50**	--	**140**	**50**	**75**	--	**50**	**90**	--	**260**	**50**	**130**	--
F4G-SG (GHH-Silica)	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Gravimetric Heavy Hydrocarbons	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SVOCs (other)																					
2-Chloronaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Hexanone	NV	µg/g	--	0.47 U	--	0.47 U	--	--	0.47 U	--	0.47 U	--	--	--	0.47 U	--	--	--	0.47 U	--	--
4-Bromophenyl Phenyl Ether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chlorophenyl Phenylether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethoxy) methane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Butyl benzyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/g	--	0.005 U	--	0.005 U	--	--	0.005 U	--	0.005 U	--	--	--	0.005 U	--	--	--	0.005 U	--	--
Chloromethane	NV	µg/g	--	0.002 U	--	0.002 U	--	--	0.002 U	--	0.002 U	--	--	--	0.002 U	--	--	--	0.002 U	--	--
Di-N-Butylphthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Isophorone	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrobenzene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodi-N-propylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																					
1,1,1,2-Tetrachloroethane	0.058	µg/g	--	0.002 U	--	0.002 U	--	--	0.002 U	--	0.002 U	--	--	--	0.002 U	--	--	--	0.002 U	--	--
1,1,1-Trichloroethane	0.38	µg/g	--	0.002 U	--	0.002 U	--	--	0.002 U	--	0.002 U	--	--	--	0.002 U	--	--	--	0.002 U	--	--
1,1,2,2-Tetrachloroethane	0.05	µg/g	--	0.002 U	--	0.002 U	--	--	0.002 U	--	0.002 U	--	--	--	0.002 U	--	--	--	0.002 U	--	--
1,1,2-Trichloroethane	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	0.47	µg/g	--	0.002 U	--	0.002 U	--	--	0.002 U	--	0.002 U	--	--	--	0.002 U	--	--	--	0.002 U	--	--
1,1-Dichloroethene	0.05	µg/g	--	0.002 U	--	0.002 U	--	--	0.002 U	--	0.002 U	--	--	--	0.002 U	--	--	--	0.002 U	--	--
1,2-Dibromoethane	0.05	µg/g	--	0.002 U	--	0.002 U	--	--	0.002 U	--	0.002 U	--	--	--	0.002 U	--	--	--	0.002 U	--	--
1,2-Dichlorobenzene	1.2	µg/g	--	0.002 U	--	0.002 U	--	--	0.002 U	--	0.002 U	--	--	--	0.002 U	--	--	--	0.002 U	--	--
1,2-Dichloroethane	0.05	µg/g	--	0.002 U	--	0.002 U	--	--	0.002 U	--	0.002 U	--	--	--	0.002 U	--	--	--	0.002 U	--	--
1,2-Dichloropropane	0.05	µg/g	--	0.002 U	--	0.002 U	--	--	0.002 U	--	0.002 U	--	--	--	0.002 U	--	--	--	0.002 U	--	--
1,3-Dichlorobenzene	4.8	µg/g	--	0.002 U	--	0.002 U	--	--	0.002 U	--	0.002 U	--	--	--	0.002 U	--	--	--	0.002 U	--	--
1,3-Dichloropropene	0.05	µg/g	--	0.002 U	--	0.002 U	--	--	0.002 U	--	0.002 U	--	--	--	0.002 U	--	--	--	0.002 U	--	--
1,4-Dichlorobenzene	0.083	µg/g	--	0.002 U	--	0.002 U	--	--	0.002 U	--	0.002 U	--	--	--	0.002 U	--	--	--	0.002 U	--	--
1,4-Dioxane	1.8	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	16	µg/g	--	0.041 U	--	0.041 U	--	--	0.041 U	--	0.041 U	--	--	--	0.041 U	--	--	--	0.041 U	--	--
4-Methyl-2-Pentanone	1.7	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acetone	16	µg/g	--	0.13 U	--	0.13 U	--	--	0.13 U	--	0.13 U	--	--	--	0.13 U	--	--	--	0.13 U	--	--
Bromodichloromethane	1.5	µg/g	--	0.003 U	--	0.003 U	--	--	0.003 U	--	0.003 U	--	--	--	0.003 U	--	--	--	0.003 U	--	--
Bromoform	0.27	µg/g	--	0.002 U	--	0.002 U	--	--	0.002 U	--	0.002 U	--	--	--	0.002 U	--	--	--	0.002 U	--	--
Bromomethane	0.05	µg/g	--	0.002 U	--	0.002 U	--	--	0.002 U	--	0.002 U	--	--	--	0.002 U	--	--	--	0.002 U	--	--
Carbon tetrachloride	0.05	µg/g	--	0.002 U	--	0.002 U	--	--	0.002 U	--	0.002 U	--	--	--	0.002 U	--	--	--	0.002 U	--	--
Chlorobenzene	2.4	µg/g	--	0.002 U	--	0.002 U	--	--	0.002 U	--	0.002 U	--	--	--	0.002 U	--	--	--	0.002 U	--	--
Chlorodibromomethane	2.3	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroform	0.05	µg/g	--	0.002 U	--	0.002 U	--	--	0.002 U	--	0.002 U	--	--	--	0.002 U	--	--	--	0.002 U	--	--
cis-1,2-Dichloroethene	1.9	µg/g	--	0.002 U	--	0.002 U	--	--	0.002 U	--	0.002 U	--	--	--	0.002 U	--	--	--	0.002 U	--	--
cis-1,3-Dichloropropene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dichlorodifluoromethane	16	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dichloromethane	0.1	µg/g	--	0.002 U	--	0.002 U	--	--	0.002 U	--	0.002 U	--	--	--	0.002 U	--	--	--	0.002 U	--	--
Methyl tert-butyl ether (MTBE)	0.75	µg/g	--	0.004 U	--	0.004 U	--	--	0.004 U	--	0.004 U	--	--	--	0.004 U	--	--	--	0.004 U	--	--
n-Hexane	2.8	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Styrene	0.7	µg/g	--	0.002 U	--	0.002 U	--	--	0.002 U	--	0.002 U	--	--	--	0.002 U	--	--	--	0.002 U	--	--
Tetrachloroethene	0.28	µg/g	--	0.002 U	--	0.002 U	--	--	0.002 U	--	0.002 U	--	--	--	0.002 U	--	--	--	0.002 U	--	--
trans-1,2-Dichloroethene	0.084	µg/g	--	0.003 U	--	0.003 U	--	--	0.003 U	--	0.003 U	--	--	--	0.003 U	--	--	--	0.003 U	--	--
trans-1,3-Dichloropropene	NV	µg/g	--	0.003 U	--	0.003 U	--	--	0.003 U	--	0.003 U	--	--	--	0.003 U	--	--	--	0.003 U	--	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	BH07-45					BH07-46	BH07-46	BH07-47	BH07-47	BH07-48	BH07-48	BH07-49	BH07-49	BH07-50	BH07-50	BH07-51	BH07-51	BH0	
		Sample ID	BH07-45 SS-1A	BH07-45 SS-2	OW07-45SS2	Dup#2	DUP#2	BH07-46 SS-1A	BH07-46 SS-2	BH07-47 SS-1	BH07-47 SS-2	BH07-48 SS-1	BH07-48 SS-2	BH07-49 SS-1	BH07-49 SS-2	BH07-50 SS-1	BH07-50 SS-2	BH07-51 SS-1	BH07-51 SS-2	BH07-52 SS-1	BH07-52
		Start Depth (m)	0.05	1.22	1.22	1.22	1.22	0.05	1.22	0.05	1.22	0.1	1.22	0.05	1.22	0.05	1.22	0	1.22	0	0
		End Depth (m)	1.22	1.78	1.78	1.78	1.78	1.22	1.68	1.22	1.8	1.22	1.42	0.3	1.83	1	1.67	1.22	2.06	1.22	2.01
		Sample Type	N	N	N	FD	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	08 Feb 2007	08 Feb 2007	22 Feb 2007	08 Feb 2007	22 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	09 Feb 2007	09 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	07 Mar 2007
Analyte	**Table 6 SCS [a]**	**Unit**																			
Trichloroethylene	0.061	µg/g	--	0.004 U	--	0.004 U	--	--	0.004 U	--	0.004 U	--	--	--	0.004 U	--	--	--	0.004 U	--	--
Trichlorofluoromethane	4	µg/g	--	0.004 U	--	0.004 U	--	--	0.004 U	--	0.004 U	--	--	--	0.004 U	--	--	--	0.004 U	--	--
Vinyl Chloride	0.02	µg/g	--	0.002 U	--	0.002 U	--	--	0.002 U	--	0.002 U	--	--	--	0.002 U	--	--	--	0.002 U	--	--

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Ministry of the Environment.* April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/g = microgram(s) per gram

ABNs = acid, base and neutral compounds

BH = borehole

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

DUP = duplicate

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mg/kg = milligram(s) per kilogram

mg/l = milligram(s) per litre

mS/cm = milliSiemen(s) per centimetre

MW = monitoring well

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

pg/g = picogram(s) per gram

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	7-52		BH07-53			BH07-54		BH07-55	BH07-56		BH07-57			BH07-58		BH07-59		BH07-60	
		Sample ID	Dup#3	BH07-52 SS-2A	BH07-53 SS-1	BH07-53 SS-2	Dup#1	BH07-54 SS-1A	BH07-54 SS-2	BH07-55 SS-1B	BH07-56 SS-1A	BH07-56 SS-2	BH07-57 SS-1A	Dup#5	BH07-57 SS-2	BH07-58 SS-1A	BH07-58 SS-2	BH07-59 SS-1A	BH07-59 SS-1B	BH07-60 SS-1	BH07-60 SS-1B
		Start Depth (m)	0	1.22	0	1.22	1.22	0.05	1.22	0.91	0.05	1.22	0.05	0.05	1.22	0.05	1.22	0.15	0.3	0	0.76
		End Depth (m)	1.22	1.83	0.15	1.47	1.47	0.61	2	1.22	0.91	1.67	1.22	1.22	1.88	0.61	1.63	0.3	0.69	0.15	1.19
		Sample Type	FD	N	N	N	FD	N	N	N	N	N	N	FD	N	N	N	N	N	N	N
		Sample Date	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	09 Feb 2007	09 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007
Analyte	**Table 6 SCS [a]**	**Unit**																			
ABNs																					
1,1'-Biphenyl	0.31	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	0.36	µg/g	--	--	0.007 U	0.007 U	0.007 U	--	--	0.007 U	0.007 U	0.007 U	0.007 U	--	--	0.007 U	--	0.007 U	--	0.007 U	--
2,2'-oxybis(1-chloropropane)	0.67	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	38	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	2	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	9.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BTEX																					
Benzene	0.21	µg/g	--	0.1 U	**0.006**	**0.003**	**0.003**	0.1 U	0.1 U	**0.008**	0.002 U	**0.007**	**0.003**	--	--	0.002 U	--	**0.007**	--	0.002 U	--
Ethylbenzene	1.1	µg/g	--	0.05 U	**0.003**	0.002 U	0.002 U	0.05 U	0.05 U	**0.004**	0.002 U	**0.003**	0.002 U	--	--	0.002 U	--	**0.003**	--	0.002 U	--
Toluene	2.3	µg/g	--	0.08 U	**0.016**	**0.005**	**0.005**	0.08 U	0.08 U	**0.017**	0.002 U	**0.017**	**0.004**	--	--	0.002 U	--	**0.016**	--	0.002 U	--
Xylene, o	NV	µg/g	--	--	**0.003**	0.002 U	0.002 U	--	--	**0.004**	0.002 U	**0.003**	0.002 U	--	--	0.002 U	--	**0.003**	--	0.002 U	--
Xylenes, m & p	NV	µg/g	--	--	**0.005**	0.002 U	0.002 U	--	--	**0.006**	0.002 U	**0.005**	0.002 U	--	--	0.002 U	--	**0.005**	--	0.002 U	--
Xylenes, Total	3.1	µg/g	--	0.07 U	**0.008**	0.002 U	0.002 U	0.07 U	0.07 U	**0.01**	0.002 U	**0.008**	0.002 U	--	--	0.002 U	--	**0.008**	--	0.002 U	--
Chlorophenols																					
2,4,5-Trichlorophenol	4.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	0.19	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	1.6	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	0.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxins and Furans																					
Lower Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mid Point PCDD/F TEQ (WHO 2005)	13	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Upper Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																					
Average Fraction Organic Carbon	NV	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fraction Organic Carbon	NV	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Moisture	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
pH	NV	pH UNITS	--	--	**8.51**	--	**8.61**	--	**8.29**	--	--	--	**8.02**	--	--	--	--	--	--	**8.13**	--
Phosphorus	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Calcium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																					
Antimony	7.5	µg/g	--	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	**18.6**	0.8 U	**2.3**	**5.6**	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	**0.9**	0.8 U
Arsenic	18	µg/g	--	**5.9**	**2.8**	**3.9**	**3.3**	**7.6**	**4.9**	**6.9**	**9.6**	**1.6**	**8.2**	**7.5**	**3.5**	**3.5**	**0.6**	**0.7**	**0.6**	**3.6**	**8.1**
Barium	390	µg/g	--	**18.4**	**19.1**	**10.6**	**8.4**	**100**	**34.5**	**29.1**	**102**	**23.2**	**260**	**277**	**24**	**25**	**19.7**	**7.9**	**14.3**	**24.7**	**39.5**
Beryllium	4	µg/g	--	**0.3**	0.2 U	0.2 U	0.2 U	**0.7**	0.2 U	**0.3**	**0.3**	**0.2**	**0.6**	**0.4**	**0.3**	0.2 U	**0.3**	0.2 U	0.2 U	0.2 U	**0.4**
Boron	120	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	1.2	µg/g	--	**1.3**	**0.6**	**0.5**	**0.3**	**1.3**	**2.3**	**0.9**	**1.8**	**0.7**	**2**	**2.3**	**0.8**	**0.8**	**0.2**	0.2 U	**0.2**	**0.3**	**0.3**
Calcium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	160	µg/g	--	**8.9**	**7.3**	**5**	**3.5**	**16.2**	**5.9**	**9.2**	**23.5**	**9.3**	**15.4**	**14**	**9.6**	**8.8**	**6.1**	**3.4**	**5.9**	**8.5**	**12.1**
Cobalt	22	µg/g	--	**5.9**	**2.3**	**2.2**	**1.6**	**7.4**	**5.1**	**3.2**	**6.2**	**3.2**	**7.3**	**6.6**	**4.3**	**2.6**	**1.6**	**0.7**	**1.5**	**1.8**	**4.6**
Copper	140	µg/g	--	**30.1**	**9.3**	**17.2**	**12.4**	**25.4**	**23.8**	**11.4**	**283**	**13.1**	**33.5**	**62.1**	**20.4**	**54.7**	**3.3**	**2.1**	**2.5**	**22.9**	**5.8**
Lead	120	µg/g	--	**103**	**72.4**	**391**	**158**	**150**	**119**	**82.2**	**545**	**92.4**	**232**	**243**	**176**	**75.6**	**33**	**13**	**38.7**	**71.5**	**132**
Magnesium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	6.9	µg/g	--	**0.7**	**0.7**	**0.4**	**0.4**	**0.9**	**0.6**	**0.6**	**2.5**	0.3 U	**0.9**	**0.9**	0.3 U	**0.7**	0.3 U	**0.5**	0.3 U	**0.9**	**0.5**
Nickel	100	µg/g	--	**14.8**	**6.5**	**7.3**	**5.2**	**17**	**18**	**9.7**	**31.2**	**11.5**	**18.7**	**16.2**	**12.1**	**7.5**	**5**	**2.3**	**4.7**	**7.8**	**10**
Selenium	2.4	µg/g	--	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	**0.8**	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Silver	20	µg/g	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.2**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Thallium	1	µg/g	--	**0.2**	0.2 U	0.2 U	0.2 U	**0.3**	**0.3**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	7-52		BH07-53			BH07-54		BH07-55	BH07-56		BH07-57			BH07-58		BH07-59		BH07-60	
		Sample ID	Dup#3	BH07-52 SS-2A	BH07-53 SS-1	BH07-53 SS-2	Dup#1	BH07-54 SS-1A	BH07-54 SS-2	BH07-55 SS-1B	BH07-56 SS-1A	BH07-56 SS-2	BH07-57 SS-1A	Dup#5	BH07-57 SS-2	BH07-58 SS-1A	BH07-58 SS-2	BH07-59 SS-1A	BH07-59 SS-1B	BH07-60 SS-1	BH07-60 SS-1B
		Start Depth (m)	0	1.22	0	1.22	1.22	0.05	1.22	0.91	0.05	1.22	0.05	0.05	1.22	0.05	1.22	0.15	0.3	0	0.76
		End Depth (m)	1.22	1.83	0.15	1.47	1.47	0.61	2	1.22	0.91	1.67	1.22	1.22	1.88	0.61	1.63	0.3	0.69	0.15	1.19
		Sample Type	FD	N	N	N	FD	N	N	N	N	N	N	FD	N	N	N	N	N	N	N
		Sample Date	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	09 Feb 2007	09 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007
Analyte	**Table 6 SCS [a]**	**Unit**																			
Uranium	23	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	86	µg/g	--	**13.8**	**10.3**	**6.8**	**5.3**	**30.4**	**9.6**	**17.7**	**27.5**	**13.2**	**26**	**21.4**	**15.7**	**12.9**	**8.1**	**4.5**	**7.6**	**8.6**	**21.4**
Zinc	340	µg/g	--	**1470**	**220**	**248**	**189**	**500**	**613**	**328**	**472**	**664**	**679**	**805**	**628**	**310**	**254**	**79**	**307**	**102**	**483**
Non-Regulated Metals																					
Aluminum	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																					
Boron (HWS)	1.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloride (Cl)	NV	µg/g	--	--	**77.4**	--	**122**	--	**46.3**	--	--	--	**9.99**	--	--	--	--	--	--	**38.1**	--
Chromium, Hexavalent (Cr6+)	8	µg/g	--	--	0.4 U	--	0.4 U	--	0.4 U	--	--	--	0.4 U	--	--	--	--	--	--	0.4 U	--
Cyanide, Free	0.051	µg/g	--	--	0.08 U	--	0.08 U	--	0.08 U	--	--	--	0.08 U	--	--	--	--	--	--	0.08 U	--
Cyanide, Weak Acid Dissociable	0.051	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	0.7	mS/cm	--	--	**0.344**	--	**0.339**	--	**0.235**	--	--	--	**0.212**	--	--	--	--	--	--	**0.226**	--
Mercury	0.27	µg/g	--	--	**0.027**	--	0.011 U	--	**0.022**	--	--	--	**0.319**	--	--	--	--	--	--	**0.027**	--
Sodium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium Absorption Ratio	5	SAR	--	--	**0.275**	--	**0.513**	--	**0.202**	--	--	--	**0.066**	--	--	--	--	--	--	**0.182**	--
OCPs																					
Hexachlorobenzene	0.52	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	0.012	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachloroethane	0.089	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs																					
1-Methylnaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-(1-)Methylnaphthalene	0.99	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	7.9	µg/g	--	--	0.03 U	--	0.03 U	--	0.03 U	0.03 U	**0.08**	--	0.03 U	--	--	0.03 U	--	**0.05**	--	0.03 U	--
Acenaphthylene	0.15	µg/g	--	--	0.02 U	--	0.02 U	--	0.02 U	0.02 U	**0.03**	--	0.02 U	--	--	0.02 U	--	0.02 U	--	**0.08**	--
Anthracene	0.67	µg/g	--	--	**0.02**	--	0.02 U	--	0.02 U	0.02 U	**0.1**	--	0.02 U	--	--	0.02 U	--	**0.11**	--	**0.04**	--
Benzo(a)anthracene	0.5	µg/g	--	--	**0.06**	--	0.02 U	--	**0.05**	0.02 U	**0.38**	--	**0.07**	--	--	**0.03**	--	**0.19**	--	**0.11**	--
Benzo(a)pyrene	0.3	µg/g	--	--	**0.05**	--	0.02 U	--	**0.04**	0.02 U	**0.35**	--	**0.08**	--	--	**0.03**	--	**0.14**	--	**0.14**	--
Benzo(b&j)fluoranthene	0.78	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.78	µg/g	--	--	**0.08**	--	0.02 U	--	**0.07**	0.02 U	**0.54**	--	**0.1**	--	--	**0.05**	--	**0.19**	--	**0.21**	--
Benzo(g,h,i)perylene	6.6	µg/g	--	--	**0.04**	--	0.02 U	--	**0.04**	0.02 U	**0.71**	--	**0.12**	--	--	**0.04**	--	**0.07**	--	**0.11**	--
Benzo(k)fluoranthene	0.78	µg/g	--	--	**0.03**	--	0.02 U	--	**0.03**	0.02 U	**0.18**	--	**0.05**	--	--	0.02 U	--	**0.08**	--	**0.08**	--
Chrysene	7	µg/g	--	--	**0.07**	--	0.02 U	--	**0.05**	0.02 U	**0.49**	--	**0.08**	--	--	**0.06**	--	**0.2**	--	**0.12**	--
Dibenzo(a,h)anthracene	0.1	µg/g	--	--	0.02 U	--	0.02 U	--	0.02 U	0.02 U	**0.02**	--	0.02 U	--	--	0.02 U	--	0.02 U	--	0.02 U	--
Fluoranthene	0.69	µg/g	--	--	**0.14**	--	0.02 U	--	**0.11**	0.02 U	**0.84**	--	**0.09**	--	--	**0.06**	--	**0.52**	--	**0.26**	--
Fluorene	62	µg/g	--	--	0.02 U	--	0.02 U	--	0.02 U	0.02 U	**0.08**	--	0.02 U	--	--	0.02 U	--	**0.05**	--	**0.02**	--
Indeno(1,2,3-Cd)Pyrene	0.38	µg/g	--	--	**0.03**	--	0.02 U	--	**0.03**	0.02 U	**0.31**	--	**0.06**	--	--	**0.02**	--	**0.08**	--	**0.11**	--
Naphthalene	0.6	µg/g	--	--	0.03 U	--	0.03 U	--	0.03 U	0.03 U	**0.22**	--	**0.03**	--	--	**0.11**	--	**0.03**	--	**0.07**	--
Phenanthrene	6.2	µg/g	--	--	**0.09**	--	0.02 U	--	**0.08**	0.02 U	**0.76**	--	**0.04**	--	--	**0.17**	--	**0.44**	--	**0.1**	--
Pyrene	78	µg/g	--	--	**0.12**	--	0.02 U	--	**0.09**	0.02 U	**0.71**	--	**0.08**	--	--	**0.05**	--	**0.41**	--	**0.22**	--
PCBs																					
Aroclor 1242	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.35	µg/g	0.02 U	--	--	--	--	--	--	--	0.02 U	--	0.02 U	--	--	0.02 U	--	0.02 U	--	--	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	7-52		BH07-53			BH07-54		BH07-55	BH07-56		BH07-57			BH07-58		BH07-59		BH07-60	
		Sample ID	Dup#3	BH07-52 SS-2A	BH07-53 SS-1	BH07-53 SS-2	Dup#1	BH07-54 SS-1A	BH07-54 SS-2	BH07-55 SS-1B	BH07-56 SS-1A	BH07-56 SS-2	BH07-57 SS-1A	Dup#5	BH07-57 SS-2	BH07-58 SS-1A	BH07-58 SS-2	BH07-59 SS-1A	BH07-59 SS-1B	BH07-60 SS-1	BH07-60 SS-1B
		Start Depth (m)	0	1.22	0	1.22	1.22	0.05	1.22	0.91	0.05	1.22	0.05	0.05	1.22	0.05	1.22	0.15	0.3	0	0.76
		End Depth (m)	1.22	1.83	0.15	1.47	1.47	0.61	2	1.22	0.91	1.67	1.22	1.22	1.88	0.61	1.63	0.3	0.69	0.15	1.19
		Sample Type	FD	N	N	N	FD	N	N	N	N	N	N	FD	N	N	N	N	N	N	N
		Sample Date	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	09 Feb 2007	09 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007
Analyte	**Table 6 SCS [a]**	**Unit**																			
PHCs																					
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	55	µg/g	--	**5**	--	**5**	--	**5**	**5**	**5**	**5**	--	**5**	--	--	**5**	--	**5**	--	**5**	--
Petroleum Hydrocarbons F1 (C6-C10)	55	µg/g	--	**5**	--	**5**	--	**5**	**5**	**5**	**5**	--	**5**	--	--	**5**	--	**5**	--	**5**	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	98	µg/g	--	--	**10**	--	**10**	--	**10**	**10**	**10**	--	**10**	--	--	**10**	--	**10**	--	**10**	--
Petroleum Hydrocarbons F2 (C10-C16)	98	µg/g	--	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	--	**10**	--	--	**10**	--	**10**	--	**10**	--
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	300	µg/g	--	--	**50**	--	**50**	--	**50**	**50**	**330**	--	**130**	--	--	**110**	--	**50**	--	**400**	--
Petroleum Hydrocarbons F3 (C16-C34)	300	µg/g	--	**1400**	**50**	**50**	**50**	**50**	**50**	**50**	**330**	--	**130**	--	--	**110**	--	**50**	--	**400**	--
Petroleum Hydrocarbons F4 (C34-C50)	2800	µg/g	--	**180**	**50**	**50**	**50**	**50**	**50**	**50**	**140**	--	**82**	--	--	**78**	--	**50**	--	**260**	--
F4G-SG (GHH-Silica)	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Gravimetric Heavy Hydrocarbons	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SVOCs (other)																					
2-Chloronaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Hexanone	NV	µg/g	--	--	0.47 U	0.47 U	0.47 U	--	--	0.47 U	0.47 U	0.47 U	0.47 U	--	--	0.47 U	--	0.47 U	--	0.47 U	--
4-Bromophenyl Phenyl Ether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chlorophenyl Phenylether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethoxy) methane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Butyl benzyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/g	--	--	0.005 U	0.005 U	0.005 U	--	--	0.005 U	0.005 U	0.005 U	0.005 U	--	--	0.005 U	--	0.005 U	--	0.005 U	--
Chloromethane	NV	µg/g	--	--	0.002 U	0.002 U	0.002 U	--	--	0.002 U	0.002 U	0.002 U	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--
Di-N-Butylphthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Isophorone	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrobenzene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodi-N-propylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																					
1,1,1,2-Tetrachloroethane	0.058	µg/g	--	--	0.002 U	0.002 U	0.002 U	--	--	0.002 U	0.002 U	0.002 U	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--
1,1,1-Trichloroethane	0.38	µg/g	--	--	0.002 U	0.002 U	0.002 U	--	--	0.002 U	0.002 U	0.002 U	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--
1,1,2,2-Tetrachloroethane	0.05	µg/g	--	--	0.002 U	0.002 U	0.002 U	--	--	0.002 U	0.002 U	0.002 U	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--
1,1,2-Trichloroethane	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	0.47	µg/g	--	--	0.002 U	0.002 U	0.002 U	--	--	0.002 U	0.002 U	0.002 U	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--
1,1-Dichloroethene	0.05	µg/g	--	--	0.002 U	0.002 U	0.002 U	--	--	0.002 U	0.002 U	0.002 U	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--
1,2-Dibromoethane	0.05	µg/g	--	--	0.002 U	0.002 U	0.002 U	--	--	0.002 U	0.002 U	0.002 U	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--
1,2-Dichlorobenzene	1.2	µg/g	--	--	0.002 U	0.002 U	0.002 U	--	--	0.002 U	0.002 U	0.002 U	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--
1,2-Dichloroethane	0.05	µg/g	--	--	0.002 U	0.002 U	0.002 U	--	--	0.002 U	0.002 U	0.002 U	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--
1,2-Dichloropropane	0.05	µg/g	--	--	0.002 U	0.002 U	0.002 U	--	--	0.002 U	0.002 U	0.002 U	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--
1,3-Dichlorobenzene	4.8	µg/g	--	--	0.002 U	0.002 U	0.002 U	--	--	0.002 U	0.002 U	0.002 U	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--
1,3-Dichloropropene	0.05	µg/g	--	--	0.002 U	0.002 U	0.002 U	--	--	0.002 U	0.002 U	0.002 U	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--
1,4-Dichlorobenzene	0.083	µg/g	--	--	0.002 U	0.002 U	0.002 U	--	--	0.002 U	0.002 U	0.002 U	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--
1,4-Dioxane	1.8	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	16	µg/g	--	--	0.041 U	0.041 U	0.041 U	--	--	0.041 U	0.041 U	0.041 U	0.041 U	--	--	0.041 U	--	0.041 U	--	0.041 U	--
4-Methyl-2-Pentanone	1.7	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acetone	16	µg/g	--	--	0.13 U	0.13 U	0.13 U	--	--	0.13 U	0.13 U	0.13 U	0.13 U	--	--	0.13 U	--	0.13 U	--	0.13 U	--
Bromodichloromethane	1.5	µg/g	--	--	0.003 U	0.003 U	0.003 U	--	--	0.003 U	0.003 U	0.003 U	0.003 U	--	--	0.003 U	--	0.003 U	--	0.003 U	--
Bromoform	0.27	µg/g	--	--	0.002 U	0.002 U	0.002 U	--	--	0.002 U	0.002 U	0.002 U	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--
Bromomethane	0.05	µg/g	--	--	0.002 U	0.002 U	0.002 U	--	--	0.002 U	0.002 U	0.002 U	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--
Carbon tetrachloride	0.05	µg/g	--	--	0.002 U	0.002 U	0.002 U	--	--	0.002 U	0.002 U	0.002 U	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--
Chlorobenzene	2.4	µg/g	--	--	0.002 U	0.002 U	0.002 U	--	--	0.002 U	0.002 U	0.002 U	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--
Chlorodibromomethane	2.3	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroform	0.05	µg/g	--	--	0.002 U	0.002 U	0.002 U	--	--	0.002 U	0.002 U	0.002 U	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--
cis-1,2-Dichloroethene	1.9	µg/g	--	--	0.002 U	0.002 U	0.002 U	--	--	0.002 U	0.002 U	0.002 U	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--
cis-1,3-Dichloropropene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dichlorodifluoromethane	16	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dichloromethane	0.1	µg/g	--	--	0.002 U	0.002 U	0.002 U	--	--	0.002 U	0.002 U	0.002 U	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--
Methyl tert-butyl ether (MTBE)	0.75	µg/g	--	--	0.004 U	0.004 U	0.004 U	--	--	0.004 U	0.004 U	0.004 U	0.004 U	--	--	0.004 U	--	0.004 U	--	0.004 U	--
n-Hexane	2.8	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Styrene	0.7	µg/g	--	--	0.002 U	0.002 U	0.002 U	--	--	0.002 U	0.002 U	0.002 U	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--
Tetrachloroethene	0.28	µg/g	--	--	0.002 U	0.002 U	0.002 U	--	--	0.002 U	0.002 U	0.002 U	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--
trans-1,2-Dichloroethene	0.084	µg/g	--	--	0.003 U	0.003 U	0.003 U	--	--	0.003 U	0.003 U	0.003 U	0.003 U	--	--	0.003 U	--	0.003 U	--	0.003 U	--
trans-1,3-Dichloropropene	NV	µg/g	--	--	0.003 U	0.003 U	0.003 U	--	--	0.003 U	0.003 U	0.003 U	0.003 U	--	--	0.003 U	--	0.003 U	--	0.003 U	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	7-52		BH07-53			BH07-54		BH07-55	BH07-56		BH07-57			BH07-58		BH07-59		BH07-60	
		Sample ID	Dup#3	BH07-52 SS-2A	BH07-53 SS-1	BH07-53 SS-2	Dup#1	BH07-54 SS-1A	BH07-54 SS-2	BH07-55 SS-1B	BH07-56 SS-1A	BH07-56 SS-2	BH07-57 SS-1A	Dup#5	BH07-57 SS-2	BH07-58 SS-1A	BH07-58 SS-2	BH07-59 SS-1A	BH07-59 SS-1B	BH07-60 SS-1	BH07-60 SS-1B
		Start Depth (m)	0	1.22	0	1.22	1.22	0.05	1.22	0.91	0.05	1.22	0.05	0.05	1.22	0.05	1.22	0.15	0.3	0	0.76
		End Depth (m)	1.22	1.83	0.15	1.47	1.47	0.61	2	1.22	0.91	1.67	1.22	1.22	1.88	0.61	1.63	0.3	0.69	0.15	1.19
		Sample Type	FD	N	N	N	FD	N	N	N	N	N	N	FD	N	N	N	N	N	N	N
		Sample Date	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	09 Feb 2007	09 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007
Analyte	**Table 6 SCS [a]**	**Unit**																			
Trichloroethylene	0.061	µg/g	--	--	0.004 U	0.004 U	0.004 U	--	--	0.004 U	0.004 U	0.004 U	0.004 U	--	--	0.004 U	--	0.004 U	--	0.004 U	--
Trichlorofluoromethane	4	µg/g	--	--	0.004 U	0.004 U	0.004 U	--	--	0.004 U	0.004 U	0.004 U	0.004 U	--	--	0.004 U	--	0.004 U	--	0.004 U	--
Vinyl Chloride	0.02	µg/g	--	--	0.002 U	0.002 U	0.002 U	--	--	0.002 U	0.002 U	0.002 U	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Ministry of the Environment.* April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/g = microgram(s) per gram

ABNs = acid, base and neutral compounds

BH = borehole

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

DUP = duplicate

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mg/kg = milligram(s) per kilogram

mg/l = milligram(s) per litre

mS/cm = milliSiemen(s) per centimetre

MW = monitoring well

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

pg/g = picogram(s) per gram

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	BH07-61		BH07-62			BH07-63		BH07-64		BH07-65		BH07-66			BH07-67		BH07-68		BH0
		Sample ID	BH07-61 SS-1A	BH07-61 SS-2	BH07-62 SS-1A	BH07-62 SS-1B	Dup#6	BH07-63 SS-1A	BH07-63 SS-2	BH07-64 SS-1A	BH07-64 SS-2	BH07-65 SS-1A	BH07-65 SS-2	BH07-66	BH07-66 SS-1A	BH07-66 SS-2	BH07-67 SS1A	BH07-67 SS2	BH07-68 SS1	BH07-68 SS1A	BH07-69 SS1A
		Start Depth (m)	0.05	1.22	0.05	0.61	0.61	0.05	1.22	0.05	1.22	0.05	0.61	0	0.05	1.22	0.05	1.22	0	0.05	0.08
		End Depth (m)	1.22	1.37	0.61	1.22	1.22	1.22	1.88	1.22	2.29	0.61	2.03	1.32	1.22	1.32	0.91	1.37	0.05	0.61	1.22
		Sample Type	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	09 Feb 2007	09 Feb 2007	08 Feb 2007	08 Feb 2007	09 Feb 2007	09 Feb 2007	07 Mar 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007
Analyte	**Table 6 SCS [a]**	**Unit**																			
ABNs																					
1,1'-Biphenyl	0.31	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	0.36	µg/g	0.007 U	--	--	0.007 U	--	0.007 U	--	0.007 U	--	--	0.007 U	--	--	--	0.08 U	0.007 U	--	--	0.007 U
2,2'-oxybis(1-chloropropane)	0.67	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	38	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	2	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	9.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BTEX																					
Benzene	0.21	µg/g	**0.003**	--	--	0.002 U	--	0.002 U	0.1 U	0.002 U	--	0.1 U	**0.003**	--	**0.26**	--	0.03 U	**0.004**	0.1 U	--	**0.003**
Ethylbenzene	1.1	µg/g	0.002 U	--	--	0.002 U	--	0.002 U	0.05 U	0.002 U	--	0.05 U	0.002 U	--	**4.1**	--	**0.15**	0.002 U	**0.19**	--	0.002 U
Toluene	2.3	µg/g	0.002 U	--	--	**0.003**	--	0.002 U	0.08 U	0.002 U	--	0.08 U	**0.007**	--	**0.55**	--	0.05 U	**0.007**	0.08 U	--	0.002 U
Xylene, o	NV	µg/g	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--	--	0.002 U	--	--	--	**0.55**	**0.004**	--	--	0.002 U
Xylenes, m & p	NV	µg/g	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--	--	**0.002**	--	--	--	**0.27**	**0.003**	--	--	0.002 U
Xylenes, Total	3.1	µg/g	0.002 U	--	--	0.002 U	--	0.002 U	0.07 U	0.002 U	--	0.07 U	**0.002**	--	**3.9**	--	**0.83**	**0.007**	**0.36**	--	0.002 U
Chlorophenols																					
2,4,5-Trichlorophenol	4.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	0.19	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	1.6	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	0.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxins and Furans																					
Lower Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mid Point PCDD/F TEQ (WHO 2005)	13	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Upper Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																					
Average Fraction Organic Carbon	NV	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fraction Organic Carbon	NV	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Moisture	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
pH	NV	pH UNITS	--	--	**8.27**	**7.79**	--	--	**7.99**	**7.76**	--	--	--	--	--	--	--	--	--	--	**8.17**
Phosphorus	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	**384**	--	--	--	--	--	--	--
Calcium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																					
Antimony	7.5	µg/g	**3**	0.8 U	0.8 U	**1.5**	**1.2**	**2.2**	0.8 U	0.8 U	0.8 U	**1.1**	0.8 U	--	**1.4**	0.8 U	**2.1**	0.8 U	0.8 U	0.8 U	0.8 U
Arsenic	18	µg/g	**5.7**	**6.5**	**2.9**	**6.4**	**5.9**	**7.4**	**2.7**	**2.4**	**4.7**	**5.2**	**7.2**	--	**6.8**	**1.3**	**23**	**1.4**	**0.8**	**4.7**	**2.9**
Barium	390	µg/g	**50.4**	**137**	**36**	**135**	**151**	**73.7**	**19**	**21.7**	**36.4**	**62.9**	**24.1**	--	**32.4**	**14.9**	**156**	**16**	**9.6**	**80.9**	**32.1**
Beryllium	4	µg/g	**0.3**	**0.6**	0.2 U	**0.4**	**0.4**	**0.7**	**0.2**	0.2 U	**0.3**	**0.3**	**0.3**	--	**0.2**	0.2 U	**0.4**	**0.2**	0.2 U	**0.5**	**0.3**
Boron	120	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	1.2	µg/g	**0.5**	**2.9**	**0.5**	**1.5**	**1.4**	**0.2**	**0.4**	0.2 U	**0.6**	**1.4**	**0.8**	--	**0.4**	**0.4**	**2.1**	**0.5**	0.2 U	**0.4**	0.2 U
Calcium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	**65200**	--	--	--	--	--	--	--
Chromium	160	µg/g	**7.6**	**14.4**	**5.6**	**11.8**	**11.5**	**19.9**	**8**	**4.3**	**8.8**	**9.3**	**7.9**	--	**14.3**	**7.1**	**13.2**	**5.5**	**3.4**	**10.2**	**9.4**
Cobalt	22	µg/g	**3.1**	**6.7**	**3.2**	**6**	**5.7**	**5.7**	**2.5**	**1.5**	**3.9**	**4.1**	**3.5**	--	**7.7**	**2.3**	**2.9**	**3.6**	**0.7**	**4.2**	**3.6**
Copper	140	µg/g	**31.6**	**39.9**	**20.3**	**22.3**	**23.4**	**45.4**	**5.4**	**9.3**	**20**	**26.1**	**15**	--	**38.3**	**8.2**	**63.1**	**13.5**	**5.4**	**17.2**	**9.8**
Lead	120	µg/g	**155**	**123**	**78.3**	**199**	**200**	**63.7**	**61.4**	**34.8**	**73**	**10100**	**105**	--	**43.3**	**53**	**336**	**37.5**	**60.4**	**72.5**	**25.5**
Magnesium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	**34600**	--	--	--	--	--	--	--
Molybdenum	6.9	µg/g	**0.6**	**0.7**	**0.5**	**0.8**	**0.8**	**1.8**	**0.3**	**0.3**	**0.7**	**0.7**	**0.6**	--	**1.2**	**0.3**	**1.4**	0.3 U	0.3 U	**0.8**	0.3 U
Nickel	100	µg/g	**8**	**22.7**	**8.2**	**11.9**	**11.8**	**19.2**	**7.3**	**3.5**	**11.9**	**13.2**	**10.2**	--	**15.4**	**6.1**	**9.8**	**8.9**	**2.8**	**11.6**	**6.8**
Selenium	2.4	µg/g	0.8 U	**0.8**	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	--	0.8 U	0.8 U	**1**	0.8 U	0.8 U	0.8 U	0.8 U
Silver	20	µg/g	**0.3**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	**0.2**	0.2 U	0.2 U	0.2 U	0.2 U
Thallium	1	µg/g	0.2 U	**0.2**	0.2 U	**0.2**	**0.2**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	BH07-61		BH07-62			BH07-63		BH07-64		BH07-65		BH07-66			BH07-67		BH07-68		BHC
		Sample ID	BH07-61 SS-1A	BH07-61 SS-2	BH07-62 SS-1A	BH07-62 SS-1B	Dup#6	BH07-63 SS-1A	BH07-63 SS-2	BH07-64 SS-1A	BH07-64 SS-2	BH07-65 SS-1A	BH07-65 SS-2	BH07-66	BH07-66 SS-1A	BH07-66 SS-2	BH07-67 SS1A	BH07-67 SS2	BH07-68 SS1	BH07-68 SS1A	BH07-69 SS1A
		Start Depth (m)	0.05	1.22	0.05	0.61	0.61	0.05	1.22	0.05	1.22	0.05	0.61	0	0.05	1.22	0.05	1.22	0	0.05	0.08
		End Depth (m)	1.22	1.37	0.61	1.22	1.22	1.22	1.88	1.22	2.29	0.61	2.03	1.32	1.22	1.32	0.91	1.37	0.05	0.61	1.22
		Sample Type	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	09 Feb 2007	09 Feb 2007	08 Feb 2007	08 Feb 2007	09 Feb 2007	09 Feb 2007	07 Mar 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007
Analyte	**Table 6 SCS [a]**	**Unit**																			
Uranium	23	µg/g	--	--	--	--	--	--	--	--	--	--	--	**0.5**	--	--	--	--	--	--	--
Vanadium	86	µg/g	**10.4**	**21.1**	**9.4**	**19.3**	**17.3**	**28.1**	**14**	**6.8**	**15.7**	**14.9**	**12.7**	--	**28.1**	**10**	**16.2**	**12.6**	**4.1**	**19.6**	**15.9**
Zinc	340	µg/g	**771**	**782**	**230**	**479**	**527**	**83.1**	**354**	**51.5**	**563**	**426**	**514**	--	**218**	**349**	**379**	**538**	**81.8**	**200**	**43.7**
Non-Regulated Metals																					
Aluminum	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	**5160**	--	--	--	--	--	--	--
Bismuth	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	**48200**	--	--	--	--	--	--	--
Manganese	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	**740**	--	--	--	--	--	--	--
Potassium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	**555**	--	--	--	--	--	--	--
Strontium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	**39.3**	--	--	--	--	--	--	--
Tin	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	**272**	--	--	--	--	--	--	--
Zirconium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																					
Boron (HWS)	1.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloride (Cl)	NV	µg/g	--	--	**62.6**	**14.6**	--	--	**29.4**	**1.78**	--	--	--	--	--	--	--	--	--	--	**6.59**
Chromium, Hexavalent (Cr6+)	8	µg/g	--	--	0.4 U	0.4 U	--	--	0.4 U	0.4 U	--	--	--	--	--	--	--	--	--	--	0.4 U
Cyanide, Free	0.051	µg/g	--	--	0.08 U	0.08 U	--	--	0.08 U	0.08 U	--	--	--	--	--	--	--	--	--	--	0.08 U
Cyanide, Weak Acid Dissociable	0.051	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	0.7	mS/cm	--	--	**0.231**	**0.208**	--	--	**0.2**	**0.074**	--	--	--	--	--	--	--	--	--	--	**0.152**
Mercury	0.27	µg/g	--	--	**0.013**	**0.067**	--	--	**0.027**	0.011 U	--	--	--	--	--	--	--	--	--	--	**0.012**
Sodium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	**154**	--	--	--	--	--	--	--
Sodium Absorption Ratio	5	SAR	--	--	**0.292**	**0.073**	--	--	**0.134**	**0.062**	--	--	--	--	--	--	--	--	--	--	**0.057**
OCPs																					
Hexachlorobenzene	0.52	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	0.012	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachloroethane	0.089	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs																					
1-Methylnaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-(1-)Methylnaphthalene	0.99	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	7.9	µg/g	0.03 U	--	--	0.03 U	--	--	--	0.03 U	--	0.03 U	--	--	0.03 U	--	--	--	0.03 U	--	0.03 U
Acenaphthylene	0.15	µg/g	0.02 U	--	--	**0.02**	--	--	--	0.02 U	--	0.02 U	--	--	0.02 U	--	--	--	0.02 U	--	0.02 U
Anthracene	0.67	µg/g	**0.03**	--	--	0.02 U	--	--	--	**0.03**	--	**0.04**	--	--	0.02 U	--	--	--	**0.12**	--	0.02 U
Benzo(a)anthracene	0.5	µg/g	**0.12**	--	--	**0.09**	--	--	--	**0.37**	--	**0.13**	--	--	**0.03**	--	--	--	**0.09**	--	0.02 U
Benzo(a)pyrene	0.3	µg/g	**0.09**	--	--	**0.11**	--	--	--	**0.44**	--	**0.1**	--	--	**0.02**	--	--	--	**0.13**	--	0.02 U
Benzo(b&j)fluoranthene	0.78	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.78	µg/g	**0.13**	--	--	**0.17**	--	--	--	**0.64**	--	**0.15**	--	--	**0.03**	--	--	--	**0.03**	--	**0.02**
Benzo(g,h,i)perylene	6.6	µg/g	**0.06**	--	--	**0.17**	--	--	--	**0.37**	--	**0.08**	--	--	**0.06**	--	--	--	0.02 U	--	0.02 U
Benzo(k)fluoranthene	0.78	µg/g	**0.06**	--	--	**0.05**	--	--	--	**0.22**	--	**0.06**	--	--	0.02 U	--	--	--	**0.1**	--	0.02 U
Chrysene	7	µg/g	**0.15**	--	--	**0.14**	--	--	--	**0.45**	--	**0.17**	--	--	**0.06**	--	--	--	**0.16**	--	**0.03**
Dibenzo(a,h)anthracene	0.1	µg/g	0.02 U	--	--	0.02 U	--	--	--	**0.07**	--	0.02 U	--	--	0.02 U	--	--	--	**0.31**	--	0.02 U
Fluoranthene	0.69	µg/g	**0.3**	--	--	**0.18**	--	--	--	**0.53**	--	**0.34**	--	--	**0.05**	--	--	--	**0.17**	--	**0.03**
Fluorene	62	µg/g	**0.02**	--	--	0.02 U	--	--	--	0.02 U	--	**0.02**	--	--	0.02 U	--	--	--	**0.02**	--	0.02 U
Indeno(1,2,3-Cd)Pyrene	0.38	µg/g	**0.06**	--	--	**0.11**	--	--	--	**0.3**	--	**0.06**	--	--	**0.03**	--	--	--	0.02 U	--	0.02 U
Naphthalene	0.6	µg/g	**0.03**	--	--	**0.03**	--	--	--	**0.04**	--	**0.07**	--	--	**0.03**	--	--	--	0.03 U	--	0.03 U
Phenanthrene	6.2	µg/g	**0.21**	--	--	**0.08**	--	--	--	**0.19**	--	**0.25**	--	--	**0.06**	--	--	--	**0.1**	--	**0.08**
Pyrene	78	µg/g	**0.24**	--	--	**0.15**	--	--	--	**0.46**	--	**0.27**	--	--	**0.04**	--	--	--	**0.03**	--	**0.02**
PCBs																					
Aroclor 1242	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.35	µg/g	0.02 U	--	--	0.02 U	--	--	--	--	--	0.02 U	0.02 U	--	0.02 U	0.02 U	**1.5**	0.02 U	**0.07**	**0.05**	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	BH07-61		BH07-62			BH07-63		BH07-64		BH07-65		BH07-66			BH07-67		BH07-68		BH0
		Sample ID	BH07-61 SS-1A	BH07-61 SS-2	BH07-62 SS-1A	BH07-62 SS-1B	Dup#6	BH07-63 SS-1A	BH07-63 SS-2	BH07-64 SS-1A	BH07-64 SS-2	BH07-65 SS-1A	BH07-65 SS-2	BH07-66	BH07-66 SS-1A	BH07-66 SS-2	BH07-67 SS1A	BH07-67 SS2	BH07-68 SS1	BH07-68 SS1A	BH07-69 SS1A
		Start Depth (m)	0.05	1.22	0.05	0.61	0.61	0.05	1.22	0.05	1.22	0.05	0.61	0	0.05	1.22	0.05	1.22	0	0.05	0.08
		End Depth (m)	1.22	1.37	0.61	1.22	1.22	1.22	1.88	1.22	2.29	0.61	2.03	1.32	1.22	1.32	0.91	1.37	0.05	0.61	1.22
		Sample Type	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	09 Feb 2007	09 Feb 2007	08 Feb 2007	08 Feb 2007	09 Feb 2007	09 Feb 2007	07 Mar 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007
Analyte	**Table 6 SCS [a]**	**Unit**																			
PHCs																					
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	55	µg/g	**5**	--	--	--	--	--	**5**	**5**	--	**5**	--	--	**5**	--	--	--	--	--	--
Petroleum Hydrocarbons F1 (C6-C10)	55	µg/g	**5**	--	--	--	--	--	**5**	**5**	--	**5**	--	--	**11**	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	98	µg/g	**10**	--	--	**10**	--	--	--	**10**	--	**10**	--	--	**10**	--	--	--	--	--	**10**
Petroleum Hydrocarbons F2 (C10-C16)	98	µg/g	**10**	--	--	**10**	--	--	**10**	**10**	--	**10**	--	--	**10**	**10**	**10**	--	--	**10**	**10**
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	300	µg/g	**200**	--	--	**50**	--	--	--	**50**	--	**52**	--	--	**310**	--	--	--	--	--	**50**
Petroleum Hydrocarbons F3 (C16-C34)	300	µg/g	**200**	--	--	**50**	--	--	**50**	**50**	--	**52**	--	--	**310**	**50**	**13000**	--	--	**350**	**50**
Petroleum Hydrocarbons F4 (C34-C50)	2800	µg/g	**81**	--	--	**50**	--	--	**50**	**50**	--	**50**	--	--	**68**	**50**	**7300**	--	--	**130**	**50**
F4G-SG (GHH-Silica)	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Gravimetric Heavy Hydrocarbons	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SVOCs (other)																					
2-Chloronaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Hexanone	NV	µg/g	0.47 U	--	--	0.47 U	--	0.47 U	--	0.47 U	--	--	0.47 U	--	--	--	0.26 U	0.47 U	--	--	0.47 U
4-Bromophenyl Phenyl Ether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chlorophenyl Phenylether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethoxy) methane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Butyl benzyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/g	0.005 U	--	--	0.005 U	--	0.005 U	--	0.005 U	--	--	0.005 U	--	--	--	0.08 U	0.005 U	--	--	0.005 U
Chloromethane	NV	µg/g	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--	--	0.002 U	--	--	--	0.11 U	0.002 U	--	--	0.002 U
Di-N-Butylphthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Isophorone	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrobenzene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodi-N-propylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																					
1,1,1,2-Tetrachloroethane	0.058	µg/g	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--	--	0.002 U	--	--	--	0.04 U	0.002 U	--	--	0.002 U
1,1,1-Trichloroethane	0.38	µg/g	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--	--	0.002 U	--	--	--	0.05 U	0.002 U	--	--	0.002 U
1,1,2,2-Tetrachloroethane	0.05	µg/g	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--	--	0.002 U	--	--	--	0.04 U	0.002 U	--	--	0.002 U
1,1,2-Trichloroethane	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	0.47	µg/g	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--	--	0.002 U	--	--	--	0.02 U	0.002 U	--	--	0.002 U
1,1-Dichloroethene	0.05	µg/g	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--	--	0.002 U	--	--	--	0.05 U	0.002 U	--	--	0.002 U
1,2-Dibromoethane	0.05	µg/g	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--	--	0.002 U	--	--	--	0.04 U	0.002 U	--	--	0.002 U
1,2-Dichlorobenzene	1.2	µg/g	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--	--	0.002 U	--	--	--	0.05 U	0.002 U	--	--	0.002 U
1,2-Dichloroethane	0.05	µg/g	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--	--	0.002 U	--	--	--	0.03 U	0.002 U	--	--	0.002 U
1,2-Dichloropropane	0.05	µg/g	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--	--	0.002 U	--	--	--	0.03 U	0.002 U	--	--	0.002 U
1,3-Dichlorobenzene	4.8	µg/g	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--	--	0.002 U	--	--	--	0.05 U	0.002 U	--	--	0.002 U
1,3-Dichloropropene	0.05	µg/g	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--	--	0.002 U	--	--	--	0.05 U	0.002 U	--	--	0.002 U
1,4-Dichlorobenzene	0.083	µg/g	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--	--	0.002 U	--	--	--	0.05 U	0.002 U	--	--	0.002 U
1,4-Dioxane	1.8	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	16	µg/g	0.041 U	--	--	0.041 U	--	0.041 U	--	0.041 U	--	--	0.041 U	--	--	--	0.29 U	0.041 U	--	--	0.041 U
4-Methyl-2-Pentanone	1.7	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acetone	16	µg/g	0.13 U	--	--	0.13 U	--	**0.14**	--	0.13 U	--	--	0.13 U	--	--	--	0.47 U	0.13 U	--	--	0.13 U
Bromodichloromethane	1.5	µg/g	0.003 U	--	--	0.003 U	--	0.003 U	--	0.003 U	--	--	0.003 U	--	--	--	0.04 U	0.003 U	--	--	0.003 U
Bromoform	0.27	µg/g	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--	--	0.002 U	--	--	--	0.03 U	0.002 U	--	--	0.002 U
Bromomethane	0.05	µg/g	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--	--	0.002 U	--	--	--	0.09 U	0.002 U	--	--	0.002 U
Carbon tetrachloride	0.05	µg/g	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--	--	0.002 U	--	--	--	0.05 U	0.002 U	--	--	0.002 U
Chlorobenzene	2.4	µg/g	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--	--	0.002 U	--	--	--	0.05 U	0.002 U	--	--	0.002 U
Chlorodibromomethane	2.3	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroform	0.05	µg/g	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--	--	0.002 U	--	--	--	0.04 U	0.002 U	--	--	0.002 U
cis-1,2-Dichloroethene	1.9	µg/g	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--	--	0.002 U	--	--	--	0.02 U	0.002 U	--	--	0.002 U
cis-1,3-Dichloropropene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dichlorodifluoromethane	16	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dichloromethane	0.1	µg/g	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--	--	0.002 U	--	--	--	0.05 U	0.002 U	--	--	0.002 U
Methyl tert-butyl ether (MTBE)	0.75	µg/g	0.004 U	--	--	0.004 U	--	0.004 U	--	0.004 U	--	--	0.004 U	--	--	--	0.06 U	0.004 U	--	--	0.004 U
n-Hexane	2.8	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Styrene	0.7	µg/g	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--	--	0.002 U	--	--	--	0.05 U	0.002 U	--	--	0.002 U
Tetrachloroethene	0.28	µg/g	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--	--	0.002 U	--	--	--	0.05 U	0.002 U	--	--	0.002 U
trans-1,2-Dichloroethene	0.084	µg/g	0.003 U	--	--	0.003 U	--	0.003 U	--	0.003 U	--	--	0.003 U	--	--	--	0.05 U	0.003 U	--	--	0.003 U
trans-1,3-Dichloropropene	NV	µg/g	0.003 U	--	--	0.003 U	--	0.003 U	--	0.003 U	--	--	0.003 U	--	--	--	0.04 U	0.003 U	--	--	0.003 U

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	BH07-61		BH07-62			BH07-63		BH07-64		BH07-65		BH07-66			BH07-67		BH07-68		BH0
		Sample ID	BH07-61 SS-1A	BH07-61 SS-2	BH07-62 SS-1A	BH07-62 SS-1B	Dup#6	BH07-63 SS-1A	BH07-63 SS-2	BH07-64 SS-1A	BH07-64 SS-2	BH07-65 SS-1A	BH07-65 SS-2	BH07-66	BH07-66 SS-1A	BH07-66 SS-2	BH07-67 SS1A	BH07-67 SS2	BH07-68 SS1	BH07-68 SS1A	BH07-69 SS1A
		Start Depth (m)	0.05	1.22	0.05	0.61	0.61	0.05	1.22	0.05	1.22	0.05	0.61	0	0.05	1.22	0.05	1.22	0	0.05	0.08
		End Depth (m)	1.22	1.37	0.61	1.22	1.22	1.22	1.88	1.22	2.29	0.61	2.03	1.32	1.22	1.32	0.91	1.37	0.05	0.61	1.22
		Sample Type	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	08 Feb 2007	09 Feb 2007	09 Feb 2007	08 Feb 2007	08 Feb 2007	09 Feb 2007	09 Feb 2007	07 Mar 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007
Analyte	**Table 6 SCS [a]**	**Unit**																			
Trichloroethylene	0.061	µg/g	0.004 U	--	--	0.004 U	--	0.004 U	--	0.004 U	--	--	0.004 U	--	--	--	0.03 U	0.004 U	--	--	0.004 U
Trichlorofluoromethane	4	µg/g	0.004 U	--	--	0.004 U	--	0.004 U	--	0.004 U	--	--	0.004 U	--	--	--	0.08 U	0.004 U	--	--	0.004 U
Vinyl Chloride	0.02	µg/g	0.002 U	--	--	0.002 U	--	0.002 U	--	0.002 U	--	--	0.002 U	--	--	--	0.1 U	0.002 U	--	--	0.002 U

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Ministry of the Environment.* April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/g = microgram(s) per gram

ABNs = acid, base and neutral compounds

BH = borehole

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

DUP = duplicate

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mg/kg = milligram(s) per kilogram

mg/l = milligram(s) per litre

mS/cm = milliSiemen(s) per centimetre

MW = monitoring well

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

pg/g = picogram(s) per gram

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	7-69	BH07-70		BH07-71		BH08			BH13-40	BH17-200				BH17-201	BH17-201	BH17-201	BH17-202	BH17-202
		Sample ID	BH07-69 SS2	BH07-70 SS1A	BH07-70 SS2	BH07-71 SS1A	BH07-71 SS2	BH8-SS1	BH15-SS1	BH8-SS2	BH13-40	BH17-200-3-3.5	BH17-200-3.5-4	BH17-200-4-6	BH17-200-6-6.5	BH17-201-0-1	BH17-201-0-2	BH17-201-2-3	BH17-202-0-2	BH17-202-2-4
		Start Depth (m)	1.22	0.05	1.22	0.05	1.22	0	1	1	1.83	0.91	1.07	1.22	1.83	0	0	0.61	0	0.61
		End Depth (m)	1.42	1.22	1.73	1.22	1.32	0.15	1.15	1.15	2.44	1.07	1.22	1.83	1.98	0.3	0.61	0.91	0.61	1.22
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	08 May 1998	08 May 1998	08 May 1998	12 Dec 2013	10 Oct 2017	10 Oct 2017	10 Oct 2017	10 Oct 2017	10 Oct 2017	10 Oct 2017	10 Oct 2017	10 Oct 2017	10 Oct 2017
Analyte	**Table 6 SCS [a]**	**Unit**																		
ABNs																				
1,1'-Biphenyl	0.31	µg/g	--	--	--	--	--	--	--	--	--	0.05 U	--	0.05 U	--	--	--	--	--	--
1,2,4-Trichlorobenzene	0.36	µg/g	--	--	--	0.007 U	--	--	--	--	--	0.05 U	--	0.05 U	--	--	--	--	--	--
2,2'-oxybis(1-chloropropane)	0.67	µg/g	--	--	--	--	--	--	--	--	--	0.1 U	--	0.1 U	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	0.5	µg/g	--	--	--	--	--	--	--	--	--	0.14 U	--	0.14 U	--	--	--	--	--	--
2,4-Dimethylphenol	38	µg/g	--	--	--	--	--	--	--	--	--	0.1 U	--	0.1 U	--	--	--	--	--	--
2,4-Dinitrophenol	2	µg/g	--	--	--	--	--	--	--	--	--	1 U	--	1 U	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/g	--	--	--	--	--	--	--	--	--	0.1 U	--	0.1 U	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/g	--	--	--	--	--	--	--	--	--	0.1 U	--	0.1 U	--	--	--	--	--	--
3,3'-Dichlorobenzidine	1	µg/g	--	--	--	--	--	--	--	--	--	0.1 U	--	0.1 U	--	--	--	--	--	--
4-Chloroaniline	0.5	µg/g	--	--	--	--	--	--	--	--	--	0.1 U	--	0.1 U	--	--	--	--	--	--
Bis (2-chloroethyl) ether	0.5	µg/g	--	--	--	--	--	--	--	--	--	0.1 U	--	0.1 U	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	5	µg/g	--	--	--	--	--	--	--	--	--	0.1 U	--	0.1 U	--	--	--	--	--	--
Diethylphthalate	0.5	µg/g	--	--	--	--	--	--	--	--	--	0.1 U	--	0.1 U	--	--	--	--	--	--
Dimethylphthalate	0.5	µg/g	--	--	--	--	--	--	--	--	--	0.1 U	--	0.1 U	--	--	--	--	--	--
Phenol	9.4	µg/g	--	--	--	--	--	--	--	--	--	0.1 U	--	0.1 U	--	--	--	--	--	--
BTEX																				
Benzene	0.21	µg/g	--	0.1 U	--	0.002 U	--	--	--	--	0.02 U	--	0.0068 U	--	0.0068 U	--	--	--	--	0.0068 U
Ethylbenzene	1.1	µg/g	--	0.05 U	--	0.002 U	--	--	--	--	0.02 U	--	0.018 U	--	0.018 U	--	--	--	--	0.018 U
Toluene	2.3	µg/g	--	0.08 U	--	0.002 U	--	--	--	--	0.02 U	--	0.08 U	--	0.08 U	--	--	--	--	0.08 U
Xylene, o	NV	µg/g	--	--	--	0.002 U	--	--	--	--	0.02 U	--	0.02 U	--	0.02 U	--	--	--	--	0.02 U
Xylenes, m & p	NV	µg/g	--	--	--	0.002 U	--	--	--	--	0.02 U	--	0.03 U	--	0.03 U	--	--	--	--	0.03 U
Xylenes, Total	3.1	µg/g	--	0.07 U	--	0.002 U	--	--	--	--	0.02 U	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U
Chlorophenols																				
2,4,5-Trichlorophenol	4.4	µg/g	--	--	--	--	--	--	--	--	--	0.1 U	--	0.1 U	--	--	--	--	--	--
2,4,6-Trichlorophenol	2.1	µg/g	--	--	--	--	--	--	--	--	--	0.1 U	--	0.1 U	--	--	--	--	--	--
2,4-Dichlorophenol	0.19	µg/g	--	--	--	--	--	--	--	--	--	0.1 U	--	0.1 U	--	--	--	--	--	--
2-Chlorophenol	1.6	µg/g	--	--	--	--	--	--	--	--	--	0.1 U	--	0.1 U	--	--	--	--	--	--
Pentachlorophenol	0.1	µg/g	--	--	--	--	--	--	--	--	--	0.1 U	--	0.1 U	--	--	--	--	--	--
Dioxins and Furans																				
Lower Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mid Point PCDD/F TEQ (WHO 2005)	13	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Upper Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																				
Average Fraction Organic Carbon	NV	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fraction Organic Carbon	NV	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Moisture	NV	%	--	--	--	--	--	--	--	--	**9**	**25.7**	**13.1**	**5.03**	**7.43**	**4.01**	**7.99**	**3.8**	**7.6**	**6.64**
pH	NV	pH UNITS	--	**7.76**	--	**7.95**	--	**7.81**	**8.64**	**7.78**	--	**7.39**	--	**8.52**	--	--	**7.71**	**7.84**	**8.16**	--
Phosphorus	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Calcium	NV	mg/l	--	--	--	--	--	--	--	--	--	**8.7**	--	**4.6**	--	--	**13.9**	**3.4**	**39.7**	--
Magnesium	NV	mg/l	--	--	--	--	--	--	--	--	--	**2.4**	--	**2.4**	--	--	**3.2**	**1.1**	**1.8**	--
Sodium	NV	mg/l	--	--	--	--	--	--	--	--	--	**2.1**	--	**4.1**	--	--	**1.8**	**1.7**	**3.1**	--
Metals and Hydride Forming Metals																				
Antimony	7.5	µg/g	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	--	--	--	0.2 U	1 U	--	1 U	--	--	**3.3**	1 U	**1.5**	--
Arsenic	18	µg/g	**0.5**	**3.5**	**2.3**	**3.4**	**1.8**	--	--	--	**4.9**	**12.4**	--	**2**	--	--	**11.3**	**2.8**	**3.2**	--
Barium	390	µg/g	**14.6**	**64**	**38.7**	**56.3**	**11.2**	--	--	--	**11**	**92.2**	--	**12.3**	--	--	**85.1**	**24**	**26.3**	--
Beryllium	4	µg/g	0.2 U	**0.4**	0.2 U	**0.3**	0.2 U	--	--	--	0.2 U	**0.51**	--	0.5 U	--	--	0.5 U	0.5 U	0.5 U	--
Boron	120	µg/g	--	--	--	--	--	--	--	--	5 U	**9.9**	--	**8.6**	--	--	**6.7**	5 U	**5.7**	--
Cadmium	1.2	µg/g	**0.3**	**1**	**0.4**	0.2 U	0.2 U	--	--	--	**0.65**	**1.47**	--	0.5 U	--	--	**1.44**	0.5 U	0.5 U	--
Calcium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	160	µg/g	**5.8**	**11.3**	**77.5**	**6.3**	**3.3**	--	--	--	**5.9**	**17.3**	--	**7.9**	--	--	**15.3**	**4.2**	**12.2**	--
Cobalt	22	µg/g	**1.8**	**3.4**	**12.7**	**3.4**	**0.8**	--	--	--	**4.1**	**8**	--	**2.1**	--	--	**4.2**	**4.1**	**3.2**	--
Copper	140	µg/g	**4.7**	**26.7**	**17.1**	**8.9**	**3**	--	--	--	**16**	**15.6**	--	**7**	--	--	**77.4**	**28.1**	**10.2**	--
Lead	120	µg/g	**29.4**	**110**	**67**	**45.3**	**11**	--	--	--	**30**	**134**	--	**50.3**	--	--	**282**	**29.1**	**77.9**	--
Magnesium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	6.9	µg/g	0.3 U	**0.5**	**0.4**	**0.4**	0.3 U	--	--	--	0.5 U	**1.2**	--	1 U	--	--	**1.2**	1 U	1 U	--
Nickel	100	µg/g	**5.3**	**10.3**	**46.5**	**6.9**	**3.4**	--	--	--	**10**	**11.5**	--	**6.1**	--	--	**15.3**	**10.2**	**8.4**	--
Selenium	2.4	µg/g	0.8 U	**0.8**	0.8 U	0.8 U	0.8 U	--	--	--	0.5 U	1 U	--	1 U	--	--	1 U	1 U	1 U	--
Silver	20	µg/g	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	0.2 U	0.2 U	--	0.2 U	--	--	0.2 U	0.2 U	0.2 U	--
Thallium	1	µg/g	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	**0.087**	0.5 U	--	0.5 U	--	--	0.5 U	0.5 U	0.5 U	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	7-69	BH07-70		BH07-71		BH08			BH13-40	BH17-200				BH17-201	BH17-201	BH17-201	BH17-202	BH17-202
		Sample ID	BH07-69 SS2	BH07-70 SS1A	BH07-70 SS2	BH07-71 SS1A	BH07-71 SS2	BH8-SS1	BH15-SS1	BH8-SS2	BH13-40	BH17-200-3-3.5	BH17-200-3.5-4	BH17-200-4-6	BH17-200-6-6.5	BH17-201-0-1	BH17-201-0-2	BH17-201-2-3	BH17-202-0-2	BH17-202-2-4
		Start Depth (m)	1.22	0.05	1.22	0.05	1.22	0	1	1	1.83	0.91	1.07	1.22	1.83	0	0	0.61	0	0.61
		End Depth (m)	1.42	1.22	1.73	1.22	1.32	0.15	1.15	1.15	2.44	1.07	1.22	1.83	1.98	0.3	0.61	0.91	0.61	1.22
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	08 May 1998	08 May 1998	08 May 1998	12 Dec 2013	10 Oct 2017	10 Oct 2017	10 Oct 2017	10 Oct 2017	10 Oct 2017	10 Oct 2017	10 Oct 2017	10 Oct 2017	10 Oct 2017
Analyte	**Table 6 SCS [a]**	**Unit**																		
Uranium	23	µg/g	--	--	--	--	--	--	--	--	**0.64**	1 U	--	1 U	--	--	1 U	1 U	1 U	--
Vanadium	86	µg/g	**7.6**	**19.5**	**35.8**	**12.8**	**3.8**	--	--	--	**8.9**	**38.1**	--	**12.6**	--	--	**27.3**	**17.3**	**20.7**	--
Zinc	340	µg/g	**275**	**699**	**1110**	**34.9**	**164**	--	--	--	**620**	**722**	--	**335**	--	--	**1140**	**446**	**53.2**	--
Non-Regulated Metals																				
Aluminum	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																				
Boron (HWS)	1.5	µg/g	--	--	--	--	--	--	--	--	--	**0.87**	--	**0.15**	--	--	**0.3**	0.1 U	**0.25**	--
Chloride (Cl)	NV	µg/g	--	**9.05**	--	**3.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium, Hexavalent (Cr6+)	8	µg/g	--	0.4 U	--	0.4 U	--	--	--	--	--	0.2 U	--	0.2 U	--	--	0.2 U	0.2 U	0.2 U	--
Cyanide, Free	0.051	µg/g	--	0.08 U	--	0.08 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	0.051	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	0.7	mS/cm	--	**0.208**	--	**0.125**	--	--	--	--	--	**0.178**	--	**0.199**	--	--	**0.26**	**0.152**	**0.401**	--
Mercury	0.27	µg/g	--	**0.064**	--	0.011 U	--	--	--	--	--	**0.0892**	--	**0.0163**	--	--	**0.0451**	**0.0144**	**0.0178**	--
Sodium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium Absorption Ratio	5	SAR	--	**0.623**	--	**0.027**	--	--	--	--	--	**0.17**	--	**0.38**	--	--	**0.12**	**0.2**	**0.13**	--
OCPs																				
Hexachlorobenzene	0.52	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	0.012	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachloroethane	0.089	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs																				
1-Methylnaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	0.005 U	0.03 U	--	0.03 U	--	--	**0.06**	0.03 U	**0.058**	--
2-(1-)Methylnaphthalene	0.99	µg/g	--	--	--	--	--	--	--	--	0.0071 U	0.042 U	--	0.042 U	--	--	**0.133**	0.042 U	**0.131**	--
2-Methylnaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	0.005 U	0.03 U	--	0.03 U	--	--	**0.073**	0.03 U	**0.073**	--
Acenaphthene	7.9	µg/g	--	0.03 U	--	0.03 U	--	--	--	--	0.005 U	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--
Acenaphthylene	0.15	µg/g	--	0.02 U	--	0.02 U	--	--	--	--	0.005 U	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--
Anthracene	0.67	µg/g	--	0.02 U	--	0.02 U	--	--	--	--	0.005 U	0.05 U	--	0.05 U	--	--	**0.101**	0.05 U	0.05 U	--
Benzo(a)anthracene	0.5	µg/g	--	**0.07**	--	0.02 U	--	--	--	--	**0.0051**	0.05 U	--	0.05 U	--	--	**0.339**	0.05 U	**0.106**	--
Benzo(a)pyrene	0.3	µg/g	--	**0.06**	--	0.02 U	--	--	--	--	0.005 U	0.05 U	--	0.05 U	--	--	**0.279**	0.05 U	**0.103**	--
Benzo(b&j)fluoranthene	0.78	µg/g	--	--	--	--	--	--	--	--	**0.0056**	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.78	µg/g	--	**0.09**	--	**0.02**	--	--	--	--	--	0.05 U	--	0.05 U	--	--	**0.398**	0.05 U	**0.191**	--
Benzo(g,h,i)perylene	6.6	µg/g	--	**0.04**	--	0.02 U	--	--	--	--	0.005 U	0.05 U	--	0.05 U	--	--	**0.184**	0.05 U	**0.088**	--
Benzo(k)fluoranthene	0.78	µg/g	--	**0.04**	--	0.02 U	--	--	--	--	0.005 U	0.05 U	--	0.05 U	--	--	**0.19**	0.05 U	**0.077**	--
Chrysene	7	µg/g	--	**0.09**	--	**0.02**	--	--	--	--	**0.0066**	0.05 U	--	0.05 U	--	--	**0.376**	0.05 U	**0.164**	--
Dibenzo(a,h)anthracene	0.1	µg/g	--	0.02 U	--	0.02 U	--	--	--	--	0.005 U	0.05 U	--	0.05 U	--	--	**0.051**	0.05 U	0.05 U	--
Fluoranthene	0.69	µg/g	--	**0.17**	--	**0.02**	--	--	--	--	**0.012**	0.05 U	--	0.05 U	--	--	**0.836**	0.05 U	**0.198**	--
Fluorene	62	µg/g	--	0.02 U	--	0.02 U	--	--	--	--	0.005 U	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--
Indeno(1,2,3-Cd)Pyrene	0.38	µg/g	--	**0.03**	--	0.02 U	--	--	--	--	0.005 U	0.05 U	--	0.05 U	--	--	**0.186**	0.05 U	**0.076**	--
Naphthalene	0.6	µg/g	--	0.03 U	--	0.03 U	--	--	--	--	0.005 U	0.05 U	--	0.05 U	--	--	**0.074**	0.05 U	**0.064**	--
Phenanthrene	6.2	µg/g	--	**0.09**	--	**0.02**	--	--	--	--	**0.01**	0.05 U	--	0.05 U	--	--	**0.497**	0.05 U	**0.136**	--
Pyrene	78	µg/g	--	**0.14**	--	**0.02**	--	--	--	--	**0.011**	0.05 U	--	0.05 U	--	--	**0.645**	0.05 U	**0.159**	--
PCBs																				
Aroclor 1242	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01 U	--	--	--	--
Aroclor 1248	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01 U	--	--	--	--
Aroclor 1254	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01 U	--	--	--	--
Aroclor 1260	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.015 U	--	--	--	--
PCB, Total	0.35	µg/g	--	0.02 U	--	--	--	--	--	--	--	--	--	--	--	0.023 U	--	--	--	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	7-69	BH07-70		BH07-71		BH08			BH13-40	BH17-200				BH17-201	BH17-201	BH17-201	BH17-202	BH17-202
		Sample ID	BH07-69 SS2	BH07-70 SS1A	BH07-70 SS2	BH07-71 SS1A	BH07-71 SS2	BH8-SS1	BH15-SS1	BH8-SS2	BH13-40	BH17-200-3-3.5	BH17-200-3.5-4	BH17-200-4-6	BH17-200-6-6.5	BH17-201-0-1	BH17-201-0-2	BH17-201-2-3	BH17-202-0-2	BH17-202-2-4
		Start Depth (m)	1.22	0.05	1.22	0.05	1.22	0	1	1	1.83	0.91	1.07	1.22	1.83	0	0	0.61	0	0.61
		End Depth (m)	1.42	1.22	1.73	1.22	1.32	0.15	1.15	1.15	2.44	1.07	1.22	1.83	1.98	0.3	0.61	0.91	0.61	1.22
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	08 May 1998	08 May 1998	08 May 1998	12 Dec 2013	10 Oct 2017	10 Oct 2017	10 Oct 2017	10 Oct 2017	10 Oct 2017	10 Oct 2017	10 Oct 2017	10 Oct 2017	10 Oct 2017
Analyte	**Table 6 SCS [a]**	**Unit**																		
PHCs																				
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	55	µg/g	--	--	--	--	--	--	--	--	10 U	--	5 U	--	5 U	--	--	--	--	5 U
Petroleum Hydrocarbons F1 (C6-C10)	55	µg/g	--	--	--	--	--	--	--	--	10 U	--	5 U	--	5 U	--	5 U	5 U	--	5 U
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	98	µg/g	--	--	--	**10**	--	--	--	--	--	--	--	--	--	--	**13**	10 U	--	--
Petroleum Hydrocarbons F2 (C10-C16)	98	µg/g	--	--	**10**	**10**	--	--	--	--	10 U	--	10 U	--	10 U	--	**13**	10 U	--	10 U
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	300	µg/g	--	--	--	**50**	--	--	--	--	--	--	--	--	--	--	**518**	**229**	--	--
Petroleum Hydrocarbons F3 (C16-C34)	300	µg/g	--	--	**50**	**50**	--	--	--	--	50 U	--	50 U	--	50 U	--	**521**	**229**	--	50 U
Petroleum Hydrocarbons F4 (C34-C50)	2800	µg/g	--	--	**50**	**50**	--	--	--	--	50 U	--	50 U	--	50 U	--	50 U	50 U	--	50 U
F4G-SG (GHH-Silica)	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Gravimetric Heavy Hydrocarbons	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/g	--	--	--	--	--	--	--	--	--	--	72 U	--	72 U	--	**535**	**229**	--	72 U
SVOCs (other)																				
2-Chloronaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Hexanone	NV	µg/g	--	--	--	0.47 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Bromophenyl Phenyl Ether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chlorophenyl Phenylether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethoxy) methane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Butyl benzyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/g	--	--	--	0.005 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	NV	µg/g	--	--	--	0.002 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-N-Butylphthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Isophorone	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrobenzene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodi-N-propylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																				
1,1,1,2-Tetrachloroethane	0.058	µg/g	--	--	--	0.002 U	--	--	--	--	0.05 U	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U
1,1,1-Trichloroethane	0.38	µg/g	--	--	--	0.002 U	--	--	--	--	0.05 U	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U
1,1,2,2-Tetrachloroethane	0.05	µg/g	--	--	--	0.002 U	--	--	--	--	0.05 U	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U
1,1,2-Trichloroethane	0.05	µg/g	--	--	--	--	--	--	--	--	0.05 U	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U
1,1-Dichloroethane	0.47	µg/g	--	--	--	0.002 U	--	--	--	--	0.05 U	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U
1,1-Dichloroethene	0.05	µg/g	--	--	--	0.002 U	--	--	--	--	0.05 U	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U
1,2-Dibromoethane	0.05	µg/g	--	--	--	0.002 U	--	--	--	--	0.05 U	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U
1,2-Dichlorobenzene	1.2	µg/g	--	--	--	0.002 U	--	--	--	--	0.05 U	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U
1,2-Dichloroethane	0.05	µg/g	--	--	--	0.002 U	--	--	--	--	0.05 U	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U
1,2-Dichloropropane	0.05	µg/g	--	--	--	0.002 U	--	--	--	--	0.05 U	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U
1,3-Dichlorobenzene	4.8	µg/g	--	--	--	0.002 U	--	--	--	--	0.05 U	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U
1,3-Dichloropropene	0.05	µg/g	--	--	--	0.002 U	--	--	--	--	0.05 U	--	0.042 U	--	0.042 U	--	--	--	--	0.042 U
1,4-Dichlorobenzene	0.083	µg/g	--	--	--	0.002 U	--	--	--	--	0.05 U	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U
1,4-Dioxane	1.8	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	16	µg/g	--	--	--	0.041 U	--	--	--	--	0.5 U	--	0.5 U	--	0.5 U	--	--	--	--	0.5 U
4-Methyl-2-Pentanone	1.7	µg/g	--	--	--	--	--	--	--	--	0.5 U	--	0.5 U	--	0.5 U	--	--	--	--	0.5 U
Acetone	16	µg/g	--	--	--	0.13 U	--	--	--	--	0.5 U	--	0.5 U	--	0.5 U	--	--	--	--	0.5 U
Bromodichloromethane	1.5	µg/g	--	--	--	0.003 U	--	--	--	--	0.05 U	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U
Bromoform	0.27	µg/g	--	--	--	0.002 U	--	--	--	--	0.05 U	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U
Bromomethane	0.05	µg/g	--	--	--	0.002 U	--	--	--	--	0.05 U	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U
Carbon tetrachloride	0.05	µg/g	--	--	--	0.002 U	--	--	--	--	0.05 U	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U
Chlorobenzene	2.4	µg/g	--	--	--	0.002 U	--	--	--	--	0.05 U	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U
Chlorodibromomethane	2.3	µg/g	--	--	--	--	--	--	--	--	0.05 U	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U
Chloroform	0.05	µg/g	--	--	--	0.002 U	--	--	--	--	0.05 U	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U
cis-1,2-Dichloroethene	1.9	µg/g	--	--	--	0.002 U	--	--	--	--	0.05 U	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U
cis-1,3-Dichloropropene	NV	µg/g	--	--	--	--	--	--	--	--	0.03 U	--	0.03 U	--	0.03 U	--	--	--	--	0.03 U
Dichlorodifluoromethane	16	µg/g	--	--	--	--	--	--	--	--	0.05 U	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U
Dichloromethane	0.1	µg/g	--	--	--	0.002 U	--	--	--	--	0.05 U	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U
Methyl tert-butyl ether (MTBE)	0.75	µg/g	--	--	--	0.004 U	--	--	--	--	0.05 U	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U
n-Hexane	2.8	µg/g	--	--	--	--	--	--	--	--	0.05 U	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U
Styrene	0.7	µg/g	--	--	--	0.002 U	--	--	--	--	0.05 U	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U
Tetrachloroethene	0.28	µg/g	--	--	--	0.002 U	--	--	--	--	0.05 U	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U
trans-1,2-Dichloroethene	0.084	µg/g	--	--	--	0.003 U	--	--	--	--	0.05 U	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U
trans-1,3-Dichloropropene	NV	µg/g	--	--	--	0.003 U	--	--	--	--	0.04 U	--	0.03 U	--	0.03 U	--	--	--	--	0.03 U

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	7-69	BH07-70		BH07-71		BH08			BH13-40	BH17-200				BH17-201	BH17-201	BH17-201	BH17-202	BH17-202
		Sample ID	BH07-69 SS2	BH07-70 SS1A	BH07-70 SS2	BH07-71 SS1A	BH07-71 SS2	BH8-SS1	BH15-SS1	BH8-SS2	BH13-40	BH17-200-3-3.5	BH17-200-3.5-4	BH17-200-4-6	BH17-200-6-6.5	BH17-201-0-1	BH17-201-0-2	BH17-201-2-3	BH17-202-0-2	BH17-202-2-4
		Start Depth (m)	1.22	0.05	1.22	0.05	1.22	0	1	1	1.83	0.91	1.07	1.22	1.83	0	0	0.61	0	0.61
		End Depth (m)	1.42	1.22	1.73	1.22	1.32	0.15	1.15	1.15	2.44	1.07	1.22	1.83	1.98	0.3	0.61	0.91	0.61	1.22
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	09 Feb 2007	08 May 1998	08 May 1998	08 May 1998	12 Dec 2013	10 Oct 2017	10 Oct 2017	10 Oct 2017	10 Oct 2017	10 Oct 2017	10 Oct 2017	10 Oct 2017	10 Oct 2017	10 Oct 2017
Analyte	**Table 6 SCS [a]**	**Unit**																		
Trichloroethylene	0.061	µg/g	--	--	--	0.004 U	--	--	--	--	**0.08**	--	0.01 U	--	0.01 U	--	--	--	--	0.01 U
Trichlorofluoromethane	4	µg/g	--	--	--	0.004 U	--	--	--	--	0.05 U	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U
Vinyl Chloride	0.02	µg/g	--	--	--	0.002 U	--	--	--	--	0.02 U	--	0.02 U	--	0.02 U	--	--	--	--	0.02 U

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Ministry of the Environment.* April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent
-- = not analyzed
µg/g = microgram(s) per gram
ABNs = acid, base and neutral compounds
BH = borehole
BTEX - benzene, toluene, ethylbenzene, and xylene
CPs = chlorophenols
DUP = duplicate
FD = field duplicate
J = associated value is estimated
m = metre(s)
MECP = Ministry of the Environment, Conservation and Parks
mg/kg = milligram(s) per kilogram
mg/l = milligram(s) per litre
mS/cm = milliSiemen(s) per centimetre
MW = monitoring well
N = normal sample
NV = no value
OCPs = organochlorine pesticides
ORPs = other regulated parameters
PCBs = polychlorinated biphenyls
pg/g = picogram(s) per gram
PHCs = petroleum hydrocarbons
SAR = sodium adsorption ratio
SVOCs = semi-volatile organic compounds
U = parameter was not detected above the associated value
VOCs = volatile organic compounds

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	BH17-202	BH17-202	BH17-203	BH17-203	BH18-204	BH18-204	BH18-204	BH18-205	BH18-205	BH18-206	BH18-206	BH18-207	BH18-207	BH18-207	BH18-207i			BH18-208	BH19-100I
		Sample ID	BH17-202-4-6	BH17-202-6-7	BH17-203-0-2	BH17-203-6-8	BH18-204-1	DUP1 JUL23	BH18-204-2	BH18-205-1	BH18-205-2	BH18-206-1	BH18-206-2	BH18-207-1	DUP1 JUL 20	BH18-207-2	BH18-207I-0.5-2.5	BH18-207I-5-7	BH18-207I-7.5-9.5	BH18-208-1	BH17-100I
		Start Depth (m)	1.22	1.83	0	1.83	1.52	1.52	3.05	0.76	1.52	0.76	1.52	0	0	0.76	0.1524	1.524	2.286	0.76	0.3048
		End Depth (m)	1.83	2.13	0.61	2.44	2.13	2.13	3.4	1.37	1.58	1.37	1.96	0.6	0.6	0.89	0.762	2.1336	2.8956	1.37	0.4572
		Sample Type	N	N	N	N	N	FD	N	N	N	N	N	N	FD	N	N	N	N	N	N
		Sample Date	10 Oct 2017	10 Oct 2017	11 Oct 2017	11 Oct 2017	23 Jul 2018	23 Jul 2018	23 Jul 2018	20 Jul 2018	20 Jul 2018	23 Jul 2018	23 Jul 2018	20 Jul 2018	20 Jul 2018	20 Jul 2018	21 Feb 2020	21 Feb 2020	21 Feb 2020	23 Jul 2018	03 Apr 2019
Analyte	**Table 6 SCS [a]**	**Unit**																			
ABNs																					
1,1'-Biphenyl	0.31	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	0.36	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,2'-oxybis(1-chloropropane)	0.67	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	38	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	2	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	9.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BTEX																					
Benzene	0.21	µg/g	--	0.0068 U	0.0068 U	--	0.0068 U	**0.0084**	**0.0077**	0.0068 UJ	0.0068 UJ	--	--	--	--	--	**0.032**	0.0068 U	0.0068 U	--	--
Ethylbenzene	1.1	µg/g	--	0.018 U	0.018 U	--	0.018 U	0.018 U	0.018 U	0.018 UJ	0.018 UJ	--	--	--	--	--	0.018 U	0.018 U	0.018 U	--	--
Toluene	2.3	µg/g	--	0.08 U	0.08 U	--	0.08 U	0.08 U	0.08 U	0.08 UJ	0.08 UJ	--	--	--	--	--	**0.097**	0.08 U	0.08 U	--	--
Xylene, o	NV	µg/g	--	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 UJ	0.02 UJ	--	--	--	--	--	**0.099**	0.02 U	0.02 U	--	--
Xylenes, m & p	NV	µg/g	--	0.03 U	0.03 U	--	0.03 U	0.03 U	0.03 U	0.03 UJ	0.03 UJ	--	--	--	--	--	**0.128**	0.03 U	0.03 U	--	--
Xylenes, Total	3.1	µg/g	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	--	--	--	--	--	**0.226**	0.05 U	0.05 U	--	--
Chlorophenols																					
2,4,5-Trichlorophenol	4.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	0.19	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	1.6	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	0.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxins and Furans																					
Lower Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mid Point PCDD/F TEQ (WHO 2005)	13	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Upper Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																					
Average Fraction Organic Carbon	NV	None	--	--	--	**0.0025**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon	NV	%	--	--	--	**0.26**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fraction Organic Carbon	NV	None	--	--	--	**0.0026**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Moisture	NV	%	**5.6**	**5.41**	**11.1**	--	**4.65**	**5.38**	**8.09**	**2.13 J**	**1.28 J**	**4.43**	**4.4**	--	--	**4.3 J**	**12.1**	**6.59**	**8.08**	**14.4**	--
pH	NV	pH UNITS	**8.57**	--	--	--	--	--	--	--	--	**8.46**	--	--	--	--	--	--	--	--	**7.71**
Phosphorus	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Calcium	NV	mg/l	**5.8**	--	--	--	--	--	--	--	--	**4.9**	--	--	--	--	--	--	--	--	--
Magnesium	NV	mg/l	**1.7**	--	--	--	--	--	--	--	--	**1**	--	--	--	--	--	--	--	--	--
Sodium	NV	mg/l	**4.6**	--	--	--	--	--	--	--	--	**7.2**	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																					
Antimony	7.5	µg/g	1 U	--	--	--	--	--	--	--	--	1 U	--	**2.3**	**2.6**	**2.4**	--	2 U	2 U	1 U	--
Arsenic	18	µg/g	**9.3**	--	--	--	--	--	--	--	--	**7.2**	--	**7.8**	**5.8**	**3.2**	--	**4**	**4.1**	**10.1**	--
Barium	390	µg/g	**17.9**	--	--	--	--	--	--	--	--	**35.7**	--	**26.9**	**26.1**	**9.4**	--	**20**	**22**	**29.1**	--
Beryllium	4	µg/g	0.5 U	--	--	--	--	--	--	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	--	2 U	2 U	0.5 U	--
Boron	120	µg/g	**6.7**	--	--	--	--	--	--	--	--	**7.6**	--	**14**	**14.5**	**7.9**	--	100 U	100 U	**9.8**	--
Cadmium	1.2	µg/g	**1.29**	--	--	--	--	--	--	--	--	**1.43**	--	**3.21**	**2.8**	**3.98**	--	**1.18**	**5.09**	**0.8**	--
Calcium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	160	µg/g	**7.9**	--	--	--	--	--	--	--	--	**8.9**	--	**13**	**11.5**	**9.1**	--	10 U	**10**	**14.1**	--
Cobalt	22	µg/g	**3.8**	--	--	--	--	--	--	--	--	**4.6**	--	**2.5**	**2.1**	**1.1**	--	**3.6**	**3.7**	**12.6**	--
Copper	140	µg/g	**23.5**	--	--	--	--	--	--	--	--	**22.8**	--	**31.8**	**34**	**44.3**	--	**23**	**48**	**13.6**	--
Lead	120	µg/g	**95.6**	--	--	--	--	--	--	--	--	**113**	--	**207**	**147**	**48.5**	--	**101**	**91**	**190**	--
Magnesium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	6.9	µg/g	1 U	--	--	--	--	--	--	--	--	1 U	--	**1.8**	**1.4**	1 U	--	2 U	2 U	1 U	--
Nickel	100	µg/g	**10.3**	--	--	--	--	--	--	--	--	**12.3**	--	**9.3**	**7**	**3.1**	--	**10**	**16**	**15.1**	--
Selenium	2.4	µg/g	1 U	--	--	--	--	--	--	--	--	1 U	--	1 U	1 U	1 U	--	4 U	4 U	1 U	--
Silver	20	µg/g	0.2 U	--	--	--	--	--	--	--	--	0.2 U	--	0.2 U	0.2 U	0.2 U	--	2 U	2 U	0.2 U	--
Thallium	1	µg/g	0.5 U	--	--	--	--	--	--	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	--	1 U	1 U	0.5 U	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	BH17-202	BH17-202	BH17-203	BH17-203	BH18-204	BH18-204	BH18-204	BH18-205	BH18-205	BH18-206	BH18-206	BH18-207	BH18-207	BH18-207	BH18-207i			BH18-208	BH19-100I
		Sample ID	BH17-202-4-6	BH17-202-6-7	BH17-203-0-2	BH17-203-6-8	BH18-204-1	DUP1 JUL23	BH18-204-2	BH18-205-1	BH18-205-2	BH18-206-1	BH18-206-2	BH18-207-1	DUP1 JUL 20	BH18-207-2	BH18-207I-0.5-2.5	BH18-207I-5-7	BH18-207I-7.5-9.5	BH18-208-1	BH17-100I
		Start Depth (m)	1.22	1.83	0	1.83	1.52	1.52	3.05	0.76	1.52	0.76	1.52	0	0	0.76	0.1524	1.524	2.286	0.76	0.3048
		End Depth (m)	1.83	2.13	0.61	2.44	2.13	2.13	3.4	1.37	1.58	1.37	1.96	0.6	0.6	0.89	0.762	2.1336	2.8956	1.37	0.4572
		Sample Type	N	N	N	N	N	FD	N	N	N	N	N	N	FD	N	N	N	N	N	N
		Sample Date	10 Oct 2017	10 Oct 2017	11 Oct 2017	11 Oct 2017	23 Jul 2018	23 Jul 2018	23 Jul 2018	20 Jul 2018	20 Jul 2018	23 Jul 2018	23 Jul 2018	20 Jul 2018	20 Jul 2018	20 Jul 2018	21 Feb 2020	21 Feb 2020	21 Feb 2020	23 Jul 2018	03 Apr 2019
Analyte	**Table 6 SCS [a]**	**Unit**																			
Uranium	23	µg/g	1 U	--	--	--	--	--	--	--	--	1 U	--	1 U	1 U	1 U	--	1 U	1 U	1 U	--
Vanadium	86	µg/g	**17.9**	--	--	--	--	--	--	--	--	**18.7**	--	**14.6**	**15.2**	**14.4**	--	**12.3**	**14.3**	**30**	--
Zinc	340	µg/g	**548**	--	--	--	--	--	--	--	--	**614**	--	**7840**	**11000**	**37500**	--	**2500**	**8650**	**665**	--
Non-Regulated Metals																					
Aluminum	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																					
Boron (HWS)	1.5	µg/g	**0.22**	--	--	--	--	--	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--
Chloride (Cl)	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium, Hexavalent (Cr6+)	8	µg/g	0.2 U	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	--	--	--	--
Cyanide, Free	0.051	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	0.051	µg/g	--	--	--	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--
Electrical Conductivity	0.7	mS/cm	**0.208**	--	--	--	--	--	--	--	--	**0.13**	--	--	--	--	--	--	--	--	--
Mercury	0.27	µg/g	**0.0309**	--	--	--	--	--	--	--	--	**0.021**	--	--	--	--	--	--	--	--	--
Sodium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium Absorption Ratio	5	SAR	**0.43**	--	--	--	--	--	--	--	--	**0.77**	--	--	--	--	--	--	--	--	--
OCPs																					
Hexachlorobenzene	0.52	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	0.012	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachloroethane	0.089	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs																					
1-Methylnaphthalene	NV	µg/g	0.03 U	--	--	--	--	--	--	--	--	--	--	--	--	--	0.03 U	--	--	0.03 U	--
2-(1-)Methylnaphthalene	0.99	µg/g	0.042 U	--	--	--	--	--	--	--	--	--	--	--	--	--	0.042 U	--	--	0.042 U	--
2-Methylnaphthalene	NV	µg/g	0.03 U	--	--	--	--	--	--	--	--	--	--	--	--	--	0.03 U	--	--	0.03 U	--
Acenaphthene	7.9	µg/g	0.05 U	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	--
Acenaphthylene	0.15	µg/g	0.05 U	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	--
Anthracene	0.67	µg/g	0.05 U	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	--
Benzo(a)anthracene	0.5	µg/g	0.05 U	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	--
Benzo(a)pyrene	0.3	µg/g	0.05 U	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	--
Benzo(b&j)fluoranthene	0.78	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.78	µg/g	0.05 U	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.057**	--	--	0.05 U	--
Benzo(g,h,i)perylene	6.6	µg/g	0.05 U	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	--
Benzo(k)fluoranthene	0.78	µg/g	0.05 U	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	--
Chrysene	7	µg/g	0.05 U	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.062**	--	--	0.05 U	--
Dibenzo(a,h)anthracene	0.1	µg/g	0.05 U	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	--
Fluoranthene	0.69	µg/g	0.05 U	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.081**	--	--	0.05 U	--
Fluorene	62	µg/g	0.05 U	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	--
Indeno(1,2,3-Cd)Pyrene	0.38	µg/g	0.05 U	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	--
Naphthalene	0.6	µg/g	0.05 U	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.02**	--	--	0.013 U	--
Phenanthrene	6.2	µg/g	0.05 U	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.064**	--	--	0.046 U	--
Pyrene	78	µg/g	0.05 U	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.084**	--	--	0.05 U	--
PCBs																					
Aroclor 1242	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.35	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	BH17-202	BH17-202	BH17-203	BH17-203	BH18-204	BH18-204	BH18-204	BH18-205	BH18-205	BH18-206	BH18-206	BH18-207	BH18-207	BH18-207	BH18-207i			BH18-208	BH19-100I
		Sample ID	BH17-202-4-6	BH17-202-6-7	BH17-203-0-2	BH17-203-6-8	BH18-204-1	DUP1 JUL23	BH18-204-2	BH18-205-1	BH18-205-2	BH18-206-1	BH18-206-2	BH18-207-1	DUP1 JUL 20	BH18-207-2	BH18-207I-0.5-2.5	BH18-207I-5-7	BH18-207I-7.5-9.5	BH18-208-1	BH17-100I
		Start Depth (m)	1.22	1.83	0	1.83	1.52	1.52	3.05	0.76	1.52	0.76	1.52	0	0	0.76	0.1524	1.524	2.286	0.76	0.3048
		End Depth (m)	1.83	2.13	0.61	2.44	2.13	2.13	3.4	1.37	1.58	1.37	1.96	0.6	0.6	0.89	0.762	2.1336	2.8956	1.37	0.4572
		Sample Type	N	N	N	N	N	FD	N	N	N	N	N	N	FD	N	N	N	N	N	N
		Sample Date	10 Oct 2017	10 Oct 2017	11 Oct 2017	11 Oct 2017	23 Jul 2018	23 Jul 2018	23 Jul 2018	20 Jul 2018	20 Jul 2018	23 Jul 2018	23 Jul 2018	20 Jul 2018	20 Jul 2018	20 Jul 2018	21 Feb 2020	21 Feb 2020	21 Feb 2020	23 Jul 2018	03 Apr 2019
Analyte	**Table 6 SCS [a]**	**Unit**																			
PHCs																					
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	55	µg/g	--	5 U	5 U	--	--	--	--	--	5 UJ	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F1 (C6-C10)	55	µg/g	--	5 U	5 U	--	--	--	--	--	5 UJ	--	5 U	--	--	5 UJ	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	98	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16)	98	µg/g	--	**14**	10 U	--	--	--	--	--	10 UJ	--	10 U	--	--	10 UJ	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	300	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34)	300	µg/g	--	**91**	50 U	--	--	--	--	--	**51 J**	--	**179**	--	--	50 UJ	--	--	--	--	--
Petroleum Hydrocarbons F4 (C34-C50)	2800	µg/g	--	50 U	50 U	--	--	--	--	--	50 UJ	--	50 U	--	--	50 UJ	--	--	--	--	--
F4G-SG (GHH-Silica)	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Gravimetric Heavy Hydrocarbons	2800	µg/g	--	--	--	--	--	--	--	--	--	--	250 U	--	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/g	--	**105**	72 U	--	--	--	--	--	72 UJ	--	**179**	--	--	72 UJ	--	--	--	--	--
SVOCs (other)																					
2-Chloronaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Hexanone	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Bromophenyl Phenyl Ether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chlorophenyl Phenylether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethoxy) methane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Butyl benzyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-N-Butylphthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Isophorone	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrobenzene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodi-N-propylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																					
1,1,1,2-Tetrachloroethane	0.058	µg/g	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--
1,1,1-Trichloroethane	0.38	µg/g	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--
1,1,2,2-Tetrachloroethane	0.05	µg/g	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--
1,1,2-Trichloroethane	0.05	µg/g	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--
1,1-Dichloroethane	0.47	µg/g	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--
1,1-Dichloroethene	0.05	µg/g	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--
1,2-Dibromoethane	0.05	µg/g	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--
1,2-Dichlorobenzene	1.2	µg/g	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--
1,2-Dichloroethane	0.05	µg/g	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--
1,2-Dichloropropane	0.05	µg/g	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--
1,3-Dichlorobenzene	4.8	µg/g	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--
1,3-Dichloropropene	0.05	µg/g	--	0.042 U	0.042 U	--	0.042 U	0.042 U	0.042 U	0.042 UJ	0.042 UJ	--	--	--	--	--	0.042 U	0.042 U	0.042 U	--	--
1,4-Dichlorobenzene	0.083	µg/g	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--
1,4-Dioxane	1.8	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	16	µg/g	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	--	--	--	--	--	0.5 U	0.5 U	0.5 U	--	--
4-Methyl-2-Pentanone	1.7	µg/g	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	--	--	--	--	--	0.5 U	0.5 U	0.5 U	--	--
Acetone	16	µg/g	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	--	--	--	--	--	0.5 U	0.5 U	0.5 U	--	--
Bromodichloromethane	1.5	µg/g	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--
Bromoform	0.27	µg/g	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--
Bromomethane	0.05	µg/g	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--
Carbon tetrachloride	0.05	µg/g	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--
Chlorobenzene	2.4	µg/g	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--
Chlorodibromomethane	2.3	µg/g	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--
Chloroform	0.05	µg/g	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--
cis-1,2-Dichloroethene	1.9	µg/g	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--
cis-1,3-Dichloropropene	NV	µg/g	--	0.03 U	0.03 U	--	0.03 U	0.03 U	0.03 U	0.03 UJ	0.03 UJ	--	--	--	--	--	0.03 U	0.03 U	0.03 U	--	--
Dichlorodifluoromethane	16	µg/g	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--
Dichloromethane	0.1	µg/g	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--
Methyl tert-butyl ether (MTBE)	0.75	µg/g	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--
n-Hexane	2.8	µg/g	--	0.05 U	**0.156**	--	0.15 U	0.15 U	0.15 U	**0.081 J**	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--
Styrene	0.7	µg/g	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--
Tetrachloroethene	0.28	µg/g	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--
trans-1,2-Dichloroethene	0.084	µg/g	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--
trans-1,3-Dichloropropene	NV	µg/g	--	0.03 U	0.03 U	--	0.03 U	0.03 U	0.03 U	0.03 UJ	0.03 UJ	--	--	--	--	--	0.03 U	0.03 U	0.03 U	--	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	BH17-202	BH17-202	BH17-203	BH17-203	BH18-204	BH18-204	BH18-204	BH18-205	BH18-205	BH18-206	BH18-206	BH18-207	BH18-207	BH18-207	BH18-207i			BH18-208	BH19-100I
		Sample ID	BH17-202-4-6	BH17-202-6-7	BH17-203-0-2	BH17-203-6-8	BH18-204-1	DUP1 JUL23	BH18-204-2	BH18-205-1	BH18-205-2	BH18-206-1	BH18-206-2	BH18-207-1	DUP1 JUL 20	BH18-207-2	BH18-207I-0.5-2.5	BH18-207I-5-7	BH18-207I-7.5-9.5	BH18-208-1	BH17-100I
		Start Depth (m)	1.22	1.83	0	1.83	1.52	1.52	3.05	0.76	1.52	0.76	1.52	0	0	0.76	0.1524	1.524	2.286	0.76	0.3048
		End Depth (m)	1.83	2.13	0.61	2.44	2.13	2.13	3.4	1.37	1.58	1.37	1.96	0.6	0.6	0.89	0.762	2.1336	2.8956	1.37	0.4572
		Sample Type	N	N	N	N	N	FD	N	N	N	N	N	N	FD	N	N	N	N	N	N
		Sample Date	10 Oct 2017	10 Oct 2017	11 Oct 2017	11 Oct 2017	23 Jul 2018	23 Jul 2018	23 Jul 2018	20 Jul 2018	20 Jul 2018	23 Jul 2018	23 Jul 2018	20 Jul 2018	20 Jul 2018	20 Jul 2018	21 Feb 2020	21 Feb 2020	21 Feb 2020	23 Jul 2018	03 Apr 2019
Analyte	**Table 6 SCS [a]**	**Unit**																			
Trichloroethylene	0.061	µg/g	--	0.01 U	0.01 U	--	**0.111**	**0.068**	**0.041**	**0.561 J**	**0.091 J**	--	--	--	--	--	**35.4**	**0.308**	**0.04**	--	--
Trichlorofluoromethane	4	µg/g	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--
Vinyl Chloride	0.02	µg/g	--	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 UJ	0.02 UJ	--	--	--	--	--	0.02 U	0.02 U	0.02 U	--	--

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Ministry of the Environment.* April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent
-- = not analyzed
µg/g = microgram(s) per gram
ABNs = acid, base and neutral compounds
BH = borehole
BTEX - benzene, toluene, ethylbenzene, and xylene
CPs = chlorophenols
DUP = duplicate
FD = field duplicate
J = associated value is estimated
m = metre(s)
MECP = Ministry of the Environment, Conservation and Parks
mg/kg = milligram(s) per kilogram
mg/l = milligram(s) per litre
mS/cm = milliSiemen(s) per centimetre
MW = monitoring well
N = normal sample
NV = no value
OCPs = organochlorine pesticides
ORPs = other regulated parameters
PCBs = polychlorinated biphenyls
pg/g = picogram(s) per gram
PHCs = petroleum hydrocarbons
SAR = sodium adsorption ratio
SVOCs = semi-volatile organic compounds
U = parameter was not detected above the associated value
VOCs = volatile organic compounds

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	BH19-102I	BH19-102II	BH19-209				BH19-210	BH19-210	BH19-210	BH19-210	BH19-211	BH19-211	BH19-211	BH20-212	BH20-213	BH20-214	BH20-214	BW11	C
		Sample ID	BH17-102I	BH17-102II	BH19-209-2.5	BH19-209-7	SOIL-DUP1	BH19-209-9.5	BH19-210-2.5	BH19-210-6	BH19-210-7.5	BH19-210-9.5	BH19-211-2.5	BH19-211-4	BH19-211-10	BH20-212-0.5-2	BH20-213-0.5-2.5	BH20-214-0.5-2	BH20-214-2.5-3	BW11-1	C-2
		Start Depth (m)	0.1524	0.1524	0.762	2.1336	2.1336	2.8956	0.762	1.8288	2.286	2.8956	0.762	1.2192	3.048	0.1524	0.1524	0.1524	0.762	0.4	0.3
		End Depth (m)	0.3048	0.3048	0.762	2.1336	2.1336	2.8956	0.762	1.8288	2.286	2.8956	0.762	1.2192	3.048	0.6096	0.762	0.6096	0.9144	0.4	0.8
		Sample Type	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	03 Apr 2019	03 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	21 Feb 2020	21 Feb 2020	21 Feb 2020	21 Feb 2020	23 Jan 1991	22 Jan 1991
Analyte	**Table 6 SCS [a]**	**Unit**																			
ABNs																					
1,1'-Biphenyl	0.31	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--	--	--	--
1,2,4-Trichlorobenzene	0.36	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--	--	--	--
2,2'-oxybis(1-chloropropane)	0.67	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	--	--	--	--
2,4 & 2,6-Dinitrotoluene	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.14 U	--	--	--	--
2,4-Dimethylphenol	38	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	--	--	--	--
2,4-Dinitrophenol	2	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
2,4-Dinitrotoluene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	--	--	--	--
2,6-Dinitrotoluene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	--	--	--	--
3,3'-Dichlorobenzidine	1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 UJ	--	--	--	--
4-Chloroaniline	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	--	--	--	--
Bis (2-chloroethyl) ether	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	--	--	--	--
Bis (2-ethylhexyl) phthalate	5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	--	--	--	--
Diethylphthalate	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	--	--	--	--
Dimethylphthalate	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	--	--	--	--
Phenol	9.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	--	--	--	--
BTEX																					
Benzene	0.21	µg/g	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	--	**0.0322**	0.0068 U	--	--
Ethylbenzene	1.1	µg/g	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	--	**0.234**	0.018 U	--	--
Toluene	2.3	µg/g	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	--	**0.611**	0.08 U	--	--
Xylene, o	NV	µg/g	**0.023**	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	**1.32**	0.02 U	--	--
Xylenes, m & p	NV	µg/g	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	--	**1.27**	0.03 U	--	--
Xylenes, Total	3.1	µg/g	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	**2.59**	0.05 U	--	--
Chlorophenols																					
2,4,5-Trichlorophenol	4.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	--	--	--	--
2,4,6-Trichlorophenol	2.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	--	--	--	--
2,4-Dichlorophenol	0.19	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	--	--	--	--
2-Chlorophenol	1.6	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	--	--	--	--
Pentachlorophenol	0.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	--	--	--	--
Dioxins and Furans																					
Lower Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mid Point PCDD/F TEQ (WHO 2005)	13	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Upper Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																					
Average Fraction Organic Carbon	NV	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fraction Organic Carbon	NV	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Moisture	NV	%	**8.51**	**5.98**	**8.63**	**3.67**	**3.67**	**6.73**	**6.34**	**5.52**	**4.88**	**11.1**	**4.49**	**3.45**	**8.21**	**15.4**	**11.7**	**12.3**	**16**	--	--
pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**8.2**
Phosphorus	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Calcium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	**8.5**	**76.7**	**64.1**	**43.8**	--	--
Magnesium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.77**	**8.47**	**10.1**	**6.22**	--	--
Sodium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.75**	**1.42**	**10.5**	**13.5**	--	--
Metals and Hydride Forming Metals																					
Antimony	7.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.2**	**1.4**	**3**	1 U	--	--
Arsenic	18	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.9**	**7.5**	**9.2**	**8.5**	--	--
Barium	390	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	**23.1**	**48.9**	**54.5**	**51.3**	--	--
Beryllium	4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	**0.89**	--
Boron	120	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	**6.2**	**5.6**	**9.5**	**10.4**	--	--
Cadmium	1.2	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	**0.89**	0.5 U	0.5 U
Calcium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	160	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	**14.7**	**16**	**9.4**	**15.6**	**9.1**	**5.1**
Cobalt	22	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	**5**	**7.3**	**5**	**5.7**	**4**	**1.9**
Copper	140	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	**25.9**	**30.6**	**26**	**21.9**	**31**	**11**
Lead	120	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	**23.4**	**42.5**	**67.2**	**133**	**83**	**1727**
Magnesium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	6.9	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	**1.9**	**1.1**	**1**	**1.11**	1 U
Nickel	100	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	**11.5**	**16**	**10.5**	**14.2**	**13**	**5.6**
Selenium	2.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U	**1.9**	1 U	--	--
Silver	20	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	1 U	1 U
Thallium	1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	BH19-102I	BH19-102II	BH19-209				BH19-210	BH19-210	BH19-210	BH19-210	BH19-211	BH19-211	BH19-211	BH20-212	BH20-213	BH20-214	BH20-214	BW11	C
		Sample ID	BH17-102I	BH17-102II	BH19-209-2.5	BH19-209-7	SOIL-DUP1	BH19-209-9.5	BH19-210-2.5	BH19-210-6	BH19-210-7.5	BH19-210-9.5	BH19-211-2.5	BH19-211-4	BH19-211-10	BH20-212-0.5-2	BH20-213-0.5-2.5	BH20-214-0.5-2	BH20-214-2.5-3	BW11-1	C-2
		Start Depth (m)	0.1524	0.1524	0.762	2.1336	2.1336	2.8956	0.762	1.8288	2.286	2.8956	0.762	1.2192	3.048	0.1524	0.1524	0.1524	0.762	0.4	0.3
		End Depth (m)	0.3048	0.3048	0.762	2.1336	2.1336	2.8956	0.762	1.8288	2.286	2.8956	0.762	1.2192	3.048	0.6096	0.762	0.6096	0.9144	0.4	0.8
		Sample Type	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	03 Apr 2019	03 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	21 Feb 2020	21 Feb 2020	21 Feb 2020	21 Feb 2020	23 Jan 1991	22 Jan 1991
Analyte	**Table 6 SCS [a]**	**Unit**																			
Uranium	23	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U	1 U	1 U	--	--
Vanadium	86	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	**28.8**	**23.7**	**13.8**	**26.1**	--	--
Zinc	340	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	**56.2**	**63.7**	**175**	**567**	**235**	**74**
Non-Regulated Metals																					
Aluminum	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																					
Boron (HWS)	1.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.24**	**0.61**	**0.37**	**0.43**	--	--
Chloride (Cl)	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium, Hexavalent (Cr6+)	8	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	10 U	10 U
Cyanide, Free	0.051	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	0.051	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--
Electrical Conductivity	0.7	mS/cm	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.136**	**0.533**	**0.445**	**0.373**	--	**0.056**
Mercury	0.27	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.005 U	**0.0394**	**0.185**	**0.0751**	--	--
Sodium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium Absorption Ratio	5	SAR	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.29**	0.1 U	**0.32**	**0.51**	--	--
OCPs																					
Hexachlorobenzene	0.52	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	0.012	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachloroethane	0.089	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs																					
1-Methylnaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.038**	**0.11**	**1.73**	**0.166**	--	--
2-(1-)Methylnaphthalene	0.99	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.07**	**0.242**	**3.76**	**0.368**	--	--
2-Methylnaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.032**	**0.133**	**2.04**	**0.202**	--	--
Acenaphthene	7.9	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U	**0.186**	0.05 U	--	--
Acenaphthylene	0.15	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--
Anthracene	0.67	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U	**0.328**	0.05 U	--	--
Benzo(a)anthracene	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	**0.054**	**0.762**	0.05 U	--	--
Benzo(a)pyrene	0.3	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U	**0.504**	0.05 U	--	--
Benzo(b&j)fluoranthene	0.78	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.78	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U	**0.847**	**0.056**	--	--
Benzo(g,h,i)perylene	6.6	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U	**0.325**	0.05 U	--	--
Benzo(k)fluoranthene	0.78	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U	**0.224**	0.05 U	--	--
Chrysene	7	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	**0.058**	**1.03**	**0.064**	--	--
Dibenzo(a,h)anthracene	0.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U	**0.103**	0.05 U	--	--
Fluoranthene	0.69	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	**0.066**	**1.56**	**0.08**	--	--
Fluorene	62	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U	**0.21**	0.05 U	--	--
Indeno(1,2,3-Cd)Pyrene	0.38	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U	**0.253**	0.05 U	--	--
Naphthalene	0.6	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.014**	**0.088**	**1.18**	**0.12**	--	--
Phenanthrene	6.2	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.046 U	**0.125**	**2.58**	**0.168**	--	--
Pyrene	78	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	**0.061**	**1.27**	**0.069**	--	--
PCBs																					
Aroclor 1242	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.35	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	BH19-102I	BH19-102II	BH19-209				BH19-210	BH19-210	BH19-210	BH19-210	BH19-211	BH19-211	BH19-211	BH20-212	BH20-213	BH20-214	BH20-214	BW11	C
		Sample ID	BH17-102I	BH17-102II	BH19-209-2.5	BH19-209-7	SOIL-DUP1	BH19-209-9.5	BH19-210-2.5	BH19-210-6	BH19-210-7.5	BH19-210-9.5	BH19-211-2.5	BH19-211-4	BH19-211-10	BH20-212-0.5-2	BH20-213-0.5-2.5	BH20-214-0.5-2	BH20-214-2.5-3	BW11-1	C-2
		Start Depth (m)	0.1524	0.1524	0.762	2.1336	2.1336	2.8956	0.762	1.8288	2.286	2.8956	0.762	1.2192	3.048	0.1524	0.1524	0.1524	0.762	0.4	0.3
		End Depth (m)	0.3048	0.3048	0.762	2.1336	2.1336	2.8956	0.762	1.8288	2.286	2.8956	0.762	1.2192	3.048	0.6096	0.762	0.6096	0.9144	0.4	0.8
		Sample Type	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	03 Apr 2019	03 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	21 Feb 2020	21 Feb 2020	21 Feb 2020	21 Feb 2020	23 Jan 1991	22 Jan 1991
Analyte	**Table 6 SCS [a]**	**Unit**																			
PHCs																					
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	55	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	**33.1**	5 U	--	--
Petroleum Hydrocarbons F1 (C6-C10)	55	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	**36.6**	5 U	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	98	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	--	**50**	**12**	--	--
Petroleum Hydrocarbons F2 (C10-C16)	98	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	--	**52**	**12**	--	--
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	300	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	50 U	--	**185**	**68**	--	--
Petroleum Hydrocarbons F3 (C16-C34)	300	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	50 U	--	**193**	**68**	--	--
Petroleum Hydrocarbons F4 (C34-C50)	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	50 U	--	**61**	50 U	--	--
F4G-SG (GHH-Silica)	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Gravimetric Heavy Hydrocarbons	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**290**	--	--	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	72 U	--	**342**	**80**	--	--
SVOCs (other)																					
2-Chloronaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Hexanone	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Bromophenyl Phenyl Ether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chlorophenyl Phenylether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethoxy) methane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Butyl benzyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-N-Butylphthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Isophorone	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrobenzene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodi-N-propylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																					
1,1,1,2-Tetrachloroethane	0.058	µg/g	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
1,1,1-Trichloroethane	0.38	µg/g	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
1,1,2,2-Tetrachloroethane	0.05	µg/g	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
1,1,2-Trichloroethane	0.05	µg/g	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
1,1-Dichloroethane	0.47	µg/g	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
1,1-Dichloroethene	0.05	µg/g	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
1,2-Dibromoethane	0.05	µg/g	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
1,2-Dichlorobenzene	1.2	µg/g	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
1,2-Dichloroethane	0.05	µg/g	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
1,2-Dichloropropane	0.05	µg/g	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
1,3-Dichlorobenzene	4.8	µg/g	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
1,3-Dichloropropene	0.05	µg/g	0.042 U	0.042 U	0.042 U	0.042 U	0.042 U	0.042 U	0.042 U	0.042 U	0.042 U	0.042 U	0.042 U	0.042 U	0.042 U	0.042 U	--	0.042 U	0.042 U	--	--
1,4-Dichlorobenzene	0.083	µg/g	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
1,4-Dioxane	1.8	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	16	µg/g	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.7 U	0.5 U	--	--
4-Methyl-2-Pentanone	1.7	µg/g	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--	--
Acetone	16	µg/g	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--	--
Bromodichloromethane	1.5	µg/g	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	4.1 U	0.05 U	--	--
Bromoform	0.27	µg/g	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
Bromomethane	0.05	µg/g	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
Carbon tetrachloride	0.05	µg/g	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
Chlorobenzene	2.4	µg/g	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
Chlorodibromomethane	2.3	µg/g	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
Chloroform	0.05	µg/g	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.15 U	0.05 U	--	--
cis-1,2-Dichloroethene	1.9	µg/g	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
cis-1,3-Dichloropropene	NV	µg/g	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	--	0.03 U	0.03 U	--	--
Dichlorodifluoromethane	16	µg/g	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
Dichloromethane	0.1	µg/g	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
Methyl tert-butyl ether (MTBE)	0.75	µg/g	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
n-Hexane	2.8	µg/g	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	**0.254**	0.05 U	--	--
Styrene	0.7	µg/g	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
Tetrachloroethene	0.28	µg/g	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
trans-1,2-Dichloroethene	0.084	µg/g	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
trans-1,3-Dichloropropene	NV	µg/g	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	--	0.03 U	0.03 U	--	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	BH19-102I	BH19-102II	BH19-209				BH19-210	BH19-210	BH19-210	BH19-210	BH19-211	BH19-211	BH19-211	BH20-212	BH20-213	BH20-214	BH20-214	BW11	C
		Sample ID	BH17-102I	BH17-102II	BH19-209-2.5	BH19-209-7	SOIL-DUP1	BH19-209-9.5	BH19-210-2.5	BH19-210-6	BH19-210-7.5	BH19-210-9.5	BH19-211-2.5	BH19-211-4	BH19-211-10	BH20-212-0.5-2	BH20-213-0.5-2.5	BH20-214-0.5-2	BH20-214-2.5-3	BW11-1	C-2
		Start Depth (m)	0.1524	0.1524	0.762	2.1336	2.1336	2.8956	0.762	1.8288	2.286	2.8956	0.762	1.2192	3.048	0.1524	0.1524	0.1524	0.762	0.4	0.3
		End Depth (m)	0.3048	0.3048	0.762	2.1336	2.1336	2.8956	0.762	1.8288	2.286	2.8956	0.762	1.2192	3.048	0.6096	0.762	0.6096	0.9144	0.4	0.8
		Sample Type	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	03 Apr 2019	03 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	16 Apr 2019	21 Feb 2020	21 Feb 2020	21 Feb 2020	21 Feb 2020	23 Jan 1991	22 Jan 1991
Analyte	**Table 6 SCS [a]**	**Unit**																			
Trichloroethylene	0.061	µg/g	**0.032**	**0.011**	**0.037**	**0.013**	0.01 U	**0.034**	0.01 U	0.01 U	0.01 U	0.01 U	**0.12**	**0.209**	**0.085**	0.01 U	--	0.01 U	0.01 U	--	--
Trichlorofluoromethane	4	µg/g	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
Vinyl Chloride	0.02	µg/g	0.02 U	0.02 U	0.02 UJ	0.02 UJ	0.02 UJ	0.02 UJ	0.02 UJ	0.02 UJ	0.02 UJ	0.02 UJ	0.02 UJ	0.02 UJ	0.02 UJ	0.02 U	--	0.02 U	0.02 U	--	--

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Ministry of the Environment.* April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/g = microgram(s) per gram

ABNs = acid, base and neutral compounds

BH = borehole

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

DUP = duplicate

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mg/kg = milligram(s) per kilogram

mg/l = milligram(s) per litre

mS/cm = milliSiemen(s) per centimetre

MW = monitoring well

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

pg/g = picogram(s) per gram

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	C	C11	C12	C14	C2	C7	C8	CE10	CS-58	CS-60	CW10	D	D	D3	DSW7	ES-11	ES-11	ES-12	ES-14
		Sample ID	C-4	C11-1	C12-1	C14-1	C2-2	C7-2	C8-1	CE10-2	CS-58	CS-60	CW10-2	D-1	D-2	Sump 5	DSW7-1	ES-11	ES-11A	ES-12	ES-14A
		Start Depth (m)	0.9	0.34	0.13	0.12	0.61	0.61	0.14	0.4	1	1	0.6	0.1	0.9	0	0	0	0	0	0
		End Depth (m)	1.3	0.4	0.3	0.61	1.07	1.22	0.76	0.6	1.3	1.3	0.9	0.8	1.2	0.15	0.5	2	2	2	2
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	22 Jan 1991	08 Feb 1991	20 Feb 1991	08 Feb 1991	08 Feb 1991	08 Feb 1991	08 Feb 1991	22 Jan 1991	22 Jul 1999	22 Jul 1999	22 Jan 1991	22 Jan 1991	22 Jan 1991	08 Feb 1991	22 Jan 1991	16 Jun 1999	16 Jun 1999	16 Jun 1999	17 Jun 1999
Analyte	**Table 6 SCS [a]**	**Unit**																			
ABNs																					
1,1'-Biphenyl	0.31	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	0.36	µg/g	--	--	--	--	--	--	--	--	--	--	0.2 U	0.2 U	--	--	--	--	--	--	--
2,2'-oxybis(1-chloropropane)	0.67	µg/g	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--
2,4-Dimethylphenol	38	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	2	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	1	µg/g	--	--	--	--	--	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	--
4-Chloroaniline	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	0.2 U	0.2 U	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	5	µg/g	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U	--	--	--	--	--	--	--
Diethylphthalate	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	0.2 U	0.2 U	--	--	--	--	--	--	--
Dimethylphthalate	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--
Phenol	9.4	µg/g	--	--	--	--	--	--	--	--	--	--	0.01 U	--	--	--	--	--	--	--	--
BTEX																					
Benzene	0.21	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	1.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	2.3	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylene, o	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes, m & p	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes, Total	3.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chlorophenols																					
2,4,5-Trichlorophenol	4.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	0.19	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	1.6	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	0.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxins and Furans																					
Lower Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mid Point PCDD/F TEQ (WHO 2005)	13	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Upper Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																					
Average Fraction Organic Carbon	NV	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fraction Organic Carbon	NV	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Moisture	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
pH	NV	pH UNITS	--	--	7.7	--	--	--	--	--	--	--	--	7.4	--	6.8	--	--	--	--	--
Phosphorus	NV	µg/g	--	70	--	240	580	410	330	380	--	--	230	--	--	--	360	--	--	--	--
Calcium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																					
Antimony	7.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	18	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	390	µg/g	--	25	--	32	53.9	32.6	32	44	--	--	18	--	--	--	30	--	--	--	--
Beryllium	4	µg/g	--	0.4	--	0.4	0.5	0.9	0.4	0.5	--	--	0.2	--	--	--	0.4	--	--	--	--
Boron	120	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	1.2	µg/g	--	0.3 U	--	0.3 U	0.6	1.2	0.5	0.3 U	--	--	0.3 U	--	0.82	--	0.3 U	--	--	--	--
Calcium	NV	µg/g	--	145000	--	27400	28500	13000	21800	4610	--	--	14500	--	--	--	1920	--	--	--	--
Chromium	160	µg/g	--	0.3 U	--	14.5	11.7	15.5	10.4	18.6	--	--	6.9	--	10	--	14.4	--	--	--	--
Cobalt	22	µg/g	--	393	--	21	22	6	24	6	--	--	2 U	--	11	--	4	--	--	--	--
Copper	140	µg/g	--	24.5	--	45.4	29.6	30.1	12.5	10	--	--	4	--	50	--	20	--	--	--	--
Lead	120	µg/g	32	17	--	50	120	24	23	92	--	--	10	--	60	--	26	--	--	--	--
Magnesium	NV	µg/g	--	42000	--	7050	13700	3100	4450	2440	--	--	2860	--	--	--	1960	--	--	--	--
Molybdenum	6.9	µg/g	3 U	3 U	--	3 U	3 U	3 U	3 U	10	--	--	3 U	--	1.63	--	5	--	--	--	--
Nickel	100	µg/g	--	2 U	--	14	11	12	9	12	--	--	5	--	23	--	10	--	--	--	--
Selenium	2.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	20	µg/g	--	7.8	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	0.2 U	--	1.2	--	0.2 U	--	--	--	--
Thallium	1	µg/g	--	2 U	--	2 U	2 U	2 U	2 U	3	--	--	2 U	--	--	--	2	--	--	--	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	C	C11	C12	C14	C2	C7	C8	CE10	CS-58	CS-60	CW10	D	D	D3	DSW7	ES-11	ES-11	ES-12	ES-14
		Sample ID	C-4	C11-1	C12-1	C14-1	C2-2	C7-2	C8-1	CE10-2	CS-58	CS-60	CW10-2	D-1	D-2	Sump 5	DSW7-1	ES-11	ES-11A	ES-12	ES-14A
		Start Depth (m)	0.9	0.34	0.13	0.12	0.61	0.61	0.14	0.4	1	1	0.6	0.1	0.9	0	0	0	0	0	0
		End Depth (m)	1.3	0.4	0.3	0.61	1.07	1.22	0.76	0.6	1.3	1.3	0.9	0.8	1.2	0.15	0.5	2	2	2	2
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	22 Jan 1991	08 Feb 1991	20 Feb 1991	08 Feb 1991	08 Feb 1991	08 Feb 1991	08 Feb 1991	22 Jan 1991	22 Jul 1999	22 Jul 1999	22 Jan 1991	22 Jan 1991	22 Jan 1991	08 Feb 1991	22 Jan 1991	16 Jun 1999	16 Jun 1999	16 Jun 1999	17 Jun 1999
Analyte	**Table 6 SCS [a]**	**Unit**																			
Uranium	23	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	86	µg/g	--	0.3 U	--	**11.7**	**20.7**	**22.9**	**15.7**	**19.2**	--	--	**8.8**	--	--	--	**16.1**	--	--	--	--
Zinc	340	µg/g	**412**	**133**	--	**278**	**507**	**79**	**83**	**57**	--	--	**39**	--	**1434**	--	**60**	--	--	--	--
Non-Regulated Metals																					
Aluminum	NV	µg/g	--	**3870**	--	**3210**	**9070**	**6210**	**6910**	**8500**	--	--	**5060**	--	--	--	**9480**	--	--	--	--
Bismuth	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	NV	µg/g	--	**9850**	--	**51100**	**72400**	**38500**	**20500**	**28700**	--	--	**7530**	--	--	--	**15100**	--	--	--	--
Manganese	NV	µg/g	--	**386**	--	**408**	**787**	**916**	**407**	**338**	--	--	**150**	--	--	--	**276**	--	--	--	--
Potassium	NV	µg/g	--	**1020**	--	**360**	**660**	**790**	**990**	**1050**	--	--	**560**	--	--	--	**970**	--	--	--	--
Strontium	NV	µg/g	--	**130**	--	**54**	**30.6**	**29.5**	**37.8**	**30.4**	--	--	**24.5**	--	--	--	**15.4**	--	--	--	--
Tin	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/g	--	**103**	--	**100**	**115**	**219**	**163**	**192**	--	--	**146**	--	--	--	**203**	--	--	--	--
Zirconium	NV	µg/g	--	**7**	--	**5**	**9**	**7**	**6**	**7**	--	--	**3**	--	--	--	**5**	--	--	--	--
ORPs																					
Boron (HWS)	1.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloride (Cl)	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium, Hexavalent (Cr6+)	8	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	10 U	--	--	--	--	--	--
Cyanide, Free	0.051	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	--	--	--	--
Cyanide, Weak Acid Dissociable	0.051	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	0.7	mS/cm	--	--	--	--	--	--	--	--	--	--	--	**0.048**	--	--	--	--	--	--	--
Mercury	0.27	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	NV	µg/g	--	**330**	--	**210**	**230**	**200**	**220**	**150**	--	--	**90**	--	--	--	**130**	--	--	--	--
Sodium Absorption Ratio	5	SAR	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OCPs																					
Hexachlorobenzene	0.52	µg/g	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U	--	--	--	--	--	--	--
Hexachlorobutadiene	0.012	µg/g	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--	--	--	--	--
Hexachloroethane	0.089	µg/g	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U	--	--	--	--	--	--	--
PAHs																					
1-Methylnaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.25 U	**0.62**	0.2 U
2-(1-)Methylnaphthalene	0.99	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	0.5 U	**0.75**	0.4 U
2-Methylnaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.25 U	**0.13**	0.2 U
Acenaphthene	7.9	µg/g	--	--	--	--	--	--	--	--	--	--	0.2 U	0.2 U	--	--	--	0.05 U	0.25 U	**0.16**	**0.17**
Acenaphthylene	0.15	µg/g	--	--	--	--	--	--	--	--	--	--	0.2 U	0.2 U	--	--	--	0.05 U	0.25 U	**0.07**	**0.2**
Anthracene	0.67	µg/g	--	--	--	--	--	--	--	--	--	--	0.2 U	0.2 U	--	--	--	0.05 U	0.25 U	**0.11**	**0.06**
Benzo(a)anthracene	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U	--	--	--	0.05 U	**0.12**	0.05 U	0.2 U
Benzo(a)pyrene	0.3	µg/g	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U	--	--	--	0.05 U	0.25 U	0.05 U	0.2 U
Benzo(b&j)fluoranthene	0.78	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.78	µg/g	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U	--	--	--	0.05 U	0.25 U	0.05 U	0.2 U
Benzo(g,h,i)perylene	6.6	µg/g	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U	--	--	--	0.05 U	0.25 U	0.05 U	0.2 U
Benzo(k)fluoranthene	0.78	µg/g	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U	--	--	--	0.05 U	0.25 U	0.05 U	0.2 U
Chrysene	7	µg/g	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U	--	--	--	**0.33**	**0.39**	0.05 U	**0.65**
Dibenzo(a,h)anthracene	0.1	µg/g	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U	--	--	--	0.05 U	0.25 U	0.05 U	0.2 U
Fluoranthene	0.69	µg/g	--	--	--	--	--	--	--	--	--	--	0.2 U	**0.2**	--	--	--	0.05 U	0.25 U	**0.05**	**0.07**
Fluorene	62	µg/g	--	--	--	--	--	--	--	--	--	--	0.2 U	0.2 U	--	--	--	0.05 U	0.25 U	**0.26**	**0.13**
Indeno(1,2,3-Cd)Pyrene	0.38	µg/g	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U	--	--	--	0.05 U	0.25 U	0.05 U	0.2 U
Naphthalene	0.6	µg/g	--	--	--	--	--	--	--	--	--	--	0.2 U	**0.1**	--	--	--	0.05 U	0.25 U	**0.19**	0.2 U
Phenanthrene	6.2	µg/g	--	--	--	--	--	--	--	--	--	--	0.2 U	**0.3**	--	--	--	0.05 U	0.25 U	**0.66**	**0.15**
Pyrene	78	µg/g	--	--	--	--	--	--	--	--	--	--	0.2 U	**0.1**	--	--	--	**0.06**	**0.22**	**0.14**	**0.34**
PCBs																					
Aroclor 1242	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.35	µg/g	--	**0.1**	--	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	C	C11	C12	C14	C2	C7	C8	CE10	CS-58	CS-60	CW10	D	D	D3	DSW7	ES-11	ES-11	ES-12	ES-14
		Sample ID	C-4	C11-1	C12-1	C14-1	C2-2	C7-2	C8-1	CE10-2	CS-58	CS-60	CW10-2	D-1	D-2	Sump 5	DSW7-1	ES-11	ES-11A	ES-12	ES-14A
		Start Depth (m)	0.9	0.34	0.13	0.12	0.61	0.61	0.14	0.4	1	1	0.6	0.1	0.9	0	0	0	0	0	0
		End Depth (m)	1.3	0.4	0.3	0.61	1.07	1.22	0.76	0.6	1.3	1.3	0.9	0.8	1.2	0.15	0.5	2	2	2	2
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	22 Jan 1991	08 Feb 1991	20 Feb 1991	08 Feb 1991	08 Feb 1991	08 Feb 1991	08 Feb 1991	22 Jan 1991	22 Jul 1999	22 Jul 1999	22 Jan 1991	22 Jan 1991	22 Jan 1991	08 Feb 1991	22 Jan 1991	16 Jun 1999	16 Jun 1999	16 Jun 1999	17 Jun 1999
Analyte	**Table 6 SCS [a]**	**Unit**																			
PHCs																					
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	55	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F1 (C6-C10)	55	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	98	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16)	98	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	300	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34)	300	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F4 (C34-C50)	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F4G-SG (GHH-Silica)	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Gravimetric Heavy Hydrocarbons	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SVOCs (other)																					
2-Chloronaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	0.2 U	0.2 U	--	--	--	--	--	--	--
2-Hexanone	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Bromophenyl Phenyl Ether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U	--	--	--	--	--	--	--
4-Chlorophenyl Phenylether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	0.2 U	0.2 U	--	--	--	--	--	--	--
Bis (2-chloroethoxy) methane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	0.2 U	0.2 U	--	--	--	--	--	--	--
Butyl benzyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U	--	--	--	--	--	--	--
Chloroethane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-N-Butylphthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	0.2 U	0.2 U	--	--	--	--	--	--	--
Di-n-octyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U	--	--	--	--	--	--	--
Isophorone	NV	µg/g	--	--	--	--	--	--	--	--	--	--	0.2 U	0.2 U	--	--	--	--	--	--	--
Nitrobenzene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	0.2 U	0.2 U	--	--	--	--	--	--	--
N-Nitrosodi-N-propylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U	--	--	--	--	--	--	--
VOCs																					
1,1,1,2-Tetrachloroethane	0.058	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	0.38	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	0.47	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethene	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dibromoethane	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	1.2	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroethane	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloropropane	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	4.8	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichloropropene	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	0.083	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dioxane	1.8	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	16	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Methyl-2-Pentanone	1.7	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acetone	16	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromodichloromethane	1.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromoform	0.27	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromomethane	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chlorobenzene	2.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chlorodibromomethane	2.3	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroform	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	1.9	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dichlorodifluoromethane	16	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dichloromethane	0.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl tert-butyl ether (MTBE)	0.75	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
n-Hexane	2.8	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Styrene	0.7	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethene	0.28	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	0.084	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
trans-1,3-Dichloropropene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	C	C11	C12	C14	C2	C7	C8	CE10	CS-58	CS-60	CW10	D	D	D3	DSW7	ES-11	ES-11	ES-12	ES-14
		Sample ID	C-4	C11-1	C12-1	C14-1	C2-2	C7-2	C8-1	CE10-2	CS-58	CS-60	CW10-2	D-1	D-2	Sump 5	DSW7-1	ES-11	ES-11A	ES-12	ES-14A
		Start Depth (m)	0.9	0.34	0.13	0.12	0.61	0.61	0.14	0.4	1	1	0.6	0.1	0.9	0	0	0	0	0	0
		End Depth (m)	1.3	0.4	0.3	0.61	1.07	1.22	0.76	0.6	1.3	1.3	0.9	0.8	1.2	0.15	0.5	2	2	2	2
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	22 Jan 1991	08 Feb 1991	20 Feb 1991	08 Feb 1991	08 Feb 1991	08 Feb 1991	08 Feb 1991	22 Jan 1991	22 Jul 1999	22 Jul 1999	22 Jan 1991	22 Jan 1991	22 Jan 1991	08 Feb 1991	22 Jan 1991	16 Jun 1999	16 Jun 1999	16 Jun 1999	17 Jun 1999
Analyte	**Table 6 SCS [a]**	**Unit**																			
Trichloroethylene	0.061	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Trichlorofluoromethane	4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vinyl Chloride	0.02	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Ministry of the Environment.* April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent
-- = not analyzed
µg/g = microgram(s) per gram
ABNs = acid, base and neutral compounds
BH = borehole
BTEX - benzene, toluene, ethylbenzene, and xylene
CPs = chlorophenols
DUP = duplicate
FD = field duplicate
J = associated value is estimated
m = metre(s)
MECP = Ministry of the Environment, Conservation and Parks
mg/kg = milligram(s) per kilogram
mg/l = milligram(s) per litre
mS/cm = milliSiemen(s) per centimetre
MW = monitoring well
N = normal sample
NV = no value
OCPs = organochlorine pesticides
ORPs = other regulated parameters
PCBs = polychlorinated biphenyls
pg/g = picogram(s) per gram
PHCs = petroleum hydrocarbons
SAR = sodium adsorption ratio
SVOCs = semi-volatile organic compounds
U = parameter was not detected above the associated value
VOCs = volatile organic compounds

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	ES-15	ES-16	ES-17	ESW8	ESW8	EW8	EW8	H	HNE19	HW16	I	I	IE15	INE15	JE15	JS15	JS15	K	KE13
		Sample ID	ES-15	ES-16A	ES-17A	ESW8-1 (ESW-1)	ESW8-2 (ESW-2)	EW8-1 (EW-1)	EW8-3 (EW-3)	H-2	HNE19-1	HW16-1	I-1	I-4	IE15-1	INE15-1 (INE-1)	JE15-2	JS15-1	JS15-3	K-1	KE13-P1
		Start Depth (m)	0	0	0	0.4	0.7	0.2	0.5	0.5	0.4	0	0.5	1	0.3	0.3	0.1	0.1	0.3	0	0.1
		End Depth (m)	2	2	2	0.4	0.7	0.3	0.7	0.8	0.4	0.1	0.5	1.5	0.8	1	0.6	0.2	0.7	0.7	0.7
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	17 Jun 1999	17 Jun 1999	23 Jun 1999	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991
Analyte	**Table 6 SCS [a]**	**Unit**																			
ABNs																					
1,1'-Biphenyl	0.31	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	0.36	µg/g	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--
2,2'-oxybis(1-chloropropane)	0.67	µg/g	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	--	--
2,4 & 2,6-Dinitrotoluene	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--
2,4-Dimethylphenol	38	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	2	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	--	--
2,6-Dinitrotoluene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	--	--
3,3'-Dichlorobenzidine	1	µg/g	--	--	--	--	--	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--	--
4-Chloroaniline	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--
Bis (2-ethylhexyl) phthalate	5	µg/g	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	--	--
Diethylphthalate	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--
Dimethylphthalate	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--
Phenol	9.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	0.01 U	--	--	--	--	--	--
BTEX																					
Benzene	0.21	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	1.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	2.3	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylene, o	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes, m & p	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes, Total	3.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chlorophenols																					
2,4,5-Trichlorophenol	4.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	0.19	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	1.6	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	0.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxins and Furans																					
Lower Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mid Point PCDD/F TEQ (WHO 2005)	13	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Upper Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																					
Average Fraction Organic Carbon	NV	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fraction Organic Carbon	NV	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Moisture	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
pH	NV	pH UNITS	--	--	--	7.5	--	--	--	--	--	--	7.9	--	--	--	--	--	--	7.8	--
Phosphorus	NV	µg/g	--	--	--	--	30	--	20 U	--	--	330	150	150	320	250	--	--	--	230	--
Calcium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																					
Antimony	7.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.24	--	0.91	--	--
Arsenic	18	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	390	µg/g	--	--	--	--	25	--	14	--	--	44	43	14	36	25	35	--	29	41	--
Beryllium	4	µg/g	--	--	--	--	0.5	--	0.4	--	--	0.5	0.4	0.4	0.4	0.3	3	--	1 U	0.4	--
Boron	120	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	1.2	µg/g	--	--	--	--	0.3 U	--	0.3 U	0.5 U	0.5 U	0.6	0.3 U	0.3 U	0.3 U	0.3 U	0.5 U	--	0.5 U	0.3 U	--
Calcium	NV	µg/g	--	--	--	--	141000	--	136000	--	--	14800	6820	134000	12300	30700	--	--	--	6960	--
Chromium	160	µg/g	--	--	--	--	18.6	--	14.9	8.2	6.4	22.1	71.6	18	17.6	8.6	5.1	--	3.4	84.7	--
Cobalt	22	µg/g	--	--	--	--	2 U	--	2 U	2.9	3.2	5	8	2 U	4	2	2.3	--	2	10	--
Copper	140	µg/g	--	--	--	--	6	--	5	12	29	26	2460	14	19	17	19	--	6.2	92	--
Lead	120	µg/g	--	--	--	--	46	--	24	86	27	830	2450	35	51	42	31	--	12	103	--
Magnesium	NV	µg/g	--	--	--	--	83700	--	87700	--	--	6240	2390	81700	3480	5700	--	--	--	3700	--
Molybdenum	6.9	µg/g	--	--	--	--	3 U	3 U	3 U	--	--	6	25	3 U	9	4	1 U	--	1 U	35	--
Nickel	100	µg/g	--	--	--	--	2 U	--	2 U	8.7	7.3	11	17	2 U	10	6	4.7	--	4.2	55	--
Selenium	2.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.24	--	0.22 U	--	--
Silver	20	µg/g	--	--	--	--	0.2 U	--	0.2 U	1.9	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	--	1 U	0.2 U	--
Thallium	1	µg/g	--	--	--	--	2 U	--	2 U	--	--	2 U	2 U	2 U	2 U	2 U	--	--	--	2 U	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	ES-15	ES-16	ES-17	ESW8	ESW8	EW8	EW8	H	HNE19	HW16	I	I	IE15	INE15	JE15	JS15	JS15	K	KE13
		Sample ID	ES-15	ES-16A	ES-17A	ESW8-1 (ESW-1)	ESW8-2 (ESW-2)	EW8-1 (EW-1)	EW8-3 (EW-3)	H-2	HNE19-1	HW16-1	I-1	I-4	IE15-1	INE15-1 (INE-1)	JE15-2	JS15-1	JS15-3	K-1	KE13-P1
		Start Depth (m)	0	0	0	0.4	0.7	0.2	0.5	0.5	0.4	0	0.5	1	0.3	0.3	0.1	0.1	0.3	0	0.1
		End Depth (m)	2	2	2	0.4	0.7	0.3	0.7	0.8	0.4	0.1	0.5	1.5	0.8	1	0.6	0.2	0.7	0.7	0.7
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	17 Jun 1999	17 Jun 1999	23 Jun 1999	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991
Analyte	**Table 6 SCS [a]**	**Unit**																			
Uranium	23	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	86	µg/g	--	--	--	--	0.3 U	--	0.3 U	--	--	**17.5**	**30.4**	0.3 U	**16.9**	**10.3**	**32**	--	**6**	**15.1**	--
Zinc	340	µg/g	--	--	--	--	**394**	--	**331**	**578**	**41**	**303**	**1810**	**586**	**94**	**141**	**65**	--	**16**	**431**	--
Non-Regulated Metals																					
Aluminum	NV	µg/g	--	--	--	--	**5460**	--	**4270**	--	--	**9870**	**8500**	**5540**	**6760**	**4160**	--	--	--	**3300**	--
Bismuth	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	NV	µg/g	--	--	--	--	**14300**	--	**5580**	--	--	**24100**	**128000**	**6510**	**33300**	**13600**	--	--	--	**91100**	--
Manganese	NV	µg/g	--	--	--	--	**274**	--	**226**	--	--	**342**	**1810**	**221**	**603**	**395**	--	--	--	**840**	--
Potassium	NV	µg/g	--	--	--	--	**280**	--	**350**	--	--	**890**	**440**	**470**	**660**	**390**	--	--	--	**130**	--
Strontium	NV	µg/g	--	--	--	--	**42.8**	--	**36.7**	--	--	**24.2**	**29.9**	**35.9**	**29**	**44.5**	--	--	--	**20.7**	--
Tin	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/g	--	--	--	--	**13.4**	--	**19.7**	--	--	**197**	**360**	**27.7**	**183**	**111**	--	--	--	**76.8**	--
Zirconium	NV	µg/g	--	--	--	--	**6**	--	**5**	--	--	**5**	**19**	**5**	**7**	**5**	--	--	--	**8**	--
ORPs																					
Boron (HWS)	1.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloride (Cl)	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium, Hexavalent (Cr6+)	8	µg/g	--	--	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	10 U	--	--
Cyanide, Free	0.051	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	--	--	0.1 U	--	--	--
Cyanide, Weak Acid Dissociable	0.051	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	0.7	mS/cm	--	--	--	**0.054**	--	--	--	--	--	--	**0.047**	--	--	--	--	--	--	**0.038**	--
Mercury	0.27	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.06**	--	0.01 U	--	--
Sodium	NV	µg/g	--	--	--	--	**140**	--	**160**	--	--	**120**	**160**	**110**	**140**	**120**	--	--	--	**80**	--
Sodium Absorption Ratio	5	SAR	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OCPs																					
Hexachlorobenzene	0.52	µg/g	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	--	--
Hexachlorobutadiene	0.012	µg/g	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	--	--
Hexachlorocyclopentadiene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	2 U	--	--	--	--	--	2 U	--	--
Hexachloroethane	0.089	µg/g	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	--	--
PAHs																					
1-Methylnaphthalene	NV	µg/g	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-(1-)Methylnaphthalene	0.99	µg/g	0.1 U	0.1 U	0.05 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	NV	µg/g	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	7.9	µg/g	0.05 U	**0.1**	0.05 U	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--
Acenaphthylene	0.15	µg/g	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--
Anthracene	0.67	µg/g	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--
Benzo(a)anthracene	0.5	µg/g	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	--	--
Benzo(a)pyrene	0.3	µg/g	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	--	--
Benzo(b&j)fluoranthene	0.78	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.78	µg/g	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	--	--
Benzo(g,h,i)perylene	6.6	µg/g	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	--	--
Benzo(k)fluoranthene	0.78	µg/g	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	--	--
Chrysene	7	µg/g	0.05 U	**0.11**	0.05 U	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	--	--
Dibenzo(a,h)anthracene	0.1	µg/g	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	--	--
Fluoranthene	0.69	µg/g	0.05 U	**0.07**	0.05 U	--	--	--	--	--	--	--	**0.2**	--	--	--	--	--	**0.1**	--	--
Fluorene	62	µg/g	0.05 U	**0.16**	0.05 U	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--
Indeno(1,2,3-Cd)Pyrene	0.38	µg/g	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	--	--
Naphthalene	0.6	µg/g	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	**0.1**	--	--	--	--	--	0.2 U	--	--
Phenanthrene	6.2	µg/g	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	**0.2**	--	--	--	--	--	**0.1**	--	--
Pyrene	78	µg/g	0.05 U	**0.27**	0.05 U	--	--	--	--	--	--	--	**0.1**	--	--	--	--	--	**0.1**	--	--
PCBs																					
Aroclor 1242	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.35	µg/g	--	--	--	0.01 U	--	0.01 U	--	--	--	--	--	--	--	--	--	0.01 U	--	--	0.01 U

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	ES-15	ES-16	ES-17	ESW8	ESW8	EW8	EW8	H	HNE19	HW16	I	I	IE15	INE15	JE15	JS15	JS15	K	KE13
		Sample ID	ES-15	ES-16A	ES-17A	ESW8-1 (ESW-1)	ESW8-2 (ESW-2)	EW8-1 (EW-1)	EW8-3 (EW-3)	H-2	HNE19-1	HW16-1	I-1	I-4	IE15-1	INE15-1 (INE-1)	JE15-2	JS15-1	JS15-3	K-1	KE13-P1
		Start Depth (m)	0	0	0	0.4	0.7	0.2	0.5	0.5	0.4	0	0.5	1	0.3	0.3	0.1	0.1	0.3	0	0.1
		End Depth (m)	2	2	2	0.4	0.7	0.3	0.7	0.8	0.4	0.1	0.5	1.5	0.8	1	0.6	0.2	0.7	0.7	0.7
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	17 Jun 1999	17 Jun 1999	23 Jun 1999	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991
Analyte	**Table 6 SCS [a]**	**Unit**																			
PHCs																					
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	55	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F1 (C6-C10)	55	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	98	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16)	98	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	300	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34)	300	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F4 (C34-C50)	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F4G-SG (GHH-Silica)	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Gravimetric Heavy Hydrocarbons	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SVOCs (other)																					
2-Chloronaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--
2-Hexanone	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Bromophenyl Phenyl Ether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	--	--
4-Chlorophenyl Phenylether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--
Bis (2-chloroethoxy) methane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--
Butyl benzyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	--	--
Chloroethane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-N-Butylphthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--
Di-n-octyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	--	--
Isophorone	NV	µg/g	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--
Nitrobenzene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--
N-Nitrosodi-N-propylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--
N-Nitrosodiphenylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	--	--
VOCs																					
1,1,1,2-Tetrachloroethane	0.058	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	0.38	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	0.47	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethene	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dibromoethane	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	1.2	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroethane	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloropropane	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	4.8	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichloropropene	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	0.083	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dioxane	1.8	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	16	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Methyl-2-Pentanone	1.7	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acetone	16	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromodichloromethane	1.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromoform	0.27	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromomethane	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chlorobenzene	2.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chlorodibromomethane	2.3	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroform	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	1.9	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dichlorodifluoromethane	16	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dichloromethane	0.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl tert-butyl ether (MTBE)	0.75	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
n-Hexane	2.8	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Styrene	0.7	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethene	0.28	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	0.084	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
trans-1,3-Dichloropropene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	ES-15	ES-16	ES-17	ESW8	ESW8	EW8	EW8	H	HNE19	HW16	I	I	IE15	INE15	JE15	JS15	JS15	K	KE13
		Sample ID	ES-15	ES-16A	ES-17A	ESW8-1 (ESW-1)	ESW8-2 (ESW-2)	EW8-1 (EW-1)	EW8-3 (EW-3)	H-2	HNE19-1	HW16-1	I-1	I-4	IE15-1	INE15-1 (INE-1)	JE15-2	JS15-1	JS15-3	K-1	KE13-P1
		Start Depth (m)	0	0	0	0.4	0.7	0.2	0.5	0.5	0.4	0	0.5	1	0.3	0.3	0.1	0.1	0.3	0	0.1
		End Depth (m)	2	2	2	0.4	0.7	0.3	0.7	0.8	0.4	0.1	0.5	1.5	0.8	1	0.6	0.2	0.7	0.7	0.7
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	17 Jun 1999	17 Jun 1999	23 Jun 1999	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991
Analyte	**Table 6 SCS [a]**	**Unit**																			
Trichloroethylene	0.061	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Trichlorofluoromethane	4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vinyl Chloride	0.02	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Ministry of the Environment.* April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/g = microgram(s) per gram

ABNs = acid, base and neutral compounds

BH = borehole

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

DUP = duplicate

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mg/kg = milligram(s) per kilogram

mg/l = milligram(s) per litre

mS/cm = milliSiemen(s) per centimetre

MW = monitoring well

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

pg/g = picogram(s) per gram

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	KNW10	KW32	L	LN2	LW23	MW17-100S	MW17-100S	MW17-100S	MW17-101D	MW17-101D	MW17-101D	MW17-101D	MW17-102D	MW17-102D	MW17-102D	MW17-102D	MW17-103D	MW17-103D
		Sample ID	KNW10-1 (KMN2)	KW32-1 (KW-1)	L-3 (M-3)	LN2-2 (H2-2/MN-2)	LW23-2 (L-2)	MW17-100S-1-1.5	MW17-100S-4.5-6	MW17-100S-6-7	MW17-101S/D-0.5-1.5	MW17-101S/D-2-3	MW17-101S/D-4-5.5	DUP 10	MW17-102D-0.5-1	MW17-102D-0.5-4	MW17-102D-4-5.5	MW17-102D-6-7	MW17-103S/D-1-1.5	MW17-103S/D-1-3
		Start Depth (m)	0.1	0.2	0.8	0.1	0.3	0.3	1.37	1.83	0.15	0.61	1.22	1.22	0.15	0.15	1.22	1.83	0.3	0.3
		End Depth (m)	0.7	1	1	0.5	1.1	0.46	1.83	2.13	0.46	0.91	1.68	1.68	0.3	1.22	1.68	2.13	0.46	0.91
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N
		Sample Date	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	12 Oct 2017	12 Oct 2017	12 Oct 2017	20 Oct 2017	20 Oct 2017	20 Oct 2017	20 Oct 2017	26 Oct 2017	26 Oct 2017	26 Oct 2017	26 Oct 2017	25 Oct 2017	25 Oct 2017
Analyte	**Table 6 SCS [a]**	**Unit**																		
ABNs																				
1,1'-Biphenyl	0.31	µg/g	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U	--	--	0.05 U	--	--	0.05 U	--
1,2,4-Trichlorobenzene	0.36	µg/g	--	--	--	0.2 U	--	--	--	--	--	0.05 U	0.05 U	--	--	0.05 U	--	--	0.05 U	--
2,2'-oxybis(1-chloropropane)	0.67	µg/g	--	--	--	0.5 U	--	--	--	--	--	0.1 U	0.1 U	--	--	0.1 U	--	--	0.1 U	--
2,4 & 2,6-Dinitrotoluene	0.5	µg/g	--	--	--	1 U	--	--	--	--	--	0.14 U	0.14 U	--	--	0.14 U	--	--	0.14 U	--
2,4-Dimethylphenol	38	µg/g	--	--	--	--	--	--	--	--	--	0.1 U	0.1 U	--	--	0.1 U	--	--	0.1 U	--
2,4-Dinitrophenol	2	µg/g	--	--	--	--	--	--	--	--	--	1 U	1 U	--	--	1 U	--	--	1 U	--
2,4-Dinitrotoluene	NV	µg/g	--	--	--	0.5 U	--	--	--	--	--	0.1 U	0.1 U	--	--	0.1 U	--	--	0.1 U	--
2,6-Dinitrotoluene	NV	µg/g	--	--	--	0.5 U	--	--	--	--	--	0.1 U	0.1 U	--	--	0.1 U	--	--	0.1 U	--
3,3'-Dichlorobenzidine	1	µg/g	--	--	--	10 U	--	--	--	--	--	0.1 U	0.3 U	--	--	0.1 U	--	--	0.1 U	--
4-Chloroaniline	0.5	µg/g	--	--	--	--	--	--	--	--	--	0.1 U	0.1 U	--	--	0.1 U	--	--	0.1 U	--
Bis (2-chloroethyl) ether	0.5	µg/g	--	--	--	0.2 U	--	--	--	--	--	0.1 U	0.1 U	--	--	0.1 U	--	--	0.1 U	--
Bis (2-ethylhexyl) phthalate	5	µg/g	--	--	--	0.5 U	--	--	--	--	--	0.1 U	0.1 U	--	--	0.1 U	--	--	0.1 U	--
Diethylphthalate	0.5	µg/g	--	--	--	0.2 U	--	--	--	--	--	0.1 U	0.1 U	--	--	0.1 U	--	--	0.1 U	--
Dimethylphthalate	0.5	µg/g	--	--	--	1 U	--	--	--	--	--	0.1 U	0.1 U	--	--	0.1 U	--	--	0.1 U	--
Phenol	9.4	µg/g	--	--	--	--	--	--	--	--	--	0.1 U	0.1 U	--	--	0.1 U	--	--	0.1 U	--
BTEX																				
Benzene	0.21	µg/g	--	--	--	--	--	0.0068 U	--	0.0068 U	--	--	0.0068 U	0.0068 U	0.0068 U	--	--	0.0068 U	--	--
Ethylbenzene	1.1	µg/g	--	--	--	--	--	0.018 U	--	0.018 U	--	--	0.018 U	0.018 U	0.018 U	--	--	0.018 U	--	--
Toluene	2.3	µg/g	--	--	--	--	--	0.08 U	--	0.08 U	--	--	0.08 U	0.08 U	0.08 U	--	--	0.08 U	--	--
Xylene, o	NV	µg/g	--	--	--	--	--	0.02 U	--	0.02 U	--	--	0.02 U	0.02 U	**0.036**	--	--	0.02 U	--	--
Xylenes, m & p	NV	µg/g	--	--	--	--	--	0.03 U	--	**0.03**	--	--	0.03 U	0.03 U	**0.04**	--	--	0.03 U	--	--
Xylenes, Total	3.1	µg/g	--	--	--	--	--	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	**0.076**	--	--	0.05 U	--	--
Chlorophenols																				
2,4,5-Trichlorophenol	4.4	µg/g	--	--	--	--	--	--	--	--	--	0.1 U	0.1 U	--	--	0.1 U	--	--	0.1 U	--
2,4,6-Trichlorophenol	2.1	µg/g	--	--	--	--	--	--	--	--	--	0.1 U	0.1 U	--	--	0.1 U	--	--	0.1 U	--
2,4-Dichlorophenol	0.19	µg/g	--	--	--	--	--	--	--	--	--	0.1 U	0.1 U	--	--	0.1 U	--	--	0.1 U	--
2-Chlorophenol	1.6	µg/g	--	--	--	--	--	--	--	--	--	0.1 U	0.1 U	--	--	0.1 U	--	--	0.1 U	--
Pentachlorophenol	0.1	µg/g	--	--	--	--	--	--	--	--	--	0.1 U	0.1 U	--	--	0.1 U	--	--	0.1 U	--
Dioxins and Furans																				
Lower Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mid Point PCDD/F TEQ (WHO 2005)	13	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Upper Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																				
Average Fraction Organic Carbon	NV	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.0484**
Carbon	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**5.16**
Fraction Organic Carbon	NV	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.0516**
Moisture	NV	%	--	--	--	--	--	**11.3**	**3.42**	**4.27**	**4.64**	**5.48**	**4.98**	**5.44**	**7.89**	**8.65**	**13.6**	**5.65**	**7.71**	--
pH	NV	pH UNITS	--	--	--	**6.7**	**6.7**	**9.45**	**8.21**	--	--	**8.31**	**8.38**	--	--	--	**7.57**	**8.6**	**7.41**	--
Phosphorus	NV	µg/g	**450**	**200**	--	**280**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Calcium	NV	mg/l	--	--	--	--	--	**32.6**	**3.2**	--	--	**3.1**	**3.5**	--	--	--	**2.6**	**3.5**	**4.8**	--
Magnesium	NV	mg/l	--	--	--	--	--	**1.5**	**1.4**	--	--	**3.2**	**3.2**	--	--	--	1 U	1 U	1 U	--
Sodium	NV	mg/l	--	--	--	--	--	**6**	**4.2**	--	--	**5.3**	**10.8**	--	--	--	**1.4**	**4.5**	1 U	--
Metals and Hydride Forming Metals																				
Antimony	7.5	µg/g	--	--	**0.24**	--	--	1 U	1 U	--	--	1 U	1 U	--	--	--	1 U	1 U	**1.8**	--
Arsenic	18	µg/g	--	--	--	--	--	**3.3**	**2.1**	--	--	**6**	**5.7**	--	--	--	**9.3**	**3**	**3.3**	--
Barium	390	µg/g	**65.5**	**43**	**89**	**63**	--	**33.6**	**35.7**	--	--	**36.9**	**23.1**	--	--	--	**115**	**60.5**	**35.4**	--
Beryllium	4	µg/g	0.7 U	**0.7**	**3**	**1.1**	--	0.5 U	0.5 U	--	--	0.5 U	0.5 U	--	--	--	0.5 U	0.5 U	0.5 U	--
Boron	120	µg/g	--	--	--	--	--	**6.4**	**5.3**	--	--	**8.5**	**7.3**	--	--	--	**5.8**	5 U	**5.2**	--
Cadmium	1.2	µg/g	0.3 U	**0.4**	0.5 U	0.3 U	--	0.5 U	**0.88**	--	--	**6.6**	**0.85**	--	--	--	**1.54**	0.5 U	0.5 U	--
Calcium	NV	µg/g	**20300**	**4100**	--	**4410**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	160	µg/g	**11.1**	**16.7**	**15**	**29.1**	--	**18.1**	**53.6**	--	--	**8.3**	**10.3**	--	--	--	**16.6**	**21.5**	**18.9**	--
Cobalt	22	µg/g	**8**	**7**	**6.2**	**15**	--	**3.6**	**9**	--	--	**3.7**	**3.9**	--	--	--	**9.8**	**5.1**	**2.8**	--
Copper	140	µg/g	**9.8**	**45**	**22**	**37**	--	**15.6**	**47.3**	--	--	**29.2**	**29.6**	--	--	--	**59.9**	**25.1**	**22.9**	--
Lead	120	µg/g	**138**	**94**	**215**	**50**	--	**20.4**	**116**	--	--	**96.2**	**58.4**	--	--	--	**424**	**45**	**51.2**	--
Magnesium	NV	µg/g	**10900**	**1960**	--	**1030**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	6.9	µg/g	3 U	**6**	**1**	**21**	--	1 U	1 U	--	--	1 U	1 U	--	--	--	**1**	1 U	**1.3**	--
Nickel	100	µg/g	**10**	**18**	**19**	**28**	--	**7.7**	**21.9**	--	--	**16.7**	**9.6**	--	--	--	**22.6**	**10.4**	**10.1**	--
Selenium	2.4	µg/g	--	--	**0.27**	--	--	1 U	1 U	--	--	1 U	1 U	--	--	--	1 U	1 U	1 U	--
Silver	20	µg/g	0.2 U	0.2 U	1 U	0.2 U	--	0.2 U	0.2 U	--	--	0.2 U	0.2 U	--	--	--	0.2 U	0.2 U	0.2 U	--
Thallium	1	µg/g	2 U	2 U	--	2 U	--	0.5 U	0.5 U	--	--	0.5 U	0.5 U	--	--	--	0.5 U	0.5 U	0.5 U	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	KNW10	KW32	L	LN2	LW23	MW17-100S	MW17-100S	MW17-100S	MW17-101D	MW17-101D	MW17-101D	MW17-101D	MW17-102D	MW17-102D	MW17-102D	MW17-102D	MW17-103D	MW17-103D
		Sample ID	KNW10-1 (KMN2)	KW32-1 (KW-1)	L-3 (M-3)	LN2-2 (H2-2/MN-2)	LW23-2 (L-2)	MW17-100S-1-1.5	MW17-100S-4.5-6	MW17-100S-6-7	MW17-101S/D-0.5-1.5	MW17-101S/D-2-3	MW17-101S/D-4-5.5	DUP 10	MW17-102D-0.5-1	MW17-102D-0.5-4	MW17-102D-4-5.5	MW17-102D-6-7	MW17-103S/D-1-1.5	MW17-103S/D-1-3
		Start Depth (m)	0.1	0.2	0.8	0.1	0.3	0.3	1.37	1.83	0.15	0.61	1.22	1.22	0.15	0.15	1.22	1.83	0.3	0.3
		End Depth (m)	0.7	1	1	0.5	1.1	0.46	1.83	2.13	0.46	0.91	1.68	1.68	0.3	1.22	1.68	2.13	0.46	0.91
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N
		Sample Date	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	12 Oct 2017	12 Oct 2017	12 Oct 2017	20 Oct 2017	20 Oct 2017	20 Oct 2017	20 Oct 2017	26 Oct 2017	26 Oct 2017	26 Oct 2017	26 Oct 2017	25 Oct 2017	25 Oct 2017
Analyte	**Table 6 SCS [a]**	**Unit**																		
Uranium	23	µg/g	--	--	--	--	--	1 U	1 U	--	--	1 U	1 U	--	--	--	1 U	1 U	1 U	--
Vanadium	86	µg/g	**23.2**	**13.3**	**61**	**23.7**	--	**39.9**	**100**	--	--	**13**	**12.2**	--	--	--	**35.6**	**31**	**17.7**	--
Zinc	340	µg/g	**753**	**209**	**740**	**2220**	--	**42.7**	**724**	--	--	**1240**	**410**	--	--	--	**784**	**393**	**69.4**	--
Non-Regulated Metals																				
Aluminum	NV	µg/g	**12300**	**3850**	--	**6730**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	NV	µg/g	**37300**	**29200**	--	**80400**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/g	**669**	**341**	--	**461**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	NV	µg/g	**560**	**250**	--	**300**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/g	**27**	**41.5**	--	**61.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/g	**17.3**	**118**	--	**268**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/g	**12**	**6**	--	**10**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																				
Boron (HWS)	1.5	µg/g	--	--	--	--	--	**0.2**	0.1 U	--	--	**0.14**	**0.15**	--	--	--	**0.33**	**0.21**	**0.23**	--
Chloride (Cl)	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium, Hexavalent (Cr6+)	8	µg/g	--	--	10 U	--	--	0.2 U	**0.32**	--	--	0.2 U	0.2 U	--	--	--	**0.31**	0.2 U	0.2 U	--
Cyanide, Free	0.051	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	0.051	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	0.7	mS/cm	--	--	--	**0.027**	--	**0.343**	**0.157**	--	--	**0.215**	**0.249**	--	--	--	**0.136**	**0.178**	**0.17**	--
Mercury	0.27	µg/g	--	--	**0.15**	--	--	**0.0066**	**0.0191**	--	--	**0.124**	**0.018**	--	--	--	**0.0432**	**0.0095**	**0.246**	--
Sodium	NV	µg/g	**60**	**80**	--	**180**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium Absorption Ratio	5	SAR	--	--	--	--	--	**0.28**	**0.49**	--	--	**0.51**	**1**	--	--	--	**0.24**	**0.65**	0.13 U	--
OCPs																				
Hexachlorobenzene	0.52	µg/g	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	0.012	µg/g	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	NV	µg/g	--	--	--	2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachloroethane	0.089	µg/g	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs																				
1-Methylnaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	0.03 U	0.03 U	--	--	**0.132**	--	**0.031**	**0.162**	--
2-(1-)Methylnaphthalene	0.99	µg/g	--	--	--	--	--	--	--	--	--	0.042 U	0.042 U	--	--	**0.278**	--	**0.072**	**0.329**	--
2-Methylnaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	0.03 U	0.03 U	--	--	**0.146**	--	**0.04**	**0.167**	--
Acenaphthene	7.9	µg/g	--	--	--	0.2 U	--	--	--	--	--	0.05 U	0.05 U	--	--	**0.379**	--	**0.119**	0.05 U	--
Acenaphthylene	0.15	µg/g	--	--	--	0.2 U	--	--	--	--	--	0.05 U	0.05 U	--	--	0.05 U	--	0.05 U	0.05 U	--
Anthracene	0.67	µg/g	--	--	--	0.2 U	--	--	--	--	--	0.05 U	0.05 U	--	--	**0.69**	--	**0.21**	**0.071**	--
Benzo(a)anthracene	0.5	µg/g	--	--	--	0.5 U	--	--	--	--	--	0.05 U	0.06 U	--	--	**1.9**	--	**0.441**	**0.661**	--
Benzo(a)pyrene	0.3	µg/g	--	--	--	0.5 U	--	--	--	--	--	0.05 U	0.05 U	--	--	**1.65**	--	**0.356**	**0.748**	--
Benzo(b&j)fluoranthene	0.78	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.78	µg/g	--	--	--	0.5 U	--	--	--	--	--	0.05 U	0.05 U	--	--	**1.74**	--	**0.495**	**0.902**	--
Benzo(g,h,i)perylene	6.6	µg/g	--	--	--	0.5 U	--	--	--	--	--	0.05 U	0.05 U	--	--	**0.992**	--	**0.221**	**0.526**	--
Benzo(k)fluoranthene	0.78	µg/g	--	--	--	0.5 U	--	--	--	--	--	0.05 U	0.05 U	--	--	**1.39**	--	**0.165**	**0.623**	--
Chrysene	7	µg/g	--	--	--	0.5 U	--	--	--	--	--	0.05 U	**0.213**	--	--	**1.93**	--	**0.49**	**0.797**	--
Dibenzo(a,h)anthracene	0.1	µg/g	--	--	--	0.5 U	--	--	--	--	--	0.05 U	0.05 U	--	--	**0.25**	--	**0.061**	**0.15**	--
Fluoranthene	0.69	µg/g	--	--	--	**0.1**	--	--	--	--	--	0.05 U	0.05 U	--	--	**4.27**	--	**1.06**	**0.646**	--
Fluorene	62	µg/g	--	--	--	0.2 U	--	--	--	--	--	0.05 U	0.05 U	--	--	**0.357**	--	**0.128**	0.05 U	--
Indeno(1,2,3-Cd)Pyrene	0.38	µg/g	--	--	--	0.5 U	--	--	--	--	--	0.05 U	0.05 U	--	--	**1.36**	--	**0.225**	**0.673**	--
Naphthalene	0.6	µg/g	--	--	--	**0.1**	--	--	--	--	--	0.05 U	0.05 U	--	--	**0.18**	--	**0.056**	**0.121**	--
Phenanthrene	6.2	µg/g	--	--	--	**0.2**	--	--	--	--	--	0.05 U	0.05 U	--	--	**3.92**	--	**1.1**	**0.565**	--
Pyrene	78	µg/g	--	--	--	**0.1**	--	--	--	--	--	0.05 U	**0.109**	--	--	**3.68**	--	**0.806**	**0.594**	--
PCBs																				
Aroclor 1242	NV	µg/g	--	--	--	--	--	--	--	--	0.01 U	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/g	--	--	--	--	--	--	--	--	0.01 U	--	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/g	--	--	--	--	--	--	--	--	0.01 U	--	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/g	--	--	--	--	--	--	--	--	0.01 U	--	--	--	--	--	--	--	--	--
PCB, Total	0.35	µg/g	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	KNW10	KW32	L	LN2	LW23	MW17-100S	MW17-100S	MW17-100S	MW17-101D	MW17-101D	MW17-101D	MW17-101D	MW17-102D	MW17-102D	MW17-102D	MW17-102D	MW17-103D	MW17-103D
		Sample ID	KNW10-1 (KMN2)	KW32-1 (KW-1)	L-3 (M-3)	LN2-2 (H2-2/MN-2)	LW23-2 (L-2)	MW17-100S-1-1.5	MW17-100S-4.5-6	MW17-100S-6-7	MW17-101S/D-0.5-1.5	MW17-101S/D-2-3	MW17-101S/D-4-5.5	DUP 10	MW17-102D-0.5-1	MW17-102D-0.5-4	MW17-102D-4-5.5	MW17-102D-6-7	MW17-103S/D-1-1.5	MW17-103S/D-1-3
		Start Depth (m)	0.1	0.2	0.8	0.1	0.3	0.3	1.37	1.83	0.15	0.61	1.22	1.22	0.15	0.15	1.22	1.83	0.3	0.3
		End Depth (m)	0.7	1	1	0.5	1.1	0.46	1.83	2.13	0.46	0.91	1.68	1.68	0.3	1.22	1.68	2.13	0.46	0.91
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N
		Sample Date	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	12 Oct 2017	12 Oct 2017	12 Oct 2017	20 Oct 2017	20 Oct 2017	20 Oct 2017	20 Oct 2017	26 Oct 2017	26 Oct 2017	26 Oct 2017	26 Oct 2017	25 Oct 2017	25 Oct 2017
Analyte	**Table 6 SCS [a]**	**Unit**																		
PHCs																				
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	55	µg/g	--	--	--	--	--	5 U	--	5 U	--	--	5 U	5 U	5 U	--	--	5 U	--	--
Petroleum Hydrocarbons F1 (C6-C10)	55	µg/g	--	--	--	--	--	5 U	--	5 U	--	--	5 U	5 U	5 U	--	--	5 U	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	98	µg/g	--	--	--	--	--	--	--	--	--	--	**50**	--	--	--	--	10 U	--	--
Petroleum Hydrocarbons F2 (C10-C16)	98	µg/g	--	--	--	--	--	10 U	--	10 U	--	--	**50**	10 U	10 U	--	--	10 U	--	--
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	300	µg/g	--	--	--	--	--	--	--	--	--	--	**727**	--	--	--	--	50 U	--	--
Petroleum Hydrocarbons F3 (C16-C34)	300	µg/g	--	--	--	--	--	50 U	--	50 U	--	--	**727**	**90**	**91**	--	--	50 U	--	--
Petroleum Hydrocarbons F4 (C34-C50)	2800	µg/g	--	--	--	--	--	50 U	--	50 U	--	--	**157**	50 U	50 U	--	--	50 U	--	--
F4G-SG (GHH-Silica)	2800	µg/g	--	--	--	--	--	--	--	--	--	--	**400**	--	--	--	--	--	--	--
Gravimetric Heavy Hydrocarbons	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/g	--	--	--	--	--	72 U	--	72 U	--	--	**934**	**90**	**91**	--	--	72 U	--	--
SVOCs (other)																				
2-Chloronaphthalene	NV	µg/g	--	--	--	0.2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Hexanone	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Bromophenyl Phenyl Ether	NV	µg/g	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chlorophenyl Phenylether	NV	µg/g	--	--	--	0.2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethoxy) methane	NV	µg/g	--	--	--	0.2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Butyl benzyl phthalate	NV	µg/g	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-N-Butylphthalate	NV	µg/g	--	--	--	0.2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	NV	µg/g	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Isophorone	NV	µg/g	--	--	--	0.2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrobenzene	NV	µg/g	--	--	--	0.2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodi-N-propylamine	NV	µg/g	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	NV	µg/g	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																				
1,1,1,2-Tetrachloroethane	0.058	µg/g	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	0.05 U	--	--
1,1,1-Trichloroethane	0.38	µg/g	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	0.05 U	--	--
1,1,2,2-Tetrachloroethane	0.05	µg/g	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	0.05 U	--	--
1,1,2-Trichloroethane	0.05	µg/g	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	0.05 U	--	--
1,1-Dichloroethane	0.47	µg/g	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	0.05 U	--	--
1,1-Dichloroethene	0.05	µg/g	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	0.05 U	--	--
1,2-Dibromoethane	0.05	µg/g	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	0.05 U	--	--
1,2-Dichlorobenzene	1.2	µg/g	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	0.05 U	--	--
1,2-Dichloroethane	0.05	µg/g	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	0.05 U	--	--
1,2-Dichloropropane	0.05	µg/g	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	0.05 U	--	--
1,3-Dichlorobenzene	4.8	µg/g	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	0.05 U	--	--
1,3-Dichloropropene	0.05	µg/g	--	--	--	--	--	--	--	0.042 U	--	--	0.042 U	0.042 U	0.042 U	--	--	0.042 U	--	--
1,4-Dichlorobenzene	0.083	µg/g	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	0.05 U	--	--
1,4-Dioxane	1.8	mg/kg	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	--	--
2-Butanone	16	µg/g	--	--	--	--	--	--	--	0.5 U	--	--	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	--
4-Methyl-2-Pentanone	1.7	µg/g	--	--	--	--	--	--	--	0.5 U	--	--	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	--
Acetone	16	µg/g	--	--	--	--	--	--	--	0.5 U	--	--	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	--
Bromodichloromethane	1.5	µg/g	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	0.05 U	--	--
Bromoform	0.27	µg/g	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	0.05 U	--	--
Bromomethane	0.05	µg/g	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	0.05 U	--	--
Carbon tetrachloride	0.05	µg/g	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	0.05 U	--	--
Chlorobenzene	2.4	µg/g	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	0.05 U	--	--
Chlorodibromomethane	2.3	µg/g	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	0.05 U	--	--
Chloroform	0.05	µg/g	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	0.05 U	--	--
cis-1,2-Dichloroethene	1.9	µg/g	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	0.05 U	--	--
cis-1,3-Dichloropropene	NV	µg/g	--	--	--	--	--	--	--	0.03 U	--	--	0.03 U	0.03 U	0.03 U	--	--	0.03 U	--	--
Dichlorodifluoromethane	16	µg/g	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	0.05 U	--	--
Dichloromethane	0.1	µg/g	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	0.05 U	--	--
Methyl tert-butyl ether (MTBE)	0.75	µg/g	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	0.05 U	--	--
n-Hexane	2.8	µg/g	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	0.05 U	--	--
Styrene	0.7	µg/g	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	0.05 U	--	--
Tetrachloroethene	0.28	µg/g	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	0.05 U	--	--
trans-1,2-Dichloroethene	0.084	µg/g	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	0.05 U	--	--
trans-1,3-Dichloropropene	NV	µg/g	--	--	--	--	--	--	--	0.03 U	--	--	0.03 U	0.03 U	0.03 U	--	--	0.03 U	--	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	KNW10	KW32	L	LN2	LW23	MW17-100S	MW17-100S	MW17-100S	MW17-101D	MW17-101D	MW17-101D	MW17-101D	MW17-102D	MW17-102D	MW17-102D	MW17-102D	MW17-103D	MW17-103D
		Sample ID	KNW10-1 (KMN2)	KW32-1 (KW-1)	L-3 (M-3)	LN2-2 (H2-2/MN-2)	LW23-2 (L-2)	MW17-100S-1-1.5	MW17-100S-4.5-6	MW17-100S-6-7	MW17-101S/D-0.5-1.5	MW17-101S/D-2-3	MW17-101S/D-4-5.5	DUP 10	MW17-102D-0.5-1	MW17-102D-0.5-4	MW17-102D-4-5.5	MW17-102D-6-7	MW17-103S/D-1-1.5	MW17-103S/D-1-3
		Start Depth (m)	0.1	0.2	0.8	0.1	0.3	0.3	1.37	1.83	0.15	0.61	1.22	1.22	0.15	0.15	1.22	1.83	0.3	0.3
		End Depth (m)	0.7	1	1	0.5	1.1	0.46	1.83	2.13	0.46	0.91	1.68	1.68	0.3	1.22	1.68	2.13	0.46	0.91
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N
		Sample Date	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	22 Jan 1991	12 Oct 2017	12 Oct 2017	12 Oct 2017	20 Oct 2017	20 Oct 2017	20 Oct 2017	20 Oct 2017	26 Oct 2017	26 Oct 2017	26 Oct 2017	26 Oct 2017	25 Oct 2017	25 Oct 2017
Analyte	**Table 6 SCS [a]**	**Unit**																		
Trichloroethylene	0.061	µg/g	--	--	--	--	--	--	--	0.01 U	--	--	0.01 U	0.01 U	**0.082**	--	--	0.01 U	--	--
Trichlorofluoromethane	4	µg/g	--	--	--	--	--	--	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	0.05 U	--	--
Vinyl Chloride	0.02	µg/g	--	--	--	--	--	--	--	0.02 U	--	--	0.02 U	0.02 U	0.02 U	--	--	0.02 U	--	--

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Ministry of the Environment.* April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent
-- = not analyzed
µg/g = microgram(s) per gram
ABNs = acid, base and neutral compounds
BH = borehole
BTEX - benzene, toluene, ethylbenzene, and xylene
CPs = chlorophenols
DUP = duplicate
FD = field duplicate
J = associated value is estimated
m = metre(s)
MECP = Ministry of the Environment, Conservation and Parks
mg/kg = milligram(s) per kilogram
mg/l = milligram(s) per litre
mS/cm = milliSiemen(s) per centimetre
MW = monitoring well
N = normal sample
NV = no value
OCPs = organochlorine pesticides
ORPs = other regulated parameters
PCBs = polychlorinated biphenyls
pg/g = picogram(s) per gram
PHCs = petroleum hydrocarbons
SAR = sodium adsorption ratio
SVOCs = semi-volatile organic compounds
U = parameter was not detected above the associated value
VOCs = volatile organic compounds

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW17-103D	MW17-103D	MW17-104D	MW17-104D	MW17-105D	MW17-105D	MW17-105D	MW17-105D	MW17-106D	MW17-107S	MW17-107S	MW17-107S	MW17-108S	MW17-108S	MW17-108S	MW17-108S	MW17-108S	MW17-108S	MW17-109S
		Sample ID	MW17-103S/D-2-3	MW17-103S/D-4-6	MW17-104S/D-2-4	MW17-104S/D-4-6	MW17-105S/D-0-0.3	MW17-105S/D-0.5-1.5	MW17-105S/D-4-6	MW17-105S/D-6-7	BH17-204-0.5-2	MW17-107S-0.5-2	DUP 7	MW17-107S-4.5-5.5	MW17-108S-0-1	MW17-108S-2-4	DUP 6	MW17-108S-8-9	MW17-108S-9-9.5	MW17-108S-10-10.5	MW17-109S-0-1
		Start Depth (m)	0.61	1.22	0.61	1.22	0	0.15	1.22	1.83	0.15	0.15	0.15	1.37	0	0.61	0.61	2.44	2.74	3.05	0
		End Depth (m)	0.91	1.83	1.22	1.83	0.09	0.46	1.83	2.06	0.61	0.61	0.61	1.68	0.3	0.91	0.91	2.67	2.9	3.2	0.3
		Sample Type	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	FD	N	N	N	N
		Sample Date	25 Oct 2017	25 Oct 2017	17 Oct 2017	17 Oct 2017	24 Oct 2017	24 Oct 2017	24 Oct 2017	24 Oct 2017	18 Oct 2017	12 Oct 2017	12 Oct 2017	12 Oct 2017	11 Oct 2017	11 Oct 2017	11 Oct 2017	11 Oct 2017	11 Oct 2017	11 Oct 2017	16 Oct 2017
Analyte	**Table 6 SCS [a]**	**Unit**																			
ABNs																					
1,1'-Biphenyl	0.31	µg/g	--	0.05 U	0.05 U	--	--	0.25 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	--	0.05 U	0.05 U	--	--	--	--
1,2,4-Trichlorobenzene	0.36	µg/g	--	0.05 U	0.05 U	--	--	0.25 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	--	0.05 U	0.05 U	--	--	--	--
2,2'-oxybis(1-chloropropane)	0.67	µg/g	--	0.1 U	0.1 U	--	--	0.5 U	0.1 U	--	0.1 U	0.1 U	--	0.1 U	--	0.1 U	0.1 U	--	--	--	--
2,4 & 2,6-Dinitrotoluene	0.5	µg/g	--	0.14 U	0.14 U	--	--	0.0071 U	0.14 U	--	0.14 U	0.14 U	--	0.14 U	--	0.14 U	0.14 U	--	--	--	--
2,4-Dimethylphenol	38	µg/g	--	0.1 U	0.1 U	--	--	0.5 U	0.1 U	--	0.1 U	0.1 U	--	0.1 U	--	0.1 U	0.1 U	--	--	--	--
2,4-Dinitrophenol	2	µg/g	--	1 U	1 U	--	--	5 U	1 U	--	1 U	1 U	--	1 U	--	1 U	1 U	--	--	--	--
2,4-Dinitrotoluene	NV	µg/g	--	0.1 U	0.1 U	--	--	0.5 U	0.1 U	--	0.1 U	0.1 U	--	0.1 U	--	0.1 U	0.1 U	--	--	--	--
2,6-Dinitrotoluene	NV	µg/g	--	0.1 U	0.1 U	--	--	0.5 U	0.1 U	--	0.1 U	0.1 U	--	0.1 U	--	0.1 U	0.1 U	--	--	--	--
3,3'-Dichlorobenzidine	1	µg/g	--	0.1 U	0.1 U	--	--	0.5 U	0.1 U	--	0.1 U	0.1 U	--	0.1 U	--	0.1 U	0.1 U	--	--	--	--
4-Chloroaniline	0.5	µg/g	--	0.1 U	0.1 U	--	--	0.5 U	0.1 U	--	0.1 U	0.1 U	--	0.1 U	--	0.1 U	0.1 U	--	--	--	--
Bis (2-chloroethyl) ether	0.5	µg/g	--	0.1 U	0.1 U	--	--	0.5 U	0.1 U	--	0.1 U	0.1 U	--	0.1 U	--	0.1 U	0.1 U	--	--	--	--
Bis (2-ethylhexyl) phthalate	5	µg/g	--	0.1 U	0.1 U	--	--	0.5 U	0.1 U	--	0.1 U	0.1 U	--	0.1 U	--	0.1 U	0.1 U	--	--	--	--
Diethylphthalate	0.5	µg/g	--	0.1 U	0.1 U	--	--	0.5 U	0.1 U	--	0.1 U	0.1 U	--	0.1 U	--	0.1 U	0.1 U	--	--	--	--
Dimethylphthalate	0.5	µg/g	--	0.1 U	0.1 U	--	--	0.5 U	0.1 U	--	0.1 U	0.1 U	--	0.1 U	--	0.1 U	0.1 U	--	--	--	--
Phenol	9.4	µg/g	--	0.1 U	0.1 U	--	--	0.5 U	0.1 U	--	0.1 U	0.1 U	--	0.1 U	--	0.1 U	0.1 U	--	--	--	--
BTEX																					
Benzene	0.21	µg/g	**0.007**	0.0068 U	--	0.0068 U	--	--	0.0068 U	0.0068 U	**0.012**	**0.0452 J**	**0.0109 J**	0.0068 U	--	--	--	--	0.0068 U	0.0068 U	--
Ethylbenzene	1.1	µg/g	0.018 U	0.018 U	--	0.018 U	--	--	0.018 U	0.018 U	**0.039**	**0.053 J**	0.018 UJ	0.018 U	--	--	--	--	0.018 U	0.018 U	--
Toluene	2.3	µg/g	0.08 U	0.08 U	--	0.08 U	--	--	0.08 U	0.08 U	0.08 U	**0.211 J**	0.08 UJ	0.08 U	--	--	--	--	0.08 U	0.08 U	--
Xylene, o	NV	µg/g	**0.059**	0.02 U	--	0.02 U	--	--	0.02 U	0.02 U	**0.333**	**0.121 J**	**0.064 J**	0.02 U	--	--	--	--	0.02 U	0.02 U	--
Xylenes, m & p	NV	µg/g	**0.055**	0.03 U	--	0.03 U	--	--	0.03 U	0.03 U	**0.158**	**0.133 J**	**0.075 J**	0.03 U	--	--	--	--	0.03 U	0.03 U	--
Xylenes, Total	3.1	µg/g	**0.115**	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	**0.491**	**0.254 J**	**0.139 J**	0.05 U	--	--	--	--	0.05 U	0.05 U	--
Chlorophenols																					
2,4,5-Trichlorophenol	4.4	µg/g	--	0.1 U	0.1 U	--	--	0.5 U	0.1 U	--	0.1 U	0.1 U	--	0.1 U	--	0.1 U	0.1 U	--	--	--	--
2,4,6-Trichlorophenol	2.1	µg/g	--	0.1 U	0.1 U	--	--	0.5 U	0.1 U	--	0.1 U	0.1 U	--	0.1 U	--	0.1 U	0.1 U	--	--	--	--
2,4-Dichlorophenol	0.19	µg/g	--	0.1 U	0.1 U	--	--	0.5 U	0.1 U	--	0.1 U	0.1 U	--	0.1 U	--	0.1 U	0.1 U	--	--	--	--
2-Chlorophenol	1.6	µg/g	--	0.1 U	0.1 U	--	--	0.5 U	0.1 U	--	0.1 U	0.1 U	--	0.1 U	--	0.1 U	0.1 U	--	--	--	--
Pentachlorophenol	0.1	µg/g	--	0.1 U	0.1 U	--	--	0.5 U	0.1 U	--	0.1 U	0.1 U	--	0.1 U	--	0.1 U	0.1 U	--	--	--	--
Dioxins and Furans																					
Lower Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mid Point PCDD/F TEQ (WHO 2005)	13	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Upper Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																					
Average Fraction Organic Carbon	NV	None	--	**0.0055**	--	--	--	--	**0.0068**	--	--	--	--	--	**0.031**	--	--	--	--	--	--
Carbon	NV	%	--	**0.56**	--	--	--	--	**0.68**	--	--	--	--	--	**3.24**	--	--	--	--	--	--
Fraction Organic Carbon	NV	None	--	**0.0056**	--	--	--	--	**0.0068**	--	--	--	--	--	**0.0324**	--	--	--	--	--	--
Moisture	NV	%	**6.5**	**3.62**	**14.4**	**4.03**	**9.94**	**8.04**	**1.11**	**1.57**	**12.3**	**11.8**	**11.6**	**7.78**	--	**5.12**	**5.25**	**7.57**	**7.77**	**7.38**	**7.9**
pH	NV	pH UNITS	--	**8.14**	**8.09**	--	**7.66**	--	**8.16**	--	**10.64**	**7.8**	--	**8.86**	--	**7.76**	**7.75**	**7.39**	--	--	--
Phosphorus	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Calcium	NV	mg/l	--	**3**	**2.2**	--	**4.9**	--	**1.5**	--	**33.4**	**5.9**	--	**4.9**	--	**15.4**	**14.5**	**9.5**	--	--	--
Magnesium	NV	mg/l	--	1 U	**14.5**	--	1 U	--	1 U	--	1 U	1 U	--	**1.2**	--	**19**	**18.1**	**12.9**	--	--	--
Sodium	NV	mg/l	--	**2.9**	**3.6**	--	1 U	--	**1.5**	--	**9.1**	1 U	--	**2.8**	--	**7.8**	**8.2**	**3.6**	--	--	--
Metals and Hydride Forming Metals																					
Antimony	7.5	µg/g	--	1 U	1 U	--	**2.9**	--	1 U	--	1 U	1 U	--	1 U	--	**5.9**	**6.6**	**6.5**	--	--	--
Arsenic	18	µg/g	--	**2.2**	**9.3**	--	**11.3**	--	**4.1**	--	**2.5**	**2.8**	--	**2.4**	--	**12.3**	**10.6**	**8.7**	--	--	--
Barium	390	µg/g	--	**16.1**	**106**	--	**80**	--	**16.1**	--	**33.8**	**20.3**	--	**22.4**	--	**28.7**	**33.2**	**50.5**	--	--	--
Beryllium	4	µg/g	--	0.5 U	**0.57**	--	0.5 U	--	0.5 U	--	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	--	--	--
Boron	120	µg/g	--	**9.9**	**8.4**	--	**12.6**	--	**8.2**	--	**6**	5 U	--	**6.3**	--	**15.3**	**15.3**	**21.3**	--	--	--
Cadmium	1.2	µg/g	--	**0.69**	**2.35**	--	**1.34**	--	**1.04**	--	0.5 U	0.5 U	--	**0.58**	--	**41.4**	**38.3**	**83.4**	--	--	--
Calcium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	160	µg/g	--	**8**	**17**	--	**16.4**	--	**9.8**	--	**8.7**	**6.9**	--	**11.3**	--	**55.1**	**54.8**	**26.2**	--	--	--
Cobalt	22	µg/g	--	**2.4**	**8.5**	--	**5.9**	--	**3.7**	--	**2.9**	**3.2**	--	**4.7**	--	**2.6**	**2.5**	**4.5**	--	--	--
Copper	140	µg/g	--	**8.7**	**32.7**	--	**38**	--	**24.8**	--	**12.8**	**8.9**	--	**13.9**	--	**69.6**	**74.8**	**364**	--	--	--
Lead	120	µg/g	--	**66.8**	**142**	--	**175**	--	**80.5**	--	**10**	**33.1**	--	**75.1**	--	**197**	**233**	**121**	--	--	--
Magnesium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	6.9	µg/g	--	1 U	1 U	--	**1.9**	--	1 U	--	1 U	1 U	--	1 U	--	**2.2**	**1.8**	1 U	--	--	--
Nickel	100	µg/g	--	**7.9**	**24.7**	--	**17.4**	--	**13**	--	**9.1**	**7**	--	**11.6**	--	**10.3**	**9.7**	**10.5**	--	--	--
Selenium	2.4	µg/g	--	1 U	1 U	--	1 U	--	1 U	--	1 U	1 U	--	1 U	--	1 U	1 U	1 U	--	--	--
Silver	20	µg/g	--	0.2 U	0.2 U	--	0.2 U	--	0.2 U	--	0.2 U	0.2 U	--	0.2 U	--	0.2 U	0.2 U	0.2 U	--	--	--
Thallium	1	µg/g	--	0.5 U	0.5 U	--	0.5 U	--	0.5 U	--	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	--	--	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW17-103D	MW17-103D	MW17-104D	MW17-104D	MW17-105D	MW17-105D	MW17-105D	MW17-105D	MW17-106D	MW17-107S	MW17-107S	MW17-107S	MW17-108S	MW17-108S	MW17-108S	MW17-108S	MW17-108S	MW17-108S	MW17-109S
		Sample ID	MW17-103S/D-2-3	MW17-103S/D-4-6	MW17-104S/D-2-4	MW17-104S/D-4-6	MW17-105S/D-0-0.3	MW17-105S/D-0.5-1.5	MW17-105S/D-4-6	MW17-105S/D-6-7	BH17-204-0.5-2	MW17-107S-0.5-2	DUP 7	MW17-107S-4.5-5.5	MW17-108S-0-1	MW17-108S-2-4	DUP 6	MW17-108S-8-9	MW17-108S-9-9.5	MW17-108S-10-10.5	MW17-109S-0-1
		Start Depth (m)	0.61	1.22	0.61	1.22	0	0.15	1.22	1.83	0.15	0.15	0.15	1.37	0	0.61	0.61	2.44	2.74	3.05	0
		End Depth (m)	0.91	1.83	1.22	1.83	0.09	0.46	1.83	2.06	0.61	0.61	0.61	1.68	0.3	0.91	0.91	2.67	2.9	3.2	0.3
		Sample Type	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	FD	N	N	N	N
		Sample Date	25 Oct 2017	25 Oct 2017	17 Oct 2017	17 Oct 2017	24 Oct 2017	24 Oct 2017	24 Oct 2017	24 Oct 2017	18 Oct 2017	12 Oct 2017	12 Oct 2017	12 Oct 2017	11 Oct 2017	11 Oct 2017	11 Oct 2017	11 Oct 2017	11 Oct 2017	11 Oct 2017	16 Oct 2017
Analyte	**Table 6 SCS [a]**	**Unit**																			
Uranium	23	µg/g	--	1 U	1 U	--	1 U	--	1 U	--	1 U	1 U	--	1 U	--	1 U	1 U	1 U	--	--	--
Vanadium	86	µg/g	--	**17.3**	**31.1**	--	**24.8**	--	**15.6**	--	**12.3**	**13.9**	--	**19.6**	--	**41.1**	**43.2**	**56.4**	--	--	--
Zinc	340	µg/g	--	**456**	**725**	--	**901**	--	**590**	--	**37.5**	**53.4**	--	**534**	--	**24400**	**25300**	**67200**	--	--	--
Non-Regulated Metals																					
Aluminum	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																					
Boron (HWS)	1.5	µg/g	--	**0.12**	**0.48**	--	**0.57**	--	**0.21**	--	**0.22**	**0.18**	--	**0.11**	--	**0.34**	**0.35**	**0.35**	--	--	--
Chloride (Cl)	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium, Hexavalent (Cr6+)	8	µg/g	--	0.2 U	0.2 U	--	0.2 U	--	0.2 U	--	0.2 U	0.2 U	--	0.2 U	--	0.2 U	0.2 U	0.2 U	--	--	--
Cyanide, Free	0.051	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	0.051	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	0.7	mS/cm	--	**0.166**	**0.241**	--	**0.174**	--	**0.128**	--	**0.346**	**0.172**	--	**0.162**	--	**0.478**	**0.445**	**0.352**	--	--	--
Mercury	0.27	µg/g	--	**0.0289**	**0.0993**	--	**0.0537**	--	**0.0352**	--	**0.0054**	**0.0061**	--	**0.0235**	--	**0.0893**	**0.112**	**0.0108**	--	--	--
Sodium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium Absorption Ratio	5	SAR	--	**0.45**	**0.19**	--	0.12 U	--	**0.34**	--	**0.43**	0.11 U	--	**0.29**	--	**0.31**	**0.34**	**0.18**	--	--	--
OCPs																					
Hexachlorobenzene	0.52	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	0.012	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachloroethane	0.089	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs																					
1-Methylnaphthalene	NV	µg/g	--	0.03 U	0.03 U	--	--	**0.58**	0.03 U	--	**0.097**	**0.073**	--	0.03 U	--	0.03 U	0.03 U	--	--	0.03 U	--
2-(1-)Methylnaphthalene	0.99	µg/g	--	0.042 U	0.042 U	--	--	**1.26**	0.042 U	--	**0.193**	**0.141**	--	0.042 U	--	0.042 U	0.042 U	--	--	0.042 U	--
2-Methylnaphthalene	NV	µg/g	--	0.03 U	0.03 U	--	--	**0.67**	0.03 U	--	**0.096**	**0.068**	--	0.03 U	--	0.03 U	0.03 U	--	--	0.03 U	--
Acenaphthene	7.9	µg/g	--	0.05 U	0.05 U	--	--	**0.27**	0.05 U	--	0.05 U	0.05 U	--	0.05 U	--	0.05 U	0.05 U	--	--	0.05 U	--
Acenaphthylene	0.15	µg/g	--	0.05 U	0.05 U	--	--	0.25 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	--	0.05 U	0.05 U	--	--	0.05 U	--
Anthracene	0.67	µg/g	--	0.05 U	0.05 U	--	--	**0.63**	0.05 U	--	0.05 U	0.05 U	--	0.05 U	--	0.05 U	0.05 U	--	--	0.05 U	--
Benzo(a)anthracene	0.5	µg/g	--	**0.111**	0.05 U	--	--	**1.37**	0.05 U	--	**0.096**	**0.053**	--	0.05 U	--	0.05 U	**0.075**	--	--	0.05 U	--
Benzo(a)pyrene	0.3	µg/g	--	**0.307**	0.05 U	--	--	**1.21**	0.05 U	--	**0.131**	0.05 U	--	0.05 U	--	0.05 U	**0.067**	--	--	0.05 U	--
Benzo(b&j)fluoranthene	0.78	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.78	µg/g	--	**0.289**	0.05 U	--	--	**1.36**	0.05 U	--	**0.201**	**0.063**	--	0.05 U	--	0.05 U	**0.073**	--	--	0.05 U	--
Benzo(g,h,i)perylene	6.6	µg/g	--	**0.253**	0.05 U	--	--	**0.81**	0.05 U	--	**0.18**	0.05 U	--	0.05 U	--	0.05 U	**0.074**	--	--	0.05 U	--
Benzo(k)fluoranthene	0.78	µg/g	--	**0.224**	0.05 U	--	--	**1.07**	0.05 U	--	**0.106**	0.05 U	--	0.05 U	--	0.05 U	**0.066**	--	--	0.05 U	--
Chrysene	7	µg/g	--	**0.139**	0.05 U	--	--	**1.46**	**0.103**	--	**0.162**	**0.066**	--	0.05 U	--	**0.081 J**	**0.158 J**	--	--	**0.192**	--
Dibenzo(a,h)anthracene	0.1	µg/g	--	**0.074**	0.05 U	--	--	0.25 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	--	0.05 U	0.05 U	--	--	0.05 U	--
Fluoranthene	0.69	µg/g	--	**0.069**	0.05 U	--	--	**2.5**	0.05 U	--	**0.132**	**0.092**	--	0.05 U	--	0.05 UJ	**0.145 J**	--	--	0.05 U	--
Fluorene	62	µg/g	--	0.05 U	0.05 U	--	--	**0.27**	0.05 U	--	0.05 U	0.05 U	--	0.05 U	--	0.05 U	0.05 U	--	--	**0.052**	--
Indeno(1,2,3-Cd)Pyrene	0.38	µg/g	--	**0.344**	0.05 U	--	--	**1.04**	0.05 U	--	**0.138**	0.05 U	--	0.05 U	--	0.05 U	**0.091**	--	--	0.05 U	--
Naphthalene	0.6	µg/g	--	0.05 U	0.05 U	--	--	**0.59**	0.05 U	--	**0.066**	0.05 U	--	0.05 U	--	0.05 U	0.05 U	--	--	0.05 U	--
Phenanthrene	6.2	µg/g	--	0.05 U	0.05 U	--	--	**2.97**	0.05 U	--	**0.151**	**0.099**	--	0.05 U	--	**0.064 J**	**0.144 J**	--	--	0.05 U	--
Pyrene	78	µg/g	--	**0.064**	0.05 U	--	--	**2.18**	0.05 U	--	**0.109**	**0.083**	--	0.05 U	--	0.05 U	**0.135**	--	--	**0.085**	--
PCBs																					
Aroclor 1242	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01 U
Aroclor 1248	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01 U
Aroclor 1254	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01 U
Aroclor 1260	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01 U
PCB, Total	0.35	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02 U

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW17-103D	MW17-103D	MW17-104D	MW17-104D	MW17-105D	MW17-105D	MW17-105D	MW17-105D	MW17-106D	MW17-107S	MW17-107S	MW17-107S	MW17-108S	MW17-108S	MW17-108S	MW17-108S	MW17-108S	MW17-108S	MW17-109S
		Sample ID	MW17-103S/D-2-3	MW17-103S/D-4-6	MW17-104S/D-2-4	MW17-104S/D-4-6	MW17-105S/D-0-0.3	MW17-105S/D-0.5-1.5	MW17-105S/D-4-6	MW17-105S/D-6-7	BH17-204-0.5-2	MW17-107S-0.5-2	DUP 7	MW17-107S-4.5-5.5	MW17-108S-0-1	MW17-108S-2-4	DUP 6	MW17-108S-8-9	MW17-108S-9-9.5	MW17-108S-10-10.5	MW17-109S-0-1
		Start Depth (m)	0.61	1.22	0.61	1.22	0	0.15	1.22	1.83	0.15	0.15	0.15	1.37	0	0.61	0.61	2.44	2.74	3.05	0
		End Depth (m)	0.91	1.83	1.22	1.83	0.09	0.46	1.83	2.06	0.61	0.61	0.61	1.68	0.3	0.91	0.91	2.67	2.9	3.2	0.3
		Sample Type	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	FD	N	N	N	N
		Sample Date	25 Oct 2017	25 Oct 2017	17 Oct 2017	17 Oct 2017	24 Oct 2017	24 Oct 2017	24 Oct 2017	24 Oct 2017	18 Oct 2017	12 Oct 2017	12 Oct 2017	12 Oct 2017	11 Oct 2017	11 Oct 2017	11 Oct 2017	11 Oct 2017	11 Oct 2017	11 Oct 2017	16 Oct 2017
Analyte	**Table 6 SCS [a]**	**Unit**																			
PHCs																					
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	55	µg/g	5 U	5 U	--	5 U	--	--	5 U	5 U	**13.2**	**10.8**	5 U	5 U	--	--	--	--	5 U	5 U	--
Petroleum Hydrocarbons F1 (C6-C10)	55	µg/g	5 U	5 U	--	5 U	--	--	5 U	5 U	**13.8**	**11.4**	5 U	5 U	--	--	--	--	5 UJ	5 U	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	98	µg/g	--	10 U	--	--	--	--	**23**	--	10 U	10 U	--	10 U	--	--	--	--	--	**55**	--
Petroleum Hydrocarbons F2 (C10-C16)	98	µg/g	**11**	10 U	--	**14**	--	--	**23**	10 U	10 U	10 U	**11**	10 U	--	--	--	--	**345**	**55**	--
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	300	µg/g	--	**98**	--	--	--	--	**120**	--	**68**	50 U	--	50 U	--	--	--	--	--	**2280**	--
Petroleum Hydrocarbons F3 (C16-C34)	300	µg/g	**295**	**97**	--	**59**	--	--	**120**	50 U	**70**	50 U	**63**	50 U	--	--	--	--	**14700**	**2280**	--
Petroleum Hydrocarbons F4 (C34-C50)	2800	µg/g	**459**	**94**	--	50 U	--	--	50 U	50 U	50 U	50 U	50 U	50 U	--	--	--	--	**981**	**142**	--
F4G-SG (GHH-Silica)	2800	µg/g	**2430**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Gravimetric Heavy Hydrocarbons	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/g	**766**	**193**	--	**72**	--	--	**143**	72 U	**83**	72 U	**74**	72 U	--	--	--	--	**16000**	**2480**	--
SVOCs (other)																					
2-Chloronaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Hexanone	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Bromophenyl Phenyl Ether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chlorophenyl Phenylether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethoxy) methane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Butyl benzyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-N-Butylphthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Isophorone	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrobenzene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodi-N-propylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																					
1,1,1,2-Tetrachloroethane	0.058	µg/g	0.05 U	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	--
1,1,1-Trichloroethane	0.38	µg/g	0.05 U	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	--
1,1,2,2-Tetrachloroethane	0.05	µg/g	0.05 U	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	0.2 U	0.05 U	--
1,1,2-Trichloroethane	0.05	µg/g	0.05 U	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	--
1,1-Dichloroethane	0.47	µg/g	0.05 U	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	--
1,1-Dichloroethene	0.05	µg/g	0.05 U	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	--
1,2-Dibromoethane	0.05	µg/g	0.05 U	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	--
1,2-Dichlorobenzene	1.2	µg/g	0.05 U	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	--
1,2-Dichloroethane	0.05	µg/g	0.05 U	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	--
1,2-Dichloropropane	0.05	µg/g	0.05 U	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	--
1,3-Dichlorobenzene	4.8	µg/g	0.05 U	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	--
1,3-Dichloropropene	0.05	µg/g	0.042 U	0.042 U	--	0.042 U	--	--	0.042 U	0.042 U	0.042 U	0.042 U	0.042 U	0.042 U	--	--	--	--	0.042 U	0.042 U	--
1,4-Dichlorobenzene	0.083	µg/g	0.05 U	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	--
1,4-Dioxane	1.8	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	0.2 U	--
2-Butanone	16	µg/g	0.5 U	0.5 U	--	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	0.5 U	0.5 U	--
4-Methyl-2-Pentanone	1.7	µg/g	0.5 U	0.5 U	--	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	0.5 U	0.5 U	--
Acetone	16	µg/g	0.5 U	0.5 U	--	0.5 U	--	--	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	--	--	--	--	0.5 U	0.5 U	--
Bromodichloromethane	1.5	µg/g	0.05 U	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	--
Bromoform	0.27	µg/g	0.05 U	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	--
Bromomethane	0.05	µg/g	0.05 U	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	--
Carbon tetrachloride	0.05	µg/g	0.05 U	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	--
Chlorobenzene	2.4	µg/g	0.05 U	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	--
Chlorodibromomethane	2.3	µg/g	0.05 U	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	--
Chloroform	0.05	µg/g	0.05 U	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	--
cis-1,2-Dichloroethene	1.9	µg/g	0.05 U	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	--
cis-1,3-Dichloropropene	NV	µg/g	0.03 U	0.03 U	--	0.03 U	--	--	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	--	--	--	--	0.03 U	0.03 U	--
Dichlorodifluoromethane	16	µg/g	0.05 U	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	--
Dichloromethane	0.1	µg/g	0.05 U	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.43 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	--
Methyl tert-butyl ether (MTBE)	0.75	µg/g	0.05 U	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	--
n-Hexane	2.8	µg/g	**0.083**	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	**0.053**	**0.861 J**	0.05 UJ	0.05 U	--	--	--	--	0.05 U	0.05 U	--
Styrene	0.7	µg/g	0.05 U	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	--
Tetrachloroethene	0.28	µg/g	0.05 U	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	--
trans-1,2-Dichloroethene	0.084	µg/g	0.05 U	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	--
trans-1,3-Dichloropropene	NV	µg/g	0.03 U	0.03 U	--	0.03 U	--	--	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	--	--	--	--	0.03 U	0.03 U	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW17-103D	MW17-103D	MW17-104D	MW17-104D	MW17-105D	MW17-105D	MW17-105D	MW17-105D	MW17-106D	MW17-107S	MW17-107S	MW17-107S	MW17-108S	MW17-108S	MW17-108S	MW17-108S	MW17-108S	MW17-108S	MW17-109S
		Sample ID	MW17-103S/D-2-3	MW17-103S/D-4-6	MW17-104S/D-2-4	MW17-104S/D-4-6	MW17-105S/D-0-0.3	MW17-105S/D-0.5-1.5	MW17-105S/D-4-6	MW17-105S/D-6-7	BH17-204-0.5-2	MW17-107S-0.5-2	DUP 7	MW17-107S-4.5-5.5	MW17-108S-0-1	MW17-108S-2-4	DUP 6	MW17-108S-8-9	MW17-108S-9-9.5	MW17-108S-10-10.5	MW17-109S-0-1
		Start Depth (m)	0.61	1.22	0.61	1.22	0	0.15	1.22	1.83	0.15	0.15	0.15	1.37	0	0.61	0.61	2.44	2.74	3.05	0
		End Depth (m)	0.91	1.83	1.22	1.83	0.09	0.46	1.83	2.06	0.61	0.61	0.61	1.68	0.3	0.91	0.91	2.67	2.9	3.2	0.3
		Sample Type	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	FD	N	N	N	N
		Sample Date	25 Oct 2017	25 Oct 2017	17 Oct 2017	17 Oct 2017	24 Oct 2017	24 Oct 2017	24 Oct 2017	24 Oct 2017	18 Oct 2017	12 Oct 2017	12 Oct 2017	12 Oct 2017	11 Oct 2017	11 Oct 2017	11 Oct 2017	11 Oct 2017	11 Oct 2017	11 Oct 2017	16 Oct 2017
Analyte	**Table 6 SCS [a]**	**Unit**																			
Trichloroethylene	0.061	µg/g	0.01 U	0.01 U	--	0.01 U	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	--	--	--	--	0.01 U	0.01 U	--
Trichlorofluoromethane	4	µg/g	0.05 U	0.05 U	--	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	--
Vinyl Chloride	0.02	µg/g	0.02 U	0.02 U	--	0.02 U	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	--	--	--	0.02 U	0.02 U	--

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Ministry of the Environment.* April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/g = microgram(s) per gram

ABNs = acid, base and neutral compounds

BH = borehole

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

DUP = duplicate

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mg/kg = milligram(s) per kilogram

mg/l = milligram(s) per litre

mS/cm = milliSiemen(s) per centimetre

MW = monitoring well

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

pg/g = picogram(s) per gram

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW17-109S	MW17-109S	MW17-109S	MW17-110S	MW17-110S	MW17-111S	MW17-111S	MW17-111S	MW17-111S	MW17-111S	MW18-117S	MW18-117S	MW18-117S	MW18-117S	MW18-120D	MW18-121S	MW18-122D	MW18-123D
		Sample ID	MW17-109S-0-2	MW17-109S-4-5	DUP9	MW17-110S-0-2	MW17-110S-4-6	MW17-111S-0-1	MW17-111S-0-2	DUP 8	MW17-111S-2-4	MW17-111S-6-7	MW18-117S-1	MW18-117S-2	DUP 1 JUL 25	DUP 2 JUL 25	MW18-120D-3.0	MW18-121S-1	MW18-122D-1	MW18-123D-2.5
		Start Depth (m)	0	1.22	1.22	0	1.22	0	0	0	0.61	1.83	0	0	0.76	0.76	0.76	0.76	0.76	0
		End Depth (m)	0.61	1.52	1.52	0.61	1.83	0.3	0.61	0.61	1.22	2.13	0.6	0.6	1.37	1.37	1.37	1.37	1.37	0.6
		Sample Type	N	N	FD	N	N	N	N	FD	N	N	N	N	FD	FD	N	N	N	N
		Sample Date	16 Oct 2017	16 Oct 2017	16 Oct 2017	16 Oct 2017	16 Oct 2017	12 Oct 2017	12 Oct 2017	12 Oct 2017	12 Oct 2017	12 Oct 2017	25 Jul 2018	25 Jul 2018	25 Jul 2018	25 Jul 2018	21 Jun 2018	27 Jul 2018	26 Jul 2018	27 Jun 2018
Analyte	**Table 6 SCS [a]**	**Unit**																		
ABNs																				
1,1'-Biphenyl	0.31	µg/g	--	--	--	**0.237**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	0.36	µg/g	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,2'-oxybis(1-chloropropane)	0.67	µg/g	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	0.5	µg/g	--	--	--	0.14 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	38	µg/g	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	2	µg/g	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/g	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/g	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	1	µg/g	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	0.5	µg/g	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	0.5	µg/g	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	5	µg/g	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	0.5	µg/g	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	0.5	µg/g	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	9.4	µg/g	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BTEX																				
Benzene	0.21	µg/g	--	0.0068 U	0.0068 U	--	0.0068 U	--	--	--	0.0068 U	0.0068 U	**0.0166**	--	**0.0132**	--	--	--	--	--
Ethylbenzene	1.1	µg/g	--	0.018 U	0.018 U	--	0.018 U	--	--	--	0.018 U	0.018 U	**0.033**	--	**0.025**	--	--	--	--	--
Toluene	2.3	µg/g	--	0.08 U	0.08 U	--	0.08 U	--	--	--	0.08 U	0.08 U	**0.101**	--	0.08 U	--	--	--	--	--
Xylene, o	NV	µg/g	--	0.02 U	0.02 U	--	0.02 U	--	--	--	0.02 U	0.02 U	**0.098**	--	**0.077**	--	--	--	--	--
Xylenes, m & p	NV	µg/g	--	**0.032**	0.03 U	--	0.03 U	--	--	--	0.03 U	0.03 U	**0.116**	--	**0.103**	--	--	--	--	--
Xylenes, Total	3.1	µg/g	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	0.05 U	**0.214**	--	**0.179**	--	--	--	--	--
Chlorophenols																				
2,4,5-Trichlorophenol	4.4	µg/g	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2.1	µg/g	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	0.19	µg/g	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	1.6	µg/g	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	0.1	µg/g	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxins and Furans																				
Lower Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mid Point PCDD/F TEQ (WHO 2005)	13	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Upper Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																				
Average Fraction Organic Carbon	NV	None	--	--	--	**0.0052**	**0.243**	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon	NV	%	--	--	--	**0.53**	**25.1**	--	--	--	--	--	--	--	--	--	--	--	--	--
Fraction Organic Carbon	NV	None	--	--	--	**0.0053**	**0.251**	--	--	--	--	--	--	--	--	--	--	--	--	--
Moisture	NV	%	**7.83**	**15 J**	**5.61 J**	**18.2**	**3.1**	**10.2**	**3.92**	**4.26**	**8.38**	**7**	**4.54**	**9.95**	**8.9**	**15.6**	--	--	**6.64**	**20.8**
pH	NV	pH UNITS	**7.63**	**8.14**	--	**7.32**	**8.38**	--	**7.13**	**7.05**	--	--	--	--	--	--	--	--	**6.98**	**7.72 J**
Phosphorus	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Calcium	NV	mg/l	**2.3**	**3.2**	--	**4.5**	**2.8**	--	**2.9**	**2.5**	--	--	--	--	--	--	--	--	**4**	**22.3**
Magnesium	NV	mg/l	1 U	**1.5**	--	**1.3**	**3.2**	--	1 U	1 U	--	--	--	--	--	--	--	--	**1.1**	**10.3**
Sodium	NV	mg/l	**1.7**	**2.3**	--	1 U	**2.7**	--	**1.3**	**1.3**	--	--	--	--	--	--	--	--	**5.6**	**2.6**
Metals and Hydride Forming Metals																				
Antimony	7.5	µg/g	1 U	1 U	--	**2.9**	1 U	--	**1.1**	**1.3**	--	--	--	1 U	--	1 U	1 U	1 U	1 U	1 U
Arsenic	18	µg/g	**6**	**2**	--	**9.9**	**2.4**	--	**10.2**	**10.9**	--	--	--	**1.5**	--	**1.5**	**7.2**	**8**	**3.7**	**8.5**
Barium	390	µg/g	**16.8**	**18.3**	--	**46.2**	**19**	--	**51.3**	**50.8**	--	--	--	**27.8**	--	**24.6**	**68.6**	**58.3**	**25.3**	**84.7**
Beryllium	4	µg/g	0.5 U	0.5 U	--	**0.56**	0.5 U	--	0.5 U	0.5 U	--	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	**0.55**
Boron	120	µg/g	**6**	**15.4**	--	**9.3**	**8.6**	--	**6.7**	**5.9**	--	--	--	**5.7**	--	**7.5**	**12.2**	**9.6**	5 U	**10.1**
Cadmium	1.2	µg/g	0.5 U	**11.7**	--	0.5 U	0.5 U	--	0.5 U	0.5 U	--	--	--	0.5 U	--	0.5 U	**1.19**	**0.99**	0.5 U	**1.82**
Calcium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	160	µg/g	**8.1**	**6**	--	**12.7**	**7.3**	--	**27.9**	**30.2**	--	--	--	**10.4**	--	**10.2**	**10.6**	**10.3**	**7.4**	**16**
Cobalt	22	µg/g	**3.3**	**3.7**	--	**5.9**	**2.8**	--	**7.4**	**7.6**	--	--	--	**5.9**	--	**3.9**	**8.2**	**5.3**	**2.7**	**6.1**
Copper	140	µg/g	**12**	**11.8**	--	**44**	**5.3**	--	**26.5**	**27.7**	--	--	--	**14.9**	--	**11.1**	**17.2**	**15.1**	**6.9**	**24**
Lead	120	µg/g	**7.9**	**158**	--	**149**	**65.3**	--	**34.9**	**31.5**	--	--	--	**156**	--	**121**	**39.4**	**82.7**	**18.7**	**186**
Magnesium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	6.9	µg/g	1 U	**1.3**	--	**1.7**	1 U	--	**1.5**	**1.4**	--	--	--	1 U	--	1 U	1 U	**1**	1 U	1 U
Nickel	100	µg/g	**6**	**8**	--	**16.2**	**6.3**	--	**18.4**	**19.4**	--	--	--	**15.5**	--	**11**	**13.1**	**11.6**	**6.1**	**17.2**
Selenium	2.4	µg/g	1 U	1 U	--	1 U	1 U	--	1 U	1 U	--	--	--	1 U	--	1 U	1 U	1 U	1 U	1 U
Silver	20	µg/g	0.2 U	0.2 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	--	--	--	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Thallium	1	µg/g	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	--	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW17-109S	MW17-109S	MW17-109S	MW17-110S	MW17-110S	MW17-111S	MW17-111S	MW17-111S	MW17-111S	MW17-111S	MW18-117S	MW18-117S	MW18-117S	MW18-117S	MW18-120D	MW18-121S	MW18-122D	MW18-123D
		Sample ID	MW17-109S-0-2	MW17-109S-4-5	DUP9	MW17-110S-0-2	MW17-110S-4-6	MW17-111S-0-1	MW17-111S-0-2	DUP 8	MW17-111S-2-4	MW17-111S-6-7	MW18-117S-1	MW18-117S-2	DUP 1 JUL 25	DUP 2 JUL 25	MW18-120D-3.0	MW18-121S-1	MW18-122D-1	MW18-123D-2.5
		Start Depth (m)	0	1.22	1.22	0	1.22	0	0	0	0.61	1.83	0	0	0.76	0.76	0.76	0.76	0.76	0
		End Depth (m)	0.61	1.52	1.52	0.61	1.83	0.3	0.61	0.61	1.22	2.13	0.6	0.6	1.37	1.37	1.37	1.37	1.37	0.6
		Sample Type	N	N	FD	N	N	N	N	FD	N	N	N	N	FD	FD	N	N	N	N
		Sample Date	16 Oct 2017	16 Oct 2017	16 Oct 2017	16 Oct 2017	16 Oct 2017	12 Oct 2017	12 Oct 2017	12 Oct 2017	12 Oct 2017	12 Oct 2017	25 Jul 2018	25 Jul 2018	25 Jul 2018	25 Jul 2018	21 Jun 2018	27 Jul 2018	26 Jul 2018	27 Jun 2018
Analyte	**Table 6 SCS [a]**	**Unit**																		
Uranium	23	µg/g	1 U	**1.7**	--	1 U	1 U	--	1 U	1 U	--	--	--	1 U	--	1 U	1 U	1 U	1 U	1 U
Vanadium	86	µg/g	**19.7**	**10.9**	--	**17.1**	**14.5**	--	**41.3**	**43.6**	--	--	--	**65**	--	**39.4**	**23.4**	**20.8**	**13.1**	**27.7**
Zinc	340	µg/g	**56.6**	**3900**	--	**130**	**398**	--	**85.5**	**79.1**	--	--	--	**536**	--	**389**	**585**	**403**	**44.1**	**543**
Non-Regulated Metals																				
Aluminum	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																				
Boron (HWS)	1.5	µg/g	0.1 U	**0.14**	--	**0.49**	**0.17**	--	**0.3**	**0.3**	--	--	--	--	--	--	--	--	**0.25**	**0.78**
Chloride (Cl)	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium, Hexavalent (Cr6+)	8	µg/g	0.2 U	0.2 U	--	0.2 U	0.2 U	--	**0.21**	0.2 U	--	--	--	--	--	--	--	--	0.2 U	0.2 UJ
Cyanide, Free	0.051	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	0.051	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 UJ
Electrical Conductivity	0.7	mS/cm	**0.127**	**0.153**	--	**0.161**	**0.163**	--	**0.112**	**0.108**	--	--	--	--	--	--	--	--	**0.117**	**0.33 J**
Mercury	0.27	µg/g	**0.0089**	**0.096**	--	**0.0605**	**0.0313**	--	**0.0102**	**0.0092**	--	--	--	--	--	--	--	--	**0.0092**	**0.0903**
Sodium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium Absorption Ratio	5	SAR	**0.31**	**0.26**	--	0.11 U	**0.26**	--	**0.21**	**0.22**	--	--	--	--	--	--	--	--	**0.64**	**0.12**
OCPs																				
Hexachlorobenzene	0.52	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	0.012	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachloroethane	0.089	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs																				
1-Methylnaphthalene	NV	µg/g	--	--	--	**1.8**	0.03 U	--	--	--	--	--	--	--	--	--	--	--	**0.07**	--
2-(1-)Methylnaphthalene	0.99	µg/g	--	--	--	**3.59**	0.042 U	--	--	--	--	--	--	--	--	--	--	--	**0.16**	--
2-Methylnaphthalene	NV	µg/g	--	--	--	**1.79**	0.03 U	--	--	--	--	--	--	--	--	--	--	--	**0.091**	--
Acenaphthene	7.9	µg/g	--	--	--	**0.098 J**	0.05 U	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--
Acenaphthylene	0.15	µg/g	--	--	--	**0.091**	0.05 U	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--
Anthracene	0.67	µg/g	--	--	--	**0.189**	0.05 U	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--
Benzo(a)anthracene	0.5	µg/g	--	--	--	**0.97**	0.05 U	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--
Benzo(a)pyrene	0.3	µg/g	--	--	--	**0.837**	0.05 U	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--
Benzo(b&j)fluoranthene	0.78	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.78	µg/g	--	--	--	**1.03**	0.05 U	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--
Benzo(g,h,i)perylene	6.6	µg/g	--	--	--	**0.634**	0.05 U	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--
Benzo(k)fluoranthene	0.78	µg/g	--	--	--	**0.723**	0.05 U	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--
Chrysene	7	µg/g	--	--	--	**1.43**	0.05 U	--	--	--	--	--	--	--	--	--	--	--	**0.055**	--
Dibenzo(a,h)anthracene	0.1	µg/g	--	--	--	**0.185**	0.05 U	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--
Fluoranthene	0.69	µg/g	--	--	--	**1.92**	0.05 U	--	--	--	--	--	--	--	--	--	--	--	**0.06**	--
Fluorene	62	µg/g	--	--	--	**0.151**	0.05 U	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--
Indeno(1,2,3-Cd)Pyrene	0.38	µg/g	--	--	--	**0.648**	0.05 U	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--
Naphthalene	0.6	µg/g	--	--	--	**1.04**	0.05 U	--	--	--	--	--	--	--	--	--	--	--	**0.073**	--
Phenanthrene	6.2	µg/g	--	--	--	**2.71**	0.05 U	--	--	--	--	--	--	--	--	--	--	--	**0.074**	--
Pyrene	78	µg/g	--	--	--	**1.56**	0.05 U	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--
PCBs																				
Aroclor 1242	NV	µg/g	--	--	--	--	--	0.01 U	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/g	--	--	--	--	--	0.01 U	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/g	--	--	--	--	--	0.01 U	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/g	--	--	--	--	--	0.01 U	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.35	µg/g	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW17-109S	MW17-109S	MW17-109S	MW17-110S	MW17-110S	MW17-111S	MW17-111S	MW17-111S	MW17-111S	MW17-111S	MW18-117S	MW18-117S	MW18-117S	MW18-117S	MW18-120D	MW18-121S	MW18-122D	MW18-123D
		Sample ID	MW17-109S-0-2	MW17-109S-4-5	DUP9	MW17-110S-0-2	MW17-110S-4-6	MW17-111S-0-1	MW17-111S-0-2	DUP 8	MW17-111S-2-4	MW17-111S-6-7	MW18-117S-1	MW18-117S-2	DUP 1 JUL 25	DUP 2 JUL 25	MW18-120D-3.0	MW18-121S-1	MW18-122D-1	MW18-123D-2.5
		Start Depth (m)	0	1.22	1.22	0	1.22	0	0	0	0.61	1.83	0	0	0.76	0.76	0.76	0.76	0.76	0
		End Depth (m)	0.61	1.52	1.52	0.61	1.83	0.3	0.61	0.61	1.22	2.13	0.6	0.6	1.37	1.37	1.37	1.37	1.37	0.6
		Sample Type	N	N	FD	N	N	N	N	FD	N	N	N	N	FD	FD	N	N	N	N
		Sample Date	16 Oct 2017	16 Oct 2017	16 Oct 2017	16 Oct 2017	16 Oct 2017	12 Oct 2017	12 Oct 2017	12 Oct 2017	12 Oct 2017	12 Oct 2017	25 Jul 2018	25 Jul 2018	25 Jul 2018	25 Jul 2018	21 Jun 2018	27 Jul 2018	26 Jul 2018	27 Jun 2018
Analyte	**Table 6 SCS [a]**	**Unit**																		
PHCs																				
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	55	µg/g	--	**8**	5 U	--	5 U	--	--	--	5 U	--	5 U	--	5 U	--	--	--	--	--
Petroleum Hydrocarbons F1 (C6-C10)	55	µg/g	--	**8**	5 U	--	5 U	--	--	--	5 U	--	5 U	--	5 U	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	98	µg/g	--	--	--	--	10 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16)	98	µg/g	--	**38**	**27**	--	10 U	--	--	--	10 U	--	50 U	--	50 U	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	300	µg/g	--	--	--	--	**128**	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34)	300	µg/g	--	**232**	**195**	--	**128**	--	--	--	50 U	--	**670**	--	**800**	--	--	--	--	--
Petroleum Hydrocarbons F4 (C34-C50)	2800	µg/g	--	**63**	**84**	--	**94**	--	--	--	50 U	--	**490**	--	**410**	--	--	--	--	--
F4G-SG (GHH-Silica)	2800	µg/g	--	**360**	**260**	--	**350**	--	--	--	--	--	--	--	--	--	--	--	--	--
Gravimetric Heavy Hydrocarbons	2800	µg/g	--	--	--	--	--	--	--	--	--	--	**1330**	--	**980**	--	--	--	--	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/g	--	**341**	**306**	--	**222**	--	--	--	72 U	--	**1160**	--	**1220**	--	--	--	--	--
SVOCs (other)																				
2-Chloronaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Hexanone	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Bromophenyl Phenyl Ether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chlorophenyl Phenylether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethoxy) methane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Butyl benzyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-N-Butylphthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Isophorone	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrobenzene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodi-N-propylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																				
1,1,1,2-Tetrachloroethane	0.058	µg/g	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	0.38	µg/g	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	0.05	µg/g	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	0.05	µg/g	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--
1,1-Dichloroethane	0.47	µg/g	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--
1,1-Dichloroethene	0.05	µg/g	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--
1,2-Dibromoethane	0.05	µg/g	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	1.2	µg/g	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--
1,2-Dichloroethane	0.05	µg/g	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--
1,2-Dichloropropane	0.05	µg/g	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	4.8	µg/g	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--
1,3-Dichloropropene	0.05	µg/g	--	0.042 U	0.042 U	--	0.042 U	--	--	--	0.042 U	0.042 U	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	0.083	µg/g	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--
1,4-Dioxane	1.8	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	16	µg/g	--	0.5 U	0.5 U	--	0.5 U	--	--	--	0.5 U	0.5 U	--	--	--	--	--	--	--	--
4-Methyl-2-Pentanone	1.7	µg/g	--	0.5 U	0.5 U	--	0.5 U	--	--	--	0.5 U	0.5 U	--	--	--	--	--	--	--	--
Acetone	16	µg/g	--	0.5 U	0.5 U	--	0.5 U	--	--	--	0.5 U	0.5 U	--	--	--	--	--	--	--	--
Bromodichloromethane	1.5	µg/g	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--
Bromoform	0.27	µg/g	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--
Bromomethane	0.05	µg/g	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--
Carbon tetrachloride	0.05	µg/g	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--
Chlorobenzene	2.4	µg/g	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--
Chlorodibromomethane	2.3	µg/g	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--
Chloroform	0.05	µg/g	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	1.9	µg/g	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	NV	µg/g	--	0.03 U	0.03 U	--	0.03 U	--	--	--	0.03 U	0.03 U	--	--	--	--	--	--	--	--
Dichlorodifluoromethane	16	µg/g	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--
Dichloromethane	0.1	µg/g	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--
Methyl tert-butyl ether (MTBE)	0.75	µg/g	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--
n-Hexane	2.8	µg/g	--	**0.164 J**	0.05 J	--	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--
Styrene	0.7	µg/g	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--
Tetrachloroethene	0.28	µg/g	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	0.084	µg/g	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--
trans-1,3-Dichloropropene	NV	µg/g	--	0.03 U	0.03 U	--	0.03 U	--	--	--	0.03 U	0.03 U	--	--	--	--	--	--	--	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW17-109S	MW17-109S	MW17-109S	MW17-110S	MW17-110S	MW17-111S	MW17-111S	MW17-111S	MW17-111S	MW17-111S	MW18-117S	MW18-117S	MW18-117S	MW18-117S	MW18-120D	MW18-121S	MW18-122D	MW18-123D
		Sample ID	MW17-109S-0-2	MW17-109S-4-5	DUP9	MW17-110S-0-2	MW17-110S-4-6	MW17-111S-0-1	MW17-111S-0-2	DUP 8	MW17-111S-2-4	MW17-111S-6-7	MW18-117S-1	MW18-117S-2	DUP 1 JUL 25	DUP 2 JUL 25	MW18-120D-3.0	MW18-121S-1	MW18-122D-1	MW18-123D-2.5
		Start Depth (m)	0	1.22	1.22	0	1.22	0	0	0	0.61	1.83	0	0	0.76	0.76	0.76	0.76	0.76	0
		End Depth (m)	0.61	1.52	1.52	0.61	1.83	0.3	0.61	0.61	1.22	2.13	0.6	0.6	1.37	1.37	1.37	1.37	1.37	0.6
		Sample Type	N	N	FD	N	N	N	N	FD	N	N	N	N	FD	FD	N	N	N	N
		Sample Date	16 Oct 2017	16 Oct 2017	16 Oct 2017	16 Oct 2017	16 Oct 2017	12 Oct 2017	12 Oct 2017	12 Oct 2017	12 Oct 2017	12 Oct 2017	25 Jul 2018	25 Jul 2018	25 Jul 2018	25 Jul 2018	21 Jun 2018	27 Jul 2018	26 Jul 2018	27 Jun 2018
Analyte	**Table 6 SCS [a]**	**Unit**																		
Trichloroethylene	0.061	µg/g	--	0.01 U	0.01 U	--	0.01 U	--	--	--	0.01 U	0.01 U	--	--	--	--	--	--	--	--
Trichlorofluoromethane	4	µg/g	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--
Vinyl Chloride	0.02	µg/g	--	0.02 U	0.02 U	--	0.02 U	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--	--	--

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Ministry of the Environment.* April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/g = microgram(s) per gram

ABNs = acid, base and neutral compounds

BH = borehole

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

DUP = duplicate

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mg/kg = milligram(s) per kilogram

mg/l = milligram(s) per litre

mS/cm = milliSiemen(s) per centimetre

MW = monitoring well

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

pg/g = picogram(s) per gram

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW18-123D	MW18-124S	MW18-124S	MW18-125S	MW18-125S	MW18-125S	MW18-126D	MW18-126D	MW18-126D	MW18-126D	MW18-129D	MW18-129D	MW18-129D	MW18-129D	MW18-129D	OW01-II	OW06	OW07-31
		Sample ID	MW18-123D-5	MW18-124S-1	MW18-124S-2	MW18-125S-1	MW18-125S-2	MW18-125S-3	MW18-126D-1	MW18-126D-2	MW18-126D-3	DUP JULY 31	MW18-129D-1	DUP2 JUL23	MW18-129D-2	DUP3 JUL23	MW18-129D-3	AS4-OWI-II	BH6-SS1	OW07-31SS1
		Start Depth (m)	0.76	0.76	1.52	0	0.76	1.52	0	0.76	1.52	1.52	0.76	0.76	1.52	1.52	2.29	2.13	0	0
		End Depth (m)	1.37	1.37	2.13	0.6	1.37	2.13	0.3	1.37	2.13	2.13	1.37	1.37	2.13	2.13	2.57	2.29	0.15	1.22
		Sample Type	N	N	N	N	N	N	N	N	N	FD	N	FD	N	FD	N	N	N	N
		Sample Date	27 Jun 2018	24 Jul 2018	24 Jul 2018	31 Jul 2018	31 Jul 2018	31 Jul 2018	31 Jul 2018	31 Jul 2018	31 Jul 2018	31 Jul 2018	23 Jul 2018	23 Jul 2018	23 Jul 2018	23 Jul 2018	23 Jul 2018	11 May 1998	08 May 1998	22 Feb 2007
Analyte	**Table 6 SCS [a]**	**Unit**																		
ABNs																				
1,1'-Biphenyl	0.31	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	0.36	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.007 U
2,2'-oxybis(1-chloropropane)	0.67	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	38	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	2	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	9.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BTEX																				
Benzene	0.21	µg/g	0.0068 UJ	--	--	--	--	--	--	**0.0205**	--	--	--	--	--	--	--	--	--	0.002 U
Ethylbenzene	1.1	µg/g	0.018 UJ	--	--	--	--	--	--	**0.033**	--	--	--	--	--	--	--	--	--	0.002 U
Toluene	2.3	µg/g	0.08 UJ	--	--	--	--	--	--	**0.116**	--	--	--	--	--	--	--	--	--	0.002 U
Xylene, o	NV	µg/g	0.02 UJ	--	--	--	--	--	--	**0.112**	--	--	--	--	--	--	--	--	--	0.002 U
Xylenes, m & p	NV	µg/g	0.03 UJ	--	--	--	--	--	--	**0.114**	--	--	--	--	--	--	--	--	--	0.002 U
Xylenes, Total	3.1	µg/g	0.05 UJ	--	--	--	--	--	--	**0.225**	--	--	--	--	--	--	--	--	--	0.002 U
Chlorophenols																				
2,4,5-Trichlorophenol	4.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	0.19	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	1.6	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	0.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxins and Furans																				
Lower Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mid Point PCDD/F TEQ (WHO 2005)	13	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Upper Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																				
Average Fraction Organic Carbon	NV	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fraction Organic Carbon	NV	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Moisture	NV	%	**4.67**	**7.44**	**8.55**	**19.9**	**4.1**	**9.19**	**5.81**	**5.74**	**3.26**	**18.6**	**5.13**	**4.01**	**2.44**	**2.06**	**2.27**	--	--	--
pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	**7.94**	**7.98**	--	--	--	**7.99**	**7.69**	**7.98**
Phosphorus	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Calcium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	**6.7**	**6.9**	--	--	--	--	--	--
Magnesium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	**2**	**2.3**	--	--	--	--	--	--
Sodium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	**3.2**	**3.5**	--	--	--	--	--	--
Metals and Hydride Forming Metals																				
Antimony	7.5	µg/g	--	1 U	--	--	1 U	--	1 U	--	--	--	1 U	1 U	--	--	--	--	--	**1**
Arsenic	18	µg/g	--	**2.7**	--	--	**2.3**	--	**3.6**	--	--	--	**7.8**	**7.2**	--	--	--	--	--	**3.1**
Barium	390	µg/g	--	**16.6**	--	--	**18**	--	**31.3**	--	--	--	**31.4**	**27.4**	--	--	--	--	--	**26.2**
Beryllium	4	µg/g	--	0.5 U	--	--	0.5 U	--	0.5 U	--	--	--	0.5 U	0.5 U	--	--	--	--	--	**0.2**
Boron	120	µg/g	--	5 U	--	--	**7.1**	--	**5.2**	--	--	--	**11.8**	**9.4**	--	--	--	--	--	--
Cadmium	1.2	µg/g	--	0.5 U	--	--	0.5 U	--	0.5 U	--	--	--	**1**	**0.96**	--	--	--	--	--	0.2 U
Calcium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	160	µg/g	--	**8.5**	--	--	**7.6**	--	**10.1**	--	--	--	**12.6**	**12.3**	--	--	--	--	--	**6.2**
Cobalt	22	µg/g	--	**3.3**	--	--	**1.7**	--	**2.5**	--	--	--	**4.8**	**4.5**	--	--	--	--	--	**3**
Copper	140	µg/g	--	**11**	--	--	**6.5**	--	**8.6**	--	--	--	**27**	**23.4**	--	--	--	--	--	**12**
Lead	120	µg/g	--	**8.7**	--	--	**95.2**	--	**28.6**	--	--	--	**103**	**97.7**	--	--	--	--	--	**47.5**
Magnesium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	6.9	µg/g	--	1 U	--	--	1 U	--	1 U	--	--	--	**1**	1 U	--	--	--	--	--	**0.4**
Nickel	100	µg/g	--	**5.6**	--	--	**4.9**	--	**7.6**	--	--	--	**14.1**	**13**	--	--	--	--	--	**6.7**
Selenium	2.4	µg/g	--	1 U	--	--	1 U	--	1 U	--	--	--	1 U	1 U	--	--	--	--	--	0.4 U
Silver	20	µg/g	--	0.2 U	--	--	0.2 U	--	0.2 U	--	--	--	0.2 U	0.2 U	--	--	--	--	--	0.2 U
Thallium	1	µg/g	--	0.5 U	--	--	0.5 U	--	0.5 U	--	--	--	0.5 U	0.5 U	--	--	--	--	--	0.2 U

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW18-123D	MW18-124S	MW18-124S	MW18-125S	MW18-125S	MW18-125S	MW18-126D	MW18-126D	MW18-126D	MW18-126D	MW18-129D	MW18-129D	MW18-129D	MW18-129D	MW18-129D	OW01-II	OW06	OW07-31
		Sample ID	MW18-123D-5	MW18-124S-1	MW18-124S-2	MW18-125S-1	MW18-125S-2	MW18-125S-3	MW18-126D-1	MW18-126D-2	MW18-126D-3	DUP JULY 31	MW18-129D-1	DUP2 JUL23	MW18-129D-2	DUP3 JUL23	MW18-129D-3	AS4-OWI-II	BH6-SS1	OW07-31SS1
		Start Depth (m)	0.76	0.76	1.52	0	0.76	1.52	0	0.76	1.52	1.52	0.76	0.76	1.52	1.52	2.29	2.13	0	0
		End Depth (m)	1.37	1.37	2.13	0.6	1.37	2.13	0.3	1.37	2.13	2.13	1.37	1.37	2.13	2.13	2.57	2.29	0.15	1.22
		Sample Type	N	N	N	N	N	N	N	N	N	FD	N	FD	N	FD	N	N	N	N
		Sample Date	27 Jun 2018	24 Jul 2018	24 Jul 2018	31 Jul 2018	31 Jul 2018	31 Jul 2018	31 Jul 2018	31 Jul 2018	31 Jul 2018	31 Jul 2018	23 Jul 2018	23 Jul 2018	23 Jul 2018	23 Jul 2018	23 Jul 2018	11 May 1998	08 May 1998	22 Feb 2007
Analyte	**Table 6 SCS [a]**	**Unit**																		
Uranium	23	µg/g	--	1 U	--	--	1 U	--	1 U	--	--	--	1 U	1 U	--	--	--	--	--	--
Vanadium	86	µg/g	--	**21**	--	--	**9.2**	--	**14.2**	--	--	--	**21.3**	**20**	--	--	--	--	--	**11.2**
Zinc	340	µg/g	--	**48.7**	--	--	**175**	--	**71.5**	--	--	--	**410**	**372**	--	--	--	--	--	**62.2**
Non-Regulated Metals																				
Aluminum	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																				
Boron (HWS)	1.5	µg/g	--	--	--	--	--	--	--	--	--	--	**0.26**	**0.24**	--	--	--	--	--	--
Chloride (Cl)	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.59**
Chromium, Hexavalent (Cr6+)	8	µg/g	--	--	--	--	--	--	--	--	--	--	**0.21**	**0.32**	--	--	--	--	--	0.4 U
Cyanide, Free	0.051	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.08 U
Cyanide, Weak Acid Dissociable	0.051	µg/g	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--
Electrical Conductivity	0.7	mS/cm	--	--	--	--	--	--	--	--	--	--	**0.17**	**0.175**	--	--	--	--	--	**0.189**
Mercury	0.27	µg/g	--	--	--	--	--	--	--	--	--	--	**0.0521**	**0.0454**	--	--	--	--	--	**0.014**
Sodium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium Absorption Ratio	5	SAR	--	--	--	--	--	--	--	--	--	--	**0.28**	**0.3**	--	--	--	--	--	**0.039**
OCPs																				
Hexachlorobenzene	0.52	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	0.012	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachloroethane	0.089	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs																				
1-Methylnaphthalene	NV	µg/g	0.03 UJ	0.03 U	0.3 U	--	--	0.03 U	**0.262**	--	--	--	--	--	0.03 U	0.03 U	--	--	--	--
2-(1-)Methylnaphthalene	0.99	µg/g	0.042 UJ	0.042 U	0.42 U	--	--	0.042 U	**0.6**	--	--	--	--	--	0.042 U	0.042 U	--	--	--	--
2-Methylnaphthalene	NV	µg/g	0.03 UJ	0.03 U	0.3 U	--	--	0.03 U	**0.338**	--	--	--	--	--	0.03 U	0.03 U	--	--	--	--
Acenaphthene	7.9	µg/g	0.05 UJ	0.05 U	0.5 U	--	--	0.05 U	0.05 U	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--
Acenaphthylene	0.15	µg/g	0.05 UJ	0.05 U	0.5 U	--	--	0.05 U	0.05 U	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--
Anthracene	0.67	µg/g	0.05 UJ	0.05 U	0.5 U	--	--	0.05 U	0.05 U	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--
Benzo(a)anthracene	0.5	µg/g	0.05 UJ	0.05 U	0.5 U	--	--	0.05 U	**0.182**	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--
Benzo(a)pyrene	0.3	µg/g	0.05 UJ	0.05 U	0.5 U	--	--	0.05 U	**0.23**	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--
Benzo(b&j)fluoranthene	0.78	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.78	µg/g	0.05 UJ	0.05 U	0.5 U	--	--	0.05 U	**0.385**	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--
Benzo(g,h,i)perylene	6.6	µg/g	0.05 UJ	0.05 U	0.5 U	--	--	0.05 U	**0.193**	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--
Benzo(k)fluoranthene	0.78	µg/g	0.05 UJ	0.05 U	0.5 U	--	--	0.05 U	**0.221**	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--
Chrysene	7	µg/g	0.05 UJ	0.05 U	0.5 U	--	--	0.05 U	**0.295**	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--
Dibenzo(a,h)anthracene	0.1	µg/g	0.05 UJ	0.05 U	0.5 U	--	--	0.05 U	**0.073**	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--
Fluoranthene	0.69	µg/g	0.05 UJ	0.05 U	0.5 U	--	--	0.05 U	**0.238**	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--
Fluorene	62	µg/g	0.05 UJ	0.05 U	0.5 U	--	--	0.05 U	0.05 U	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--
Indeno(1,2,3-Cd)Pyrene	0.38	µg/g	0.05 UJ	0.05 U	0.5 U	--	--	0.05 U	**0.181**	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--
Naphthalene	0.6	µg/g	0.013 UJ	0.013 U	0.13 U	--	--	0.013 U	**0.276**	--	--	--	--	--	0.013 U	0.013 U	--	--	--	--
Phenanthrene	6.2	µg/g	0.046 UJ	0.046 U	0.46 U	--	--	0.046 U	**0.224**	--	--	--	--	--	0.046 U	0.046 U	--	--	--	--
Pyrene	78	µg/g	0.05 UJ	0.05 U	0.5 U	--	--	0.05 U	**0.21**	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--
PCBs																				
Aroclor 1242	NV	µg/g	--	--	--	0.01 U	--	0.01 U	--	--	0.01 U	0.01 U	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/g	--	--	--	0.01 U	--	0.01 U	--	--	0.01 U	0.01 U	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/g	--	--	--	0.01 U	--	0.01 U	--	--	0.01 U	0.01 U	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/g	--	--	--	0.01 U	--	0.01 U	--	--	0.01 U	0.01 U	--	--	--	--	--	--	--	--
PCB, Total	0.35	µg/g	--	--	--	0.02 U	--	0.02 U	--	--	0.02 U	0.02 U	--	--	--	--	--	--	--	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW18-123D	MW18-124S	MW18-124S	MW18-125S	MW18-125S	MW18-125S	MW18-126D	MW18-126D	MW18-126D	MW18-126D	MW18-129D	MW18-129D	MW18-129D	MW18-129D	MW18-129D	OW01-II	OW06	OW07-31
		Sample ID	MW18-123D-5	MW18-124S-1	MW18-124S-2	MW18-125S-1	MW18-125S-2	MW18-125S-3	MW18-126D-1	MW18-126D-2	MW18-126D-3	DUP JULY 31	MW18-129D-1	DUP2 JUL23	MW18-129D-2	DUP3 JUL23	MW18-129D-3	AS4-OWI-II	BH6-SS1	OW07-31SS1
		Start Depth (m)	0.76	0.76	1.52	0	0.76	1.52	0	0.76	1.52	1.52	0.76	0.76	1.52	1.52	2.29	2.13	0	0
		End Depth (m)	1.37	1.37	2.13	0.6	1.37	2.13	0.3	1.37	2.13	2.13	1.37	1.37	2.13	2.13	2.57	2.29	0.15	1.22
		Sample Type	N	N	N	N	N	N	N	N	N	FD	N	FD	N	FD	N	N	N	N
		Sample Date	27 Jun 2018	24 Jul 2018	24 Jul 2018	31 Jul 2018	31 Jul 2018	31 Jul 2018	31 Jul 2018	31 Jul 2018	31 Jul 2018	31 Jul 2018	23 Jul 2018	23 Jul 2018	23 Jul 2018	23 Jul 2018	23 Jul 2018	11 May 1998	08 May 1998	22 Feb 2007
Analyte	**Table 6 SCS [a]**	**Unit**																		
PHCs																				
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	55	µg/g	--	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	**5**
Petroleum Hydrocarbons F1 (C6-C10)	55	µg/g	--	--	--	--	5 U	--	--	5 U	--	--	--	--	--	--	**6**	--	--	**5**
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	98	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16)	98	µg/g	--	--	--	--	10 U	--	--	10 U	--	--	--	--	--	--	10 U	--	--	**10**
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	300	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34)	300	µg/g	--	--	--	--	**53**	--	--	**60**	--	--	--	--	--	--	**58**	--	--	**50**
Petroleum Hydrocarbons F4 (C34-C50)	2800	µg/g	--	--	--	--	50 U	--	--	50 U	--	--	--	--	--	--	50 U	--	--	**50**
F4G-SG (GHH-Silica)	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Gravimetric Heavy Hydrocarbons	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/g	--	--	--	--	72 U	--	--	72 U	--	--	--	--	--	--	72 U	--	--	--
SVOCs (other)																				
2-Chloronaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Hexanone	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.47 U
4-Bromophenyl Phenyl Ether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chlorophenyl Phenylether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethoxy) methane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Butyl benzyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.005 U
Chloromethane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.002 U
Di-N-Butylphthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Isophorone	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrobenzene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodi-N-propylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																				
1,1,1,2-Tetrachloroethane	0.058	µg/g	0.05 UJ	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	0.002 U
1,1,1-Trichloroethane	0.38	µg/g	0.05 UJ	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	0.002 U
1,1,2,2-Tetrachloroethane	0.05	µg/g	0.05 UJ	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	0.002 U
1,1,2-Trichloroethane	0.05	µg/g	0.05 UJ	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	0.47	µg/g	0.05 UJ	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	0.002 U
1,1-Dichloroethene	0.05	µg/g	0.05 UJ	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	0.002 U
1,2-Dibromoethane	0.05	µg/g	0.05 UJ	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	0.002 U
1,2-Dichlorobenzene	1.2	µg/g	0.05 UJ	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	0.002 U
1,2-Dichloroethane	0.05	µg/g	0.05 UJ	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	0.002 U
1,2-Dichloropropane	0.05	µg/g	0.05 UJ	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	0.002 U
1,3-Dichlorobenzene	4.8	µg/g	0.05 UJ	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	0.002 U
1,3-Dichloropropene	0.05	µg/g	0.042 UJ	--	--	--	--	--	--	0.042 U	--	--	--	--	--	--	--	--	--	0.002 U
1,4-Dichlorobenzene	0.083	µg/g	0.05 UJ	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	0.002 U
1,4-Dioxane	1.8	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	16	µg/g	0.5 UJ	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--	0.041 U
4-Methyl-2-Pentanone	1.7	µg/g	0.5 UJ	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--	--
Acetone	16	µg/g	0.5 UJ	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--	0.13 U
Bromodichloromethane	1.5	µg/g	0.05 UJ	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	0.003 U
Bromoform	0.27	µg/g	0.05 UJ	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	0.002 U
Bromomethane	0.05	µg/g	0.05 UJ	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	0.002 U
Carbon tetrachloride	0.05	µg/g	0.05 UJ	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	0.002 U
Chlorobenzene	2.4	µg/g	0.05 UJ	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	0.002 U
Chlorodibromomethane	2.3	µg/g	0.05 UJ	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	--
Chloroform	0.05	µg/g	0.05 UJ	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	0.002 U
cis-1,2-Dichloroethene	1.9	µg/g	0.05 UJ	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	0.002 U
cis-1,3-Dichloropropene	NV	µg/g	0.03 UJ	--	--	--	--	--	--	0.03 U	--	--	--	--	--	--	--	--	--	--
Dichlorodifluoromethane	16	µg/g	0.05 UJ	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	--
Dichloromethane	0.1	µg/g	0.05 UJ	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	0.002 U
Methyl tert-butyl ether (MTBE)	0.75	µg/g	0.05 UJ	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	0.004 U
n-Hexane	2.8	µg/g	0.05 UJ	--	--	--	--	--	--	0.17 U	--	--	--	--	--	--	--	--	--	--
Styrene	0.7	µg/g	0.05 UJ	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	0.002 U
Tetrachloroethene	0.28	µg/g	0.05 UJ	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	0.002 U
trans-1,2-Dichloroethene	0.084	µg/g	0.05 UJ	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	0.003 U
trans-1,3-Dichloropropene	NV	µg/g	0.03 UJ	--	--	--	--	--	--	0.03 U	--	--	--	--	--	--	--	--	--	0.003 U

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW18-123D	MW18-124S	MW18-124S	MW18-125S	MW18-125S	MW18-125S	MW18-126D	MW18-126D	MW18-126D	MW18-126D	MW18-129D	MW18-129D	MW18-129D	MW18-129D	MW18-129D	OW01-II	OW06	OW07-31
		Sample ID	MW18-123D-5	MW18-124S-1	MW18-124S-2	MW18-125S-1	MW18-125S-2	MW18-125S-3	MW18-126D-1	MW18-126D-2	MW18-126D-3	DUP JULY 31	MW18-129D-1	DUP2 JUL23	MW18-129D-2	DUP3 JUL23	MW18-129D-3	AS4-OWI-II	BH6-SS1	OW07-31SS1
		Start Depth (m)	0.76	0.76	1.52	0	0.76	1.52	0	0.76	1.52	1.52	0.76	0.76	1.52	1.52	2.29	2.13	0	0
		End Depth (m)	1.37	1.37	2.13	0.6	1.37	2.13	0.3	1.37	2.13	2.13	1.37	1.37	2.13	2.13	2.57	2.29	0.15	1.22
		Sample Type	N	N	N	N	N	N	N	N	N	FD	N	FD	N	FD	N	N	N	N
		Sample Date	27 Jun 2018	24 Jul 2018	24 Jul 2018	31 Jul 2018	31 Jul 2018	31 Jul 2018	31 Jul 2018	31 Jul 2018	31 Jul 2018	31 Jul 2018	23 Jul 2018	23 Jul 2018	23 Jul 2018	23 Jul 2018	23 Jul 2018	11 May 1998	08 May 1998	22 Feb 2007
Analyte	**Table 6 SCS [a]**	**Unit**																		
Trichloroethylene	0.061	µg/g	0.01 UJ	--	--	--	--	--	--	**0.017**	--	--	--	--	--	--	--	--	--	0.004 U
Trichlorofluoromethane	4	µg/g	0.05 UJ	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	0.004 U
Vinyl Chloride	0.02	µg/g	0.02 UJ	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--	0.002 U

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Ministry of the Environment.* April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/g = microgram(s) per gram

ABNs = acid, base and neutral compounds

BH = borehole

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

DUP = duplicate

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mg/kg = milligram(s) per kilogram

mg/l = milligram(s) per litre

mS/cm = milliSiemen(s) per centimetre

MW = monitoring well

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

pg/g = picogram(s) per gram

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW07-31	OW07-32	OW07-32	OW07-32	OW07-33	OW07-34D	OW07-34D	OW07-34D	OW07-35	OW07-36D	OW07-36D	OW07-37	OW07-37	OW07-38S	OW07-38S	OW13-39S	SS-40	SS-41	SS-42
		Sample ID	DUP#8	OW07-32SS1	OW07-32	OW07-32SS2	OW07-33SS1	OW07-34SS1	OW07-34SS2	DUP#11	OW07-35SS1	OW07-36SS1	OW07-36SS1A	OW07-37SS1	OW07-37SS-1A	OW07-38SS1	OW07-38SS2	OW13-39S	SS-40	SS-41	SS-42
		Start Depth (m)	0	0	0	1.22	0	0	1.22	1.22	0	0.08	0.61	0	0.61	0	1.22	2.29	1	1	1
		End Depth (m)	1.22	1.07	1.65	1.65	1.22	1.22	1.57	1.57	1.22	0.61	1.22	0.61	1.22	1.22	1.8	2.25	1.3	1.3	1.3
		Sample Type	FD	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	22 Feb 2007	22 Feb 2007	07 Mar 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	12 Dec 2013	06 Jul 1999	06 Jul 1999	06 Jul 1999
Analyte	**Table 6 SCS [a]**	**Unit**																			
ABNs																					
1,1'-Biphenyl	0.31	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	0.36	µg/g	0.007 U	0.007 U	--	0.007 U	0.007 U	0.007 U	--	--	--	--	--	0.007 U	0.007 U	0.007 U	0.007 U	--	--	--	--
2,2'-oxybis(1-chloropropane)	0.67	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	38	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	2	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	9.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BTEX																					
Benzene	0.21	µg/g	**0.003**	0.002 U	--	**0.007**	**0.005**	**0.004**	--	--	--	--	--	**0.003**	0.002 U	0.002 U	**0.01**	0.02 U	--	--	--
Ethylbenzene	1.1	µg/g	0.002 U	0.002 U	--	**0.003**	**0.003**	0.002 U	--	--	--	--	--	0.002 U	0.002 U	0.002 U	**0.005**	0.02 U	--	--	--
Toluene	2.3	µg/g	0.002 U	0.002 U	--	**0.016**	**0.012**	**0.003**	--	--	--	--	--	**0.007**	0.002 U	0.002 U	**0.027**	0.02 U	--	--	--
Xylene, o	NV	µg/g	0.002 U	0.002 U	--	**0.002**	**0.002**	0.002 U	--	--	--	--	--	0.002 U	0.002 U	0.002 U	**0.005**	0.02 U	--	--	--
Xylenes, m & p	NV	µg/g	0.002 U	0.002 U	--	**0.004**	**0.004**	0.002 U	--	--	--	--	--	0.002 U	0.002 U	0.002 U	**0.008**	0.02 U	--	--	--
Xylenes, Total	3.1	µg/g	0.002 U	0.002 U	--	**0.006**	**0.006**	0.002 U	--	--	--	--	--	0.002 U	0.002 U	0.002 U	**0.013**	0.02 U	--	--	--
Chlorophenols																					
2,4,5-Trichlorophenol	4.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	0.19	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	1.6	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	0.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxins and Furans																					
Lower Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mid Point PCDD/F TEQ (WHO 2005)	13	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Upper Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																					
Average Fraction Organic Carbon	NV	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fraction Organic Carbon	NV	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Moisture	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.3**	--	--	--
pH	NV	pH UNITS	--	**7.8**	--	--	**7.96**	**7.5**	--	--	**7.85**	**8.18**	**8.12**	--	--	--	--	--	--	--	--
Phosphorus	NV	µg/g	--	--	**495**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Calcium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																					
Antimony	7.5	µg/g	--	**1.5**	--	--	0.8 U	**2.6**	--	--	--	--	--	0.8 U	0.8 U	**1.5**	--	**0.98**	--	--	--
Arsenic	18	µg/g	--	**7.1**	--	--	**3.7**	**8.2**	--	--	--	--	--	**3.2**	**2.1**	**20.5**	--	**4.9**	--	--	--
Barium	390	µg/g	--	**36.2**	--	--	**62.8**	**107**	--	--	--	--	--	**13.7**	**13.6**	**63.6**	--	**190**	--	--	--
Beryllium	4	µg/g	--	**0.4**	--	--	**0.3**	**0.5**	--	--	--	--	--	0.2 U	0.2 U	**0.4**	--	0.2 U	--	--	--
Boron	120	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**8.7**	--	--	--
Cadmium	1.2	µg/g	--	**0.5**	--	--	**1.2**	**1.3**	--	--	--	--	--	**0.4**	0.2 U	**1.3**	--	**1.9**	--	--	--
Calcium	NV	µg/g	--	--	**116000**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	160	µg/g	--	**11.9**	--	--	**9.3**	**25.9**	--	--	--	--	--	**5**	**3.6**	**41.4**	--	**9**	--	--	--
Cobalt	22	µg/g	--	**4.8**	--	--	**4.7**	**3.6**	--	--	--	--	--	**2.1**	**2.3**	**7.5**	--	**3.6**	--	--	--
Copper	140	µg/g	--	**50.3**	--	--	**15.6**	**48.2**	--	--	--	--	--	**26.1**	**6**	**84.4**	--	**29**	--	--	--
Lead	120	µg/g	--	**117**	--	--	**107**	**274**	--	--	--	--	--	**81.9**	**9.6**	**90.1**	--	**220**	--	--	--
Magnesium	NV	µg/g	--	--	**63800**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	6.9	µg/g	--	**1.5**	--	--	**0.4**	**0.8**	--	--	--	--	--	**0.6**	0.3 U	**9.3**	--	**0.79**	--	--	--
Nickel	100	µg/g	--	**11.2**	--	--	**11**	**10.6**	--	--	--	--	--	**5.9**	**4.5**	**43.9**	--	**11**	--	--	--
Selenium	2.4	µg/g	--	0.4 U	--	--	0.4 U	0.4 U	--	--	--	--	--	0.4 U	0.4 U	**0.9**	--	0.5 U	--	--	--
Silver	20	µg/g	--	0.2 U	--	--	0.2 U	**0.4**	--	--	--	--	--	0.2 U	0.2 U	0.2 U	--	0.2 U	--	--	--
Thallium	1	µg/g	--	0.2 U	--	--	0.2 U	0.2 U	--	--	--	--	--	0.2 U	0.2 U	0.2 U	--	**0.13**	--	--	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW07-31	OW07-32	OW07-32	OW07-32	OW07-33	OW07-34D	OW07-34D	OW07-34D	OW07-35	OW07-36D	OW07-36D	OW07-37	OW07-37	OW07-38S	OW07-38S	OW13-39S	SS-40	SS-41	SS-42
		Sample ID	DUP#8	OW07-32SS1	OW07-32	OW07-32SS2	OW07-33SS1	OW07-34SS1	OW07-34SS2	DUP#11	OW07-35SS1	OW07-36SS1	OW07-36SS1A	OW07-37SS1	OW07-37SS-1A	OW07-38SS1	OW07-38SS2	OW13-39S	SS-40	SS-41	SS-42
		Start Depth (m)	0	0	0	1.22	0	0	1.22	1.22	0	0.08	0.61	0	0.61	0	1.22	2.29	1	1	1
		End Depth (m)	1.22	1.07	1.65	1.65	1.22	1.22	1.57	1.57	1.22	0.61	1.22	0.61	1.22	1.22	1.8	2.25	1.3	1.3	1.3
		Sample Type	FD	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	22 Feb 2007	22 Feb 2007	07 Mar 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	12 Dec 2013	06 Jul 1999	06 Jul 1999	06 Jul 1999
Analyte	**Table 6 SCS [a]**	**Unit**																			
Uranium	23	µg/g	--	--	**0.5**	--	--	--	--	--	--	--	--	--	--	--	--	**0.5**	--	--	--
Vanadium	86	µg/g	--	**18.9**	--	--	**15.3**	**16.8**	--	--	--	--	--	**9**	**6.1**	**14.8**	--	**11**	--	--	--
Zinc	340	µg/g	--	**256**	--	--	**720**	**635**	--	--	--	--	--	**306**	**39.8**	**371**	--	**2400**	--	--	--
Non-Regulated Metals																					
Aluminum	NV	µg/g	--	--	**6240**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	NV	µg/g	--	--	**17500**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/g	--	--	**566**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	NV	µg/g	--	--	**874**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/g	--	--	**57.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/g	--	--	**104**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																					
Boron (HWS)	1.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloride (Cl)	NV	µg/g	--	**18.8**	--	--	**33.1**	**25.3**	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium, Hexavalent (Cr6+)	8	µg/g	--	0.4 U	--	--	0.4 U	0.4 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Free	0.051	µg/g	--	0.08 U	--	--	0.08 U	0.08 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	0.051	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	0.7	mS/cm	--	**0.514**	--	--	**0.244**	**0.296**	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.27	µg/g	--	**0.036**	--	--	**0.037**	**0.051**	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	NV	µg/g	--	--	**157**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium Absorption Ratio	5	SAR	--	**0.151**	--	--	**0.142**	**0.165**	--	--	--	--	--	--	--	--	--	--	--	--	--
OCPs																					
Hexachlorobenzene	0.52	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	0.012	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachloroethane	0.089	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs																					
1-Methylnaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-(1-)Methylnaphthalene	0.99	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	7.9	µg/g	--	0.03 U	--	--	--	**94**	--	--	--	--	--	0.03 U	0.03 U	--	--	--	--	--	--
Acenaphthylene	0.15	µg/g	--	**0.02**	--	--	--	2 U	--	--	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--
Anthracene	0.67	µg/g	--	**0.05**	--	--	--	**160**	--	--	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--
Benzo(a)anthracene	0.5	µg/g	--	**0.6**	--	--	--	**200**	--	--	--	--	--	**0.03**	**0.02**	--	--	--	--	--	--
Benzo(a)pyrene	0.3	µg/g	--	**0.54**	--	--	--	**130**	--	--	--	--	--	**0.04**	0.02 U	--	--	--	--	--	--
Benzo(b&j)fluoranthene	0.78	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.78	µg/g	--	**0.77**	--	--	--	**190**	--	--	--	--	--	**0.05**	**0.02**	--	--	--	--	--	--
Benzo(g,h,i)perylene	6.6	µg/g	--	**0.45**	--	--	--	**70**	--	--	--	--	--	**0.08**	**0.02**	--	--	--	--	--	--
Benzo(k)fluoranthene	0.78	µg/g	--	**0.23**	--	--	--	**66**	--	--	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--
Chrysene	7	µg/g	--	**0.56**	--	--	--	**180**	--	--	--	--	--	**0.04**	**0.02**	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.1	µg/g	--	**0.12**	--	--	--	**26**	--	--	--	--	--	**0.02**	0.02 U	--	--	--	--	--	--
Fluoranthene	0.69	µg/g	--	**0.78**	--	--	--	**660**	--	--	--	--	--	**0.04**	**0.03**	--	--	--	--	--	--
Fluorene	62	µg/g	--	0.02 U	--	--	--	**150**	--	--	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--
Indeno(1,2,3-Cd)Pyrene	0.38	µg/g	--	**0.46**	--	--	--	**80**	--	--	--	--	--	**0.06**	**0.02**	--	--	--	--	--	--
Naphthalene	0.6	µg/g	--	**0.05**	--	--	--	**220**	--	--	--	--	--	0.03 U	**0.03**	--	--	--	--	--	--
Phenanthrene	6.2	µg/g	--	**0.41**	--	--	--	**900**	--	--	--	--	--	**0.05**	**0.04**	--	--	--	--	--	--
Pyrene	78	µg/g	--	**0.7**	--	--	--	**470**	--	--	--	--	--	0.02 U	**0.02**	--	--	--	--	--	--
PCBs																					
Aroclor 1242	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.35	µg/g	--	0.02 U	--	0.02 U	0.02 U	**0.06**	0.02 U	**0.03**	--	--	--	--	--	--	--	--	**0.1**	**0.54**	0.05 U

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW07-31	OW07-32	OW07-32	OW07-32	OW07-33	OW07-34D	OW07-34D	OW07-34D	OW07-35	OW07-36D	OW07-36D	OW07-37	OW07-37	OW07-38S	OW07-38S	OW13-39S	SS-40	SS-41	SS-42
		Sample ID	DUP#8	OW07-32SS1	OW07-32	OW07-32SS2	OW07-33SS1	OW07-34SS1	OW07-34SS2	DUP#11	OW07-35SS1	OW07-36SS1	OW07-36SS1A	OW07-37SS1	OW07-37SS-1A	OW07-38SS1	OW07-38SS2	OW13-39S	SS-40	SS-41	SS-42
		Start Depth (m)	0	0	0	1.22	0	0	1.22	1.22	0	0.08	0.61	0	0.61	0	1.22	2.29	1	1	1
		End Depth (m)	1.22	1.07	1.65	1.65	1.22	1.22	1.57	1.57	1.22	0.61	1.22	0.61	1.22	1.22	1.8	2.25	1.3	1.3	1.3
		Sample Type	FD	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	22 Feb 2007	22 Feb 2007	07 Mar 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	12 Dec 2013	06 Jul 1999	06 Jul 1999	06 Jul 1999
Analyte	**Table 6 SCS [a]**	**Unit**																			
PHCs																					
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	55	µg/g	**5**	**5**	--	**5**	**5**	**5**	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F1 (C6-C10)	55	µg/g	**5**	**5**	--	**5**	**5**	**5**	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	98	µg/g	--	**13**	--	--	--	**10**	--	--	--	--	--	**10**	**10**	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16)	98	µg/g	**10**	**13**	--	**10**	**10**	**82**	--	--	--	--	--	**10**	**10**	**10**	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	300	µg/g	--	**89**	--	--	--	**50**	--	--	--	--	--	**170**	**50**	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34)	300	µg/g	**50**	**94**	--	**50**	**50**	**700**	--	--	--	--	--	**170**	**50**	**140**	--	--	--	--	--
Petroleum Hydrocarbons F4 (C34-C50)	2800	µg/g	**50**	**51**	--	**50**	**50**	**69**	--	--	--	--	--	**600**	**50**	**64**	--	--	--	--	--
F4G-SG (GHH-Silica)	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Gravimetric Heavy Hydrocarbons	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SVOCs (other)																					
2-Chloronaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Hexanone	NV	µg/g	0.47 U	0.47 U	--	0.47 U	0.47 U	0.47 U	--	--	--	--	--	0.47 U	0.47 U	0.47 U	0.47 U	--	--	--	--
4-Bromophenyl Phenyl Ether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chlorophenyl Phenylether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethoxy) methane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Butyl benzyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/g	0.005 U	0.005 U	--	0.005 U	0.005 U	0.005 U	--	--	--	--	--	0.005 U	0.005 U	0.005 U	0.005 U	--	--	--	--
Chloromethane	NV	µg/g	0.002 U	0.002 U	--	0.002 U	0.002 U	0.002 U	--	--	--	--	--	0.002 U	0.002 U	0.002 U	0.002 U	--	--	--	--
Di-N-Butylphthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Isophorone	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrobenzene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodi-N-propylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																					
1,1,1,2-Tetrachloroethane	0.058	µg/g	0.002 U	0.002 U	--	0.002 U	0.002 U	0.002 U	--	--	--	--	--	0.002 U	0.002 U	0.002 U	0.002 U	0.05 U	--	--	--
1,1,1-Trichloroethane	0.38	µg/g	0.002 U	0.002 U	--	0.002 U	0.002 U	0.002 U	--	--	--	--	--	0.002 U	**0.01**	0.002 U	0.002 U	0.05 U	--	--	--
1,1,2,2-Tetrachloroethane	0.05	µg/g	0.002 U	0.002 U	--	0.002 U	0.002 U	0.002 U	--	--	--	--	--	0.002 U	0.002 U	0.002 U	0.002 U	0.05 U	--	--	--
1,1,2-Trichloroethane	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--	--	--
1,1-Dichloroethane	0.47	µg/g	0.002 U	0.002 U	--	0.002 U	0.002 U	0.002 U	--	--	--	--	--	0.002 U	0.002 U	0.002 U	0.002 U	0.05 U	--	--	--
1,1-Dichloroethene	0.05	µg/g	0.002 U	0.002 U	--	0.002 U	0.002 U	0.002 U	--	--	--	--	--	0.002 U	0.002 U	0.002 U	0.002 U	0.05 U	--	--	--
1,2-Dibromoethane	0.05	µg/g	0.002 U	0.002 U	--	0.002 U	0.002 U	0.002 U	--	--	--	--	--	0.002 U	0.002 U	0.002 U	0.002 U	0.05 U	--	--	--
1,2-Dichlorobenzene	1.2	µg/g	0.002 U	0.002 U	--	0.002 U	0.002 U	0.002 U	--	--	--	--	--	0.002 U	0.002 U	0.002 U	0.002 U	0.05 U	--	--	--
1,2-Dichloroethane	0.05	µg/g	0.002 U	0.002 U	--	0.002 U	0.002 U	0.002 U	--	--	--	--	--	0.002 U	0.002 U	0.002 U	0.002 U	0.05 U	--	--	--
1,2-Dichloropropane	0.05	µg/g	0.002 U	0.002 U	--	0.002 U	0.002 U	0.002 U	--	--	--	--	--	0.002 U	0.002 U	0.002 U	0.002 U	0.05 U	--	--	--
1,3-Dichlorobenzene	4.8	µg/g	0.002 U	0.002 U	--	0.002 U	0.002 U	0.002 U	--	--	--	--	--	0.002 U	0.002 U	0.002 U	0.002 U	0.05 U	--	--	--
1,3-Dichloropropene	0.05	µg/g	0.002 U	0.002 U	--	0.002 U	0.002 U	0.002 U	--	--	--	--	--	0.002 U	0.002 U	0.002 U	0.002 U	0.05 U	--	--	--
1,4-Dichlorobenzene	0.083	µg/g	0.002 U	0.002 U	--	0.002 U	0.002 U	0.002 U	--	--	--	--	--	0.002 U	0.002 U	0.002 U	0.002 U	0.05 U	--	--	--
1,4-Dioxane	1.8	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	16	µg/g	0.041 U	0.041 U	--	0.041 U	0.041 U	0.041 U	--	--	--	--	--	0.041 U	0.041 U	0.041 U	0.041 U	0.5 U	--	--	--
4-Methyl-2-Pentanone	1.7	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--
Acetone	16	µg/g	0.13 U	0.13 U	--	0.13 U	0.13 U	0.13 U	--	--	--	--	--	0.13 U	0.13 U	0.13 U	0.13 U	0.5 U	--	--	--
Bromodichloromethane	1.5	µg/g	0.003 U	0.003 U	--	0.003 U	0.003 U	0.003 U	--	--	--	--	--	0.003 U	0.003 U	0.003 U	0.003 U	0.05 U	--	--	--
Bromoform	0.27	µg/g	0.002 U	0.002 U	--	0.002 U	0.002 U	0.002 U	--	--	--	--	--	0.002 U	0.002 U	0.002 U	0.002 U	0.05 U	--	--	--
Bromomethane	0.05	µg/g	0.002 U	0.002 U	--	0.002 U	0.002 U	0.002 U	--	--	--	--	--	0.002 U	0.002 U	0.002 U	0.002 U	0.05 U	--	--	--
Carbon tetrachloride	0.05	µg/g	0.002 U	0.002 U	--	0.002 U	0.002 U	0.002 U	--	--	--	--	--	0.002 U	0.002 U	0.002 U	0.002 U	0.05 U	--	--	--
Chlorobenzene	2.4	µg/g	0.002 U	0.002 U	--	0.002 U	0.002 U	0.002 U	--	--	--	--	--	0.002 U	0.002 U	0.002 U	0.002 U	0.05 U	--	--	--
Chlorodibromomethane	2.3	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--	--	--
Chloroform	0.05	µg/g	0.002 U	0.002 U	--	0.002 U	0.002 U	0.002 U	--	--	--	--	--	0.002 U	0.002 U	0.002 U	0.002 U	0.05 U	--	--	--
cis-1,2-Dichloroethene	1.9	µg/g	0.002 U	0.002 U	--	0.002 U	0.002 U	0.002 U	--	--	--	--	--	0.002 U	0.002 U	0.002 U	0.002 U	0.05 U	--	--	--
cis-1,3-Dichloropropene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.03 U	--	--	--
Dichlorodifluoromethane	16	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--	--	--
Dichloromethane	0.1	µg/g	0.002 U	0.002 U	--	0.002 U	0.002 U	0.002 U	--	--	--	--	--	0.002 U	0.002 U	0.002 U	0.002 U	0.05 U	--	--	--
Methyl tert-butyl ether (MTBE)	0.75	µg/g	0.004 U	0.004 U	--	0.004 U	0.004 U	0.004 U	--	--	--	--	--	0.004 U	0.004 U	0.004 U	0.004 U	0.05 U	--	--	--
n-Hexane	2.8	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--	--	--
Styrene	0.7	µg/g	0.002 U	0.002 U	--	0.002 U	0.002 U	0.002 U	--	--	--	--	--	0.002 U	0.002 U	0.002 U	0.002 U	0.05 U	--	--	--
Tetrachloroethene	0.28	µg/g	0.002 U	0.002 U	--	0.002 U	0.002 U	0.002 U	--	--	--	--	--	0.002 U	0.002 U	0.002 U	0.002 U	0.05 U	--	--	--
trans-1,2-Dichloroethene	0.084	µg/g	0.003 U	0.003 U	--	0.003 U	0.003 U	0.003 U	--	--	--	--	--	0.003 U	0.003 U	0.003 U	0.003 U	0.05 U	--	--	--
trans-1,3-Dichloropropene	NV	µg/g	0.003 U	0.003 U	--	0.003 U	0.003 U	0.003 U	--	--	--	--	--	0.003 U	0.003 U	0.003 U	0.003 U	0.04 U	--	--	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW07-31	OW07-32	OW07-32	OW07-32	OW07-33	OW07-34D	OW07-34D	OW07-34D	OW07-35	OW07-36D	OW07-36D	OW07-37	OW07-37	OW07-38S	OW07-38S	OW13-39S	SS-40	SS-41	SS-42
		Sample ID	DUP#8	OW07-32SS1	OW07-32	OW07-32SS2	OW07-33SS1	OW07-34SS1	OW07-34SS2	DUP#11	OW07-35SS1	OW07-36SS1	OW07-36SS1A	OW07-37SS1	OW07-37SS-1A	OW07-38SS1	OW07-38SS2	OW13-39S	SS-40	SS-41	SS-42
		Start Depth (m)	0	0	0	1.22	0	0	1.22	1.22	0	0.08	0.61	0	0.61	0	1.22	2.29	1	1	1
		End Depth (m)	1.22	1.07	1.65	1.65	1.22	1.22	1.57	1.57	1.22	0.61	1.22	0.61	1.22	1.22	1.8	2.25	1.3	1.3	1.3
		Sample Type	FD	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	22 Feb 2007	22 Feb 2007	07 Mar 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	22 Feb 2007	12 Dec 2013	06 Jul 1999	06 Jul 1999	06 Jul 1999
Analyte	**Table 6 SCS [a]**	**Unit**																			
Trichloroethylene	0.061	µg/g	0.004 U	0.004 U	--	0.004 U	0.004 U	0.004 U	--	--	--	--	--	0.004 U	0.004 U	0.004 U	0.004 U	**1**	--	--	--
Trichlorofluoromethane	4	µg/g	0.004 U	0.004 U	--	0.004 U	0.004 U	0.004 U	--	--	--	--	--	0.004 U	0.004 U	0.004 U	0.004 U	0.05 U	--	--	--
Vinyl Chloride	0.02	µg/g	0.002 U	0.002 U	--	0.002 U	0.002 U	0.002 U	--	--	--	--	--	0.002 U	0.002 U	0.002 U	0.002 U	0.02 U	--	--	--

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Ministry of the Environment.* April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/g = microgram(s) per gram

ABNs = acid, base and neutral compounds

BH = borehole

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

DUP = duplicate

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mg/kg = milligram(s) per kilogram

mg/l = milligram(s) per litre

mS/cm = milliSiemen(s) per centimetre

MW = monitoring well

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

pg/g = picogram(s) per gram

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	SS-43	SS-44	SS-45	TP13-01	TP13-02	TP13-03	TP13-04	TP13-05	TP13-06	TP13-08	TP13-08	TP13-09	TP13-10	TP13-11	TP13-11	TP17-300	TP17-300	TP17-300	TP17-300
		Sample ID	SS-43	SS-44	SS-45	TP1-5	TP2-4	TP3-6	TP4-6	TP5-4	TP6-4	TP8-4	DUP1	TP9-1	TP10-4	TP11-6	DUP2	TP17-300-0-1	DUP 3	TP17-300-1-2A	TP17-300-1-2
		Start Depth (m)	1	1	1	0.1	1.22	0.1	0.1	1.22	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0	0	0.3	0.3
		End Depth (m)	1.3	1.3	1.3	0.3	1.42	0.3	0.3	1.42	0.3	0.3	0.3	0.5	0.3	0.3	0.3	0.3	0.3	0.61	0.61
		Sample Type	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	FD	N	FD	N	N
		Sample Date	06 Jul 1999	06 Jul 1999	06 Jul 1999	02 Dec 2013	02 Dec 2013	02 Dec 2013	02 Dec 2013	02 Dec 2013	02 Dec 2013	03 Dec 2013	03 Dec 2013	03 Dec 2013	03 Dec 2013	03 Dec 2013	03 Dec 2013	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017
Analyte	**Table 6 SCS [a]**	**Unit**																			
ABNs																					
1,1'-Biphenyl	0.31	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.63 U
1,2,4-Trichlorobenzene	0.36	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.63 U
2,2'-oxybis(1-chloropropane)	0.67	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.3 U
2,4 & 2,6-Dinitrotoluene	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.8 U
2,4-Dimethylphenol	38	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.3 U
2,4-Dinitrophenol	2	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	13 U
2,4-Dinitrotoluene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.3 U
2,6-Dinitrotoluene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.3 U
3,3'-Dichlorobenzidine	1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.3 U
4-Chloroaniline	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.3 U
Bis (2-chloroethyl) ether	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.3 U
Bis (2-ethylhexyl) phthalate	5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.3 U
Diethylphthalate	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.3 U
Dimethylphthalate	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.3 U
Phenol	9.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.3 U
BTEX																					
Benzene	0.21	µg/g	--	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	**0.23**	**0.25**	--	--	--	**0.156**
Ethylbenzene	1.1	µg/g	--	--	--	0.02 U	0.02 U	0.02 U	**0.025**	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	**0.36**	**0.4**	--	--	--	**0.092**
Toluene	2.3	µg/g	--	--	--	0.02 U	0.02 U	0.02 U	**0.067**	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	**1**	**1.2**	--	--	--	**0.606**
Xylene, o	NV	µg/g	--	--	--	**0.047**	0.02 U	0.02 U	**0.06**	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	**0.73**	**0.83**	--	--	--	**0.168**
Xylenes, m & p	NV	µg/g	--	--	--	**0.06**	0.02 U	0.02 U	**0.061**	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	**0.78**	**0.87**	--	--	--	**0.538**
Xylenes, Total	3.1	µg/g	--	--	--	**0.11**	0.02 U	0.02 U	**0.12**	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	**1.5**	**1.7**	--	--	--	**0.706**
Chlorophenols																					
2,4,5-Trichlorophenol	4.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.3 U
2,4,6-Trichlorophenol	2.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.3 U
2,4-Dichlorophenol	0.19	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.3 U
2-Chlorophenol	1.6	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.3 U
Pentachlorophenol	0.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.3 U
Dioxins and Furans																					
Lower Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**5.19**	--	--	--
Mid Point PCDD/F TEQ (WHO 2005)	13	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**5.19**	--	--	--
Upper Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**5.19**	--	--	--
Chemistry																					
Average Fraction Organic Carbon	NV	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fraction Organic Carbon	NV	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Moisture	NV	%	--	--	--	**32**	**9.6**	**5.8**	**9.1**	**5.2**	**4.1**	**16**	**16**	**12**	**12**	**34**	**21**	**2.09**	**1.84**	--	**5.62**
pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**7.47**
Phosphorus	NV	µg/g	--	--	--	**740**	**640**	**320**	**180**	**250**	**240**	**450**	**410**	**440**	**830**	**2100**	**2000**	--	--	--	--
Calcium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.6**
Magnesium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U
Sodium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U
Metals and Hydride Forming Metals																					
Antimony	7.5	µg/g	--	--	--	**1.7**	0.2 U	**0.29**	**2**	0.2 U	0.2 U	**2.6**	**2.6**	**4.2**	**0.46**	**1.1**	**2.1**	--	--	--	**1.9**
Arsenic	18	µg/g	--	--	--	**6.2**	**3.7**	**3**	**5.2**	**2.2**	**1.9**	**8.8**	**8.6**	**6**	**8.2**	**7.4**	**9**	--	--	--	**6.5**
Barium	390	µg/g	--	--	--	**43**	**28**	**19**	**42**	**19**	**9.4**	**150**	**150**	**36**	**40**	**100**	**94**	--	--	--	**53.3**
Beryllium	4	µg/g	--	--	--	**0.34**	0.2 U	0.2 U	**0.24**	0.2 U	0.2 U	**0.56**	**0.51**	**0.29**	**0.47**	**0.85**	**0.62**	--	--	--	0.5 U
Boron	120	µg/g	--	--	--	**15**	5 U	5 U	5 U	**15**	**13**	**23**	**20**	**7.7**	**6.7**	**11**	**11**	--	--	--	5 U
Cadmium	1.2	µg/g	--	--	--	**0.67**	**0.53**	**0.77**	**0.38**	**4.8**	**5.1**	**2.2**	**1.6**	**2.3**	**1.6**	**1.9**	**3.8**	--	--	--	**0.62**
Calcium	NV	µg/g	--	--	--	**78000**	**89000**	**110000**	**18000**	**200000**	**220000**	**66000**	**66000**	**40000**	**76000**	**35000**	**24000**	--	--	--	--
Chromium	160	µg/g	--	--	--	**11**	**9.2**	**8.7**	**15**	**5.7**	**4.2**	**40**	**33**	**14**	**13**	**19**	**39**	--	--	--	**13.4**
Cobalt	22	µg/g	--	--	--	**4.6**	**4.6**	**2.6**	**2.8**	**4.6**	**4**	**6.6**	**6**	**4.9**	**7.6**	**2.4**	**3.9**	--	--	--	**3.8**
Copper	140	µg/g	--	--	--	**24**	**30**	**24**	**33**	**12**	**11**	**70**	**73**	**41**	**25**	**43**	**62**	--	--	--	**42.7**
Lead	120	µg/g	--	--	--	**110**	**37**	**75**	**110**	**230**	**150**	**310**	**460**	**270**	**160**	**230**	**470**	--	--	--	**108**
Magnesium	NV	µg/g	--	--	--	**40000**	**10000**	**45000**	**8200**	**110000**	**120000**	**16000**	**16000**	**20000**	**35000**	**17000**	**7500**	--	--	--	--
Molybdenum	6.9	µg/g	--	--	--	**1**	0.5 U	**0.61**	**1.5**	**1.4**	**1.5**	**3.4**	**2.4**	**1.3**	**0.66**	**1.6**	**2.1**	--	--	--	**1**
Nickel	100	µg/g	--	--	--	**10**	**10**	**8.2**	**12**	**10**	**8.4**	**36**	**35**	**13**	**17**	**11**	**19**	--	--	--	**12**
Selenium	2.4	µg/g	--	--	--	**0.64**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	1 U
Silver	20	µg/g	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.2**	**0.39**	--	--	--	0.2 U
Thallium	1	µg/g	--	--	--	**0.087**	**0.094**	**0.087**	0.05 U	**0.21**	**0.25**	**0.064**	**0.077**	**0.2**	**0.17**	**0.062**	**0.1**	--	--	--	0.5 U

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	SS-43	SS-44	SS-45	TP13-01	TP13-02	TP13-03	TP13-04	TP13-05	TP13-06	TP13-08	TP13-08	TP13-09	TP13-10	TP13-11	TP13-11	TP17-300	TP17-300	TP17-300	TP17-300
		Sample ID	SS-43	SS-44	SS-45	TP1-5	TP2-4	TP3-6	TP4-6	TP5-4	TP6-4	TP8-4	DUP1	TP9-1	TP10-4	TP11-6	DUP2	TP17-300-0-1	DUP 3	TP17-300-1-2A	TP17-300-1-2
		Start Depth (m)	1	1	1	0.1	1.22	0.1	0.1	1.22	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0	0	0.3	0.3
		End Depth (m)	1.3	1.3	1.3	0.3	1.42	0.3	0.3	1.42	0.3	0.3	0.3	0.5	0.3	0.3	0.3	0.3	0.3	0.61	0.61
		Sample Type	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	FD	N	FD	N	N
		Sample Date	06 Jul 1999	06 Jul 1999	06 Jul 1999	02 Dec 2013	02 Dec 2013	02 Dec 2013	02 Dec 2013	02 Dec 2013	02 Dec 2013	03 Dec 2013	03 Dec 2013	03 Dec 2013	03 Dec 2013	03 Dec 2013	03 Dec 2013	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017
Analyte	**Table 6 SCS [a]**	**Unit**																			
Uranium	23	µg/g	--	--	--	0.75	0.33	0.4	0.41	1.9	2	0.58	0.53	0.33	0.51	2.6	1.8	--	--	--	1 U
Vanadium	86	µg/g	--	--	--	22	26	16	15	10	8.7	36	34	22	29	18	27	--	--	--	18.8
Zinc	340	µg/g	--	--	--	360	400	470	190	2000	2000	760	810	5600	940	890	2200	--	--	--	259
Non-Regulated Metals																					
Aluminum	NV	µg/g	--	--	--	4900	4100	2600	4500	2500	1700	12000	11000	5300	8300	12000	9800	--	--	--	--
Bismuth	NV	µg/g	--	--	--	1 U	1 U	7.1	1 U	1 U	1 U	6.4	8.9	1 U	1 U	36	150	--	--	--	--
Iron	NV	µg/g	--	--	--	25000	17000	9800	23000	6500	5300	34000	33000	39000	27000	15000	25000	--	--	--	--
Manganese	NV	µg/g	--	--	--	490	260	370	660	560	590	510	520	510	1300	440	740	--	--	--	--
Potassium	NV	µg/g	--	--	--	420	450	420	320	900	770	2000	1700	470	610	570	740	--	--	--	--
Strontium	NV	µg/g	--	--	--	56	110	78	47	110	100	72	72	28	54	190	130	--	--	--	--
Tin	NV	µg/g	--	--	--	5 U	5 U	5 U	5.8	5 U	5 U	8.1	9.6	9	5 U	6	7.7	--	--	--	--
Titanium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																					
Boron (HWS)	1.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.16
Chloride (Cl)	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium, Hexavalent (Cr6+)	8	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U
Cyanide, Free	0.051	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	0.051	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	0.7	mS/cm	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.124
Mercury	0.27	µg/g	--	--	--	0.14	0.05 U	0.05 U	0.05 U	0.09	0.084	0.05 U	0.051	0.13	0.05 U	0.05 U	0.097	--	--	--	0.067
Sodium	NV	µg/g	--	--	--	100 U	100 U	110	100 U	200	210	510	420	100 U	120	460	300	--	--	--	--
Sodium Absorption Ratio	5	SAR	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.15 U
OCPs																					
Hexachlorobenzene	0.52	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	0.012	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachloroethane	0.089	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs																					
1-Methylnaphthalene	NV	µg/g	--	--	--	0.04	0.005 U	0.02	0.074	0.0053	0.005 U	0.34	0.79	0.014	0.0088	0.92	0.72	--	--	--	1.04
2-(1-)Methylnaphthalene	0.99	µg/g	--	--	--	0.078	0.0071 U	0.044	0.15	0.0071 U	0.0071 U	0.65	1.6	0.029	0.016	2	1.6	--	--	--	4.47
2-Methylnaphthalene	NV	µg/g	--	--	--	0.038	0.005 U	0.024	0.08	0.005 U	0.005 U	0.32	0.79	0.014	0.0073	1.1	0.87	--	--	--	3.44
Acenaphthene	7.9	µg/g	--	--	--	0.005 U	0.005 U	0.0068	0.012	0.005 U	0.005 U	1.5	4.1	0.13	0.005 U	0.23	0.44	--	--	--	0.63 U
Acenaphthylene	0.15	µg/g	--	--	--	0.005 U	0.005 U	0.005 U	0.0072	0.005 U	0.005 U	0.48	1	0.095	0.023	0.16	0.1	--	--	--	0.63 U
Anthracene	0.67	µg/g	--	--	--	0.0059	0.005 U	0.0091	0.028	0.005 U	0.005 U	4.3	10	0.28	0.028	0.55	0.89	--	--	--	1.77
Benzo(a)anthracene	0.5	µg/g	--	--	--	0.043	0.005 U	0.022	0.11	0.0073	0.0097	11	22	0.9	0.051	1.5	1.9	--	--	--	14.6
Benzo(a)pyrene	0.3	µg/g	--	--	--	0.044	0.005 U	0.018	0.1	0.0053	0.0091	8.9	17	0.95	0.056	1	1.2	--	--	--	14.3
Benzo(b&j)fluoranthene	0.78	µg/g	--	--	--	0.13	0.005 U	0.032	0.18	0.0092	0.012	12	19	1.3	0.082	1.7	1.9	--	--	--	--
Benzo(b)fluoranthene	0.78	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.26
Benzo(g,h,i)perylene	6.6	µg/g	--	--	--	0.07	0.005 U	0.013	0.064	0.005 U	0.0061	5.5	7.8	0.65	0.037	0.44	0.45	--	--	--	18.8
Benzo(k)fluoranthene	0.78	µg/g	--	--	--	0.03	0.005 U	0.0091	0.06	0.005 U	0.005 U	4.5	7.3	0.45	0.027	0.57	0.66	--	--	--	3.52
Chrysene	7	µg/g	--	--	--	0.064	0.005 U	0.025	0.12	0.015	0.014	9.1	18	0.77	0.041	1.3	1.7	--	--	--	22.2
Dibenzo(a,h)anthracene	0.1	µg/g	--	--	--	0.013	0.005 U	0.005 U	0.018	0.005 U	0.005 U	1.5	2.4	0.15	0.0078	0.16	0.19	--	--	--	11.9
Fluoranthene	0.69	µg/g	--	--	--	0.07	0.005 U	0.061	0.21	0.013	0.024	28	58	1.8	0.12	3.7	4.9	--	--	--	1.42
Fluorene	62	µg/g	--	--	--	0.005 U	0.005 U	0.0064	0.011	0.005 U	0.005 U	1.9	5.1	0.082	0.0093	0.27	0.55	--	--	--	0.63 U
Indeno(1,2,3-Cd)Pyrene	0.38	µg/g	--	--	--	0.058	0.005 U	0.012	0.067	0.005 U	0.005 U	5.9	8.8	0.68	0.038	0.53	0.58	--	--	--	6.48
Naphthalene	0.6	µg/g	--	--	--	0.024	0.005 U	0.047	0.064	0.005 U	0.005 U	0.72	1.5	0.015	0.0073	1.2	1.1	--	--	--	2.46
Phenanthrene	6.2	µg/g	--	--	--	0.049	0.005 U	0.063	0.18	0.031	0.031	17	48	1.1	0.075	2.8	4.8	--	--	--	5.5
Pyrene	78	µg/g	--	--	--	0.16	0.005 U	0.048	0.17	0.012	0.02	18	44	1.5	0.094	2.9	3.7	--	--	--	4.77
PCBs																					
Aroclor 1242	NV	µg/g	--	--	--	0.02 U	--	0.01 U	0.01 U	--	--	0.01 U	0.01 U	--	--	--	--	0.55 U	0.7 U	0.01 U	--
Aroclor 1248	NV	µg/g	--	--	--	0.02 U	--	0.01 U	0.01 U	--	--	0.035	0.01 U	--	--	--	--	1.28	1.65	0.01 U	--
Aroclor 1254	NV	µg/g	--	--	--	0.02 U	--	0.01 U	0.01 U	--	--	0.16	0.026	--	--	--	--	0.4 U	0.45 U	0.01 U	--
Aroclor 1260	NV	µg/g	--	--	--	0.02 U	--	0.01 U	0.01 U	--	--	0.2	0.039	--	--	--	--	0.05 U	0.05 U	0.01 U	--
PCB, Total	0.35	µg/g	0.33	0.05 U	0.05 U	0.02 U	--	0.01 U	0.01 U	--	--	0.4	0.065	--	--	--	--	1.28	1.65	0.02 U	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	SS-43	SS-44	SS-45	TP13-01	TP13-02	TP13-03	TP13-04	TP13-05	TP13-06	TP13-08	TP13-08	TP13-09	TP13-10	TP13-11	TP13-11	TP17-300	TP17-300	TP17-300	TP17-300
		Sample ID	SS-43	SS-44	SS-45	TP1-5	TP2-4	TP3-6	TP4-6	TP5-4	TP6-4	TP8-4	DUP1	TP9-1	TP10-4	TP11-6	DUP2	TP17-300-0-1	DUP 3	TP17-300-1-2A	TP17-300-1-2
		Start Depth (m)	1	1	1	0.1	1.22	0.1	0.1	1.22	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0	0	0.3	0.3
		End Depth (m)	1.3	1.3	1.3	0.3	1.42	0.3	0.3	1.42	0.3	0.3	0.3	0.5	0.3	0.3	0.3	0.3	0.3	0.61	0.61
		Sample Type	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	FD	N	FD	N	N
		Sample Date	06 Jul 1999	06 Jul 1999	06 Jul 1999	02 Dec 2013	02 Dec 2013	02 Dec 2013	02 Dec 2013	02 Dec 2013	02 Dec 2013	03 Dec 2013	03 Dec 2013	03 Dec 2013	03 Dec 2013	03 Dec 2013	03 Dec 2013	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017
Analyte	**Table 6 SCS [a]**	**Unit**																			
PHCs																					
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	55	µg/g	--	--	--	20 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	20 U	10 U	--	--	--	5 U
Petroleum Hydrocarbons F1 (C6-C10)	55	µg/g	--	--	--	20 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	20 U	10 U	--	--	--	**5.3**
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	98	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U
Petroleum Hydrocarbons F2 (C10-C16)	98	µg/g	--	--	--	10 U	10 U	10 U	10 U	**14**	**13**	**25**	**38**	10 U	10 U	**29**	**60**	--	--	--	10 U
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	300	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**405**
Petroleum Hydrocarbons F3 (C16-C34)	300	µg/g	--	--	--	50 U	50 U	50 U	**150**	**96**	**88**	**520**	**770**	**290**	**86**	**240**	**370**	--	--	--	**477**
Petroleum Hydrocarbons F4 (C34-C50)	2800	µg/g	--	--	--	50 U	50 U	50 U	50 U	50 U	50 U	**250**	**360**	**98**	50 U	**81**	**80**	--	--	--	**865**
F4G-SG (GHH-Silica)	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1680**
Gravimetric Heavy Hydrocarbons	2800	µg/g	--	--	--	--	--	--	--	--	--	**510**	**1100**	--	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1350**
SVOCs (other)																					
2-Chloronaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Hexanone	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Bromophenyl Phenyl Ether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chlorophenyl Phenylether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethoxy) methane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Butyl benzyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-N-Butylphthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Isophorone	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrobenzene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodi-N-propylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																					
1,1,1,2-Tetrachloroethane	0.058	µg/g	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U
1,1,1-Trichloroethane	0.38	µg/g	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U
1,1,2,2-Tetrachloroethane	0.05	µg/g	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U
1,1,2-Trichloroethane	0.05	µg/g	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U
1,1-Dichloroethane	0.47	µg/g	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U
1,1-Dichloroethene	0.05	µg/g	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U
1,2-Dibromoethane	0.05	µg/g	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U
1,2-Dichlorobenzene	1.2	µg/g	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U
1,2-Dichloroethane	0.05	µg/g	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U
1,2-Dichloropropane	0.05	µg/g	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U
1,3-Dichlorobenzene	4.8	µg/g	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U
1,3-Dichloropropene	0.05	µg/g	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.042 U
1,4-Dichlorobenzene	0.083	µg/g	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U
1,4-Dioxane	1.8	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	16	µg/g	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	0.5 U
4-Methyl-2-Pentanone	1.7	µg/g	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	0.5 U
Acetone	16	µg/g	--	--	--	**0.68**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	0.5 U
Bromodichloromethane	1.5	µg/g	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U
Bromoform	0.27	µg/g	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U
Bromomethane	0.05	µg/g	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U
Carbon tetrachloride	0.05	µg/g	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U
Chlorobenzene	2.4	µg/g	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U
Chlorodibromomethane	2.3	µg/g	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U
Chloroform	0.05	µg/g	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U
cis-1,2-Dichloroethene	1.9	µg/g	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U
cis-1,3-Dichloropropene	NV	µg/g	--	--	--	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	--	--	--	0.03 U
Dichlorodifluoromethane	16	µg/g	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U
Dichloromethane	0.1	µg/g	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U
Methyl tert-butyl ether (MTBE)	0.75	µg/g	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U
n-Hexane	2.8	µg/g	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**0.12**	**0.12**	--	--	--	**0.089**
Styrene	0.7	µg/g	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U
Tetrachloroethene	0.28	µg/g	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U
trans-1,2-Dichloroethene	0.084	µg/g	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U
trans-1,3-Dichloropropene	NV	µg/g	--	--	--	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	--	--	--	0.03 U

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	SS-43	SS-44	SS-45	TP13-01	TP13-02	TP13-03	TP13-04	TP13-05	TP13-06	TP13-08	TP13-08	TP13-09	TP13-10	TP13-11	TP13-11	TP17-300	TP17-300	TP17-300	TP17-300
		Sample ID	SS-43	SS-44	SS-45	TP1-5	TP2-4	TP3-6	TP4-6	TP5-4	TP6-4	TP8-4	DUP1	TP9-1	TP10-4	TP11-6	DUP2	TP17-300-0-1	DUP 3	TP17-300-1-2A	TP17-300-1-2
		Start Depth (m)	1	1	1	0.1	1.22	0.1	0.1	1.22	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0	0	0.3	0.3
		End Depth (m)	1.3	1.3	1.3	0.3	1.42	0.3	0.3	1.42	0.3	0.3	0.3	0.5	0.3	0.3	0.3	0.3	0.3	0.61	0.61
		Sample Type	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	FD	N	FD	N	N
		Sample Date	06 Jul 1999	06 Jul 1999	06 Jul 1999	02 Dec 2013	02 Dec 2013	02 Dec 2013	02 Dec 2013	02 Dec 2013	02 Dec 2013	03 Dec 2013	03 Dec 2013	03 Dec 2013	03 Dec 2013	03 Dec 2013	03 Dec 2013	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017
Analyte	**Table 6 SCS [a]**	**Unit**																			
Trichloroethylene	0.061	µg/g	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.01 U
Trichlorofluoromethane	4	µg/g	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U
Vinyl Chloride	0.02	µg/g	--	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	--	--	0.02 U

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Ministry of the Environment.* April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent
-- = not analyzed
µg/g = microgram(s) per gram
ABNs = acid, base and neutral compounds
BH = borehole
BTEX - benzene, toluene, ethylbenzene, and xylene
CPs = chlorophenols
DUP = duplicate
FD = field duplicate
J = associated value is estimated
m = metre(s)
MECP = Ministry of the Environment, Conservation and Parks
mg/kg = milligram(s) per kilogram
mg/l = milligram(s) per litre
mS/cm = milliSiemen(s) per centimetre
MW = monitoring well
N = normal sample
NV = no value
OCPs = organochlorine pesticides
ORPs = other regulated parameters
PCBs = polychlorinated biphenyls
pg/g = picogram(s) per gram
PHCs = petroleum hydrocarbons
SAR = sodium adsorption ratio
SVOCs = semi-volatile organic compounds
U = parameter was not detected above the associated value
VOCs = volatile organic compounds

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	TP17-300	TP17-300	TP17-301	TP17-301	TP17-301	TP17-302	TP17-302	TP17-302	TP17-303	TP17-303	TP17-303	TP17-304	TP17-304	TP17-305	TP17-306	TP17-306	TP17-307	TP17-308	TP18-309
		Sample ID	DUP 4	TP17-300-3-4	TP17-301-1-3	DUP 2	TP17-301-4-5	TP17-302-1-3	DUP 1	TP17-302-5-7	TP17-303-1-2	TP17-303-4-5	DUP 5	TP17-304-3-4	TP17-304-6-7	TP17-305-5-6	TP17-306-3-4	TP17-306-5-6	TP17-307-7-8	TP17-308-8-8.5	TP18-309-5
		Start Depth (m)	0.3	0.91	0.3	0.3	1.22	0.3	0.3	1.52	0.3	1.22	1.22	0.91	1.83	1.52	0.91	1.52	2.13	2.44	1.22
		End Depth (m)	0.61	1.22	0.91	0.91	1.52	0.91	0.91	2.13	0.61	1.52	1.52	1.22	2	1.83	1.22	1.83	2.44	2.59	1.52
		Sample Type	FD	N	N	FD	N	N	FD	N	N	N	FD	N	N	N	N	N	N	N	N
		Sample Date	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	05 Jul 2018
Analyte	**Table 6 SCS [a]**	**Unit**																			
ABNs																					
1,1'-Biphenyl	0.31	µg/g	0.63 U	0.13 U	**0.13**	0.13 U	0.13 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	0.36	µg/g	0.63 U	0.13 U	0.13 U	0.13 U	0.13 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,2'-oxybis(1-chloropropane)	0.67	µg/g	1.3 U	0.25 U	0.25 U	0.25 U	0.25 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	0.5	µg/g	1.8 U	0.35 U	0.35 U	0.35 U	0.35 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	38	µg/g	1.3 U	0.25 U	0.25 U	0.25 U	0.25 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	2	µg/g	13 U	2.5 U	2.5 U	2.5 U	2.5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/g	1.3 U	0.25 U	0.25 U	0.25 U	0.25 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/g	1.3 U	0.25 U	0.25 U	0.25 U	0.25 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	1	µg/g	1.3 U	0.25 U	0.25 U	0.25 U	0.25 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	0.5	µg/g	1.3 U	0.25 U	0.25 U	0.25 U	0.25 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	0.5	µg/g	1.3 U	0.25 U	0.25 U	0.25 U	0.25 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	5	µg/g	1.3 U	0.25 U	0.25 U	0.25 U	0.25 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	0.5	µg/g	1.3 U	0.25 U	0.25 U	0.25 U	0.25 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	0.5	µg/g	1.3 U	0.25 U	0.25 U	0.25 U	0.25 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	9.4	µg/g	1.3 U	0.25 U	0.25 U	0.25 U	0.25 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BTEX																					
Benzene	0.21	µg/g	**0.105**	0.0068 U	**0.0246**	--	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	--	0.0068 U	0.0068 U	0.0068 U	**0.0108**	--	0.0068 U	--	--
Ethylbenzene	1.1	µg/g	**0.066**	0.018 U	**0.052**	--	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	--	0.018 U	0.018 U	0.018 U	**0.02**	--	0.018 U	--	--
Toluene	2.3	µg/g	**0.406**	0.08 U	**0.184**	--	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	--	0.08 U	0.08 U	0.08 U	0.08 U	--	0.08 U	--	--
Xylene, o	NV	µg/g	**0.115**	0.02 U	**0.245**	--	0.02 U	**0.082 J**	0.02 UJ	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	**0.079**	--	0.02 U	--	--
Xylenes, m & p	NV	µg/g	**0.36**	0.03 U	**0.318**	--	0.03 U	**0.072 J**	0.03 UJ	0.03 U	0.03 U	0.03 U	--	0.03 U	0.03 U	0.03 U	**0.081**	--	0.03 U	--	--
Xylenes, Total	3.1	µg/g	**0.475**	0.05 U	**0.563**	--	0.05 U	**0.154 J**	0.05 UJ	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	**0.16**	--	0.05 U	--	--
Chlorophenols																					
2,4,5-Trichlorophenol	4.4	µg/g	1.3 U	0.25 U	0.25 U	0.25 U	0.25 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2.1	µg/g	1.3 U	0.25 U	0.25 U	0.25 U	0.25 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	0.19	µg/g	1.3 U	0.25 U	0.25 U	0.25 U	0.25 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	1.6	µg/g	1.3 U	0.25 U	0.25 U	0.25 U	0.25 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	0.1	µg/g	1.3 U	0.25 U	0.25 U	0.25 U	0.25 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxins and Furans																					
Lower Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mid Point PCDD/F TEQ (WHO 2005)	13	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Upper Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																					
Average Fraction Organic Carbon	NV	None	--	--	**0.0546**	--	**0.0273**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon	NV	%	--	--	**5.53**	--	**2.77**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fraction Organic Carbon	NV	None	--	--	**0.0553**	--	**0.0277**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Moisture	NV	%	**6.4**	**6.51**	**8.66**	**10.9**	**10.1**	**11.1**	**9.52**	**12.1**	**5.57**	**11.2**	**6.27**	**7.02**	**11.6**	**5.26**	**6.65**	**6.96**	**5.45**	**4.71**	**5.88**
pH	NV	pH UNITS	**7.4**	**7.27**	**7.29**	--	**7.57**	**7.58**	**7.48**	**7.62**	**7.67**	**7.41**	**7.6**	**7.74**	**7.55**	**7.24**	**7.74**	**7.81**	--	**8.15**	--
Phosphorus	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Calcium	NV	mg/l	**3.1**	**2.6**	**4.5**	--	**4.4**	**13 J**	**6.7 J**	**4.3**	**3.8**	**1.8 J**	**5.9 J**	**18.9**	**20.6**	**2.3**	**4.3**	**3.6**	--	**1.5**	--
Magnesium	NV	mg/l	1 U	1 U	1 U	--	1 U	**1.5**	1 U	**1.5**	1 U	1 U	1 U	**1.6**	**1.6**	1 U	1 U	1 U	--	1 U	--
Sodium	NV	mg/l	1 U	1 U	1 U	--	1 U	1 U	1 U	**1.1**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1**	--	1 U	--
Metals and Hydride Forming Metals																					
Antimony	7.5	µg/g	**1.7**	1 U	**2.3**	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.4**	1 U	**8.5**	**8.5**	--	1 U	**1.2**
Arsenic	18	µg/g	**5.8**	**2.2**	**9.5**	--	**1.7**	**3.6**	**3.1**	**2.2**	**3.7**	**5.4**	**3.7**	**5.7**	**13.4**	**9.3**	**14**	**20.2**	--	**2.9**	**5**
Barium	390	µg/g	**47.4**	**29.9**	**58.6**	--	**31.9**	**31.7**	**26.5**	**48.1**	**44.1**	**93 J**	**43.6 J**	**50.2**	**91.9**	**48.9**	**109**	**119**	--	**19.8**	**24.9**
Beryllium	4	µg/g	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U
Boron	120	µg/g	5 U	**8.9**	**6.9**	--	**8.5**	**5.8**	**5.1**	**8.8**	**5**	**5.4**	**5.1**	**10.1**	**16.2**	**6.4**	**9**	**8.9**	--	5 U	**7.4**
Cadmium	1.2	µg/g	0.5 U	**0.56**	0.5 U	--	**0.57**	0.5 U	0.5 U	**1.06**	0.5 U	**0.78**	0.5 U	**2.46**	**2.57**	**0.77**	**1.22**	**1.43**	--	0.5 U	**8.78**
Calcium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	160	µg/g	**12**	**13.9**	**21.6**	--	**14.1**	**13.4**	**9.9**	**14**	**10.5**	**6.2 J**	**10.6 J**	**15.3**	**18.6**	**28.7**	**20.7**	**19**	--	**9.6**	**11.4**
Cobalt	22	µg/g	**3.5**	**4.5**	**5.6**	--	**5**	**3.8**	**3.3**	**4.7**	**4**	**8**	**4**	**8.8**	**9.5**	**13.3**	**4.9**	**5**	--	**3.5**	**6**
Copper	140	µg/g	**40**	**12.4**	**219**	--	**9.6**	**18.1**	**12.9**	**27**	**10.7**	**25.9 J**	**11.2 J**	**36.3**	**45.1**	**95.9**	**105**	**124**	--	**15.1**	**35.2**
Lead	120	µg/g	**94.4**	**73.4**	**72.9**	--	**68.2**	**26**	**30.4**	**87.4**	**19.6**	**46.8 J**	**20.4 J**	**205**	**188**	**110**	**471**	**504**	--	**25.7**	**165**
Magnesium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	6.9	µg/g	1 U	1 U	**1.3**	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1**	**2**	1 U	**1.2**	**1.4**	--	1 U	**1.3**
Nickel	100	µg/g	**10.7**	**12.4**	**15.1**	--	**13.9**	**9.5**	**7.2**	**14.1**	**7.6**	**9.4**	**7.4**	**23.3**	**24.9**	**27.9**	**14.6**	**15.2**	--	**7.9**	**13.7**
Selenium	2.4	µg/g	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
Silver	20	µg/g	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.24**	**0.26**	--	0.2 U	0.2 U
Thallium	1	µg/g	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	TP17-300	TP17-300	TP17-301	TP17-301	TP17-301	TP17-302	TP17-302	TP17-302	TP17-303	TP17-303	TP17-303	TP17-304	TP17-304	TP17-305	TP17-306	TP17-306	TP17-307	TP17-308	TP18-309
		Sample ID	DUP 4	TP17-300-3-4	TP17-301-1-3	DUP 2	TP17-301-4-5	TP17-302-1-3	DUP 1	TP17-302-5-7	TP17-303-1-2	TP17-303-4-5	DUP 5	TP17-304-3-4	TP17-304-6-7	TP17-305-5-6	TP17-306-3-4	TP17-306-5-6	TP17-307-7-8	TP17-308-8-8.5	TP18-309-5
		Start Depth (m)	0.3	0.91	0.3	0.3	1.22	0.3	0.3	1.52	0.3	1.22	1.22	0.91	1.83	1.52	0.91	1.52	2.13	2.44	1.22
		End Depth (m)	0.61	1.22	0.91	0.91	1.52	0.91	0.91	2.13	0.61	1.52	1.52	1.22	2	1.83	1.22	1.83	2.44	2.59	1.52
		Sample Type	FD	N	N	FD	N	N	FD	N	N	N	FD	N	N	N	N	N	N	N	N
		Sample Date	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	05 Jul 2018
Analyte	**Table 6 SCS [a]**	**Unit**																			
Uranium	23	µg/g	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1**	**1.1**	1 U	1 U	1 U	--	1 U	1 U
Vanadium	86	µg/g	**17.6**	**20.6**	**34.2**	--	**23.2**	**22.5**	**21.1**	**23.5**	**23.5**	**48 J**	**23.7 J**	**30.3**	**35.2**	**47.9**	**24.2**	**22.9**	--	**21.7**	**22.8**
Zinc	340	µg/g	**210**	**803**	**116**	--	**843**	**99.1**	**68.1**	**1070**	**41.4**	**665 J**	**43.8 J**	**2600**	**2660**	**3440**	**562**	**565**	--	**160**	**9890**
Non-Regulated Metals																					
Aluminum	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																					
Boron (HWS)	1.5	µg/g	**0.14**	**0.1**	**0.27**	--	**0.16**	**0.18**	**0.17**	0.1 U	**0.15**	**0.14**	**0.13**	0.1 U	**0.11**	**0.14**	**0.3**	**0.41**	--	0.1 U	--
Chloride (Cl)	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium, Hexavalent (Cr6+)	8	µg/g	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.22**	0.2 U	0.2 U	--	0.2 U	--
Cyanide, Free	0.051	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	0.051	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	0.7	mS/cm	**0.117**	**0.0898**	**0.143**	--	**0.121**	**0.223**	**0.165**	**0.109**	**0.127**	**0.0763 J**	**0.157 J**	**0.266**	**0.295**	**0.121**	**0.135**	**0.176**	--	**0.0764**	--
Mercury	0.27	µg/g	**0.0626**	**0.0447**	**0.0582**	--	**0.0405**	**0.0139**	**0.011**	**0.0203**	**0.0085**	**0.0146**	**0.009**	**0.051**	**0.0622**	**0.0327**	**0.0522**	**0.0452**	--	**0.0152**	--
Sodium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium Absorption Ratio	5	SAR	0.16 U	0.17 U	0.13 U	--	0.13 U	0.1 U	0.11 U	**0.11**	0.14 U	0.2 U	0.11 U	0.1 U	0.1 U	0.18 U	0.13 U	**0.15**	--	0.23 U	--
OCPs																					
Hexachlorobenzene	0.52	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	0.012	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachloroethane	0.089	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs																					
1-Methylnaphthalene	NV	µg/g	**1.26**	0.075 U	**1.08 J**	**1.04**	0.075 U	0.03 UJ	**0.093 J**	0.03 U	0.03 U	0.03 U	0.03 U	--	--	--	**0.129**	**0.256**	--	--	--
2-(1-)Methylnaphthalene	0.99	µg/g	**4.93**	0.0011 U	**2**	**1.99**	0.0011 U	0.042 UJ	**0.205 J**	0.042 U	0.042 U	0.042 U	0.042 U	--	--	--	**0.28**	**0.566**	--	--	--
2-Methylnaphthalene	NV	µg/g	**3.67**	0.075 U	**0.918 J**	**0.959**	0.075 U	0.03 UJ	**0.112 J**	0.03 U	0.03 U	0.03 U	0.03 U	--	--	--	**0.151**	**0.31**	--	--	--
Acenaphthene	7.9	µg/g	0.63 U	0.13 U	0.13 U	0.13 U	0.13 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	**0.058**	**0.349 J**	--	--	--
Acenaphthylene	0.15	µg/g	0.63 U	0.13 U	**0.38**	**0.59**	0.13 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--
Anthracene	0.67	µg/g	**2.04**	0.13 U	**0.17**	**0.25**	0.13 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	**0.113**	**0.887 J**	--	--	--
Benzo(a)anthracene	0.5	µg/g	**16.2**	0.13 U	**0.92 J**	**1.27 J**	0.13 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	**1**	**2.19 J**	--	--	--
Benzo(a)pyrene	0.3	µg/g	**16.1**	0.13 U	**1.76**	**2.52**	0.13 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	**1.33**	**1.99**	--	--	--
Benzo(b&j)fluoranthene	0.78	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.78	µg/g	**10.5**	0.13 U	**2.44**	**3.03**	0.13 U	**0.114**	**0.122**	0.05 U	0.05 U	0.05 U	**0.057**	--	--	--	**1.85**	**2.38**	--	--	--
Benzo(g,h,i)perylene	6.6	µg/g	**20.1**	0.13 U	**1.48**	**2.22**	0.13 U	0.05 U	**0.062**	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	**0.757**	**1.32**	--	--	--
Benzo(k)fluoranthene	0.78	µg/g	**3.71**	0.13 U	**1.64**	**1.96**	0.13 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	**0.678**	**1.16 J**	--	--	--
Chrysene	7	µg/g	**25.7**	0.13 U	**1.75**	**2.16**	0.13 U	**0.073**	**0.074**	0.05 U	0.05 U	0.05 U	**0.062**	--	--	--	**1.24**	**2.1 J**	--	--	--
Dibenzo(a,h)anthracene	0.1	µg/g	**13.2**	0.13 U	**0.44**	**0.66**	0.13 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	**0.236**	**0.399**	--	--	--
Fluoranthene	0.69	µg/g	**1.61**	0.13 U	**0.89**	**1.13**	0.13 U	**0.051**	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	**1.19**	**4.18 J**	--	--	--
Fluorene	62	µg/g	0.63 U	0.13 U	0.13 U	0.13 U	0.13 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U	**0.395 J**	--	--	--
Indeno(1,2,3-Cd)Pyrene	0.38	µg/g	**7.86**	0.13 U	**1.61**	**2.47**	0.13 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	**0.769**	**1.4**	--	--	--
Naphthalene	0.6	µg/g	**2.75**	0.13 U	**0.46 J**	**0.56**	0.13 U	0.05 U	**0.082**	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	**0.114**	**0.332**	--	--	--
Phenanthrene	6.2	µg/g	**6.18**	0.13 U	**1.15**	**1.09**	0.13 U	0.05 U	**0.07**	0.05 U	0.05 U	0.05 U	**0.051**	--	--	--	**0.527**	**3.75 J**	--	--	--
Pyrene	78	µg/g	**5.11**	0.13 U	**1.49**	**1.91**	0.13 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	**1.12**	**3.31 J**	--	--	--
PCBs																					
Aroclor 1242	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.35 U	--	--	--	--
Aroclor 1248	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.945**	--	--	--	--
Aroclor 1254	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3 U	--	--	--	--
Aroclor 1260	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.025 U	--	--	--	--
PCB, Total	0.35	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.945**	--	--	--	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	TP17-300	TP17-300	TP17-301	TP17-301	TP17-301	TP17-302	TP17-302	TP17-302	TP17-303	TP17-303	TP17-303	TP17-304	TP17-304	TP17-305	TP17-306	TP17-306	TP17-307	TP17-308	TP18-309
		Sample ID	DUP 4	TP17-300-3-4	TP17-301-1-3	DUP 2	TP17-301-4-5	TP17-302-1-3	DUP 1	TP17-302-5-7	TP17-303-1-2	TP17-303-4-5	DUP 5	TP17-304-3-4	TP17-304-6-7	TP17-305-5-6	TP17-306-3-4	TP17-306-5-6	TP17-307-7-8	TP17-308-8-8.5	TP18-309-5
		Start Depth (m)	0.3	0.91	0.3	0.3	1.22	0.3	0.3	1.52	0.3	1.22	1.22	0.91	1.83	1.52	0.91	1.52	2.13	2.44	1.22
		End Depth (m)	0.61	1.22	0.91	0.91	1.52	0.91	0.91	2.13	0.61	1.52	1.52	1.22	2	1.83	1.22	1.83	2.44	2.59	1.52
		Sample Type	FD	N	N	FD	N	N	FD	N	N	N	FD	N	N	N	N	N	N	N	N
		Sample Date	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	05 Jul 2018
Analyte	**Table 6 SCS [a]**	**Unit**																			
PHCs																					
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	55	µg/g	5 U	5 U	**7.1**	--	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	--	--
Petroleum Hydrocarbons F1 (C6-C10)	55	µg/g	5 U	5 U	**7.9**	--	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	--	5 U
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	98	µg/g	10 U	10 U	**14**	--	10 U	10 U	10 U	10 U	10 U	10 U	--	--	--	--	10 U	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16)	98	µg/g	10 U	10 U	**15**	--	10 U	10 U	10 U	10 U	10 U	10 U	--	**31**	**18**	**21**	10 U	--	**14**	--	10 U
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	300	µg/g	**436**	**66**	**145**	--	**52**	50 U	**50**	50 U	50 U	50 U	--	--	--	--	**74**	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34)	300	µg/g	**516**	**66**	**158**	--	**52**	50 U	**50**	50 U	50 U	50 U	--	**204**	**177**	**451**	**66**	--	**69**	--	**530**
Petroleum Hydrocarbons F4 (C34-C50)	2800	µg/g	**813**	50 U	**58**	--	50 U	50 U	50 U	50 U	50 U	50 U	--	**59**	50 U	**72**	50 U	--	**123**	--	**879**
F4G-SG (GHH-Silica)	2800	µg/g	**1890**	--	--	--	--	--	--	--	--	--	--	**250**	--	**300**	--	--	**360**	--	**2140**
Gravimetric Heavy Hydrocarbons	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/g	**1330**	72 U	**238**	--	72 U	72 U	72 U	72 U	72 U	72 U	--	**294**	**194**	**543**	**74**	--	**207**	--	**1410**
SVOCs (other)																					
2-Chloronaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Hexanone	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Bromophenyl Phenyl Ether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chlorophenyl Phenylether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethoxy) methane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Butyl benzyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-N-Butylphthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Isophorone	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrobenzene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodi-N-propylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																					
1,1,1,2-Tetrachloroethane	0.058	µg/g	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--
1,1,1-Trichloroethane	0.38	µg/g	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--
1,1,2,2-Tetrachloroethane	0.05	µg/g	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--
1,1,2-Trichloroethane	0.05	µg/g	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--
1,1-Dichloroethane	0.47	µg/g	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--
1,1-Dichloroethene	0.05	µg/g	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--
1,2-Dibromoethane	0.05	µg/g	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--
1,2-Dichlorobenzene	1.2	µg/g	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--
1,2-Dichloroethane	0.05	µg/g	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--
1,2-Dichloropropane	0.05	µg/g	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--
1,3-Dichlorobenzene	4.8	µg/g	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--
1,3-Dichloropropene	0.05	µg/g	0.042 U	0.042 U	--	--	--	0.042 U	0.042 U	0.042 U	0.042 U	0.042 U	--	0.042 U	0.042 U	0.042 U	0.042 U	--	0.042 U	--	--
1,4-Dichlorobenzene	0.083	µg/g	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--
1,4-Dioxane	1.8	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	16	µg/g	0.5 U	0.5 U	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	--
4-Methyl-2-Pentanone	1.7	µg/g	0.5 U	0.5 U	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	--
Acetone	16	µg/g	0.5 U	0.5 U	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	--
Bromodichloromethane	1.5	µg/g	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--
Bromoform	0.27	µg/g	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--
Bromomethane	0.05	µg/g	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--
Carbon tetrachloride	0.05	µg/g	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--
Chlorobenzene	2.4	µg/g	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--
Chlorodibromomethane	2.3	µg/g	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--
Chloroform	0.05	µg/g	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--
cis-1,2-Dichloroethene	1.9	µg/g	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--
cis-1,3-Dichloropropene	NV	µg/g	0.03 U	0.03 U	--	--	--	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	--	0.03 U	0.03 U	0.03 U	0.03 U	--	0.03 U	--	--
Dichlorodifluoromethane	16	µg/g	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--
Dichloromethane	0.1	µg/g	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--
Methyl tert-butyl ether (MTBE)	0.75	µg/g	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--
n-Hexane	2.8	µg/g	**0.061**	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--
Styrene	0.7	µg/g	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--
Tetrachloroethene	0.28	µg/g	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--
trans-1,2-Dichloroethene	0.084	µg/g	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--
trans-1,3-Dichloropropene	NV	µg/g	0.03 U	0.03 U	--	--	--	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	--	0.03 U	0.03 U	0.03 U	0.03 U	--	0.03 U	--	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	TP17-300	TP17-300	TP17-301	TP17-301	TP17-301	TP17-302	TP17-302	TP17-302	TP17-303	TP17-303	TP17-303	TP17-304	TP17-304	TP17-305	TP17-306	TP17-306	TP17-307	TP17-308	TP18-309
		Sample ID	DUP 4	TP17-300-3-4	TP17-301-1-3	DUP 2	TP17-301-4-5	TP17-302-1-3	DUP 1	TP17-302-5-7	TP17-303-1-2	TP17-303-4-5	DUP 5	TP17-304-3-4	TP17-304-6-7	TP17-305-5-6	TP17-306-3-4	TP17-306-5-6	TP17-307-7-8	TP17-308-8-8.5	TP18-309-5
		Start Depth (m)	0.3	0.91	0.3	0.3	1.22	0.3	0.3	1.52	0.3	1.22	1.22	0.91	1.83	1.52	0.91	1.52	2.13	2.44	1.22
		End Depth (m)	0.61	1.22	0.91	0.91	1.52	0.91	0.91	2.13	0.61	1.52	1.52	1.22	2	1.83	1.22	1.83	2.44	2.59	1.52
		Sample Type	FD	N	N	FD	N	N	FD	N	N	N	FD	N	N	N	N	N	N	N	N
		Sample Date	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	04 Oct 2017	05 Jul 2018
Analyte	**Table 6 SCS [a]**	**Unit**																			
Trichloroethylene	0.061	µg/g	0.01 U	0.01 U	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	--	0.01 U	0.01 U	0.01 U	0.01 U	--	0.01 U	--	--
Trichlorofluoromethane	4	µg/g	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--
Vinyl Chloride	0.02	µg/g	0.02 U	0.02 U	--	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	--	--

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Ministry of the Environment.* April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/g = microgram(s) per gram

ABNs = acid, base and neutral compounds

BH = borehole

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

DUP = duplicate

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mg/kg = milligram(s) per kilogram

mg/l = milligram(s) per litre

mS/cm = milliSiemen(s) per centimetre

MW = monitoring well

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

pg/g = picogram(s) per gram

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	TP18-309	TP18-310	TP18-310	TP18-310	TP18-311	TP18-311	TP18-312	TP18-312	TP18-313	TP18-313	TP18-314	TP18-314	TP18-314	TP18-315	TP18-315	TP18-315	TP18-316	TP18-316	TP18-317
		Sample ID	TP18-309-9.5	TP18-310-4	TP18-310-5	TP18-310-9	TP18-311-2	TP18-311-6.5	TP18-312-3	TP18-312-6	TP18-313-2	TP18-313-6	TP18-314-2	TP18-314-6	TP18-DUP1	TP18-315-1	TP18-315-2	TP18-315-5	TP18-316-1	TP18-316-2	TP18-317-5
		Start Depth (m)	2.74	0.91	1.22	2.44	0.3	1.83	0.61	1.52	0.3	1.52	0.3	1.52	1.52	0.1	0.3	1.22	0	0.3	1.21
		End Depth (m)	2.9	1.22	1.52	2.74	0.61	1.98	0.91	1.83	0.61	1.83	0.61	1.83	1.83	0.3	0.61	1.32	0.3	0.6	1.21
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N
		Sample Date	05 Jul 2018	05 Jul 2018	05 Jul 2018	05 Jul 2018	06 Jul 2018	06 Jul 2018	06 Jul 2018	06 Jul 2018	06 Jul 2018	06 Jul 2018	06 Jul 2018	06 Jul 2018	06 Jul 2018	05 Jul 2018	05 Jul 2018	05 Jul 2018	05 Jul 2018	05 Jul 2018	06 Jul 2018
Analyte	**Table 6 SCS [a]**	**Unit**																			
ABNs																					
1,1'-Biphenyl	0.31	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	0.36	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,2'-oxybis(1-chloropropane)	0.67	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	38	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	2	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	9.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BTEX																					
Benzene	0.21	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.0185**	--	--	--	--	0.0068 U
Ethylbenzene	1.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.028**	--	--	--	--	0.018 U
Toluene	2.3	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.099**	--	--	--	--	0.08 U
Xylene, o	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.074**	--	--	--	--	0.02 U
Xylenes, m & p	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.086**	--	--	--	--	0.03 U
Xylenes, Total	3.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.16**	--	--	--	--	0.05 U
Chlorophenols																					
2,4,5-Trichlorophenol	4.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	0.19	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	1.6	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	0.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxins and Furans																					
Lower Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mid Point PCDD/F TEQ (WHO 2005)	13	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Upper Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																					
Average Fraction Organic Carbon	NV	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fraction Organic Carbon	NV	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Moisture	NV	%	--	**6.41**	--	--	--	--	--	--	--	--	--	--	--	**7.2**	**7.55**	**8.78**	**10.2**	**7.64**	**12.2**
pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Calcium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	NV	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																					
Antimony	7.5	µg/g	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**1.2**	1 U	1 U	1 U	1 U	--	--	--	--	--	--
Arsenic	18	µg/g	**6.5**	--	**6.5**	**5.3**	**3.6**	**3.9**	**7.1**	**6**	**7.9**	**7.1**	**2.7**	**4**	**2.4**	--	--	--	--	--	--
Barium	390	µg/g	**38.6**	--	**39.2**	**25.4**	**19.2**	**27**	**71.4**	**44.2**	**116**	**49.5**	**18.5**	**20.8**	**14.7**	--	--	--	--	--	--
Beryllium	4	µg/g	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--
Boron	120	µg/g	**10.6**	--	**7.3**	**6.8**	**5**	5 U	**7.8**	**5.5**	**7.6**	**9.7**	5 U	**5.2**	5 U	--	--	--	--	--	--
Cadmium	1.2	µg/g	**7**	--	**1.42**	**2.67**	0.5 U	0.5 U	**1.36**	**0.98**	**1.84**	**1.63**	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--
Calcium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	160	µg/g	**14.8**	--	**21.6**	**12.3**	**8.8**	**8**	**15.2**	**13.6**	**14.8**	**13.5**	**7.7**	**8.8**	**6.7**	--	--	--	--	--	--
Cobalt	22	µg/g	**6.1**	--	**5.2**	**5.9**	**3.3**	**3.1**	**5.5**	**5.7**	**6.3**	**5.5**	**3.4**	**4.4**	**3.3**	--	--	--	--	--	--
Copper	140	µg/g	**58.1**	--	**41.1**	**40.7**	**15.4**	**22.4**	**18.4**	**18.2**	**27**	**25.3**	**13**	**19.6**	**12.7**	--	--	--	--	--	--
Lead	120	µg/g	**144**	--	**196**	**124**	**20**	**47.8**	**123**	**105**	**155**	**116**	**8.8**	**42.6 J**	**20.1 J**	--	--	--	--	--	--
Magnesium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	6.9	µg/g	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**1.2**	1 U	1 U	1 U	1 U	--	--	--	--	--	--
Nickel	100	µg/g	**16.8**	--	**13.4**	**17.5**	**6.1**	**6.7**	**14.1**	**13.6**	**15.9**	**13.8**	**6.1**	**9.3**	**6**	--	--	--	--	--	--
Selenium	2.4	µg/g	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--
Silver	20	µg/g	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
Thallium	1	µg/g	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	TP18-309	TP18-310	TP18-310	TP18-310	TP18-311	TP18-311	TP18-312	TP18-312	TP18-313	TP18-313	TP18-314	TP18-314	TP18-314	TP18-315	TP18-315	TP18-315	TP18-316	TP18-316	TP18-317
		Sample ID	TP18-309-9.5	TP18-310-4	TP18-310-5	TP18-310-9	TP18-311-2	TP18-311-6.5	TP18-312-3	TP18-312-6	TP18-313-2	TP18-313-6	TP18-314-2	TP18-314-6	TP18-DUP1	TP18-315-1	TP18-315-2	TP18-315-5	TP18-316-1	TP18-316-2	TP18-317-5
		Start Depth (m)	2.74	0.91	1.22	2.44	0.3	1.83	0.61	1.52	0.3	1.52	0.3	1.52	1.52	0.1	0.3	1.22	0	0.3	1.21
		End Depth (m)	2.9	1.22	1.52	2.74	0.61	1.98	0.91	1.83	0.61	1.83	0.61	1.83	1.83	0.3	0.61	1.32	0.3	0.6	1.21
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N
		Sample Date	05 Jul 2018	05 Jul 2018	05 Jul 2018	05 Jul 2018	06 Jul 2018	06 Jul 2018	06 Jul 2018	06 Jul 2018	06 Jul 2018	06 Jul 2018	06 Jul 2018	06 Jul 2018	06 Jul 2018	05 Jul 2018	05 Jul 2018	05 Jul 2018	05 Jul 2018	05 Jul 2018	06 Jul 2018
Analyte	**Table 6 SCS [a]**	**Unit**																			
Uranium	23	µg/g	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--
Vanadium	86	µg/g	**28.9**	--	**29.7**	**22.7**	**22.4**	**17.1**	**28**	**23.5**	**28.3**	**25.1**	**20.6**	**19.7**	**17.7**	--	--	--	--	--	--
Zinc	340	µg/g	**20700**	--	**1670**	**5530**	**103**	**152**	**442**	**727**	**517**	**666**	**68.4**	**438 J**	**223 J**	--	--	--	--	--	--
Non-Regulated Metals																					
Aluminum	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																					
Boron (HWS)	1.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloride (Cl)	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium, Hexavalent (Cr6+)	8	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Free	0.051	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	0.051	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	0.7	mS/cm	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.27	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium Absorption Ratio	5	SAR	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OCPs																					
Hexachlorobenzene	0.52	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	0.012	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachloroethane	0.089	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs																					
1-Methylnaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.03 U	**0.286**	--	**0.042**	--
2-(1-)Methylnaphthalene	0.99	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.042 U	**0.644**	--	**0.089**	--
2-Methylnaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.032**	**0.358**	--	**0.047**	--
Acenaphthene	7.9	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	**0.39**	--	0.05 U	--
Acenaphthylene	0.15	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.108**	**0.112**	--	0.05 U	--
Anthracene	0.67	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.108**	**0.833**	--	**0.071**	--
Benzo(a)anthracene	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.865**	**2.42**	--	**0.334**	--
Benzo(a)pyrene	0.3	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.749**	**1.98**	--	**0.27**	--
Benzo(b&j)fluoranthene	0.78	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.78	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.928**	**2.62**	--	**0.351**	--
Benzo(g,h,i)perylene	6.6	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.37**	**0.939**	--	**0.142**	--
Benzo(k)fluoranthene	0.78	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	**0.864**	--	**0.121**	--
Chrysene	7	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.685**	**2.08**	--	**0.292**	--
Dibenzo(a,h)anthracene	0.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.105**	**0.266**	--	0.05 U	--
Fluoranthene	0.69	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.43**	**5.64**	--	**0.662**	--
Fluorene	62	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	**0.37**	--	0.05 U	--
Indeno(1,2,3-Cd)Pyrene	0.38	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.376**	**1**	--	**0.14**	--
Naphthalene	0.6	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.041**	**0.672**	--	**0.041**	--
Phenanthrene	6.2	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.325**	**5.09**	--	**0.361**	--
Pyrene	78	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.28**	**4.39**	--	**0.549**	--
PCBs																					
Aroclor 1242	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01 U	0.01 U	--
Aroclor 1248	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01 U	0.01 U	--
Aroclor 1254	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01 U	0.01 U	--
Aroclor 1260	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01 U	0.01 U	--
PCB, Total	0.35	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02 U	0.02 U	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	TP18-309	TP18-310	TP18-310	TP18-310	TP18-311	TP18-311	TP18-312	TP18-312	TP18-313	TP18-313	TP18-314	TP18-314	TP18-314	TP18-315	TP18-315	TP18-315	TP18-316	TP18-316	TP18-317
		Sample ID	TP18-309-9.5	TP18-310-4	TP18-310-5	TP18-310-9	TP18-311-2	TP18-311-6.5	TP18-312-3	TP18-312-6	TP18-313-2	TP18-313-6	TP18-314-2	TP18-314-6	TP18-DUP1	TP18-315-1	TP18-315-2	TP18-315-5	TP18-316-1	TP18-316-2	TP18-317-5
		Start Depth (m)	2.74	0.91	1.22	2.44	0.3	1.83	0.61	1.52	0.3	1.52	0.3	1.52	1.52	0.1	0.3	1.22	0	0.3	1.21
		End Depth (m)	2.9	1.22	1.52	2.74	0.61	1.98	0.91	1.83	0.61	1.83	0.61	1.83	1.83	0.3	0.61	1.32	0.3	0.6	1.21
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N
		Sample Date	05 Jul 2018	05 Jul 2018	05 Jul 2018	05 Jul 2018	06 Jul 2018	06 Jul 2018	06 Jul 2018	06 Jul 2018	06 Jul 2018	06 Jul 2018	06 Jul 2018	06 Jul 2018	06 Jul 2018	05 Jul 2018	05 Jul 2018	05 Jul 2018	05 Jul 2018	05 Jul 2018	06 Jul 2018
Analyte	**Table 6 SCS [a]**	**Unit**																			
PHCs																					
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	55	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	5 U
Petroleum Hydrocarbons F1 (C6-C10)	55	µg/g	--	5 U	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	5 U	5 U
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	98	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**12**	--
Petroleum Hydrocarbons F2 (C10-C16)	98	µg/g	--	10 U	--	--	--	--	--	--	--	--	--	--	--	**12**	--	--	--	**12**	10 U
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	300	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**112**	--
Petroleum Hydrocarbons F3 (C16-C34)	300	µg/g	--	**82**	--	--	--	--	--	--	--	--	--	--	--	**197**	--	--	--	**115**	**61**
Petroleum Hydrocarbons F4 (C34-C50)	2800	µg/g	--	50 U	--	--	--	--	--	--	--	--	--	--	--	**92**	--	--	--	50 U	50 U
F4G-SG (GHH-Silica)	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	**310**	--	--	--	--	--
Gravimetric Heavy Hydrocarbons	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/g	--	**82**	--	--	--	--	--	--	--	--	--	--	--	**301**	--	--	--	**127**	72 U
SVOCs (other)																					
2-Chloronaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Hexanone	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Bromophenyl Phenyl Ether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chlorophenyl Phenylether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethoxy) methane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Butyl benzyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-N-Butylphthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Isophorone	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrobenzene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodi-N-propylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																					
1,1,1,2-Tetrachloroethane	0.058	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	0.38	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	0.47	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethene	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dibromoethane	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	1.2	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroethane	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloropropane	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	4.8	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichloropropene	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	0.083	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dioxane	1.8	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	16	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Methyl-2-Pentanone	1.7	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acetone	16	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromodichloromethane	1.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromoform	0.27	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromomethane	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chlorobenzene	2.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chlorodibromomethane	2.3	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroform	0.05	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	1.9	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dichlorodifluoromethane	16	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dichloromethane	0.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl tert-butyl ether (MTBE)	0.75	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
n-Hexane	2.8	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Styrene	0.7	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethene	0.28	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	0.084	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
trans-1,3-Dichloropropene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	TP18-309	TP18-310	TP18-310	TP18-310	TP18-311	TP18-311	TP18-312	TP18-312	TP18-313	TP18-313	TP18-314	TP18-314	TP18-314	TP18-315	TP18-315	TP18-315	TP18-316	TP18-316	TP18-317
		Sample ID	TP18-309-9.5	TP18-310-4	TP18-310-5	TP18-310-9	TP18-311-2	TP18-311-6.5	TP18-312-3	TP18-312-6	TP18-313-2	TP18-313-6	TP18-314-2	TP18-314-6	TP18-DUP1	TP18-315-1	TP18-315-2	TP18-315-5	TP18-316-1	TP18-316-2	TP18-317-5
		Start Depth (m)	2.74	0.91	1.22	2.44	0.3	1.83	0.61	1.52	0.3	1.52	0.3	1.52	1.52	0.1	0.3	1.22	0	0.3	1.21
		End Depth (m)	2.9	1.22	1.52	2.74	0.61	1.98	0.91	1.83	0.61	1.83	0.61	1.83	1.83	0.3	0.61	1.32	0.3	0.6	1.21
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N
		Sample Date	05 Jul 2018	05 Jul 2018	05 Jul 2018	05 Jul 2018	06 Jul 2018	06 Jul 2018	06 Jul 2018	06 Jul 2018	06 Jul 2018	06 Jul 2018	06 Jul 2018	06 Jul 2018	06 Jul 2018	05 Jul 2018	05 Jul 2018	05 Jul 2018	05 Jul 2018	05 Jul 2018	06 Jul 2018
Analyte	**Table 6 SCS [a]**	**Unit**																			
Trichloroethylene	0.061	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Trichlorofluoromethane	4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vinyl Chloride	0.02	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Ministry of the Environment.* April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent
-- = not analyzed
µg/g = microgram(s) per gram
ABNs = acid, base and neutral compounds
BH = borehole
BTEX - benzene, toluene, ethylbenzene, and xylene
CPs = chlorophenols
DUP = duplicate
FD = field duplicate
J = associated value is estimated
m = metre(s)
MECP = Ministry of the Environment, Conservation and Parks
mg/kg = milligram(s) per kilogram
mg/l = milligram(s) per litre
mS/cm = milliSiemen(s) per centimetre
MW = monitoring well
N = normal sample
NV = no value
OCPs = organochlorine pesticides
ORPs = other regulated parameters
PCBs = polychlorinated biphenyls
pg/g = picogram(s) per gram
PHCs = petroleum hydrocarbons
SAR = sodium adsorption ratio
SVOCs = semi-volatile organic compounds
U = parameter was not detected above the associated value
VOCs = volatile organic compounds

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	TP18-318	TP18-318	TP18-319	TP18-319	TP18-319	TP20-320	TP20-320	TP20-321	TP20-321	TP20-322	TP20-322	TP20-323	TP20-324
		Sample ID	TP18-318-2	TP18-DUP2	TP18-319-2	TP18-319-3	TP18-319-6	TP20-320-2.5-3'	DUP2	TP20-321-2.75-3.25'	TP20-321-4.5-5'	TP20-322-2-2.5'	DUP1	TP20-323-2-2.5'	TP20-324-1-1.5'
		Start Depth (m)	0.3	0.3	0.3	0.61	1.52	0.762	0.762	0.8382	1.3716	0.6096	0.6096	0.6096	0.3048
		End Depth (m)	0.61	0.61	0.61	0.91	1.83	0.9144	0.9144	0.9906	1.524	0.762	0.762	0.762	0.4572
		Sample Type	N	FD	N	N	N	N	FD	N	N	N	FD	N	N
		Sample Date	06 Jul 2018	06 Jul 2018	05 Jul 2018	05 Jul 2018	05 Jul 2018	20 Feb 2020	20 Feb 2020	20 Feb 2020	20 Feb 2020	20 Feb 2020	20 Feb 2020	20 Feb 2020	20 Feb 2020
Analyte	**Table 6 SCS [a]**	**Unit**													
ABNs															
1,1'-Biphenyl	0.31	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	0.36	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
2,2'-oxybis(1-chloropropane)	0.67	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	38	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	2	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	0.5	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	9.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
BTEX															
Benzene	0.21	µg/g	**0.007**	**0.0071**	--	--	--	0.0068 U	0.0068 U	0.0068 U	0.0068 U	**0.0081**	0.0068 U	--	0.0068 U
Ethylbenzene	1.1	µg/g	0.018 U	0.018 U	--	--	--	0.018 U	0.018 U	0.018 U	0.018 U	**0.018**	0.018 U	--	0.018 U
Toluene	2.3	µg/g	0.08 U	0.08 U	--	--	--	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	--	0.08 U
Xylene, o	NV	µg/g	**0.021**	**0.025**	--	--	--	0.02 U	0.02 U	0.02 U	0.02 U	**0.072**	**0.055**	--	0.02 U
Xylenes, m & p	NV	µg/g	**0.033**	**0.035**	--	--	--	0.03 U	0.03 U	0.03 U	0.03 U	**0.07**	**0.057**	--	0.03 U
Xylenes, Total	3.1	µg/g	**0.054**	**0.06**	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	**0.141**	**0.112**	--	0.05 U
Chlorophenols															
2,4,5-Trichlorophenol	4.4	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	0.19	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	1.6	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	0.1	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxins and Furans															
Lower Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Mid Point PCDD/F TEQ (WHO 2005)	13	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Upper Bound PCDD/F TEQ (WHO 2005)	NV	pg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry															
Average Fraction Organic Carbon	NV	None	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--
Fraction Organic Carbon	NV	None	--	--	--	--	--	--	--	--	--	--	--	--	--
Moisture	NV	%	**6.98**	**6.73**	--	**16.7**	**11.2**	**4.65**	**4.62**	**4.32**	**9.88**	**8.53**	**10.7**	**10.2**	**4.67**
pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Calcium	NV	mg/l	--	--	--	--	--	**650**	**663**	**9.12**	**439**	**11.2**	**11.2**	**15.7**	**6.63**
Magnesium	NV	mg/l	--	--	--	--	--	**10.1**	**9.41**	**2.49**	**12**	**1.28**	**1.27**	**1.31**	**0.69**
Sodium	NV	mg/l	--	--	--	--	--	**1.88**	**2.12**	**1.92**	**2.69**	**0.51**	0.5 U	0.5 U	0.5 U
Metals and Hydride Forming Metals															
Antimony	7.5	µg/g	**1.9**	--	**3.6**	--	--	1 U	1 U	1 U	1 U	**1.5**	**1.4**	**1.5**	1 U
Arsenic	18	µg/g	**9.9**	--	**10.2**	--	--	**2**	**2**	**2.2**	**2.2**	**5.4**	**5.1**	**4.7**	**2.7**
Barium	390	µg/g	**48.2**	--	**54.7**	--	--	**24.3**	**23.4**	**16.8**	**21.8**	**26.5**	**30.8**	**37.2**	**18.9**
Beryllium	4	µg/g	0.5 U	--	**0.59**	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Boron	120	µg/g	5 U	--	**5**	--	--	**20.5**	**18.4**	**14.9**	**18.4**	5 U	**6.2**	**5.4**	**5.4**
Cadmium	1.2	µg/g	0.5 U	--	**0.73**	--	--	**2.58**	**2.13**	**2.21**	**3.03**	0.5 U	0.5 U	0.5 U	**0.75**
Calcium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	160	µg/g	**14.6**	--	**29.8**	--	--	**6.2**	**6.5**	**7.2**	**6.5**	**13.9**	**12.5**	**14.9**	**9.6**
Cobalt	22	µg/g	**5**	--	**7.9**	--	--	**4.2**	**4.4**	**4.1**	**4.6**	**4.9**	**5.1**	**3.8**	**3.5**
Copper	140	µg/g	**36.5**	--	**113**	--	--	**10.5**	**10.5**	**11.5**	**11.4**	**21.1**	**19.7**	**21.1**	**13.5**
Lead	120	µg/g	**86.4**	--	**139**	--	--	**147**	**135**	**308**	**149**	**40.2**	**40.7**	**87.9**	**54.7**
Magnesium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	6.9	µg/g	**1**	--	**3**	--	--	**1.7**	**1.7**	1 U	**1.6**	1 U	1 U	1 U	1 U
Nickel	100	µg/g	**14.3**	--	**26.8**	--	--	**9**	**9.3**	**9.4**	**9.3**	**10.9**	**10.6**	**10.2**	**8.9**
Selenium	2.4	µg/g	1 U	--	1 U	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Silver	20	µg/g	0.2 U	--	0.2 U	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Thallium	1	µg/g	0.5 U	--	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	TP18-318	TP18-318	TP18-319	TP18-319	TP18-319	TP20-320	TP20-320	TP20-321	TP20-321	TP20-322	TP20-322	TP20-323	TP20-324
		Sample ID	TP18-318-2	TP18-DUP2	TP18-319-2	TP18-319-3	TP18-319-6	TP20-320-2.5-3'	DUP2	TP20-321-2.75-3.25'	TP20-321-4.5-5'	TP20-322-2-2.5'	DUP1	TP20-323-2-2.5'	TP20-324-1-1.5'
		Start Depth (m)	0.3	0.3	0.3	0.61	1.52	0.762	0.762	0.8382	1.3716	0.6096	0.6096	0.6096	0.3048
		End Depth (m)	0.61	0.61	0.61	0.91	1.83	0.9144	0.9144	0.9906	1.524	0.762	0.762	0.762	0.4572
		Sample Type	N	FD	N	N	N	N	FD	N	N	N	FD	N	N
		Sample Date	06 Jul 2018	06 Jul 2018	05 Jul 2018	05 Jul 2018	05 Jul 2018	20 Feb 2020	20 Feb 2020	20 Feb 2020	20 Feb 2020	20 Feb 2020	20 Feb 2020	20 Feb 2020	20 Feb 2020
Analyte	**Table 6 SCS [a]**	**Unit**													
Uranium	23	µg/g	1 U	--	1 U	--	--	**2.1**	**2.2**	**1.5**	**1.9**	1 U	1 U	1 U	1 U
Vanadium	86	µg/g	**22.1**	--	**23.3**	--	--	**12.3**	**13.1**	**15.8**	**14**	**18.7**	**22.5**	**20.4**	**18.4**
Zinc	340	µg/g	**209**	--	**1680**	--	--	**1060**	**862**	**1000**	**1310**	**183**	**178**	**92.2**	**777**
Non-Regulated Metals															
Aluminum	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs															
Boron (HWS)	1.5	µg/g	--	--	--	--	--	**0.12**	**0.15**	0.1 U	0.1 U	**0.23**	**0.22**	**0.2**	0.1 U
Chloride (Cl)	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium, Hexavalent (Cr6+)	8	µg/g	--	--	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Cyanide, Free	0.051	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	0.051	µg/g	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Electrical Conductivity	0.7	mS/cm	--	--	--	--	--	**2.13**	**2.19**	**0.123**	**1.64**	**0.116**	**0.112**	**0.139**	**0.0777**
Mercury	0.27	µg/g	--	--	--	--	--	**0.0709**	**0.0706**	**0.0595**	**0.0773**	**0.0197**	**0.0167**	**0.0246**	**0.0099**
Sodium	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium Absorption Ratio	5	SAR	--	--	--	--	--	0.1 U	0.1 U	**0.15**	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
OCPs															
Hexachlorobenzene	0.52	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	0.012	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachloroethane	0.089	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs															
1-Methylnaphthalene	NV	µg/g	**0.051**	**0.054**	--	**0.06**	**0.053**	**0.034**	0.03 U	0.03 U	**0.031**	**0.122**	**0.091**	**0.187**	0.03 U
2-(1-)Methylnaphthalene	0.99	µg/g	**0.115**	**0.121**	--	**0.127**	**0.108**	0.042 U	0.042 U	0.042 U	0.042 U	**0.276**	**0.209**	**0.416**	0.042 U
2-Methylnaphthalene	NV	µg/g	**0.064**	**0.068**	--	**0.067**	**0.055**	0.03 U	0.03 U	0.03 U	0.03 U	**0.155**	**0.118**	**0.23**	0.03 U
Acenaphthene	7.9	µg/g	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**0.054**	0.05 U	0.05 U	0.05 U
Acenaphthylene	0.15	µg/g	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Anthracene	0.67	µg/g	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**0.086**	**0.181**	0.05 U	0.05 U
Benzo(a)anthracene	0.5	µg/g	**0.072**	**0.065**	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**0.194**	**1.41**	**0.098**	0.05 U
Benzo(a)pyrene	0.3	µg/g	**0.059**	**0.056**	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**0.143**	**1.3**	**0.1**	0.05 U
Benzo(b&j)fluoranthene	0.78	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.78	µg/g	**0.112**	**0.092**	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**0.295 J**	**1.89**	**0.231**	0.05 U
Benzo(g,h,i)perylene	6.6	µg/g	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**0.136**	**0.932**	**0.13**	0.05 U
Benzo(k)fluoranthene	0.78	µg/g	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**0.077**	**0.553**	**0.064**	0.05 U
Chrysene	7	µg/g	**0.081**	**0.077**	--	0.05 U	0.05 U	**0.058**	0.05 U	**0.054**	**0.056**	**0.246**	**1.51**	**0.159**	0.05 U
Dibenzo(a,h)anthracene	0.1	µg/g	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**0.261**	0.05 U	0.05 U
Fluoranthene	0.69	µg/g	**0.115**	**0.1**	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**0.398 J**	**2.15**	**0.16**	0.05 U
Fluorene	62	µg/g	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Indeno(1,2,3-Cd)Pyrene	0.38	µg/g	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**0.11**	**0.884**	**0.104**	0.05 U
Naphthalene	0.6	µg/g	**0.058**	**0.062**	--	**0.041**	**0.03**	0.013 U	0.013 U	0.013 U	**0.018**	**0.138**	**0.095**	**0.182**	0.013 U
Phenanthrene	6.2	µg/g	**0.093**	**0.089**	--	**0.064**	**0.061**	**0.057**	0.046 U	**0.077**	**0.071**	**0.397**	**0.611**	**0.233**	0.046 U
Pyrene	78	µg/g	**0.096**	**0.082**	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**0.319 J**	**2.06**	**0.131**	0.05 U
PCBs															
Aroclor 1242	NV	µg/g	0.01 U	0.01 U	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/g	0.01 U	0.01 U	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/g	0.01 U	0.01 U	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/g	0.01 U	0.01 U	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.35	µg/g	0.02 U	0.02 U	--	--	--	--	--	--	--	--	--	--	--

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	TP18-318	TP18-318	TP18-319	TP18-319	TP18-319	TP20-320	TP20-320	TP20-321	TP20-321	TP20-322	TP20-322	TP20-323	TP20-324
		Sample ID	TP18-318-2	TP18-DUP2	TP18-319-2	TP18-319-3	TP18-319-6	TP20-320-2.5-3'	DUP2	TP20-321-2.75-3.25'	TP20-321-4.5-5'	TP20-322-2-2.5'	DUP1	TP20-323-2-2.5'	TP20-324-1-1.5'
		Start Depth (m)	0.3	0.3	0.3	0.61	1.52	0.762	0.762	0.8382	1.3716	0.6096	0.6096	0.6096	0.3048
		End Depth (m)	0.61	0.61	0.61	0.91	1.83	0.9144	0.9144	0.9906	1.524	0.762	0.762	0.762	0.4572
		Sample Type	N	FD	N	N	N	N	FD	N	N	N	FD	N	N
		Sample Date	06 Jul 2018	06 Jul 2018	05 Jul 2018	05 Jul 2018	05 Jul 2018	20 Feb 2020	20 Feb 2020	20 Feb 2020	20 Feb 2020	20 Feb 2020	20 Feb 2020	20 Feb 2020	20 Feb 2020
Analyte	**Table 6 SCS [a]**	**Unit**													
PHCs															
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	55	µg/g	5 U	5 U	--	--	--	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U
Petroleum Hydrocarbons F1 (C6-C10)	55	µg/g	5 U	5 U	--	--	--	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	98	µg/g	**11**	10 U	--	--	--	**16**	**16**	**19**	10 U	10 U	10 U	--	10 U
Petroleum Hydrocarbons F2 (C10-C16)	98	µg/g	**11**	10 U	--	--	--	**16**	**16**	**19**	10 U	10 U	10 U	--	10 U
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	300	µg/g	**59**	50 U	--	--	--	**117**	**119**	**112**	**61**	**59**	**57**	--	50 U
Petroleum Hydrocarbons F3 (C16-C34)	300	µg/g	**59**	50 U	--	--	--	**117**	**119**	**112**	**61**	**61**	**68**	--	50 U
Petroleum Hydrocarbons F4 (C34-C50)	2800	µg/g	50 U	50 U	--	--	--	**54**	**54**	50 U	50 U	50 U	50 U	--	50 U
F4G-SG (GHH-Silica)	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Gravimetric Heavy Hydrocarbons	2800	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/g	72 U	72 U	--	--	--	**188**	**189**	**131**	72 U	72 U	72 U	--	72 U
SVOCs (other)															
2-Chloronaphthalene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Hexanone	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Bromophenyl Phenyl Ether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chlorophenyl Phenylether	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethoxy) methane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Butyl benzyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-N-Butylphthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Isophorone	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrobenzene	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodi-N-propylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	NV	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs															
1,1,1,2-Tetrachloroethane	0.058	µg/g	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
1,1,1-Trichloroethane	0.38	µg/g	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
1,1,2,2-Tetrachloroethane	0.05	µg/g	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
1,1,2-Trichloroethane	0.05	µg/g	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
1,1-Dichloroethane	0.47	µg/g	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
1,1-Dichloroethene	0.05	µg/g	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
1,2-Dibromoethane	0.05	µg/g	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
1,2-Dichlorobenzene	1.2	µg/g	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
1,2-Dichloroethane	0.05	µg/g	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
1,2-Dichloropropane	0.05	µg/g	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
1,3-Dichlorobenzene	4.8	µg/g	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
1,3-Dichloropropene	0.05	µg/g	--	--	--	--	--	0.042 U	0.042 U	0.042 U	0.042 U	0.042 U	0.042 U	--	0.042 U
1,4-Dichlorobenzene	0.083	µg/g	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
1,4-Dioxane	1.8	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	16	µg/g	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U
4-Methyl-2-Pentanone	1.7	µg/g	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U
Acetone	16	µg/g	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U
Bromodichloromethane	1.5	µg/g	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
Bromoform	0.27	µg/g	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
Bromomethane	0.05	µg/g	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
Carbon tetrachloride	0.05	µg/g	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
Chlorobenzene	2.4	µg/g	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
Chlorodibromomethane	2.3	µg/g	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
Chloroform	0.05	µg/g	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
cis-1,2-Dichloroethene	1.9	µg/g	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
cis-1,3-Dichloropropene	NV	µg/g	--	--	--	--	--	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	--	0.03 U
Dichlorodifluoromethane	16	µg/g	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
Dichloromethane	0.1	µg/g	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
Methyl tert-butyl ether (MTBE)	0.75	µg/g	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
n-Hexane	2.8	µg/g	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
Styrene	0.7	µg/g	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
Tetrachloroethene	0.28	µg/g	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
trans-1,2-Dichloroethene	0.084	µg/g	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
trans-1,3-Dichloropropene	NV	µg/g	--	--	--	--	--	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	--	0.03 U

Table 6-5. Summary of Analytical Results in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	TP18-318	TP18-318	TP18-319	TP18-319	TP18-319	TP20-320	TP20-320	TP20-321	TP20-321	TP20-322	TP20-322	TP20-323	TP20-324
		Sample ID	TP18-318-2	TP18-DUP2	TP18-319-2	TP18-319-3	TP18-319-6	TP20-320-2.5-3'	DUP2	TP20-321-2.75-3.25'	TP20-321-4.5-5'	TP20-322-2-2.5'	DUP1	TP20-323-2-2.5'	TP20-324-1-1.5'
		Start Depth (m)	0.3	0.3	0.3	0.61	1.52	0.762	0.762	0.8382	1.3716	0.6096	0.6096	0.6096	0.3048
		End Depth (m)	0.61	0.61	0.61	0.91	1.83	0.9144	0.9144	0.9906	1.524	0.762	0.762	0.762	0.4572
		Sample Type	N	FD	N	N	N	N	FD	N	N	N	FD	N	N
		Sample Date	06 Jul 2018	06 Jul 2018	05 Jul 2018	05 Jul 2018	05 Jul 2018	20 Feb 2020	20 Feb 2020	20 Feb 2020	20 Feb 2020	20 Feb 2020	20 Feb 2020	20 Feb 2020	20 Feb 2020
Analyte	**Table 6 SCS [a]**	**Unit**													
Trichloroethylene	0.061	µg/g	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	--	0.01 U
Trichlorofluoromethane	4	µg/g	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
Vinyl Chloride	0.02	µg/g	--	--	--	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Ministry of the Environment.* April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent
-- = not analyzed
µg/g = microgram(s) per gram
ABNs = acid, base and neutral compounds
BH = borehole
BTEX - benzene, toluene, ethylbenzene, and xylene
CPs = chlorophenols
DUP = duplicate
FD = field duplicate
J = associated value is estimated
m = metre(s)
MECP = Ministry of the Environment, Conservation and Parks
mg/kg = milligram(s) per kilogram
mg/l = milligram(s) per litre
mS/cm = milliSiemen(s) per centimetre
MW = monitoring well
N = normal sample
NV = no value
OCPs = organochlorine pesticides
ORPs = other regulated parameters
PCBs = polychlorinated biphenyls
pg/g = picogram(s) per gram
PHCs = petroleum hydrocarbons
SAR = sodium adsorption ratio
SVOCs = semi-volatile organic compounds
U = parameter was not detected above the associated value
VOCs = volatile organic compounds

Table 6-6. Maximum Detected Concentrations in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Analyte Group	Analyte	Unit	Maximum Detected Concentration	Sample Qualifier	Location	Sample Name	Sample Type	Sample Date	Start Depth (mbgs)	End Depth (mbgs)	SDG
ABN	1,1'-Biphenyl	µg/g	0.237		MW17-110S	MW17-110S-0-2	N	10/16/2017	0.00	0.61	L2010780
BTEX	Benzene	µg/g	0.26		BH07-66	BH07-66 SS-1A	N	2/9/2007	0.05	1.22	07T209831
BTEX	Ethylbenzene	µg/g	4.1		BH07-66	BH07-66 SS-1A	N	2/9/2007	0.05	1.22	07T209831
BTEX	Toluene	µg/g	1.2		TP13-11	DUP2	FD	12/3/2013	0.10	0.30	B3K9090
BTEX	Xylene, o	µg/g	1.32		BH20-214	BH20-214-0.5-2	N	2/21/2020	0.15	0.61	L2419793
BTEX	Xylenes, m & p	µg/g	1.27		BH20-214	BH20-214-0.5-2	N	2/21/2020	0.15	0.61	L2419793
BTEX	Xylenes, Total	µg/g	3.9		BH07-66	BH07-66 SS-1A	N	2/9/2007	0.05	1.22	07T209831
Chemistry	Phosphorus	µg/g	2100		TP13-11	TP11-6	N	12/3/2013	0.10	0.30	B3K9090
Chemistry	Sodium Absorption Ratio	SAR	2		BH07-40	BH07-40SS-1A	N	2/8/2007	0.30	1.22	07T209831
Dioxins/Furans	Mid Point PCDD/F TEQ (WHO 2005)	pg/g	5.19		TP17-300	TP17-300-0-1	N	10/4/2017	0.00	0.30	L2003037
Metals	Barium	µg/g	277		BH07-57	Dup#5	FD	2/8/2007	0.05	1.22	07T209831
Metals	Beryllium	µg/g	4		12	12-2 (OW7-SW7-2)	N	1/22/1991	0.40	1.00	P&R_E.O.90K26
Metals	Boron	µg/g	23		TP13-08	TP8-4	N	12/3/2013	0.10	0.30	B3K9090
Metals	Cadmium	µg/g	83.4		MW17-108S	MW17-108S-8-9	N	10/11/2017	2.44	2.67	L2007635
Metals	Chromium	µg/g	84.7		K	K-1	N	1/22/1991	0.00	0.70	91-4281/P&R_E.O.90K2
Metals	Cobalt	µg/g	393		C11	C11-1	N	2/8/1991	0.34	0.40	91-4346/P&R_E.O.90K2
Metals	Copper	µg/g	2460		I	I-1	N	1/22/1991	0.50	0.50	91-4281/P&R_E.O.90K2
Metals	Lead	µg/g	10100		BH07-65	BH07-65 SS-1A	N	2/9/2007	0.05	0.61	07T209831
Metals	Molybdenum	µg/g	35		K	K-1	N	1/22/1991	0.00	0.70	91-4281/P&R_E.O.90K2
Metals	Nickel	µg/g	117		BH07-51	BH07-51 SS-1	N	2/8/2007	0.00	1.22	07T209831
Metals	Selenium	µg/g	1.9		BH20-214	BH20-214-0.5-2	N	2/21/2020	0.15	0.61	L2419793
Metals	Silver	µg/g	7.8		C11	C11-1	N	2/8/1991	0.34	0.40	91-4346/P&R_E.O.90K2
Metals	Thallium	µg/g	6		AN21	AN21-2	N	1/22/1991	0.90	1.70	91-4281/P&R_E.O.90K2
Metals	Uranium	µg/g	2.6		TP13-11	TP11-6	N	12/3/2013	0.10	0.30	B3K9090
Metals	Vanadium	µg/g	100		MW17-100S	MW17-100S-4.5-6	N	10/12/2017	1.37	1.83	L2007635
Metals	Zinc	µg/g	67200		MW17-108S	MW17-108S-8-9	N	10/11/2017	2.44	2.67	L2007635
Metals, Ca & Mg	Calcium	µg/g	220000		TP13-06	TP6-4	N	12/2/2013	0.10	0.30	B3K9090
Metals, Ca & Mg	Magnesium	µg/g	120000		TP13-06	TP6-4	N	12/2/2013	0.10	0.30	B3K9090
Metals, HF	Antimony	µg/g	18.6		BH07-56	BH07-56 SS-1A	N	2/9/2007	0.05	0.91	07T209831
Metals, HF	Arsenic	µg/g	23		BH07-67	BH07-67 SS1A	N	2/9/2007	0.05	0.91	07T209831
Metals, Na	Sodium	µg/g	510		TP13-08	TP8-4	N	12/3/2013	0.10	0.30	B3K9090
Metals, Other	Aluminum	µg/g	16000		A	A-1	N	1/22/1991	0.30	1.00	91-4543/91-4281
Metals, Other	Bismuth	µg/g	150		TP13-11	DUP2	FD	12/3/2013	0.10	0.30	B3K9090
Metals, Other	Iron	µg/g	128000		I	I-1	N	1/22/1991	0.50	0.50	91-4281/P&R_E.O.90K2
Metals, Other	Manganese	µg/g	1810		I	I-1	N	1/22/1991	0.50	0.50	91-4281/P&R_E.O.90K2
Metals, Other	Potassium	µg/g	2000		TP13-08	TP8-4	N	12/3/2013	0.10	0.30	B3K9090
Metals, Other	Strontium	µg/g	190		TP13-11	TP11-6	N	12/3/2013	0.10	0.30	B3K9090
Metals, Other	Tin	µg/g	9.6		TP13-08	DUP1	FD	12/3/2013	0.10	0.30	B3K9090
Metals, Other	Titanium	µg/g	532		12SE10	12SE10-2 (OW7SE10-2)	N	1/22/1991	0.40	1.40	91-4543
Metals, Other	Zirconium	µg/g	19		I	I-1	N	1/22/1991	0.50	0.50	91-4281/P&R_E.O.90K2
ORPs	Boron (HWS)	µg/g	0.87		BH17-200	BH17-200-3-3.5	N	10/10/2017	0.91	1.07	L2007635
ORPs	Chloride (Cl)	µg/g	122		BH07-53	Dup#1	FD	2/8/2007	1.22	1.47	07T209831

Table 6-6. Maximum Detected Concentrations in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Analyte Group	Analyte	Unit	Maximum Detected Concentration	Sample Qualifier	Location	Sample Name	Sample Type	Sample Date	Start Depth (mbgs)	End Depth (mbgs)	SDG
ORPs	Chromium, Hexavalent (Cr6+)	µg/g	0.32		MW17-100S	MW17-100S-4.5-6	N	10/12/2017	1.37	1.83	L2007635
ORPs	Chromium, Hexavalent (Cr6+)	µg/g	0.32		MW18-129D	DUP2 JUL23	FD	7/23/2018	0.76	1.37	L2136825
ORPs	Electrical Conductivity	mS/cm	2.19		TP20-320	DUP2	FD	2/20/2020	0.76	0.91	L2419793
ORPs	Mercury	µg/g	0.319		BH07-57	BH07-57 SS-1A	N	2/8/2007	0.05	1.22	07T209831
ORPs	pH	pH UNITS	9		7	7-2	N	1/22/1991	0.40	0.90	91-4281/P&R_E.O.90K2
PAH	2-(1-)Methylnaphthalene	µg/g	4.93		TP17-300	DUP 4	FD	10/4/2017	0.30	0.61	L2003037
PAH	Acenaphthene	µg/g	94		OW07-34D	OW07-34SS1	N	2/22/2007	0.00	1.22	07T211735
PAH	Acenaphthylene	µg/g	1		TP13-08	DUP1	FD	12/3/2013	0.10	0.30	B3K9090
PAH	Anthracene	µg/g	160		OW07-34D	OW07-34SS1	N	2/22/2007	0.00	1.22	07T211735
PAH	Benzo(a)anthracene	µg/g	200		OW07-34D	OW07-34SS1	N	2/22/2007	0.00	1.22	07T211735
PAH	Benzo(a)pyrene	µg/g	130		OW07-34D	OW07-34SS1	N	2/22/2007	0.00	1.22	07T211735
PAH	Benzo(b)fluoranthene	µg/g	190		OW07-34D	OW07-34SS1	N	2/22/2007	0.00	1.22	07T211735
PAH	Benzo(g,h,i)perylene	µg/g	70		OW07-34D	OW07-34SS1	N	2/22/2007	0.00	1.22	07T211735
PAH	Benzo(k)fluoranthene	µg/g	66		OW07-34D	OW07-34SS1	N	2/22/2007	0.00	1.22	07T211735
PAH	Chrysene	µg/g	180		OW07-34D	OW07-34SS1	N	2/22/2007	0.00	1.22	07T211735
PAH	Dibenzo(a,h)anthracene	µg/g	26		OW07-34D	OW07-34SS1	N	2/22/2007	0.00	1.22	07T211735
PAH	Fluoranthene	µg/g	660		OW07-34D	OW07-34SS1	N	2/22/2007	0.00	1.22	07T211735
PAH	Fluorene	µg/g	150		OW07-34D	OW07-34SS1	N	2/22/2007	0.00	1.22	07T211735
PAH	Indeno(1,2,3-Cd)Pyrene	µg/g	80		OW07-34D	OW07-34SS1	N	2/22/2007	0.00	1.22	07T211735
PAH	Naphthalene	µg/g	220		OW07-34D	OW07-34SS1	N	2/22/2007	0.00	1.22	07T211735
PAH	Phenanthrene	µg/g	900		OW07-34D	OW07-34SS1	N	2/22/2007	0.00	1.22	07T211735
PAH	Pyrene	µg/g	470		OW07-34D	OW07-34SS1	N	2/22/2007	0.00	1.22	07T211735
PCB	Aroclor 1248	µg/g	1.65		TP17-300	DUP 3	FD	10/4/2017	0.00	0.30	L2003037
PCB	Aroclor 1254	µg/g	0.16		TP13-08	TP8-4	N	12/3/2013	0.10	0.30	B3K9090
PCB	Aroclor 1260	µg/g	0.2		TP13-08	TP8-4	N	12/3/2013	0.10	0.30	B3K9090
PCB	PCB, Total	µg/g	1.65		TP17-300	DUP 3	FD	10/4/2017	0.00	0.30	L2003037
PHC	Petroleum Hydrocarbons F1 (C6-C10)	µg/g	36.6		BH20-214	BH20-214-0.5-2	N	2/21/2020	0.15	0.61	L2419793
PHC	Petroleum Hydrocarbons F2 (C10-C16)	µg/g	3600		BH07-46	BH07-46 SS-2	N	2/8/2007	1.22	1.68	07T209831
PHC	Petroleum Hydrocarbons F3 (C16-C34)	µg/g	23000		BH07-40	BH07-40SS-1A	N	2/8/2007	0.30	1.22	07T209831
PHC	Petroleum Hydrocarbons F4 (C34-C50)	µg/g	7300		BH07-67	BH07-67 SS1A	N	2/9/2007	0.05	0.91	07T209831
VOC	1,1,1-Trichloroethane	µg/g	0.01		OW07-37	OW07-37SS-1A	N	2/22/2007	0.61	1.22	07T211735
VOC	Acetone	µg/g	0.68		TP13-01	TP1-5	N	12/2/2013	0.10	0.30	B3K9090
VOC	n-Hexane	µg/g	0.861	J	MW17-107S	MW17-107S-0.5-2	N	10/12/2017	0.15	0.61	L2007635
VOC	Trichloroethylene	µg/g	35.4		BH18-207i	BH18-207I-0.5-2.5	N	2/21/2020	0.15	0.76	L2419793

Notes:

µg/g = microgram(s) per gram

F = fraction

mbgs = metre(s) below ground surface

N = normal sample

SDG = sample delivery group

Table 6-7a. Preliminary COC Screening in Soil

Phase Two Environmental Site Assesment, 200 Beverley Street, Guelph, Ontario

Contaminant [a]	Parameter Group	No. of Stations	No. of Samples	Other Criteria [b],c	Maximum Detected Concentration	Max Nondetect Concentration	Maximum Measured Concentration [d.]	Units	Minimum Detection Limit (MDL)	Applicable SCS [e.]	No. of Detects Exceeding Table 6 SCS	No. of Nondetects Exceeding Table 6 SCS	No. of Detects with No Table 6 SCS	No. of Nondetects with No Table 6 SCS	Retained as a Contaminant for Phase Two ESA? (Rationale)
2-(1-)Methylnaphthalene	PAH	54	86	--	4.93	0.5	4.93	µg/g	0.07	0.99	9	--	--	--	**Yes, included (Max > Table 6 SCS)**
Acenaphthene	PAH	89	125	--	94	0.63	94	µg/g	0.002	7.9	1	--	--	--	**Yes, included (Max > Table 6 SCS)**
Acenaphthylene	PAH	89	125	--	1	2	2	µg/g	0.001	0.15	6	13	--	--	**Yes, included (Max > Table 6 SCS)**
Anthracene	PAH	89	125	--	160	0.5	160	µg/g	0.001	0.67	9	--	--	--	**Yes, included (Max > Table 6 SCS)**
Antimony	INO	116	194	--	18.6	2	18.6	µg/g	0.04	7.5	3	--	--	--	**Yes, included (Max > Table 6 SCS)**
Arsenic	INO	101	179	--	23	--	23	µg/g	0.3	18	3	--	--	--	**Yes, included (Max > Table 6 SCS)**
Benzene	BTEX	90	146	--	0.26	0.1	0.26	µg/g	0.002	0.21	3	--	--	--	**Yes, included (Max > Table 6 SCS)**
Benzo(a)anthracene	PAH	89	125	--	200	0.5	200	µg/g	0.002	0.5	21	--	--	--	**Yes, included (Max > Table 6 SCS)**
Benzo(a)pyrene	PAH	89	125	--	130	0.5	130	µg/g	0.001	0.3	26	7	--	--	**Yes, included (Max > Table 6 SCS)**
Benzo(b)fluoranthene	PAH	89	125	--	190	0.5	190	µg/g	0.02	0.78	16	--	--	--	**Yes, included (Max > Table 6 SCS)**
Benzo(g,h,i)perylene	PAH	89	125	--	70	0.5	70	µg/g	0.004	6.6	4	--	--	--	**Yes, included (Max > Table 6 SCS)**
Benzo(k)fluoranthene	PAH	89	125	--	66	0.5	66	µg/g	0.002	0.78	11	--	--	--	**Yes, included (Max > Table 6 SCS)**
Cadmium	INO	143	229	--	83.4	0.5	83.4	µg/g	0.02	1.2	68	--	--	--	**Yes, included (Max > Table 6 SCS)**
Chrysene	PAH	89	125	--	180	0.5	180	µg/g	0.002	7	5	--	--	--	**Yes, included (Max > Table 6 SCS)**
Cobalt	INO	143	228	--	393	2	393	µg/g	0.02	22	2	--	--	--	**Yes, included (Max > Table 6 SCS)**
Copper	INO	143	228	--	2460	--	2460	µg/g	0.2	140	6	--	--	--	**Yes, included (Max > Table 6 SCS)**
Dibenzo(a,h)anthracene	PAH	89	125	--	26	0.5	26	µg/g	0.004	0.1	21	13	--	--	**Yes, included (Max > Table 6 SCS)**
Electrical Conductivity	GC	71	101	--	2.19	--	2.19	mS/cm	0.002	0.7	3	--	--	--	**Yes, included (Max > Table 6 SCS)**
Ethylbenzene	BTEX	90	146	--	4.1	0.05	4.1	µg/g	0.002	1.1	1	--	--	--	**Yes, included (Max > Table 6 SCS)**
Fluoranthene	PAH	89	125	--	660	0.5	660	µg/g	0.001	0.69	24	--	--	--	**Yes, included (Max > Table 6 SCS)**
Fluorene	PAH	89	125	--	150	0.63	150	µg/g	0.001	62	1	--	--	--	**Yes, included (Max > Table 6 SCS)**
Indeno(1,2,3-Cd)Pyrene	PAH	89	125	--	80	0.5	80	µg/g	0.004	0.38	20	7	--	--	**Yes, included (Max > Table 6 SCS)**
Lead	INO	143	231	--	10100	--	10100	µg/g	0.3	120	76	--	--	--	**Yes, included (Max > Table 6 SCS)**
Mercury	INO	79	111	--	0.319	0.05	0.319	µg/g	0.005	0.27	1	--	--	--	**Yes, included (Max > Table 6 SCS)**
Molybdenum	INO	140	229	--	35	3	35	µg/g	0.3	6.9	9	--	--	--	**Yes, included (Max > Table 6 SCS)**
Naphthalene	PAH	89	125	--	220	0.25	220	µg/g	0.001	0.6	11	--	--	--	**Yes, included (Max > Table 6 SCS)**
Nickel	INO	143	228	--	117	2	117	µg/g	0.3	100	1	--	--	--	**Yes, included (Max > Table 6 SCS)**
PCB, Total	PCB	53	72	--	1.65	0.05	1.65	µg/g	0.01	0.35	6	--	--	--	**Yes, included (Max > Table 6 SCS)**
Petroleum Hydrocarbons F2 (C10-C16)	PHC	90	130	--	3600	50	3600	µg/g	10	98	4	--	--	--	**Yes, included (Max > Table 6 SCS)**
Petroleum Hydrocarbons F3 (C16-C34)	PHC	90	130	--	23000	50	23000	µg/g	250	300	27	--	--	--	**Yes, included (Max > Table 6 SCS)**
Petroleum Hydrocarbons F4 (C34-C50)	PHC	90	130	--	7300	250	7300	µg/g	100	2800	1	--	--	--	**Yes, included (Max > Table 6 SCS)**
Phenanthrene	PAH	89	125	--	900	0.46	900	µg/g	0.02	6.2	3	--	--	--	**Yes, included (Max > Table 6 SCS)**
Pyrene	PAH	89	125	--	470	0.5	470	µg/g	0.02	78	1	--	--	--	**Yes, included (Max > Table 6 SCS)**
Thallium	INO	123	205	--	6	2	6	µg/g	0.05	1	4	23	--	--	**Yes, included (Max > Table 6 SCS)**
Trichloroethylene	VOC	79	126	--	35.4	0.05	35.4	µg/g	0.004	0.061	12	--	--	--	**Yes, included (Max > Table 6 SCS)**
Vanadium	INO	136	221	--	100	0.3	100	µg/g	0.2	86	1	--	--	--	**Yes, included (Max > Table 6 SCS)**
Xylenes, Total	BTEX	90	147	--	3.9	0.07	3.9	µg/g	0.002	3.1	1	--	--	--	**Yes, included (Max > Table 6 SCS)**
Zinc	INO	143	230	--	67200	--	67200	µg/g	0.2	340	139	--	--	--	**Yes, included (Max > Table 6 SCS)**
1,1,1,2-Tetrachloroethane	VOC	79	126	--	--	0.05	0.05	µg/g	0.002	0.058	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
1,1,1-Trichloroethane	VOC	79	126	--	0.01	0.05	0.05	µg/g	0.002	0.38	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
1,1,2,2-Tetrachloroethane	VOC	79	126	--	--	0.2	0.2	µg/g	0.002	0.05	--	1	--	--	No, excluded (Max > Table 6 SCS); see Table 6-7b. Rationale for the Removal of Soil COCs
1,1,2-Trichloroethane	VOC	50	86	--	--	0.05	0.05	µg/g	0.02	0.05	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
1,1'-Biphenyl	ABN	13	23	--	0.237	0.63	0.63	µg/g	0.05	0.31	--	2	--	--	No, excluded (Max > Table 6 SCS); see Table 6-7b. Rationale for the Removal of Soil COCs
1,1-Dichloroethane	VOC	79	126	--	--	0.05	0.05	µg/g	0.002	0.47	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
1,1-Dichloroethene	VOC	79	126	--	--	0.05	0.05	µg/g	0.002	0.05	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
1,2,4-Trichlorobenzene	ABN	48	69	--	--	0.63	0.63	µg/g	0.007	0.36	--	2	--	--	No, excluded (Max > Table 6 SCS); see Table 6-7b. Rationale for the Removal of Soil COCs
1,2-Dibromoethane	VOC	79	126	--	--	0.05	0.05	µg/g	0.002	0.05	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
1,2-Dichlorobenzene	VOC	79	126	--	--	0.05	0.05	µg/g	0.002	1.2	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
1,2-Dichloroethane	VOC	79	126	--	--	0.05	0.05	µg/g	0.002	0.05	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
1,2-Dichloropropane	VOC	79	126	--	--	0.05	0.05	µg/g	0.002	0.05	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
1,3-Dichlorobenzene	VOC	79	126	--	--	0.05	0.05	µg/g	0.002	4.8	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
1,3-Dichloropropene	VOC	79	127	--	--	0.05	0.05	µg/g	0.002	0.05	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
1,4-Dichlorobenzene	VOC	79	126	--	--	0.05	0.05	µg/g	0.002	0.083	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
1,4-Dioxane	VOC	2	3	--	--	0.2	0.2	µg/g	0.1	1.8	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
2,4 & 2,6-Dinitrotoluene	ABN	19	29	--	--	1.8	1.8	µg/g	0.0071	0.5	--	8	--	--	No, excluded (Max > Table 6 SCS); see Table 6-7b. Rationale for the Removal of Soil COCs
2,4,5-Trichlorophenol	CP	13	23	--	--	1.3	1.3	µg/g	0.1	4.4	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
2,4,6-Trichlorophenol	CP	13	23	--	--	1.3	1.3	µg/g	0.1	2.1	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
2,4-Dichlorophenol	CP	13	23	--	--	1.3	1.3	µg/g	0.1	0.19	--	7	--	--	No, excluded (Max > Table 6 SCS); see Table 6-7b. Rationale for the Removal of Soil COCs
2,4-Dimethylphenol	ABN	13	23	--	--	1.3	1.3	µg/g	0.1	38	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
2,4-Dinitrophenol	ABN	13	23	--	--	13	13	µg/g	0.2	2	--	7	--	--	No, excluded (Max > Table 6 SCS); see Table 6-7b. Rationale for the Removal of Soil COCs
2-Chloronaphthalene	SVOC	6	6	NA	--	0.2	0.2	µg/g	0.2	--	--	--	--	6	No, excluded (no standard available; all results nondetect)

Table 6-7a. Preliminary COC Screening in Soil
Phase Two Environmental Site Assesment, 200 Beverley Street, Guelph, Ontario

Contaminant [a]	Parameter Group	No. of Stations	No. of Samples	Other Criteria [b],c	Maximum Detected Concentration	Max Nondetect Concentration	Maximum Measured Concentration [d.]	Units	Minimum Detection Limit (MDL)	Applicable SCS [e.]	No. of Detects Exceeding Table 6 SCS	No. of Nondetects Exceeding Table 6 SCS	No. of Detects with No Table 6 SCS	No. of Nondetects with No Table 6 SCS	Retained as a Contaminant for Phase Two ESA? (Rationale)
2-Chlorophenol	CP	13	23	--	--	1.3	1.3	µg/g	0.1	1.6	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
2-Hexanone	SVOC	29	40	NA	--	0.47	0.47	µg/g	0.26	--	--	--	--	40	No, excluded (no standard available; all results nondetect)
3,3'-Dichlorobenzidine	ABN	19	29	--	--	10	10	µg/g	0.1	1	--	8	--	--	No, excluded (Max > Table 6 SCS); see Table 6-7b. Rationale for the Removal of Soil COCs
4-Bromophenyl Phenyl Ether	SVOC	6	6	NA	--	0.5	0.5	µg/g	0.5	--	--	--	--	6	No, excluded (no standard available; all results nondetect)
4-Chloroaniline	ABN	13	23	--	--	1.3	1.3	µg/g	0.1	0.5	--	2	--	--	No, excluded (Max > Table 6 SCS); see Table 6-7b. Rationale for the Removal of Soil COCs
4-Chlorophenyl Phenylether	SVOC	6	6	NA	--	0.2	0.2	µg/g	0.2	--	--	--	--	6	No, excluded (no standard available; all results nondetect)
4-Methyl-2-Pentanone	VOC	50	86	--	--	0.5	0.5	µg/g	0.05	1.7	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Acetone	VOC	79	126	--	0.68	1	1	µg/g	0.074	16	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Aluminum	INO	37	43	28600	16000	--	16000	µg/g	5	--	--	--	43	--	No, excluded (Max < or = OTR value)
Barium	INO	136	221	--	277	--	277	µg/g	0.2	390	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Beryllium	INO	137	222	--	4	2	4	µg/g	0.04	4	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Bis (2-chloroethoxy) methane	SVOC	6	6	NA	--	0.2	0.2	µg/g	0.2	--	--	--	--	6	No, excluded (no standard available; all results nondetect)
Bis (2-chloroethyl) ether	ABN	19	29	--	--	1.3	1.3	µg/g	0.1	0.5	--	2	--	--	No, excluded (Max > Table 6 SCS); see Table 6-7b. Rationale for the Removal of Soil COCs
bis (2-Chloroisopropyl) ether	ABN	19	29	NA	--	1.3	1.3	µg/g	0.1	0.67	--	2	--	--	No, excluded (Max > Table 6 SCS); see Table 6-7b. Rationale for the Removal of Soil COCs
Bis (2-ethylhexyl) phthalate	ABN	19	29	--	--	1.3	1.3	µg/g	0.1	5	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Bismuth	INO	10	12	NA	150	1	150	µg/g	1	--	--	--	5	7	No, excluded (no standard available; detected concentrations); see Table 6-7b. Rationale for the Removal of Soil COCs
Boron	INO	64	105	--	23	100	100	µg/g	0.1	120	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Boron (HWS)	INO	35	63	--	0.87	0.1	0.87	µg/g	0.1	1.5	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Bromodichloromethane	VOC	79	126	--	--	4.1	4.1	µg/g	0.003	1.5	--	1	--	--	No, excluded (Max > Table 6 SCS); see Table 6-7b. Rationale for the Removal of Soil COCs
Bromoform	VOC	79	126	--	--	0.05	0.05	µg/g	0.002	0.27	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Bromomethane	VOC	79	126	--	--	0.09	0.09	µg/g	0.002	0.05	--	1	--	--	No, excluded (Max > Table 6 SCS); see Table 6-7b. Rationale for the Removal of Soil COCs
Butyl benzyl phthalate	SVOC	6	6	NA	--	0.5	0.5	µg/g	0.5	--	--	--	--	6	No, excluded (no standard available; all results nondetect)
Calcium	INO	72	106	53508	220000	--	220000	µg/g	0.5	--	--	--	106	--	No, excluded (Max > OTR value); see Table 6-7b. Rationale for the Removal of Soil COCs
Carbon tetrachloride	VOC	79	126	--	--	0.05	0.05	µg/g	0.002	0.05	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Chloride (Cl)	INO	17	19	200.2	122	--	122	µg/g	0.2	--	--	--	19	--	No, excluded (Max < or = OTR value)
Chlorobenzene	VOC	79	126	--	--	0.05	0.05	µg/g	0.002	2.4	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Chlorodibromomethane	VOC	50	86	--	--	0.05	0.05	µg/g	0.01	2.3	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Chloroethane	SVOC	29	40	NA	--	0.08	0.08	µg/g	0.005	--	--	--	--	40	No, excluded (no standard available; all results nondetect)
Chloroform	VOC	79	126	--	--	0.15	0.15	µg/g	0.002	0.05	--	1	--	--	No, excluded (Max > Table 6 SCS); see Table 6-7b. Rationale for the Removal of Soil COCs
Chloromethane	SVOC	30	41	NA	--	1	1	µg/g	0.002	--	--	--	--	41	No, excluded (no standard available; all results nondetect)
Chromium	INO	143	228	--	84.7	10	84.7	µg/g	0.3	160	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Chromium, Hexavalent (Cr6+)	INO	77	107	--	0.32	10	10	µg/g	0.2	8	--	24	--	--	No, excluded (Max > Table 6 SCS); see Table 6-7b. Rationale for the Removal of Soil COCs
cis-1,2-Dichloroethene	VOC	79	126	--	--	0.05	0.05	µg/g	0.002	1.9	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Cyanide	INO	35	63	--	--	0.05	0.05	µg/g	0.05	0.051	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Cyanide, Free	INO	23	25	--	--	0.1	0.1	µg/g	0.08	0.051	--	25	--	--	No, excluded (Max > Table 6 SCS); see Table 6-7b. Rationale for the Removal of Soil COCs
Dichlorodifluoromethane	VOC	50	86	--	--	0.05	0.05	µg/g	0.02	16	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Dichloromethane	VOC	79	126	--	--	0.43	0.43	µg/g	0.002	0.1	--	1	--	--	No, excluded (Max > Table 6 SCS); see Table 6-7b. Rationale for the Removal of Soil COCs
Diethylphthalate	ABN	19	29	--	--	1.3	1.3	µg/g	0.1	0.5	--	2	--	--	No, excluded (Max > Table 6 SCS); see Table 6-7b. Rationale for the Removal of Soil COCs
Dimethylphthalate	ABN	19	29	--	--	1.3	1.3	µg/g	0.1	0.5	--	8	--	--	No, excluded (Max > Table 6 SCS); see Table 6-7b. Rationale for the Removal of Soil COCs
Di-N-Butylphthalate	SVOC	6	6	NA	--	0.2	0.2	µg/g	0.2	--	--	--	--	6	No, excluded (no standard available; all results nondetect)
Di-n-octyl phthalate	SVOC	6	6	NA	--	0.5	0.5	µg/g	0.5	--	--	--	--	6	No, excluded (no standard available; all results nondetect)
Dioxins and Furans, Total (TEQ)	D&F	1	1	--	5.19	--	5.19	pg/g	--	13	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Hexachlorobenzene	OCP	6	6	--	--	0.5	0.5	µg/g	0.5	0.52	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Hexachlorobutadiene	OCP	6	6	--	--	0.5	0.5	µg/g	0.5	0.012	--	6	--	--	No, excluded (Max > Table 6 SCS); see Table 6-7b. Rationale for the Removal of Soil COCs
Hexachlorocyclopentadiene	OCP	6	6	NA	--	2	2	µg/g	2	--	--	--	--	6	No, excluded (no standard available; all results nondetect)
Hexachloroethane	OCP	6	6	--	--	0.5	0.5	µg/g	0.5	0.089	--	6	--	--	No, excluded (Max > Table 6 SCS); see Table 6-7b. Rationale for the Removal of Soil COCs
Iron	INO	37	43	37808	128000	--	128000	µg/g	0.5	--	--	--	43	--	No, excluded (Max > OTR value); see Table 6-7b. Rationale for the Removal of Soil COCs
Isophorone	SVOC	6	6	NA	--	0.2	0.2	µg/g	0.2	--	--	--	--	6	No, excluded (no standard available; all results nondetect)
Magnesium	INO	72	106	17400	120000	1	120000	µg/g	0.5	--	--	--	82	24	No, excluded (Max > OTR value); see Table 6-7b. Rationale for the Removal of Soil COCs
Manganese	INO	37	43	1820	1810	--	1810	µg/g	0.2	--	--	--	43	--	No, excluded (Max < or = OTR value)
Methyl Ethyl Ketone	VOC	79	126	--	--	0.7	0.7	µg/g	0.018	16	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Methyl tert-butyl ether (MTBE)	VOC	79	126	--	--	0.06	0.06	µg/g	0.004	0.75	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
n-Hexane	VOC	50	86	--	0.861	0.17	0.861	µg/g	0.02	2.8	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Nitrobenzene	SVOC	6	6	NA	--	0.2	0.2	µg/g	0.5	--	--	--	--	6	No, excluded (no standard available; all results nondetect)
N-Nitrosodi-N-propylamine	SVOC	6	6	NA	--	1	1	µg/g	1	--	--	--	--	6	No, excluded (no standard available; all results nondetect)
N-Nitrosodiphenylamine	SVOC	6	6	NA	--	0.5	0.5	µg/g	0.5	--	--	--	--	6	No, excluded (no standard available; all results nondetect)
Pentachlorophenol	CP	13	23	--	--	1.3	1.3	µg/g	0.1	0.1	--	7	--	--	No, excluded (Max > Table 6 SCS); see Table 6-7b. Rationale for the Removal of Soil COCs
Petroleum Hydrocarbons F1 (C6-C10)	PHC	79	111	--	36.6	20	36.6	µg/g	5	55	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Phenol	ABN	20	30	--	--	1.3	1.3	µg/g	0.01	9.4	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Phosphorus	GC	37	43	1635	2100	20	2100	µg/g	20	--	--	--	41	2	No, excluded (Max > OTR value); see Table 6-7b. Rationale for the Removal of Soil COCs

Table 6-7a. Preliminary COC Screening in Soil

Phase Two Environmental Site Assesment, 200 Beverley Street, Guelph, Ontario

Contaminant [a]	Parameter Group	No. of Stations	No. of Samples	Other Criteria [b],c	Maximum Detected Concentration	Max Nondetect Concentration	Maximum Measured Concentration [d.]	Units	Minimum Detection Limit (MDL)	Applicable SCS [e.]	No. of Detects Exceeding Table 6 SCS	No. of Nondetects Exceeding Table 6 SCS	No. of Detects with No Table 6 SCS	No. of Nondetects with No Table 6 SCS	Retained as a Contaminant for Phase Two ESA? (Rationale)
Potassium	INO	37	43	5978	2000	--	2000	µg/g	10	--	--	--	43	--	No, excluded (Max < or = OTR value)
Selenium	INO	116	194	--	1.9	4	4	µg/g	0.22	2.4	--	2	--	--	No, excluded (Max > Table 6 SCS); see Table 6-7b. Rationale for the Removal of Soil COCs
Silver	INO	143	228	--	7.8	2	7.8	µg/g	0.2	20	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Sodium	INO	72	106	204	510	100	510	µg/g	0.5	--	--	--	80	26	No, excluded (Max > OTR value); see Table 6-7b. Rationale for the Removal of Soil COCs
Sodium Absorption Ratio	HC	52	82	--	2	0.23	2	SAR	0.1	5	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Strontium	INO	37	43	87	190	--	190	µg/g	0.5	--	--	--	43	--	No, excluded (Max > OTR value); see Table 6-7b. Rationale for the Removal of Soil COCs
Styrene	VOC	79	126	--	--	0.05	0.05	µg/g	0.002	0.7	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Tetrachloroethene	VOC	79	126	--	--	0.05	0.05	µg/g	0.002	0.28	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Tin	INO	10	12	50	9.6	5	9.6	µg/g	5	--	--	--	6	6	No, excluded (Max < or = CCME value)
Titanium	INO	27	31	5395	532	--	532	µg/g	0.5	--	--	--	31	--	No, excluded (Max < or = OTR value)
Toluene	BTEX	90	146	--	1.2	0.08	1.2	µg/g	0.002	2.3	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
trans-1,2-Dichloroethene	VOC	79	126	--	--	0.05	0.05	µg/g	0.003	0.084	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Trichlorofluoromethane	VOC	79	126	--	--	0.08	0.08	µg/g	0.004	4	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Uranium	INO	68	109	--	2.6	1	2.6	µg/g	0.05	23	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Vinyl Chloride	VOC	79	126	--	--	0.1	0.1	µg/g	0.002	0.02	--	1	--	--	No, excluded (Max > Table 6 SCS); see Table 6-7b. Rationale for the Removal of Soil COCs
Zirconium	INO	23	27	48	19	--	19	µg/g	--	--	--	--	27	--	No, excluded (Max < or = OTR value)

Notes:

[a] The representative maximum concentration (the maximum concentration of similar analytes or total concentration of multiple isomers) is used for comparison.

[b] For aluminun, calcium, chloride, iron, magnesium, manganese, phosphorus, potasium, sodium, strontium, tin, titanium, and zirconium, the Ontario Typical Ranges for an urban scenario are applied (MECP 2011). OTR values were adjusted to match the MECP derivation of the Table 1 Standards as presented on the "Background Calculations" tab of the MGRA (2016).

[c] For tin, the CCME residential/parkland value has been applied (CCME 2020).

[d] Column lists the greater of the maximum detected concentration or the maximum nondetect concentration.

[e] Ontario Regulation 153/04, Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition for residential/parkland/institutional use and Coarse Textured Soils (MECP 2011).

Bold parameters are identified as COCs.

Grey-shaded parameters have been reviewed further because they are nondetect with maximum MDL concentrations greater than the SCS, parameters with no SCS with detected concentrations, or detected concentrations greater than the OTR or other applicable alternative standard and may not be reflective of actual conditions at the Phase Two Property. Refer to Table 6-7b.

-- = no value or not applicable
> = greater than
< = less than
µg/g = microgram per gram
ABN = acid, base, and neutral compound
BTEX = benzene, toluene, ethylbenzene, xylene
COC = contaminant of concern
CP = chlorphenols
D&F = dioxins and furans
F = fraction
GC = general chemistry
INO = inorganic
Max = maximum concentration
MDL = method detection limit
MGRA = modified generic risk assessment model
MECP = Ontario Ministry of the Environment, Conservation and Parks
NA = not available
No. = number
OCP = organochlorine pesticides
OTR = Ontario Typical Range
PAH = polycyclic aromatic hydrocarbons
PCB = polychlorinated biphenyl
pg/g = picogram/gram
PHC = petroleum hydrocarbon
SCS = Site Condition Standard
SVOC = semi-volatile organic compound
TEQ = toxic equivialent
VOC = volatile organic compound

Table 6-7b. Rationale for the Removal of Soil COCs

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Parameter Group	Parameter(s)	Category	Detail/Sample(s)	Comment/Rationale
ABN	1,1'-Biphenyl 1,2,4-Trichlorobenzene 2,2'-oxybis(1-chloropropane) 2,4 & 2,6-Dinitrotoluene 3,3'-Dichlorobenzidine 4-Chloroaniline Bis (2-chloroethyl) ether Diethylphthalate Dimethylphthalate	Parameters with existing SCS but RL exceedances only	Two surface samples (original and field duplicate) collected at TP17-300 in 2017 (Lab report L2003037)	The laboratory report indicates adjusted detection limits because of sample matrix effects (i.e., chemical interference, colour, and turbidity), preventing the determination of the presence or absence of the parameters (greater or less than regular detection limits), which may be due to the nature of the fill materials. Concentrations of these ABNs have not been detected elsewhere on the Site, including the remaining 21 samples from 12 locations where these parameters were analyzed as COPCs and RLs met the SCS. Additionally, a sample collected from a deeper interval at TP17-300 did not have raised RLs and met the SCS. Based on the available information, these parameters were determined to likely not be present at concentrations exceeding the SCS; therefore, at the discretion of the QPESA, they were not considered to be COCs for the Site.
ABN	2,4 & 2,6-Dinitrotoluene 3,3'-Dichlorobenzidine Dimethylphthalate	Parameters with existing SCS but RL exceedances only	Six surface samples from 1991 (lab report 91-4281/P&R_E.O.90K2)	Parameters were run as part of older BNA laboratory scans alongside VOCs and PAHs and were not targeted COCs. Historical laboratory RLs may not have had capabilities to meet current SCS. Concentrations of these ABNs have not been detected elsewhere on the Site, including the 11 locations where ABNs were analyzed as a COPC, and RLs met the SCS. Based on the available information, these parameters were determined to likely not be present at concentrations exceeding the SCS; therefore, at the discretion of the QPESA, they were not considered to be COCs for the Site.
ABN	2,4-Dinitrophenol	Parameters with existing SCS but RL exceedances only	Seven surface samples from three locations (MW17-105D, TP17-300 and TP17-301) in 2017, including 2 duplicates (lab report L2003037).	Lab indicated matrix effects as the reason for an RL increase, which may be due to the nature of the fill materials. No detected concentrations of 2,4-dinitrophenol have been reported at the Site, including 10 other locations where ABNs were analyzed as a COPC, and RLs met the SCS. Additionally, a sample collected from a deeper interval at MW17-105D did not have raised RLs and met the SCS. Based on the available information, this parameter was determined to likely not be present at concentrations exceeding the SCS; therefore, at the discretion of the QPESA, it was not considered to be a COC for the Site.
CP	2,4-Dichlorophenol Pentachlorophenol	Parameters with existing SCS but RL exceedances only	Seven surface samples from three locations (MW17-105D, TP17-300 and TP17-301) in 2017, including 2 duplicates (lab report L2003037).	Lab indicated matrix effects as the reason for an RL increase, which may be due to the nature of the fill materials. No detected concentrations of 2,4-dichlorophenol and pentachlorophenol have been reported at the Site, including 10 other locations where ABNs were analyzed as a COPC, and RLs met the SCS. Additionally, a sample collected from a deeper interval at MW17-105D did not have raised RLs and met the SCS. Based on the available information, these parameters were determined to likely not be present at concentrations exceeding the SCS; therefore, at the discretion of the QPESA, they were not considered to be COCs for the Site.
CHEMISTRY	Phosphorus	Parameters with no Table 6 SCS but exceeds the OTR value	Two samples from TP13-11 (TP11-6 and DUP2) in 2013 (Lab report B3K9090)	Two of 43 samples analyzed for phosphorus were above the OTR value of 1635 µg/g. The remaining 41 samples had concentrations of phosphorus below the OTR value. Samples were from 1991, 2007, and 2013, as phosphorus was analyzed as part of the historical laboratory metal suites; it was not targeted as a COC. As phosphorus is considered a nutrient and is not a COPC associated with APEC on Site, and at the discretion of the QPESA, phosphorus is not considered to be a COC for the Site.
METALS	Bismuth	Parameters with no Table 6 SCS and no OTR value	12 samples from 2013 (Lab report B3K9090)	Samples collected as part of historical test-pitting activities in 2013 included a full metals scan, including bismuth. The other metals without an SCS had an OTR value to compare concentrations except for bismuth. Concentrations ranged from nondetect values to 150 µg/g. Bismuth was not a targeted COC. Based on the available information, and at the discretion of the QPESA, bismuth is not considered to be a COC for the Site.
METALS	Calcium	Parameters with no Table 6 SCS but detected concentrations above the OTR value	20 samples from 18 locations collected between 2007 and 2013.	Twenty of a total of 43 samples from between 2007 and 2013 had results with detected concentrations greater than the OTR value of 53,508 µg/g. Calcium was analyzed as part of the historical laboratory metal suites and was not targeted as a COC. As the bedrock in the region is limestone and dolostone, which are typically abundant with calcium and magnesium, it is likely that soils in the region would also contain naturally elevated calcium concentrations. As calcium is considered a naturally occurring element and not a COPC associated with APECs on Site, and at the discretion of the QPESA, calcium is not considered to be a COC for the Site.
METALS	Chromium, Hexavalent (Cr6+)	Parameters with existing SCS but RL exceedances only	24 RL exceedances from 1991 (Lab reports P&R_E.O.90K26, 91-4543/P&R_E.O.90K2, 91-4281/P&R_E.O.90K2, 91-4543/91-4281)	The 24 samples collected in 1991 for hexavalent chromium had RL exceedances. Historical laboratory RLs may not have had capabilities to meet current SCS. Recent sampling conducted in 2007, 2017, and 2018 do not show concentrations detected on the Site above the SCS (65 results with nondetect concentrations below the SCS and 6 samples with detected concentrations below the SCS). Based on the available information, this parameter was determined to likely not be present at concentrations exceeding the SCS; therefore, at the discretion of the QPESA, it was not considered to be a COC for the Site.

Table 6-7b. Rationale for the Removal of Soil COCs

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Parameter Group	Parameter(s)	Category	Detail/Sample(s)	Comment/Rationale
METALS	Cyanide, Free	Parameters with existing SCS but RL exceedances only	All historical samples (five from 1991 and 20 from 2007) (Lab reports 91-281/P&R_E.O.90K2, P&R_E.O.90K26, 91-4281, 07T209831, 07T211735)	Samples analyzed for cyanide in 1991 and 2007 had RL exceedances. Historical laboratory RLs may not have had capabilities to meet current SCS. Recent sampling for cyanide (weak acid dissociable) conducted between 2017 and 2020 have 63 results with nondetect concentrations below the SCS. No concentrations of cyanide have been detected at the Site. Based on the available information, this parameter was determined to likely not be present at concentrations exceeding the SCS; therefore, at the discretion of the QPESA, it was not considered to be a COC for the Site.
METALS	Iron	Parameters with no Table 6 SCS but detected concentrations above the OTR value	7 samples from 1991, 1 sample from 2007, and 1 sample from 2013	Nine of a total of 43 samples had detected concentrations exceeding the OTR value of 37808 µg/g. The remaining 36 samples had detected concentrations below the OTR value. Iron was analyzed as part of the historical laboratory metal suites and was not targeted as a COC. As iron is considered a naturally occurring element and is not a COPC associated with APECs on Site, and at the discretion of the QPESA, iron is not considered to be a COC for the Site.
METALS	Magnesium	Parameters with no Table 6 SCS but detected concentrations above the OTR value	9 samples from 1991, 4 samples from 2007, and 6 samples from 2013	Nineteen of a total of 43 samples had results with detected concentrations greater than the OTR value of 17,400 µg/g. The remaining 24 samples had detected concentrations below the OTR value. Magnesium was analyzed as part of the historical laboratory metal suite and was not targeted as a COC. As the bedrock in the region is limestone and dolostone, which are typically abundant with calcium and magnesium, it is likely that soils in the region would also contain naturally elevated magnesium concentrations. As magnesium is considered a naturally occurring element and not a COPC associated with APECs on Site, and at the discretion of the QPESA, magnesium is not considered to be a COC for the Site.
METALS	Selenium	Parameters with existing SCS but RL exceedances only	Two samples from BH18-207i collected in 2020 (lab report L2419793).	The laboratory report indicates that dilution was required because of high concentrations of test analytes. No detected concentrations of selenium exceeded the SCS in samples where metals were analyzed as a COPC, and RLs met the SCS in the other samples where selenium was not detected. Additionally, three samples collected at BH18-207 in 2018 located within 2 metres of BH18-207i, did not have raised RLs and met the SCS. Based on the available information, this parameter was determined to likely not be present at concentrations exceeding the SCS; therefore, at the discretion of the QPESA, it was not considered to be COCs for the Site.
METALS	Sodium	Parameters with no Table 6 SCS but detected concentrations above the OTR value	6 samples from 1991, and 4 samples from 2013	Ten of a total of 43 samples had detected concentrations greater than the OTR value of 215 µg/g. Twenty-nine of the remaining 33 samples had detected concentrations of sodium below the OTR value, and 4 samples had nondetected concentrations of sodium. Sodium was analyzed as part of the historical laboratory metal suites, and current methods analyze Sodium risks, using SAR analysis. SAR results are below the SCS. Based on the available information, including SAR results below the SCS, at the discretion of the QPESA, sodium is not considered to be a COC for the Site.
METALS	Strontium	Parameters with no Table 6 SCS but detected concentrations above the OTR value	7 samples, 2 from 1991 and 5 from 2013	Seven of a total of 43 samples had detected concentrations greater than the OTR value of 87.5 µg/g, with a maximum of 190 µg/g. The remaining 36 samples had detected concentrations of strontium below the OTR value. Strontium was analyzed as part of the historical laboratory metal suites and was not targeted as a COC. As strontium is considered a naturally occurring element and is not a COPC associated with APEC on Site, and at the discretion of the QPESA, strontium is not considered to be a COC for the Site.
OCP	Hexachlorobutadiene Hexachloroethane	Parameters with existing SCS but RL exceedances only	6 historical samples from 1991 with RL exceedances in soil.	Samples analyzed for hexachlorobutadiene and hexachloroethane in 1991 had RL above the SCS. Historical laboratory RLs may not have had capabilities to meet current SCS. These individual OCP parameters (including hexachlorobenzene and hexachloropentadiene) were run as part of older BNA laboratory scans alongside VOCs and PAHs and were not targeted COCs. OCPs are not considered to be a COPC on Site, and therefore, they were not analyzed in the 2017/2018 environmental investigations. Based on the available information, at the discretion of the QPESA, these parameters are not considered to be COCs for the Site.
VOC	1,1,2,2-Tetrachloroethane	Parameters with existing SCS but RL exceedances only	One sample from MW17-108S in 2017 (2.74 to 2.9 mbgs) (Lab report L2007635)	One sample of the 126 samples analyzed contained an RL exceedance. Laboratory report indicated adjusted detection limits because of co-eluting interferences (i.e., interfering peaks on the VOC method) preventing the determination of the presence or absence of the VOC analytes (greater or less than regular detection limits). The remaining 125 samples, including one sample collected at a deeper interval at the same location, had nondetected concentrations of this parameter, which met the SCS. Based on the available information, this parameter was determined to likely not be present at concentrations exceeding the SCS; therefore, at the discretion of the QPESA, it was not considered to be a COC for the Site.

Table 6-7b. Rationale for the Removal of Soil COCs

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Parameter Group	Parameter(s)	Category	Detail/Sample(s)	Comment/Rationale
VOC	Bromomethane Vinyl Chloride	Parameters with existing SCS but RL exceedances only	One sample from BH07-67 in 2007 (Lab report 07T209831)	One sample of 126 contained RL exceedances for the noted VOCs. Laboratory report indicated adjusted detection limits because of co-eluting interferences (i.e., interfering peaks on the VOC method) preventing the determination of the presence or absence of the VOC analytes (greater or less than regular detection limits). The remaining 125 samples, including one sample collected at a deeper interval at the same location, had nondetected concentrations of these parameters. Based on the available information, these parameters were determined to likely not be present at concentrations exceeding the SCS; therefore, at the discretion of the QPESA, they were not considered to be a COC for the Site.
VOC	Dichloromethane	Parameters with existing SCS but RL exceedances only	One sample from MW17-107S-0.5-2 with an RL exceedance (Lab report L2007635)	One sample of 126 contained RL exceedances for the noted VOC. Laboratory report indicated adjusted detection limits because of co-eluting interferences (i.e., interfering peaks on the VOC method) preventing the determination of the presence or absence of the VOC analytes (greater or less than regular detection limits). The remaining 125 samples had nondetected concentrations of this parameter. Based on the available information, this parameter was determined to likely not be present at concentrations exceeding the SCS; therefore, at the discretion of the QPESA, it was not considered to be a COC for the Site.
VOC	Bromodichloromethane Chloroform	Parameters with existing SCS but RL exceedances only	One sample from BH20-214 with and RL exceedance in soil (Lab report L2419793)	One sample of 126 contained RL exceedances for the noted VOCs. The laboratory report indicated that detection limits were raised because of interference from volatile hydrocarbons on the VOC method; therefore, chromatographic elution of interfering peaks in the same region as the test analytes prevented a determination of whether the analyte was present or absent with respect to the regular detection limits. Concentrations of these VOCs have not been detected elsewhere on the Site. Based on the available information, this parameter was determined to likely not be present at concentrations exceeding the SCS; therefore, at the discretion of the QPESA, it was not considered to be a COC for the Site.

Notes:

The rationale for exclusion of COCs listed in this table is based on the data collected as part of the ESA and only applies to this ESA.

µg/g = microgram per gram
ABN = acid, base, and neutral compound
APEC = area of potential environmental concern
COC = contaminant of concern
COPC = contaminant of potential concern
CP = chlorophenol
ESA = Environmental Site Assessment
mbgs = metre(s) below ground surface
RL = laboratory reporting limit
MECP = Ontario Ministry of the Environment, Conservation and Parks
BNA = base, neutral, and acid compound
No. = number
OCP = organochlorine pesticide
PAH = polycyclic aromatic hydrocarbon
PCA = potentially contaminating activity
PCB = polychlorinated biphenyl
PHC = petroleum hydrocarbon
QPESA = MECP Qualified Person for Environmental Site Assessment
RSC = Record of Site Condition
SCS = Site Condition Standards
VOC = volatile organic compound

Table 6-7c. Contaminants of Concern Identified in Soil

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Soil COCs	
2-(1-)Methylnaphthalene	F2 (C10-C16)
Acenaphthene	F3 (C16-C34)
Acenaphthylene	F4 (C34-C50)
Anthracene	Fluoranthene
Antimony	Fluorene
Arsenic	Indeno(1,2,3-Cd)Pyrene
Benzene	Lead
Benzo(a)anthracene	Mercury
Benzo(a)pyrene	Molybdenum
Benzo(b)fluoranthene	Naphthalene
Benzo(g,h,i)perylene	Nickel
Benzo(k)fluoranthene	PCB, Total
Cadmium	Phenanthrene
Chrysene	Pyrene
Cobalt	Thallium
Copper	Trichloroethylene
Dibenzo(a,h)anthracene	Vanadium
Electrical Conductivity	Xylenes, Total
Ethylbenzene	Zinc

Notes:

COC = contaminant of concern

F = fraction

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW17-100S			MW17-101D				MW17-101S			MW17-102D			MW17-103D		MW17-103S	
		Sample ID	MW17-100S	MW17-100S	MW17-100S	MW17-101D	MW17-101D	MW17-101D	MW17-101D	DUP3	MW17-101S	MW17-101S	MW17-102D	MW17-102D	MW17-102D	MW17-103D	MW17-103D	MW17-103S	MW17-103S
		Start Depth (m)	3.38	3.38	3.38	6.30	6.30	6.30	6.30	1.22	1.22	1.22	13.76	13.76	13.76	7.32	7.32	2.44	2.44
		End Depth (m)	4.90	4.90	4.90	7.82	7.82	7.82	7.82	4.27	4.27	4.27	15.29	15.29	15.29	8.84	8.84	3.96	3.96
		Sample Type	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N
		Sample Date	31 Oct 2017	31 Jul 2018	24 Feb 2020	01 Nov 2017	21 Mar 2018	13 Apr 2018	28 Feb 2020	01 Nov 2017	01 Nov 2017	28 Feb 2020	02 Nov 2017	21 Dec 2018	26 Feb 2020	02 Nov 2017	03 Mar 2020	02 Nov 2017	03 Mar 2020
Analyte	**Table 6 SCS [a]**	**Unit**																	
ABNs																			
1,1'-Biphenyl	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	--
1,2,4-Trichlorobenzene	3	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	--
2,2'-oxybis(1-chloropropane)	120	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	--
2,4 & 2,6-Dinitrotoluene	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.57 U	--
2,4-Dimethylphenol	59	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--
2,4-Dinitrophenol	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--
2,4-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	--
2,6-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	--
3,3'-Dichlorobenzidine	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	--
4-Chloroaniline	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	--
Bis (2-chloroethyl) ether	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	--
Bis (2-ethylhexyl) phthalate	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2 U	--
Diethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--
Dimethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--
Phenol	890	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--
BTEX																			
Benzene	0.5	µg/L	0.5 U	--	0.5 UJ	**1.17**	--	--	**0.7**	--	**0.89**	0.5 U	**1.18**	**1.44**	**1.3**	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	2.4	µg/L	0.5 U	--	0.5 UJ	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	24	µg/L	0.5 U	--	0.5 UJ	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Xylene, o	NV	µg/L	0.3 U	--	0.3 UJ	0.3 U	--	--	0.3 U	--	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Xylenes, m & p	NV	µg/L	0.4 U	--	0.4 UJ	0.4 U	--	--	0.4 U	--	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Xylenes, Total	72	µg/L	0.5 U	--	0.5 UJ	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorophenyls																			
2,4,5-Trichlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--
2,4,6-Trichlorophenol	2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--
2,4-Dichlorophenol	20	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3 U	--
2-Chlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3 U	--
Pentachlorophenol	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--
Chemistry																			
Alkalinity, Bicarbonate (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Carbonate (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Hydroxide (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Total (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon, dissolved organic (DOC)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cation - Anion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Color	NV	CU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity % Difference	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	NV	mS/cm	**0.817**	--	--	**1.5**	--	--	--	--	**1.04**	--	--	--	--	--	--	**0.864**	--
Hardness (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate, as NO3	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate-Nitrite, as N, Total	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite, as NO2	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
pH	NV	pH UNITS	**7.25**	--	--	**7.59**	--	--	--	--	**7.44**	--	--	--	--	--	--	**7.63**	--
pH (Laboratory)	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus, Total Orthophosphate (As P)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Saturation pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (as SIO2)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfur	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total dissolved solids	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Turbidity	NV	NTU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																			
Antimony	6	µg/L	**0.26**	--	--	**0.53**	0.1 U	0.1 U	--	--	0.1 U	--	--	--	--	--	--	**1.07**	--
Arsenic	25	µg/L	**5.88**	--	--	**44.8**	**6.87**	**6.19**	--	--	**0.29**	--	--	--	--	--	--	**1.06**	--
Barium	1000	µg/L	**67.7**	--	--	**136**	--	--	--	--	**77.5**	--	--	--	--	--	--	**45.2**	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW17-100S			MW17-101D				MW17-101S			MW17-102D			MW17-103D		MW17-103S	
		Sample ID	MW17-100S	MW17-100S	MW17-100S	MW17-101D	MW17-101D	MW17-101D	MW17-101D	DUP3	MW17-101S	MW17-101S	MW17-102D	MW17-102D	MW17-102D	MW17-103D	MW17-103D	MW17-103S	MW17-103S
		Start Depth (m)	3.38	3.38	3.38	6.30	6.30	6.30	6.30	1.22	1.22	1.22	13.76	13.76	13.76	7.32	7.32	2.44	2.44
		End Depth (m)	4.90	4.90	4.90	7.82	7.82	7.82	7.82	4.27	4.27	4.27	15.29	15.29	15.29	8.84	8.84	3.96	3.96
		Sample Type	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N
		Sample Date	31 Oct 2017	31 Jul 2018	24 Feb 2020	01 Nov 2017	21 Mar 2018	13 Apr 2018	28 Feb 2020	01 Nov 2017	01 Nov 2017	28 Feb 2020	02 Nov 2017	21 Dec 2018	26 Feb 2020	02 Nov 2017	03 Mar 2020	02 Nov 2017	03 Mar 2020
Analyte	**Table 6 SCS [a]**	**Unit**																	
Beryllium	4	µg/L	0.1 U	--	--	0.1 U	--	--	--	--	0.1 U	--	--	--	--	--	--	0.1 U	--
Boron	5000	µg/L	**81**	--	--	**71**	--	--	--	--	**59**	--	--	--	--	--	--	**86**	--
Cadmium	2.1	µg/L	**0.121**	--	--	0.01 U	--	--	--	--	0.01 U	--	--	--	--	--	--	**0.083**	--
Calcium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	50	µg/L	0.5 U	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	--	--	0.5 U	--
Cobalt	3.8	µg/L	**1.05**	--	--	**0.23**	--	--	--	--	0.1 U	--	--	--	--	--	--	**0.45**	--
Copper	69	µg/L	**0.95**	--	--	0.2 U	--	--	--	--	0.2 U	--	--	--	--	--	--	**0.45**	--
Lead	10	µg/L	0.05 U	--	--	**0.52**	--	--	--	--	0.05 U	--	--	--	--	--	--	**0.102**	--
Magnesium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	70	µg/L	**1.26**	--	--	**9.78**	--	--	--	--	**0.195**	--	--	--	--	--	--	**2.46**	--
Nickel	100	µg/L	**6.88**	--	--	**6.93**	--	--	--	--	0.5 U	--	--	--	--	--	--	**4.73**	--
Selenium	10	µg/L	**0.497**	--	--	**0.375**	0.05 U	**0.097**	--	--	**6.26**	--	--	--	--	--	--	**0.725**	--
Silver	1.2	µg/L	0.05 U	--	--	0.05 U	--	--	--	--	0.05 U	--	--	--	--	--	--	0.05 U	--
Sodium	490000	µg/L	**7480**	--	--	**75800**	--	--	--	--	**7710**	--	--	--	--	--	--	**6540**	--
Thallium	2	µg/L	**0.046**	--	--	0.01 U	--	--	--	--	0.01 U	--	--	--	--	--	--	**0.055**	--
Uranium	20	µg/L	**1.57**	--	--	**8.19**	--	--	--	--	**3.07**	--	--	--	--	--	--	**2.35**	--
Vanadium	6.2	µg/L	0.5 U	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	--	--	0.5 U	--
Zinc	890	µg/L	**458**	--	--	**46.1**	--	--	--	--	1 U	--	--	--	--	--	--	**315**	--
Non-Regulated Metals																			
Aluminum	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cesium (Cs)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoride	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lithium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Rubidium (Rb)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silicon	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tellurium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thorium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tungsten	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																			
Chromium, Hexavalent (Cr6+)	25	µg/L	1 U	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--
Chloride (Cl)	790000	µg/L	**2350**	--	--	**142000**	--	--	--	--	**8980**	--	--	--	--	--	--	**6860**	--
Cyanide, Free	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	µg/L	0.01 U	--	--	0.01 U	--	--	--	--	0.01 U	--	--	--	--	--	--	0.01 U	--
PAHs																			
1-Methylnaphthalene	NV	µg/L	--	0.02 U	--	0.02 U	--	--	--	--	**0.142**	--	--	--	--	--	--	0.02 U	--
2-(1-)Methylnaphthalene	3.2	µg/L	--	0.028 U	--	0.028 U	--	--	--	--	**0.174**	--	--	--	--	--	--	0.028 U	--
2-Methylnaphthalene	NV	µg/L	--	0.02 U	--	0.02 U	--	--	--	--	**0.032**	--	--	--	--	--	--	0.02 U	--
Acenaphthene	4.1	µg/L	--	0.02 U	--	0.02 U	--	--	--	--	**0.618**	--	--	--	--	--	--	0.02 U	--
Acenaphthylene	1	µg/L	--	0.02 U	--	0.02 U	--	--	--	--	0.1 U	--	--	--	--	--	--	0.02 U	--
Anthracene	1	µg/L	--	0.02 U	--	0.02 U	--	--	--	--	0.9 U	--	--	--	--	--	--	0.02 U	--
Benzo(a)anthracene	1	µg/L	--	0.02 U	--	0.02 U	--	--	--	--	0.02 U	--	--	--	--	--	--	0.02 U	--
Benzo(a)pyrene	0.01	µg/L	--	0.01 U	--	0.01 U	--	--	--	--	0.01 U	--	--	--	--	--	--	0.01 U	--
Benzo(b&j)fluoranthene	0.1	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.1	µg/L	--	0.02 U	--	0.02 U	--	--	--	--	0.02 U	--	--	--	--	--	--	0.02 U	--
Benzo(g,h,i)perylene	0.2	µg/L	--	0.02 U	--	0.02 U	--	--	--	--	0.02 U	--	--	--	--	--	--	0.02 U	--
Benzo(k)fluoranthene	0.1	µg/L	--	0.02 U	--	0.02 U	--	--	--	--	0.02 U	--	--	--	--	--	--	0.02 U	--
Chrysene	0.1	µg/L	--	0.02 U	--	0.02 U	--	--	--	--	0.02 U	--	--	--	--	--	--	0.02 U	--
Dibenzo(a,h)anthracene	0.2	µg/L	--	0.02 U	--	0.02 U	--	--	--	--	0.02 U	--	--	--	--	--	--	0.02 U	--
Fluoranthene	0.41	µg/L	--	0.02 U	--	0.02 U	--	--	--	--	0.02 U	--	--	--	--	--	--	0.02 U	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW17-100S			MW17-101D				MW17-101S			MW17-102D			MW17-103D		MW17-103S	
		Sample ID	MW17-100S	MW17-100S	MW17-100S	MW17-101D	MW17-101D	MW17-101D	MW17-101D	DUP3	MW17-101S	MW17-101S	MW17-102D	MW17-102D	MW17-102D	MW17-103D	MW17-103D	MW17-103S	MW17-103S
		Start Depth (m)	3.38	3.38	3.38	6.30	6.30	6.30	6.30	1.22	1.22	1.22	13.76	13.76	13.76	7.32	7.32	2.44	2.44
		End Depth (m)	4.90	4.90	4.90	7.82	7.82	7.82	7.82	4.27	4.27	4.27	15.29	15.29	15.29	8.84	8.84	3.96	3.96
		Sample Type	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N
		Sample Date	31 Oct 2017	31 Jul 2018	24 Feb 2020	01 Nov 2017	21 Mar 2018	13 Apr 2018	28 Feb 2020	01 Nov 2017	01 Nov 2017	28 Feb 2020	02 Nov 2017	21 Dec 2018	26 Feb 2020	02 Nov 2017	03 Mar 2020	02 Nov 2017	03 Mar 2020
Analyte	**Table 6 SCS [a]**	**Unit**																	
Fluorene	120	µg/L	--	0.02 U	--	0.02 U	--	--	--	--	**0.892**	--	--	--	--	--	--	0.02 U	--
Indeno(1,2,3-Cd)Pyrene	0.2	µg/L	--	0.02 U	--	0.02 U	--	--	--	--	0.02 U	--	--	--	--	--	--	0.02 U	--
Naphthalene	7	µg/L	--	0.05 U	--	0.05 U	--	--	--	--	0.14 U	--	--	--	--	--	--	0.05 U	--
Phenanthrene	1	µg/L	--	0.02 U	--	0.02 U	--	--	--	--	0.03 U	--	--	--	--	--	--	0.02 U	--
Pyrene	4.1	µg/L	--	0.02 U	--	0.02 U	--	--	--	--	**0.044**	--	--	--	--	--	--	0.02 U	--
PCBs																			
Aroclor 1016	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1221	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1232	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1242	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1262	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1268	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PHCs																			
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	420	µg/L	25 U	--	--	25 U	--	--	--	--	25 U	--	25 U	--	--	--	--	25 U	--
Petroleum Hydrocarbons F1 (C6-C10)	420	µg/L	25 U	--	--	25 U	--	--	--	--	25 U	--	25 U	--	--	--	--	25 U	--
Petroleum Hydrocarbons F1+F2	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	NV	µg/L	--	--	--	100 U	--	--	--	--	**120**	--	--	--	--	--	--	100 U	--
Petroleum Hydrocarbons F2 (C10-C16)	150	µg/L	100 U	--	--	100 U	--	--	--	--	**120**	--	100 U	--	--	--	--	100 U	--
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	NV	µg/L	--	--	--	250 U	--	--	--	--	250 U	--	--	--	--	--	--	250 U	--
Petroleum Hydrocarbons F3 (C16-C34)	500	µg/L	250 U	--	--	250 U	--	--	--	--	250 U	--	250 U	--	--	--	--	250 U	--
Petroleum Hydrocarbons F3+F4	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3a (C16-C22)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3b (C22-C34)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F4 (C34-C50)	500	µg/L	250 U	--	--	250 U	--	--	--	--	250 U	--	250 U	--	--	--	--	250 U	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/L	370 U	--	--	370 U	--	--	--	--	370 U	--	370 U	--	--	--	--	370 U	--
SVOCs																			
2-Hexanone	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(e)pyrene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Perylene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																			
1,1,1,2-Tetrachloroethane	1.1	µg/L	0.5 U	--	0.5 UJ	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane	23	µg/L	0.5 U	--	0.5 UJ	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	**4.92**	**2.94**
1,1,2,2-Tetrachloroethane	0.5	µg/L	0.5 U	--	0.5 UJ	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	0.5	µg/L	0.5 U	--	0.5 UJ	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	5	µg/L	0.5 U	--	0.5 UJ	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	**1.72**	--	**1.47**	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	0.5	µg/L	0.5 U	--	0.5 UJ	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	0.2	µg/L	0.2 U	--	0.2 UJ	0.2 U	--	--	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichlorobenzene	3	µg/L	0.5 U	--	0.5 UJ	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	0.5	µg/L	0.5 U	--	0.5 UJ	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	0.58	µg/L	0.5 U	--	0.5 UJ	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	59	µg/L	0.5 U	--	0.5 UJ	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropene	0.5	µg/L	0.5 U	--	0.5 UJ	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dichlorobenzene	0.5	µg/L	0.5 U	--	0.5 UJ	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dioxane	50	µg/L	--	--	--	20 U	--	--	--	20 U	20 U	--	--	--	--	--	--	--	--
2-Butanone	1800	µg/L	20 U	--	20 UJ	20 U	--	--	20 U	--	20 U	20 U	20 U	--	20 U	20 U	20 U	20 U	20 U
4-Methyl-2-Pentanone	640	µg/L	20 U	--	20 UJ	20 U	--	--	20 U	--	20 U	20 U	20 U	--	20 U	20 U	20 U	20 U	20 U
Acetone	2700	µg/L	30 U	--	30 UJ	30 U	--	--	30 U	--	30 U	30 U	30 U	--	30 U	30 U	30 U	30 U	30 U
Bromodichloromethane	16	µg/L	2 U	--	2 UJ	2 U	--	--	2 U	--	2 U	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U
Bromoform	5	µg/L	5 U	--	5 UJ	5 U	--	--	5 U	--	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U
Bromomethane	0.89	µg/L	0.5 U	--	0.5 UJ	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride	0.2	µg/L	0.2 U	--	0.2 UJ	0.2 U	--	--	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chlorobenzene	30	µg/L	0.5 U	--	0.5 UJ	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorodibromomethane	25	µg/L	2 U	--	2 UJ	2 U	--	--	2 U	--	2 U	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW17-100S			MW17-101D				MW17-101S			MW17-102D			MW17-103D		MW17-103S	
		Sample ID	MW17-100S	MW17-100S	MW17-100S	MW17-101D	MW17-101D	MW17-101D	MW17-101D	DUP3	MW17-101S	MW17-101S	MW17-102D	MW17-102D	MW17-102D	MW17-103D	MW17-103D	MW17-103S	MW17-103S
		Start Depth (m)	3.38	3.38	3.38	6.30	6.30	6.30	6.30	1.22	1.22	1.22	13.76	13.76	13.76	7.32	7.32	2.44	2.44
		End Depth (m)	4.90	4.90	4.90	7.82	7.82	7.82	7.82	4.27	4.27	4.27	15.29	15.29	15.29	8.84	8.84	3.96	3.96
		Sample Type	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N
		Sample Date	31 Oct 2017	31 Jul 2018	24 Feb 2020	01 Nov 2017	21 Mar 2018	13 Apr 2018	28 Feb 2020	01 Nov 2017	01 Nov 2017	28 Feb 2020	02 Nov 2017	21 Dec 2018	26 Feb 2020	02 Nov 2017	03 Mar 2020	02 Nov 2017	03 Mar 2020
Analyte	**Table 6 SCS [a]**	**Unit**																	
Chloroform	2	µg/L	1 U	--	1 UJ	**1.1**	--	--	1 U	--	1 U	1 U	**1.5**	--	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	1.6	µg/L	0.5 U	--	0.5 UJ	**1.44**	--	--	**1.8**	--	**0.67**	0.5 U	**5.36**	--	**5.4**	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,3-Dichloropropene	NV	µg/L	0.3 U	--	0.3 UJ	0.3 U	--	--	0.3 U	--	0.3 U	0.3 U	0.3 U	--	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Dichlorodifluoromethane	590	µg/L	2 U	--	2 UJ	2 U	--	--	2 U	--	2 U	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U
Dichloromethane	26	µg/L	5 U	--	5 UJ	5 U	--	--	5 U	--	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U
Methyl tert-butyl ether (MTBE)	15	µg/L	2 U	--	2 UJ	2 U	--	--	2 U	--	2 U	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U
n-Hexane	5	µg/L	0.5 U	--	0.5 UJ	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	5.4	µg/L	0.5 U	--	0.5 UJ	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	0.5	µg/L	0.5 U	--	0.5 UJ	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	1.6	µg/L	0.5 U	--	0.5 UJ	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	NV	µg/L	0.3 U	--	0.3 UJ	0.3 U	--	--	0.3 U	--	0.3 U	0.3 U	0.3 U	--	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Trichloroethylene	0.5	µg/L	0.5 U	--	0.5 UJ	0.5 U	--	--	0.5 U	--	**0.6**	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichlorofluoromethane	150	µg/L	5 U	--	5 UJ	5 U	--	--	5 U	--	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U
Vinyl Chloride	0.5	µg/L	0.5 U	--	0.5 UJ	**0.91**	--	--	**1.24**	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act.* Ministry of the Environment. April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/L = microgram(s) per litre

ABNs = acid, base and neutral compounds

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mS/cm = milliSiemen(s) per centimetre

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW17-104D				MW17-104S		MW17-105D			MW17-105S		MW17-106D		MW17-106S			MW17-107S		
		Sample ID	MW17-104D	MW17-104D	DUP1	MW17-104D	MW17-104S	MW17-104S	DUP2	MW17-105D	MW17-105D	MW17-105S	MW17-105S	MW17-106D	MW17-106D	MW17-106S	DUP1	MW17-106S	DUP4	MW17-107S	MW17-107S
		Start Depth (m)	6.10	6.10	6.10	6.10	1.22	1.22	6.93	6.93	6.93	3.20	3.20	7.01	7.01	3.05	3.05	3.05	2.72	2.72	2.72
		End Depth (m)	7.62	7.62	7.62	7.62	3.66	3.66	8.46	8.46	8.46	4.72	4.72	8.53	8.53	4.57	4.57	4.57	4.85	4.85	4.85
		Sample Type	N	N	FD	N	N	N	FD	N	N	N	N	N	N	N	FD	N	FD	N	N
		Sample Date	01 Nov 2017	31 Jul 2018	31 Jul 2018	02 Mar 2020	01 Nov 2017	02 Mar 2020	31 Oct 2017	31 Oct 2017	28 Feb 2020	31 Oct 2017	28 Feb 2020	01 Nov 2017	24 Feb 2020	01 Nov 2017	24 Feb 2020	24 Feb 2020	01 Nov 2017	01 Nov 2017	26 Feb 2020
Analyte	**Table 6 SCS [a]**	**Unit**																			
ABNs																					
1,1'-Biphenyl	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	0.4 U	0.4 U	0.4 U	--
1,2,4-Trichlorobenzene	3	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	0.4 U	0.4 U	0.4 U	--
2,2'-oxybis(1-chloropropane)	120	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	0.4 U	0.4 U	0.4 U	--
2,4 & 2,6-Dinitrotoluene	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.57 U	0.57 U	0.57 U	0.57 U	--
2,4-Dimethylphenol	59	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	--
2,4-Dinitrophenol	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U	1 U	1 U	--
2,4-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	0.4 U	0.4 U	0.4 U	--
2,6-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	0.4 U	0.4 U	0.4 U	--
3,3'-Dichlorobenzidine	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	0.4 U	0.4 U	0.4 U	--
4-Chloroaniline	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.4 UJ	0.4 UJ	0.4 U	0.4 U	--
Bis (2-chloroethyl) ether	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	0.4 U	0.4 U	0.4 U	--
Bis (2-ethylhexyl) phthalate	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	2 U	2 U	--
Diethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	--
Dimethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	--
Phenol	890	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	--
BTEX																					
Benzene	0.5	µg/L	0.5 U	--	--	0.5 U	0.5 U	0.5 U	**3.07**	**3.05**	**1.8**	**66.8**	**31.1**	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ	--	0.5 U	0.5 U
Ethylbenzene	2.4	µg/L	0.5 U	--	--	0.5 U	**0.65**	0.5 U	0.5 U	0.5 U	0.5 U	**8.42**	**1.42**	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ	--	0.5 U	0.5 U
Toluene	24	µg/L	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**1.57**	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ	--	0.5 U	0.5 U
Xylene, o	NV	µg/L	0.3 U	--	--	0.3 U	**2.47**	**2.26**	0.3 U	0.3 U	0.3 U	**1.17**	0.3 U	0.3 U	0.3 UJ	0.3 U	0.3 UJ	0.3 UJ	--	0.3 U	0.3 U
Xylenes, m & p	NV	µg/L	0.4 U	--	--	0.4 U	**0.63**	**0.85**	**0.7**	**0.72**	0.4 U	**37.4**	**11**	0.4 U	0.4 UJ	0.4 U	0.4 UJ	0.4 UJ	--	0.4 U	0.4 U
Xylenes, Total	72	µg/L	0.5 U	--	--	0.5 U	**3.1**	**3.11**	**0.7**	**0.72**	0.5 U	**38.6**	**11**	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ	--	0.5 U	0.5 U
Chlorophenyls																					
2,4,5-Trichlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	--
2,4,6-Trichlorophenol	2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	--
2,4-Dichlorophenol	20	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3 U	0.3 U	0.3 U	0.3 U	--
2-Chlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3 U	0.3 U	0.3 U	0.3 U	--
Pentachlorophenol	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	--
Chemistry																					
Alkalinity, Bicarbonate (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Carbonate (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Hydroxide (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Total (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon, dissolved organic (DOC)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cation - Anion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Color	NV	CU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity % Difference	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	NV	mS/cm	**0.725**	--	--	--	**0.758**	--	**1.09**	**1.08**	--	**1.01**	--	--	--	**0.746**	--	--	--	**0.831**	--
Hardness (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate, as NO3	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate-Nitrite, as N, Total	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite, as NO2	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
pH	NV	pH UNITS	**7.65**	--	--	--	**7.69**	--	**7.61**	**7.5**	--	**7.61**	--	--	--	**7.48**	--	--	--	**7.76**	--
pH (Laboratory)	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus, Total Orthophosphate (As P)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Saturation pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (as SIO2)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfur	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total dissolved solids	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Turbidity	NV	NTU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																					
Antimony	6	µg/L	**2.05**	--	--	--	0.1 U	--	**0.11**	**0.11**	--	0.1 U	--	--	--	**0.26**	--	--	--	**0.28**	--
Arsenic	25	µg/L	**10.6**	--	--	--	**1.06**	--	**20.6**	**20.5**	--	**12.6**	--	--	--	**1.3**	--	--	--	**2.02**	--
Barium	1000	µg/L	**60.2**	--	--	--	**60.7**	--	**246**	**251**	--	**142**	--	--	--	**34.9**	--	--	--	**88.7**	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW17-104D				MW17-104S		MW17-105D			MW17-105S		MW17-106D		MW17-106S			MW17-107S		
		Sample ID	MW17-104D	MW17-104D	DUP1	MW17-104D	MW17-104S	MW17-104S	DUP2	MW17-105D	MW17-105D	MW17-105S	MW17-105S	MW17-106D	MW17-106D	MW17-106S	DUP1	MW17-106S	DUP4	MW17-107S	MW17-107S
		Start Depth (m)	6.10	6.10	6.10	6.10	1.22	1.22	6.93	6.93	6.93	3.20	3.20	7.01	7.01	3.05	3.05	3.05	2.72	2.72	2.72
		End Depth (m)	7.62	7.62	7.62	7.62	3.66	3.66	8.46	8.46	8.46	4.72	4.72	8.53	8.53	4.57	4.57	4.57	4.85	4.85	4.85
		Sample Type	N	N	FD	N	N	N	FD	N	N	N	N	N	N	N	FD	N	FD	N	N
		Sample Date	01 Nov 2017	31 Jul 2018	31 Jul 2018	02 Mar 2020	01 Nov 2017	02 Mar 2020	31 Oct 2017	31 Oct 2017	28 Feb 2020	31 Oct 2017	28 Feb 2020	01 Nov 2017	24 Feb 2020	01 Nov 2017	24 Feb 2020	24 Feb 2020	01 Nov 2017	01 Nov 2017	26 Feb 2020
Analyte	**Table 6 SCS [a]**	**Unit**																			
Beryllium	4	µg/L	0.1 U	--	--	--	0.1 U	--	0.1 U	0.1 U	--	0.1 U	--	--	--	0.1 U	--	--	--	0.1 U	--
Boron	5000	µg/L	**40**	--	--	--	**24**	--	**87**	**87**	--	**76**	--	--	--	**68**	--	--	--	**85**	--
Cadmium	2.1	µg/L	0.01 U	--	--	--	0.01 U	--	0.01 U	0.01 U	--	0.01 U	--	--	--	**0.043**	--	--	--	**0.133**	--
Calcium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	50	µg/L	0.5 U	--	--	--	0.5 U	--	0.5 U	0.5 U	--	0.5 U	--	--	--	0.5 U	--	--	--	0.5 U	--
Cobalt	3.8	µg/L	**0.19**	--	--	--	**0.11**	--	**0.22**	**0.22**	--	**0.17**	--	--	--	**0.17**	--	--	--	**0.47**	--
Copper	69	µg/L	0.2 U	--	--	--	0.2 U	--	0.2 U	0.2 U	--	**0.38**	--	--	--	**0.48**	--	--	--	**0.85**	--
Lead	10	µg/L	**0.093**	--	--	--	0.05 U	--	**0.336**	**0.342**	--	**0.094**	--	--	--	0.05 U	--	--	--	**0.167**	--
Magnesium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	70	µg/L	**23.4**	--	--	--	**0.234**	--	**3.56**	**3.54**	--	**3.17**	--	--	--	**1.19**	--	--	--	**2.42**	--
Nickel	100	µg/L	**4.41**	--	--	--	0.5 U	--	**2.02**	**2.02**	--	**1.98**	--	--	--	**3.19**	--	--	--	**2.92**	--
Selenium	10	µg/L	**0.274**	--	--	--	**0.216**	--	0.05 U	0.05 U	--	0.05 U	--	--	--	**0.128**	--	--	--	**0.859**	--
Silver	1.2	µg/L	0.05 U	--	--	--	0.05 U	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	--	--	--	0.05 U	--
Sodium	490000	µg/L	**8890**	--	--	--	**2220**	--	**34800**	**34800**	--	**28000**	--	--	--	**6370**	--	--	--	**7800**	--
Thallium	2	µg/L	**0.022**	--	--	--	0.01 U	--	**0.018**	**0.021**	--	**0.029**	--	--	--	**0.12**	--	--	--	**0.086**	--
Uranium	20	µg/L	**17**	--	--	--	**0.361**	--	**3.38**	**3.52**	--	**2.51**	--	--	--	**1.92**	--	--	--	**1.4**	--
Vanadium	6.2	µg/L	0.5 U	--	--	--	0.5 U	--	0.5 U	0.5 U	--	0.5 U	--	--	--	0.5 U	--	--	--	0.5 U	--
Zinc	890	µg/L	**58.2**	--	--	--	1 U	--	**28.8**	**28.6**	--	**46.7**	--	--	--	**322**	--	--	--	**200**	--
Non-Regulated Metals																					
Aluminum	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cesium (Cs)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoride	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lithium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Rubidium (Rb)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silicon	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tellurium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thorium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tungsten	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																					
Chromium, Hexavalent (Cr6+)	25	µg/L	1 U	--	--	--	1 U	--	1 U	1 U	--	1 U	--	--	--	1 U	--	--	--	1 U	--
Chloride (Cl)	790000	µg/L	**7530**	--	--	--	**2350**	--	**60400**	**60300**	--	**52300**	--	--	--	**4920**	--	--	--	**7910**	--
Cyanide, Free	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	µg/L	0.01 U	--	--	--	0.01 U	--	0.01 U	0.01 U	--	0.01 U	--	--	--	0.01 U	--	--	--	0.01 U	--
PAHs																					
1-Methylnaphthalene	NV	µg/L	**0.05**	0.02 U	0.02 U	--	**13.9**	--	--	--	--	**0.231**	--	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--
2-(1-)Methylnaphthalene	3.2	µg/L	**0.075**	0.028 U	0.028 U	--	**19.8**	--	--	--	--	**0.56**	--	--	--	0.028 U	0.028 U	0.028 U	0.028 U	0.028 U	--
2-Methylnaphthalene	NV	µg/L	**0.026**	0.02 U	0.02 U	--	**5.92**	--	--	--	--	**0.329**	--	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--
Acenaphthene	4.1	µg/L	**0.072**	0.02 U	0.02 U	--	**3.67**	--	--	--	--	0.02 U	--	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--
Acenaphthylene	1	µg/L	**0.02**	0.02 U	0.02 U	--	**0.44**	--	--	--	--	0.02 U	--	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--
Anthracene	1	µg/L	0.045 U	0.02 U	0.02 U	--	**0.159**	--	--	--	--	0.02 U	--	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--
Benzo(a)anthracene	1	µg/L	0.02 U	0.02 U	0.02 U	--	0.02 U	--	--	--	--	0.02 U	--	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--
Benzo(a)pyrene	0.01	µg/L	**0.015**	0.01 U	0.01 U	--	0.01 U	--	--	--	--	0.01 U	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	--
Benzo(b&j)fluoranthene	0.1	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.1	µg/L	0.02 U	0.02 U	0.02 U	--	0.02 U	--	--	--	--	0.02 U	--	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--
Benzo(g,h,i)perylene	0.2	µg/L	**0.021**	0.02 U	0.02 U	--	0.02 U	--	--	--	--	0.02 U	--	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--
Benzo(k)fluoranthene	0.1	µg/L	0.02 U	0.02 U	0.02 U	--	0.02 U	--	--	--	--	0.02 U	--	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--
Chrysene	0.1	µg/L	0.02 U	0.02 U	0.02 U	--	0.02 U	--	--	--	--	0.02 U	--	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--
Dibenzo(a,h)anthracene	0.2	µg/L	0.02 U	0.02 U	0.02 U	--	0.02 U	--	--	--	--	0.02 U	--	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--
Fluoranthene	0.41	µg/L	0.02 U	0.02 U	0.02 U	--	**0.026**	--	--	--	--	0.02 U	--	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW17-104D				MW17-104S		MW17-105D			MW17-105S		MW17-106D		MW17-106S			MW17-107S		
		Sample ID	MW17-104D	MW17-104D	DUP1	MW17-104D	MW17-104S	MW17-104S	DUP2	MW17-105D	MW17-105D	MW17-105S	MW17-105S	MW17-106D	MW17-106D	MW17-106S	DUP1	MW17-106S	DUP4	MW17-107S	MW17-107S
		Start Depth (m)	6.10	6.10	6.10	6.10	1.22	1.22	6.93	6.93	6.93	3.20	3.20	7.01	7.01	3.05	3.05	3.05	2.72	2.72	2.72
		End Depth (m)	7.62	7.62	7.62	7.62	3.66	3.66	8.46	8.46	8.46	4.72	4.72	8.53	8.53	4.57	4.57	4.57	4.85	4.85	4.85
		Sample Type	N	N	FD	N	N	N	FD	N	N	N	N	N	N	N	FD	N	FD	N	N
		Sample Date	01 Nov 2017	31 Jul 2018	31 Jul 2018	02 Mar 2020	01 Nov 2017	02 Mar 2020	31 Oct 2017	31 Oct 2017	28 Feb 2020	31 Oct 2017	28 Feb 2020	01 Nov 2017	24 Feb 2020	01 Nov 2017	24 Feb 2020	24 Feb 2020	01 Nov 2017	01 Nov 2017	26 Feb 2020
Analyte	**Table 6 SCS [a]**	**Unit**																			
Fluorene	120	µg/L	**0.073**	0.02 U	0.02 U	--	**2.15**	--	--	--	--	0.02 U	--	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--
Indeno(1,2,3-Cd)Pyrene	0.2	µg/L	**0.024**	0.02 U	0.02 U	--	0.02 U	--	--	--	--	0.02 U	--	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--
Naphthalene	7	µg/L	0.05 U	0.05 U	0.05 U	--	15 U	--	--	--	--	**1.28**	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--
Phenanthrene	1	µg/L	0.02 U	0.02 U	0.02 U	--	**1.39**	--	--	--	--	0.02 U	--	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--
Pyrene	4.1	µg/L	**0.026**	0.02 U	0.02 U	--	**0.061**	--	--	--	--	0.02 U	--	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--
PCBs																					
Aroclor 1016	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1221	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1232	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1242	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1262	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1268	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PHCs																					
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	420	µg/L	25 U	--	--	--	**58**	--	25 U	25 U	--	**198**	--	25 U	--	25 U	--	--	--	25 U	--
Petroleum Hydrocarbons F1 (C6-C10)	420	µg/L	25 U	--	--	--	**61**	--	25 U	25 U	--	**313**	--	25 U	--	25 U	--	--	--	25 U	--
Petroleum Hydrocarbons F1+F2	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	NV	µg/L	100 U	--	--	--	**760**	--	--	--	--	100 U	--	--	--	100 U	--	--	--	100 U	--
Petroleum Hydrocarbons F2 (C10-C16)	150	µg/L	100 U	--	--	--	**760**	--	100 U	100 U	--	100 U	--	100 U	--	100 U	--	--	--	100 U	--
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	NV	µg/L	250 U	--	--	--	250 U	--	--	--	--	250 U	--	--	--	250 U	--	--	--	250 U	--
Petroleum Hydrocarbons F3 (C16-C34)	500	µg/L	250 U	--	--	--	250 U	--	250 U	250 U	--	250 U	--	250 U	--	250 U	--	--	--	250 U	--
Petroleum Hydrocarbons F3+F4	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3a (C16-C22)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3b (C22-C34)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F4 (C34-C50)	500	µg/L	250 U	--	--	--	250 U	--	250 U	250 U	--	250 U	--	250 U	--	250 U	--	--	--	250 U	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/L	370 U	--	--	--	**830**	--	370 U	370 U	--	370 U	--	370 U	--	370 U	--	--	--	370 U	--
SVOCs																					
2-Hexanone	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(e)pyrene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Perylene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																					
1,1,1,2-Tetrachloroethane	1.1	µg/L	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ	--	0.5 U	0.5 U
1,1,1-Trichloroethane	23	µg/L	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ	--	**19.5**	**8.34**
1,1,2,2-Tetrachloroethane	0.5	µg/L	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ	--	0.5 U	0.5 U
1,1,2-Trichloroethane	0.5	µg/L	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ	--	0.5 U	0.5 U
1,1-Dichloroethane	5	µg/L	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ	--	**21.4**	**13.4**
1,1-Dichloroethene	0.5	µg/L	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ	--	**1.01**	**0.62**
1,2-Dibromoethane	0.2	µg/L	0.2 U	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 UJ	0.2 UJ	--	0.2 U	0.2 U
1,2-Dichlorobenzene	3	µg/L	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ	--	0.5 U	0.5 U
1,2-Dichloroethane	0.5	µg/L	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ	--	0.5 U	0.5 U
1,2-Dichloropropane	0.58	µg/L	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ	--	0.5 U	0.5 U
1,3-Dichlorobenzene	59	µg/L	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ	--	0.5 U	0.5 U
1,3-Dichloropropene	0.5	µg/L	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ	--	0.5 U	0.5 U
1,4-Dichlorobenzene	0.5	µg/L	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ	--	0.5 U	0.5 U
1,4-Dioxane	50	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	1800	µg/L	20 U	--	--	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 UJ	20 U	20 UJ	20 UJ	--	20 U	20 U
4-Methyl-2-Pentanone	640	µg/L	20 U	--	--	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 UJ	20 U	20 UJ	20 UJ	--	20 U	20 U
Acetone	2700	µg/L	30 U	--	--	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 UJ	30 U	30 UJ	30 UJ	--	30 U	30 U
Bromodichloromethane	16	µg/L	2 U	--	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	2 UJ	2 UJ	--	2 U	2 U
Bromoform	5	µg/L	5 U	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 UJ	5 UJ	--	5 U	5 U
Bromomethane	0.89	µg/L	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ	--	0.5 U	0.5 U
Carbon tetrachloride	0.2	µg/L	0.2 U	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 UJ	0.2 UJ	--	0.2 U	0.2 U
Chlorobenzene	30	µg/L	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ	--	0.5 U	0.5 U
Chlorodibromomethane	25	µg/L	2 U	--	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	2 UJ	2 UJ	--	2 U	2 U

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW17-104D				MW17-104S		MW17-105D			MW17-105S		MW17-106D		MW17-106S			MW17-107S		
		Sample ID	MW17-104D	MW17-104D	DUP1	MW17-104D	MW17-104S	MW17-104S	DUP2	MW17-105D	MW17-105D	MW17-105S	MW17-105S	MW17-106D	MW17-106D	MW17-106S	DUP1	MW17-106S	DUP4	MW17-107S	MW17-107S
		Start Depth (m)	6.10	6.10	6.10	6.10	1.22	1.22	6.93	6.93	6.93	3.20	3.20	7.01	7.01	3.05	3.05	3.05	2.72	2.72	2.72
		End Depth (m)	7.62	7.62	7.62	7.62	3.66	3.66	8.46	8.46	8.46	4.72	4.72	8.53	8.53	4.57	4.57	4.57	4.85	4.85	4.85
		Sample Type	N	N	FD	N	N	N	FD	N	N	N	N	N	N	N	FD	N	FD	N	N
		Sample Date	01 Nov 2017	31 Jul 2018	31 Jul 2018	02 Mar 2020	01 Nov 2017	02 Mar 2020	31 Oct 2017	31 Oct 2017	28 Feb 2020	31 Oct 2017	28 Feb 2020	01 Nov 2017	24 Feb 2020	01 Nov 2017	24 Feb 2020	24 Feb 2020	01 Nov 2017	01 Nov 2017	26 Feb 2020
Analyte	**Table 6 SCS [a]**	**Unit**																			
Chloroform	2	µg/L	1 U	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 UJ	1 UJ	--	1 U	1 U
cis-1,2-Dichloroethene	1.6	µg/L	0.5 U	--	--	0.5 U	0.5 U	0.5 U	**5.62**	**5.57**	**1.8**	**10.9**	**3.49**	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ	--	**1.47**	**1.78**
cis-1,3-Dichloropropene	NV	µg/L	0.3 U	--	--	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 UJ	0.3 U	0.3 UJ	0.3 UJ	--	0.3 U	0.3 U
Dichlorodifluoromethane	590	µg/L	2 U	--	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	2 UJ	2 UJ	--	2 U	2 U
Dichloromethane	26	µg/L	5 U	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 UJ	5 UJ	--	5 U	5 U
Methyl tert-butyl ether (MTBE)	15	µg/L	2 U	--	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	2 UJ	2 UJ	--	2 U	2 U
n-Hexane	5	µg/L	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**7.46**	**0.57**	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ	--	0.5 U	0.5 U
Styrene	5.4	µg/L	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ	--	0.5 U	0.5 U
Tetrachloroethene	0.5	µg/L	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ	--	**0.68**	0.5 U
trans-1,2-Dichloroethene	1.6	µg/L	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ	--	0.5 U	0.5 U
trans-1,3-Dichloropropene	NV	µg/L	0.3 U	--	--	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 UJ	0.3 U	0.3 UJ	0.3 UJ	--	0.3 U	0.3 U
Trichloroethylene	0.5	µg/L	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**0.5**	**0.85**	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ	--	**1.26**	**1.43**
Trichlorofluoromethane	150	µg/L	5 U	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 UJ	5 UJ	--	5 U	5 U
Vinyl Chloride	0.5	µg/L	0.5 U	--	--	0.5 U	0.5 U	0.5 U	**3.97**	**3.88**	**1.23**	**5.63**	**0.94**	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ	--	0.5 U	0.5 U

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act.* Ministry of the Environment. April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/L = microgram(s) per litre

ABNs = acid, base and neutral compounds

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mS/cm = milliSiemen(s) per centimetre

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW17-108S			MW17-109S			MW17-110S		MW17-111S		MW18-105G		MW18-107D		MW18-112D		
		Sample ID	DUP 1	MW17-108S	MW17-108S	DUP5	MW17-109S	MW17-109S	MW17-110S	MW17-110S	MW17-111S	MW17-111S	MW18-105G	MW18-105G	MW18-107D	MW18-107D	MW18-112D	MW18-112D	MW18-112D
		Start Depth (m)	1.93	1.93	1.93	2.79	2.79	2.79	3.00	3.00	3.43	3.43	16.97	16.97	18.59	18.59	6.40	6.40	6.40
		End Depth (m)	4.98	4.98	4.98	4.32	4.32	4.32	4.52	4.52	4.95	4.95	18.49	18.49	20.11	20.11	7.92	7.92	7.92
		Sample Type	FD	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	31 Oct 2017	31 Oct 2017	20 Mar 2018	02 Nov 2017	02 Nov 2017	02 Mar 2020	02 Nov 2017	02 Mar 2020	02 Nov 2017	25 Feb 2020	11 Dec 2018	28 Feb 2020	30 Jul 2018	26 Feb 2020	02 Aug 2018	10 Dec 2018	25 Feb 2020
Analyte	**Table 6 SCS [a]**	**Unit**																	
ABNs																			
1,1'-Biphenyl	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	3	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,2'-oxybis(1-chloropropane)	120	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	59	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	890	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BTEX																			
Benzene	0.5	µg/L	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 UJ
Ethylbenzene	2.4	µg/L	0.5 U	0.5 U	0.5 U	--	**3.19**	**8.46**	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 UJ
Toluene	24	µg/L	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 UJ
Xylene, o	NV	µg/L	0.3 U	0.3 U	0.3 U	--	**0.5**	**0.69**	0.3 U	0.3 U	0.3 U	0.3 UJ	0.3 U	0.3 U	**0.42**	0.3 U	--	0.3 U	0.3 UJ
Xylenes, m & p	NV	µg/L	0.4 U	0.4 U	0.4 U	--	**1.1**	**0.89**	0.4 U	0.4 U	0.4 U	0.4 UJ	0.4 U	0.4 U	**0.57**	0.4 U	--	0.4 U	0.4 UJ
Xylenes, Total	72	µg/L	0.5 U	0.5 U	0.5 U	--	**1.6**	**1.58**	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	**0.99**	0.5 U	--	0.5 U	0.5 UJ
Chlorophenyls																			
2,4,5-Trichlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	20	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																			
Alkalinity, Bicarbonate (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Carbonate (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Hydroxide (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Total (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon, dissolved organic (DOC)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cation - Anion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Color	NV	CU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity % Difference	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	NV	mS/cm	**1.09**	**1.08**	--	--	**1.67**	--	**0.89**	--	**0.68**	--	--	--	--	--	--	--	--
Hardness (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate, as NO3	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate-Nitrite, as N, Total	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite, as NO2	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
pH	NV	pH UNITS	**7.35**	**7.32**	--	--	**7.44**	--	**7.53**	--	**7.81**	--	--	--	--	--	--	--	--
pH (Laboratory)	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus, Total Orthophosphate (As P)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Saturation pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (as SIO2)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfur	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total dissolved solids	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Turbidity	NV	NTU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																			
Antimony	6	µg/L	**0.1**	**0.1**	--	--	1 U	--	**0.22**	--	**0.14**	--	--	--	--	--	**0.67**	--	--
Arsenic	25	µg/L	**1.1**	**1.13**	--	--	1 U	--	**2.61**	--	**3.15**	--	--	--	--	--	**32.7**	--	--
Barium	1000	µg/L	**180**	**184**	--	--	**48.3**	--	**42.8**	--	**82.4**	--	--	--	--	--	**109**	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW17-108S			MW17-109S			MW17-110S		MW17-111S		MW18-105G		MW18-107D		MW18-112D		
		Sample ID	DUP 1	MW17-108S	MW17-1085	DUP5	MW17-109S	MW17-109S	MW17-110S	MW17-110S	MW17-111S	MW17-111S	MW18-105G	MW18-105G	MW18-107D	MW18-107D	MW18-112D	MW18-112D	MW18-112D
		Start Depth (m)	1.93	1.93	1.93	2.79	2.79	2.79	3.00	3.00	3.43	3.43	16.97	16.97	18.59	18.59	6.40	6.40	6.40
		End Depth (m)	4.98	4.98	4.98	4.32	4.32	4.32	4.52	4.52	4.95	4.95	18.49	18.49	20.11	20.11	7.92	7.92	7.92
		Sample Type	FD	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	31 Oct 2017	31 Oct 2017	20 Mar 2018	02 Nov 2017	02 Nov 2017	02 Mar 2020	02 Nov 2017	02 Mar 2020	02 Nov 2017	25 Feb 2020	11 Dec 2018	28 Feb 2020	30 Jul 2018	26 Feb 2020	02 Aug 2018	10 Dec 2018	25 Feb 2020
Analyte	**Table 6 SCS [a]**	**Unit**																	
Beryllium	4	µg/L	0.1 U	0.1 U	--	--	1 U	--	0.1 U	--	0.1 U	--	--	--	--	--	0.1 U	--	--
Boron	5000	µg/L	**113**	**113**	--	--	100 U	--	**118**	--	**76**	--	--	--	--	--	**53**	--	--
Cadmium	2.1	µg/L	0.01 U	0.01 U	--	--	0.1 U	--	**0.02**	--	**0.119**	--	--	--	--	--	0.01 U	--	--
Calcium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	50	µg/L	0.5 U	0.5 U	--	--	5 U	--	0.5 U	--	0.5 U	--	--	--	--	--	0.5 U	--	--
Cobalt	3.8	µg/L	0.1 U	0.1 U	--	--	1 U	--	**1.54**	--	**0.37**	--	--	--	--	--	0.1 U	--	--
Copper	69	µg/L	0.2 U	0.2 U	--	--	2 U	--	**1.61**	--	**0.4**	--	--	--	--	--	**1.56**	--	--
Lead	10	µg/L	0.05 U	0.05 U	--	--	0.5 U	--	**0.154**	--	**0.263**	--	--	--	--	--	**0.239**	--	--
Magnesium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	70	µg/L	**0.594**	**0.61**	--	--	0.5 U	--	**2.58**	--	**3.25**	--	--	--	--	--	**5.5**	--	--
Nickel	100	µg/L	0.5 U	0.5 U	--	--	5 U	--	**6.48**	--	**2**	--	--	--	--	--	**1.39**	--	--
Selenium	10	µg/L	**0.165**	**0.201**	--	--	**1.03**	--	**0.231**	--	**0.126**	--	--	--	--	--	**0.169**	--	--
Silver	1.2	µg/L	0.05 U	0.05 U	--	--	0.5 U	--	0.05 U	--	0.05 U	--	--	--	--	--	0.05 U	--	--
Sodium	490000	µg/L	**9360**	**9670**	--	--	5000 U	--	**8290**	--	**7430**	--	--	--	--	--	--	--	--
Thallium	2	µg/L	0.01 U	0.01 U	--	--	0.1 U	--	**0.081**	--	**0.115**	--	--	--	--	--	0.01 U	--	--
Uranium	20	µg/L	**0.557**	**0.569**	--	--	**4.92**	--	**2.76**	--	**2.36**	--	--	--	--	--	**2.09**	--	--
Vanadium	6.2	µg/L	0.5 U	0.5 U	--	--	5 U	--	0.5 U	--	0.5 U	--	--	--	--	--	0.5 U	--	--
Zinc	890	µg/L	**1.1**	**1.3**	--	--	10 U	--	**459**	--	**304**	--	--	--	--	--	**5.8**	--	--
Non-Regulated Metals																			
Aluminum	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cesium (Cs)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoride	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lithium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Rubidium (Rb)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silicon	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tellurium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thorium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tungsten	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																			
Chromium, Hexavalent (Cr6+)	25	µg/L	1 U	1 U	--	--	1 U	--	1 U	--	1 U	--	--	--	--	--	--	--	--
Chloride (Cl)	790000	µg/L	**8920**	**9000**	--	--	**8310**	--	**5880**	--	**12900**	--	--	--	--	--	--	--	--
Cyanide, Free	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	µg/L	0.01 U	0.01 U	--	--	0.01 U	--	0.01 U	--	0.01 U	--	--	--	--	--	--	--	--
PAHs																			
1-Methylnaphthalene	NV	µg/L	**0.026**	**0.022**	0.02 U	--	**3.98**	--	0.02 U	--	--	--	--	--	--	--	--	--	--
2-(1-)Methylnaphthalene	3.2	µg/L	**0.048 J**	0.028 UJ	0.028 U	--	**4.47**	--	0.028 U	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	NV	µg/L	**0.023**	0.02 U	0.02 U	--	**0.493**	--	0.02 U	--	--	--	--	--	--	--	--	--	--
Acenaphthene	4.1	µg/L	0.04 U	0.035 U	**0.026 J**	--	**3.37**	--	0.02 U	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	1	µg/L	0.02 U	0.02 U	0.02 U	--	**0.553**	--	0.02 U	--	--	--	--	--	--	--	--	--	--
Anthracene	1	µg/L	**0.023**	0.02 U	0.02 U	--	**0.314**	--	0.02 U	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	1	µg/L	0.02 U	0.02 U	0.02 U	--	0.02 U	--	0.02 U	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.01	µg/L	0.01 U	0.01 U	0.01 U	--	0.01 U	--	0.01 U	--	--	--	--	--	--	--	--	--	--
Benzo(b&j)fluoranthene	0.1	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.1	µg/L	0.02 U	0.02 U	0.02 U	--	0.02 U	--	0.02 U	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	0.2	µg/L	0.02 U	0.02 U	0.02 U	--	0.02 U	--	0.02 U	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.1	µg/L	0.02 U	0.02 U	0.02 U	--	0.02 U	--	0.02 U	--	--	--	--	--	--	--	--	--	--
Chrysene	0.1	µg/L	**0.023**	**0.022**	0.02 U	--	0.02 U	--	0.02 U	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.2	µg/L	0.02 U	0.02 U	0.02 U	--	0.02 U	--	0.02 U	--	--	--	--	--	--	--	--	--	--
Fluoranthene	0.41	µg/L	**0.022**	0.02 U	0.02 U	--	**0.03**	--	0.02 U	--	--	--	--	--	--	--	--	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW17-108S			MW17-109S			MW17-110S		MW17-111S		MW18-105G		MW18-107D		MW18-112D		
		Sample ID	DUP 1	MW17-108S	MW17-1085	DUP5	MW17-109S	MW17-109S	MW17-110S	MW17-110S	MW17-111S	MW17-111S	MW18-105G	MW18-105G	MW18-107D	MW18-107D	MW18-112D	MW18-112D	MW18-112D
		Start Depth (m)	1.93	1.93	1.93	2.79	2.79	2.79	3.00	3.00	3.43	3.43	16.97	16.97	18.59	18.59	6.40	6.40	6.40
		End Depth (m)	4.98	4.98	4.98	4.32	4.32	4.32	4.52	4.52	4.95	4.95	18.49	18.49	20.11	20.11	7.92	7.92	7.92
		Sample Type	FD	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	31 Oct 2017	31 Oct 2017	20 Mar 2018	02 Nov 2017	02 Nov 2017	02 Mar 2020	02 Nov 2017	02 Mar 2020	02 Nov 2017	25 Feb 2020	11 Dec 2018	28 Feb 2020	30 Jul 2018	26 Feb 2020	02 Aug 2018	10 Dec 2018	25 Feb 2020
Analyte	**Table 6 SCS [a]**	**Unit**																	
Fluorene	120	µg/L	**0.162**	**0.136**	**0.122**	--	**3.06**	--	0.02 U	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-Cd)Pyrene	0.2	µg/L	0.02 U	0.02 U	0.02 U	--	0.02 U	--	0.02 U	--	--	--	--	--	--	--	--	--	--
Naphthalene	7	µg/L	0.05 U	0.05 U	0.05 U	--	0.8 U	--	0.05 U	--	--	--	--	--	--	--	--	--	--
Phenanthrene	1	µg/L	**0.03**	**0.025**	0.02 U	--	**0.953**	--	0.02 U	--	--	--	--	--	--	--	--	--	--
Pyrene	4.1	µg/L	**0.05**	**0.047**	**0.034**	--	**0.084**	--	0.02 U	--	--	--	--	--	--	--	--	--	--
PCBs																			
Aroclor 1016	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1221	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1232	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1242	NV	µg/L	--	--	--	0.2 U	0.1 U	--	--	--	0.02 U	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/L	--	--	--	0.02 U	0.02 U	--	--	--	0.02 U	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/L	--	--	--	0.02 U	0.02 U	--	--	--	0.02 U	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/L	--	--	--	0.02 U	0.02 U	--	--	--	0.02 U	--	--	--	--	--	--	--	--
Aroclor 1262	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1268	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.2	µg/L	--	--	--	0.2 U	0.11 U	--	--	--	0.04 U	--	--	--	--	--	--	--	--
PHCs																			
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	420	µg/L	25 U	25 U	25 U	--	**33**	--	25 U	--	25 U	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F1 (C6-C10)	420	µg/L	25 U	25 U	25 U	--	**38**	--	25 U	--	25 U	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F1+F2	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	NV	µg/L	100 U	100 U	100 U	--	100 U	--	100 U	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16)	150	µg/L	100 U	100 U	100 U	--	100 U	--	100 U	--	100 U	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	NV	µg/L	**450**	**470**	250 U	--	250 U	--	250 U	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34)	500	µg/L	**450**	**470**	250 U	--	250 U	--	250 U	--	250 U	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3+F4	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3a (C16-C22)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3b (C22-C34)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F4 (C34-C50)	500	µg/L	250 U	250 U	250 U	--	250 U	--	250 U	--	250 U	--	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/L	**450**	**470**	370 U	--	370 U	--	370 U	--	370 U	--	--	--	--	--	--	--	--
SVOCs																			
2-Hexanone	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(e)pyrene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Perylene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																			
1,1,1,2-Tetrachloroethane	1.1	µg/L	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 UJ
1,1,1-Trichloroethane	23	µg/L	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	**4.51**	**5.29 J**	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 UJ
1,1,2,2-Tetrachloroethane	0.5	µg/L	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 UJ
1,1,2-Trichloroethane	0.5	µg/L	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 UJ
1,1-Dichloroethane	5	µg/L	**0.72**	**0.74**	**0.61**	--	0.5 U	0.5 U	0.5 U	0.5 U	**2.64**	**2.04 J**	**1.04**	**0.78**	0.5 U	0.5 U	--	0.5 U	0.5 UJ
1,1-Dichloroethene	0.5	µg/L	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 UJ
1,2-Dibromoethane	0.2	µg/L	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 UJ
1,2-Dichlorobenzene	3	µg/L	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 UJ
1,2-Dichloroethane	0.5	µg/L	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 UJ
1,2-Dichloropropane	0.58	µg/L	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 UJ
1,3-Dichlorobenzene	59	µg/L	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 UJ
1,3-Dichloropropene	0.5	µg/L	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 UJ
1,4-Dichlorobenzene	0.5	µg/L	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 UJ
1,4-Dioxane	50	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	1800	µg/L	20 U	20 U	20 U	--	20 U	20 U	20 U	20 U	20 U	20 UJ	20 U	20 U	20 U	20 U	--	20 U	20 UJ
4-Methyl-2-Pentanone	640	µg/L	20 U	20 U	20 U	--	20 U	20 U	20 U	20 U	20 U	20 UJ	20 U	20 U	20 U	20 U	--	20 U	20 UJ
Acetone	2700	µg/L	30 U	30 U	30 U	--	30 U	30 U	30 U	30 U	30 U	30 UJ	30 U	30 U	30 U	30 U	--	30 U	30 UJ
Bromodichloromethane	16	µg/L	2 U	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	2 U	2 U	2 U	--	2 U	2 UJ
Bromoform	5	µg/L	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	--	5 U	5 UJ
Bromomethane	0.89	µg/L	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 UJ
Carbon tetrachloride	0.2	µg/L	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 UJ
Chlorobenzene	30	µg/L	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 UJ
Chlorodibromomethane	25	µg/L	2 U	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	2 U	2 U	2 U	--	2 U	2 UJ

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW17-108S			MW17-109S			MW17-110S		MW17-111S		MW18-105G		MW18-107D		MW18-112D		
		Sample ID	DUP 1	MW17-108S	MW17-1085	DUP5	MW17-109S	MW17-109S	MW17-110S	MW17-110S	MW17-111S	MW17-111S	MW18-105G	MW18-105G	MW18-107D	MW18-107D	MW18-112D	MW18-112D	MW18-112D
		Start Depth (m)	1.93	1.93	1.93	2.79	2.79	2.79	3.00	3.00	3.43	3.43	16.97	16.97	18.59	18.59	6.40	6.40	6.40
		End Depth (m)	4.98	4.98	4.98	4.32	4.32	4.32	4.52	4.52	4.95	4.95	18.49	18.49	20.11	20.11	7.92	7.92	7.92
		Sample Type	FD	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	31 Oct 2017	31 Oct 2017	20 Mar 2018	02 Nov 2017	02 Nov 2017	02 Mar 2020	02 Nov 2017	02 Mar 2020	02 Nov 2017	25 Feb 2020	11 Dec 2018	28 Feb 2020	30 Jul 2018	26 Feb 2020	02 Aug 2018	10 Dec 2018	25 Feb 2020
Analyte	**Table 6 SCS [a]**	**Unit**																	
Chloroform	2	µg/L	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	**1.3**	1 U	--	1 U	1 UJ
cis-1,2-Dichloroethene	1.6	µg/L	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	**2.04**	**2.11**	**1.23**	**0.82**	--	0.5 U	0.5 UJ
cis-1,3-Dichloropropene	NV	µg/L	0.3 U	0.3 U	0.3 U	--	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 UJ	0.3 U	0.3 U	0.3 U	0.3 U	--	0.3 U	0.3 UJ
Dichlorodifluoromethane	590	µg/L	2 U	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	2 U	2 U	2 U	--	2 U	2 UJ
Dichloromethane	26	µg/L	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	--	5 U	5 UJ
Methyl tert-butyl ether (MTBE)	15	µg/L	2 U	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	2 U	2 U	2 U	--	2 U	2 UJ
n-Hexane	5	µg/L	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	**0.52**	0.5 U	--	0.5 U	0.5 UJ
Styrene	5.4	µg/L	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 UJ
Tetrachloroethene	0.5	µg/L	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 UJ
trans-1,2-Dichloroethene	1.6	µg/L	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 UJ
trans-1,3-Dichloropropene	NV	µg/L	0.3 U	0.3 U	0.3 U	--	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 UJ	0.3 U	0.3 U	0.3 U	0.3 U	--	0.3 U	0.3 UJ
Trichloroethylene	0.5	µg/L	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	**0.5**	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 UJ
Trichlorofluoromethane	150	µg/L	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	--	5 U	5 UJ
Vinyl Chloride	0.5	µg/L	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 UJ

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act.* Ministry of the Environment. April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/L = microgram(s) per litre

ABNs = acid, base and neutral compounds

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mS/cm = milliSiemen(s) per centimetre

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW18-112G				MW18-112S		MW18-113D				MW18-113S				MW18-114D				
		Sample ID	MW-112 G	MW18-112G	MW18-112G	MW18-112G	MW18-112S	MW18-112S	MW18-113D	MW18-113D	MW18-113D	MW18-113D	MW18-113S	DUP3	MW18-113S	MW18-113S	MW18-114D	MW18-114D	MW18-114D	GW-DUP4	MW18-114D
		Start Depth (m)	19.35	19.35	19.35	19.35	3.42	3.42	18.29	18.29	18.29	18.29	3.37	3.37	3.37	3.37	19.20	19.20	19.20	19.20	19.20
		End Depth (m)	20.88	20.88	20.88	20.88	4.95	4.95	19.81	19.81	19.81	19.81	4.90	4.90	4.90	4.90	20.73	20.73	20.73	20.73	20.73
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	FD	N
		Sample Date	22 Nov 2018	29 Nov 2018	03 Dec 2018	25 Feb 2020	02 Aug 2018	25 Feb 2020	11 Dec 2018	17 Dec 2018	21 Dec 2018	24 Feb 2020	03 Aug 2018	03 Aug 2018	24 Feb 2020	11 Mar 2020	10 Dec 2018	11 Dec 2018	21 Dec 2018	27 Mar 2019	27 Mar 2019
Analyte	**Table 6 SCS [a]**	**Unit**																			
ABNs																					
1,1'-Biphenyl	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	3	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,2'-oxybis(1-chloropropane)	120	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	59	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	890	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BTEX																					
Benzene	0.5	µg/L	**0.86**	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 U	--	0.5 U	0.5 UJ	--	--	0.5 UJ	0.5 U	--	0.5 U	--	--	--
Ethylbenzene	2.4	µg/L	0.5 U	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 U	--	0.5 U	0.5 UJ	--	--	0.5 UJ	0.5 U	--	0.5 U	--	--	--
Toluene	24	µg/L	**1.74**	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	**0.52**	--	0.5 U	0.5 UJ	--	--	0.5 UJ	0.5 U	--	**0.93**	--	--	--
Xylene, o	NV	µg/L	**0.48**	0.3 U	0.3 U	0.3 UJ	--	0.3 UJ	0.3 U	--	0.3 U	0.3 UJ	--	--	0.3 UJ	0.3 U	--	**0.32**	--	--	--
Xylenes, m & p	NV	µg/L	**0.87**	0.4 U	0.4 U	0.4 UJ	--	0.4 UJ	0.4 U	--	0.4 U	0.4 UJ	--	--	0.4 UJ	0.4 U	--	**0.64**	--	--	--
Xylenes, Total	72	µg/L	**1.35**	0.5 U	--	0.5 UJ	--	0.5 UJ	0.5 U	--	0.5 U	0.5 UJ	--	--	0.5 UJ	0.5 U	--	**0.96**	--	--	--
Chlorophenyls																					
2,4,5-Trichlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	20	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																					
Alkalinity, Bicarbonate (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Carbonate (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Hydroxide (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Total (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon, dissolved organic (DOC)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cation - Anion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Color	NV	CU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity % Difference	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	NV	mS/cm	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardness (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate, as NO3	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate-Nitrite, as N, Total	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite, as NO2	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
pH (Laboratory)	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus, Total Orthophosphate (As P)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Saturation pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (as SIO2)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfur	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total dissolved solids	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Turbidity	NV	NTU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																					
Antimony	6	µg/L	**3.5**	--	--	--	**0.51**	--	--	**0.42**	--	--	**3.07**	**3.04**	--	--	**6.2**	--	**1.54**	**0.1**	**0.12**
Arsenic	25	µg/L	**2.5**	--	--	--	**42.5**	--	--	**17.1**	--	--	**16.4**	**15.9**	--	--	**23**	--	**24.8**	**8.96**	**9.11**
Barium	1000	µg/L	--	--	--	--	**60.5**	--	--	--	--	--	**52.5**	**50.4**	--	--	**60.5**	--	**48**	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW18-112G				MW18-112S		MW18-113D				MW18-113S				MW18-114D				
		Sample ID	MW-112 G	MW18-112G	MW18-112G	MW18-112G	MW18-112S	MW18-112S	MW18-113D	MW18-113D	MW18-113D	MW18-113D	MW18-113S	DUP3	MW18-113S	MW18-113S	MW18-114D	MW18-114D	MW18-114D	GW-DUP4	MW18-114D
		Start Depth (m)	19.35	19.35	19.35	19.35	3.42	3.42	18.29	18.29	18.29	18.29	3.37	3.37	3.37	3.37	19.20	19.20	19.20	19.20	19.20
		End Depth (m)	20.88	20.88	20.88	20.88	4.95	4.95	19.81	19.81	19.81	19.81	4.90	4.90	4.90	4.90	20.73	20.73	20.73	20.73	20.73
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	FD	N
		Sample Date	22 Nov 2018	29 Nov 2018	03 Dec 2018	25 Feb 2020	02 Aug 2018	25 Feb 2020	11 Dec 2018	17 Dec 2018	21 Dec 2018	24 Feb 2020	03 Aug 2018	03 Aug 2018	24 Feb 2020	11 Mar 2020	10 Dec 2018	11 Dec 2018	21 Dec 2018	27 Mar 2019	27 Mar 2019
Analyte	**Table 6 SCS [a]**	**Unit**																			
Beryllium	4	µg/L	--	--	--	--	0.1 U	--	--	--	--	--	0.1 U	0.1 U	--	--	1 U	--	0.1 U	--	--
Boron	5000	µg/L	--	--	--	--	**43**	--	--	--	--	--	**64**	**63**	--	--	**110**	--	**89**	--	--
Cadmium	2.1	µg/L	--	--	--	--	0.01 U	--	--	--	--	--	**0.041**	**0.041**	--	--	0.05 U	--	0.01 U	--	--
Calcium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	50	µg/L	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U	--	--	**13.3**	--	0.5 U	--	--
Cobalt	3.8	µg/L	--	--	--	--	**0.26**	--	--	--	--	--	**0.51**	**0.49**	--	--	1 U	--	0.1 U	--	--
Copper	69	µg/L	--	--	--	--	**0.42**	--	--	--	--	--	**0.48 J**	**1.04 J**	--	--	**4.3**	--	0.2 U	--	--
Lead	10	µg/L	--	--	--	--	**1.04**	--	--	--	--	--	**3.78 J**	**2.65 J**	--	--	**9.88**	--	**0.343**	--	--
Magnesium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	70	µg/L	--	--	--	--	**2.18**	--	--	--	--	--	**4.46**	**4.29**	--	--	**52.4**	--	**43.1**	--	--
Nickel	100	µg/L	--	--	--	--	**1.51**	--	--	--	--	--	**8.58**	**8.34**	--	--	5 U	--	**2.7**	--	--
Selenium	10	µg/L	**2.7**	--	--	--	**0.255**	--	--	**0.115**	--	--	**0.273**	**0.262**	--	--	**0.64**	--	**0.177**	**0.264**	**0.254**
Silver	1.2	µg/L	--	--	--	--	0.05 U	--	--	--	--	--	0.05 U	0.05 U	--	--	0.5 U	--	0.05 U	--	--
Sodium	490000	µg/L	--	--	--	--	--	--	--	--	--	--	**135000**	**127000**	--	--	--	--	--	--	--
Thallium	2	µg/L	--	--	--	--	0.01 U	--	--	--	--	--	0.01 U	0.01 U	--	--	0.1 U	--	0.01 U	--	--
Uranium	20	µg/L	--	--	--	--	**2.85**	--	--	--	--	--	**11.8**	**11.2**	--	--	**4.85**	--	**5.35**	--	--
Vanadium	6.2	µg/L	--	--	--	--	**1.32**	--	--	--	--	--	0.5 U	0.5 U	--	--	5 U	--	0.5 U	--	--
Zinc	890	µg/L	--	--	--	--	**13.5**	--	--	--	--	--	**515**	**509**	--	--	**62**	--	**13.6**	--	--
Non-Regulated Metals																					
Aluminum	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cesium (Cs)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoride	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lithium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Rubidium (Rb)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silicon	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tellurium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thorium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tungsten	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																					
Chromium, Hexavalent (Cr6+)	25	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloride (Cl)	790000	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Free	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs																					
1-Methylnaphthalene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-(1-)Methylnaphthalene	3.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	4.1	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	1	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	1	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	1	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.01	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b&j)fluoranthene	0.1	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.1	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	0.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.1	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	0.1	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	0.41	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW18-112G				MW18-112S		MW18-113D				MW18-113S				MW18-114D				
		Sample ID	MW-112 G	MW18-112G	MW18-112G	MW18-112G	MW18-112S	MW18-112S	MW18-113D	MW18-113D	MW18-113D	MW18-113D	MW18-113S	DUP3	MW18-113S	MW18-113S	MW18-114D	MW18-114D	MW18-114D	GW-DUP4	MW18-114D
		Start Depth (m)	19.35	19.35	19.35	19.35	3.42	3.42	18.29	18.29	18.29	18.29	3.37	3.37	3.37	3.37	19.20	19.20	19.20	19.20	19.20
		End Depth (m)	20.88	20.88	20.88	20.88	4.95	4.95	19.81	19.81	19.81	19.81	4.90	4.90	4.90	4.90	20.73	20.73	20.73	20.73	20.73
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	FD	N
		Sample Date	22 Nov 2018	29 Nov 2018	03 Dec 2018	25 Feb 2020	02 Aug 2018	25 Feb 2020	11 Dec 2018	17 Dec 2018	21 Dec 2018	24 Feb 2020	03 Aug 2018	03 Aug 2018	24 Feb 2020	11 Mar 2020	10 Dec 2018	11 Dec 2018	21 Dec 2018	27 Mar 2019	27 Mar 2019
Analyte	**Table 6 SCS [a]**	**Unit**																			
Fluorene	120	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-Cd)Pyrene	0.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	7	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	1	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	4.1	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCBs																					
Aroclor 1016	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1221	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1232	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1242	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1262	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1268	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PHCs																					
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	420	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F1 (C6-C10)	420	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F1+F2	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16)	150	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34)	500	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3+F4	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3a (C16-C22)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3b (C22-C34)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F4 (C34-C50)	500	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SVOCs																					
2-Hexanone	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(e)pyrene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Perylene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																					
1,1,1,2-Tetrachloroethane	1.1	µg/L	0.5 U	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 U	--	0.5 U	0.5 UJ	--	--	0.5 UJ	0.5 U	--	0.5 U	--	--	--
1,1,1-Trichloroethane	23	µg/L	0.5 U	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 U	--	0.5 U	0.5 UJ	--	--	0.5 UJ	0.5 U	--	0.5 U	--	--	--
1,1,2,2-Tetrachloroethane	0.5	µg/L	0.5 U	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 U	--	0.5 U	0.5 UJ	--	--	0.5 UJ	0.5 U	--	0.5 U	--	--	--
1,1,2-Trichloroethane	0.5	µg/L	0.5 U	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 U	--	0.5 U	0.5 UJ	--	--	0.5 UJ	0.5 U	--	0.5 U	--	--	--
1,1-Dichloroethane	5	µg/L	0.5 U	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 U	--	0.5 U	0.5 UJ	--	--	0.5 UJ	0.5 U	--	0.5 U	--	--	--
1,1-Dichloroethene	0.5	µg/L	0.5 U	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 U	--	0.5 U	0.5 UJ	--	--	0.5 UJ	0.5 U	--	0.5 U	--	--	--
1,2-Dibromoethane	0.2	µg/L	0.2 U	0.2 U	0.2 U	0.2 UJ	--	0.2 UJ	0.2 U	--	0.2 U	0.2 UJ	--	--	0.2 UJ	0.2 U	--	0.2 U	--	--	--
1,2-Dichlorobenzene	3	µg/L	0.5 U	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 U	--	0.5 U	0.5 UJ	--	--	0.5 UJ	0.5 U	--	0.5 U	--	--	--
1,2-Dichloroethane	0.5	µg/L	0.5 U	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 U	--	0.5 U	0.5 UJ	--	--	0.5 UJ	0.5 U	--	0.5 U	--	--	--
1,2-Dichloropropane	0.58	µg/L	0.5 U	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 U	--	0.5 U	0.5 UJ	--	--	0.5 UJ	0.5 U	--	0.5 U	--	--	--
1,3-Dichlorobenzene	59	µg/L	0.5 U	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 U	--	0.5 U	0.5 UJ	--	--	0.5 UJ	0.5 U	--	0.5 U	--	--	--
1,3-Dichloropropene	0.5	µg/L	0.5 U	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 U	--	0.5 U	0.5 UJ	--	--	0.5 UJ	0.5 U	--	0.5 U	--	--	--
1,4-Dichlorobenzene	0.5	µg/L	0.5 U	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 U	--	0.5 U	0.5 UJ	--	--	0.5 UJ	0.5 U	--	0.5 U	--	--	--
1,4-Dioxane	50	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	1800	µg/L	20 U	20 U	20 U	20 UJ	--	20 UJ	20 U	--	20 U	20 UJ	--	--	20 UJ	20 U	--	20 U	--	--	--
4-Methyl-2-Pentanone	640	µg/L	20 U	20 U	20 U	20 UJ	--	20 UJ	20 U	--	20 U	20 UJ	--	--	20 UJ	20 U	--	20 U	--	--	--
Acetone	2700	µg/L	30 U	30 U	30 U	30 UJ	--	30 UJ	30 U	--	30 U	30 UJ	--	--	30 UJ	30 U	--	30 U	--	--	--
Bromodichloromethane	16	µg/L	**7.3**	2 U	2 U	2 UJ	--	2 UJ	2 U	--	2 U	2 UJ	--	--	2 UJ	2 U	--	2 U	--	--	--
Bromoform	5	µg/L	5 U	5 U	5 U	5 UJ	--	5 UJ	5 U	--	5 U	5 UJ	--	--	5 UJ	5 U	--	5 U	--	--	--
Bromomethane	0.89	µg/L	0.5 U	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 U	--	0.5 U	0.5 UJ	--	--	0.5 UJ	0.5 U	--	0.5 U	--	--	--
Carbon tetrachloride	0.2	µg/L	0.2 U	0.2 U	0.2 U	0.2 UJ	--	0.2 UJ	0.2 U	--	0.2 U	0.2 UJ	--	--	0.2 UJ	0.2 U	--	0.2 U	--	--	--
Chlorobenzene	30	µg/L	0.5 U	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 U	--	0.5 U	0.5 UJ	--	--	0.5 UJ	0.5 U	--	0.5 U	--	--	--
Chlorodibromomethane	25	µg/L	**7.4**	2 U	2 U	2 UJ	--	2 UJ	2 U	--	2 U	2 UJ	--	--	2 UJ	2 U	--	2 U	--	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW18-112G				MW18-112S		MW18-113D				MW18-113S				MW18-114D				
		Sample ID	MW-112 G	MW18-112G	MW18-112G	MW18-112G	MW18-112S	MW18-112S	MW18-113D	MW18-113D	MW18-113D	MW18-113D	MW18-113S	DUP3	MW18-113S	MW18-113S	MW18-114D	MW18-114D	MW18-114D	GW-DUP4	MW18-114D
		Start Depth (m)	19.35	19.35	19.35	19.35	3.42	3.42	18.29	18.29	18.29	18.29	3.37	3.37	3.37	3.37	19.20	19.20	19.20	19.20	19.20
		End Depth (m)	20.88	20.88	20.88	20.88	4.95	4.95	19.81	19.81	19.81	19.81	4.90	4.90	4.90	4.90	20.73	20.73	20.73	20.73	20.73
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	FD	N
		Sample Date	22 Nov 2018	29 Nov 2018	03 Dec 2018	25 Feb 2020	02 Aug 2018	25 Feb 2020	11 Dec 2018	17 Dec 2018	21 Dec 2018	24 Feb 2020	03 Aug 2018	03 Aug 2018	24 Feb 2020	11 Mar 2020	10 Dec 2018	11 Dec 2018	21 Dec 2018	27 Mar 2019	27 Mar 2019
Analyte	**Table 6 SCS [a]**	**Unit**																			
Chloroform	2	µg/L	**5.8**	1 U	1 U	1 UJ	--	1 UJ	1 U	--	1 U	1 UJ	--	--	1 UJ	1 U	--	**1.1**	--	--	--
cis-1,2-Dichloroethene	1.6	µg/L	0.5 U	**2.22**	**1.55**	**1.57 J**	--	0.5 UJ	**1.33**	--	**1.75**	**1.02 J**	--	--	0.5 UJ	0.5 U	--	**1.87**	--	--	--
cis-1,3-Dichloropropene	NV	µg/L	0.3 U	0.3 U	0.3 U	0.3 UJ	--	0.3 UJ	0.3 U	--	0.3 U	0.3 UJ	--	--	0.3 UJ	0.3 U	--	0.3 U	--	--	--
Dichlorodifluoromethane	590	µg/L	2 U	2 U	2 U	2 UJ	--	2 UJ	2 U	--	2 U	2 UJ	--	--	2 UJ	2 U	--	2 U	--	--	--
Dichloromethane	26	µg/L	5 U	5 U	5 U	5 UJ	--	5 UJ	5 U	--	5 U	5 UJ	--	--	5 UJ	5 U	--	5 U	--	--	--
Methyl tert-butyl ether (MTBE)	15	µg/L	2 U	2 U	2 U	2 UJ	--	2 UJ	2 U	--	2 U	2 UJ	--	--	2 UJ	2 U	--	2 U	--	--	--
n-Hexane	5	µg/L	0.5 U	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	**0.72**	--	0.5 U	0.5 UJ	--	--	0.5 UJ	0.5 U	--	**0.77**	--	--	--
Styrene	5.4	µg/L	0.5 U	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 U	--	0.5 U	0.5 UJ	--	--	0.5 UJ	0.5 U	--	0.5 U	--	--	--
Tetrachloroethene	0.5	µg/L	0.5 U	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 U	--	0.5 U	0.5 UJ	--	--	0.5 UJ	0.5 U	--	0.5 U	--	--	--
trans-1,2-Dichloroethene	1.6	µg/L	0.5 U	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 U	--	0.5 U	0.5 UJ	--	--	0.5 UJ	0.5 U	--	0.5 U	--	--	--
trans-1,3-Dichloropropene	NV	µg/L	0.3 U	0.3 U	0.3 U	0.3 UJ	--	0.3 UJ	0.3 U	--	0.3 U	0.3 UJ	--	--	0.3 UJ	0.3 U	--	0.3 U	--	--	--
Trichloroethylene	0.5	µg/L	0.5 U	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	**0.58**	--	0.5 U	0.5 UJ	--	--	0.5 UJ	0.5 U	--	0.5 U	--	--	--
Trichlorofluoromethane	150	µg/L	5 U	5 U	5 U	5 UJ	--	5 UJ	5 U	--	5 U	5 UJ	--	--	5 UJ	5 U	--	5 U	--	--	--
Vinyl Chloride	0.5	µg/L	0.5 U	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 U	--	0.5 U	0.5 UJ	--	--	0.5 UJ	0.5 U	--	0.5 U	--	--	--

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act.* Ministry of the Environment. April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/L = microgram(s) per litre

ABNs = acid, base and neutral compounds

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mS/cm = milliSiemen(s) per centimetre

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location		MW18-114S			MW18-115D		MW18-115S				MW18-116D		MW18-116S		MW18-117S			
		Sample ID	MW18-114D	MW18-114S	MW18-114S	MW18-114S	MW18-115D	MW18-115D	MW18-115S	DUP2	MW18-115S	MW18-115S	MW18-116D	MW18-116D	MW18-116S	MW18-116S	MW18-117S	MW18-117S	DUP1	MW18-117S
		Start Depth (m)	19.20	3.37	3.37	3.37	19.20	19.20	3.20	3.20	3.20	3.20	6.50	6.50	2.51	2.51	3.35	3.35	3.35	3.35
		End Depth (m)	20.73	4.90	4.90	4.90	20.73	20.73	4.72	4.72	4.72	4.72	8.02	8.02	4.03	4.03	4.87	4.87	4.87	4.87
		Sample Type	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	FD	N
		Sample Date	24 Feb 2020	02 Aug 2018	24 Feb 2020	11 Mar 2020	12 Dec 2018	24 Feb 2020	02 Aug 2018	24 Feb 2020	24 Feb 2020	11 Mar 2020	03 Aug 2018	26 Feb 2020	03 Aug 2018	26 Feb 2020	02 Aug 2018	24 Feb 2020	11 Mar 2020	11 Mar 2020
Analyte	**Table 6 SCS [a]**	**Unit**																		
ABNs																				
1,1'-Biphenyl	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	3	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,2'-oxybis(1-chloropropane)	120	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	59	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	890	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BTEX																				
Benzene	0.5	µg/L	0.5 UJ	--	0.5 UJ	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U
Ethylbenzene	2.4	µg/L	0.5 UJ	--	0.5 UJ	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U
Toluene	24	µg/L	0.5 UJ	--	**0.87 J**	**1.12**	0.5 U	0.5 UJ	--	0.5 UJ	0.5 UJ	**0.56**	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U
Xylene, o	NV	µg/L	0.3 UJ	--	0.3 UJ	0.3 U	0.3 U	0.3 UJ	--	0.3 UJ	0.3 UJ	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	--	0.3 UJ	0.3 U	0.3 U
Xylenes, m & p	NV	µg/L	0.4 UJ	--	0.4 UJ	0.4 U	0.4 U	0.4 UJ	--	0.4 UJ	0.4 UJ	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	--	0.4 UJ	0.4 U	0.4 U
Xylenes, Total	72	µg/L	0.5 UJ	--	0.5 UJ	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U
Chlorophenyls																				
2,4,5-Trichlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	20	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																				
Alkalinity, Bicarbonate (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Carbonate (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Hydroxide (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Total (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon, dissolved organic (DOC)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cation - Anion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Color	NV	CU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity % Difference	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	NV	mS/cm	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardness (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate, as NO3	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate-Nitrite, as N, Total	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite, as NO2	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
pH (Laboratory)	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus, Total Orthophosphate (As P)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Saturation pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (as SIO2)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfur	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total dissolved solids	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Turbidity	NV	NTU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																				
Antimony	6	µg/L	--	**0.29**	--	--	**0.12**	--	**0.28**	--	--	--	**0.57**	--	**0.84**	--	**1.03**	--	--	--
Arsenic	25	µg/L	--	**13.7**	--	--	**0.8**	--	**6.74**	--	--	--	**1.19**	--	**0.55**	--	**1.14**	--	--	--
Barium	1000	µg/L	--	**62.2**	--	--	**51.9**	--	**38.8**	--	--	--	**50.3**	--	**40.8**	--	**39.5**	--	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location		MW18-114S			MW18-115D		MW18-115S				MW18-116D		MW18-116S		MW18-117S			
		Sample ID	MW18-114D	MW18-114S	MW18-114S	MW18-114S	MW18-115D	MW18-115D	MW18-115S	DUP2	MW18-115S	MW18-115S	MW18-116D	MW18-116D	MW18-116S	MW18-116S	MW18-117S	MW18-117S	DUP1	MW18-117S
		Start Depth (m)	19.20	3.37	3.37	3.37	19.20	19.20	3.20	3.20	3.20	3.20	6.50	6.50	2.51	2.51	3.35	3.35	3.35	3.35
		End Depth (m)	20.73	4.90	4.90	4.90	20.73	20.73	4.72	4.72	4.72	4.72	8.02	8.02	4.03	4.03	4.87	4.87	4.87	4.87
		Sample Type	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	FD	N
		Sample Date	24 Feb 2020	02 Aug 2018	24 Feb 2020	11 Mar 2020	12 Dec 2018	24 Feb 2020	02 Aug 2018	24 Feb 2020	24 Feb 2020	11 Mar 2020	03 Aug 2018	26 Feb 2020	03 Aug 2018	26 Feb 2020	02 Aug 2018	24 Feb 2020	11 Mar 2020	11 Mar 2020
Analyte	**Table 6 SCS [a]**	**Unit**																		
Beryllium	4	µg/L	--	0.1 U	--	--	0.1 U	--	0.1 U	--	--	--	0.1 U	--	0.1 U	--	0.1 U	--	--	--
Boron	5000	µg/L	--	**53**	--	--	**70**	--	**62**	--	--	--	**54**	--	**55**	--	**52**	--	--	--
Cadmium	2.1	µg/L	--	**0.291**	--	--	0.01 U	--	0.01 U	--	--	--	**0.36**	--	**0.635**	--	**0.223**	--	--	--
Calcium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	50	µg/L	--	0.5 U	--	--	0.5 U	--	0.5 U	--	--	--	0.5 U	--	0.5 U	--	0.5 U	--	--	--
Cobalt	3.8	µg/L	--	**0.74**	--	--	0.1 U	--	**1.1**	--	--	--	**0.63**	--	**0.14**	--	**0.26**	--	--	--
Copper	69	µg/L	--	**1.1**	--	--	0.2 U	--	**0.48**	--	--	--	**2.07**	--	**12.5**	--	**1.69**	--	--	--
Lead	10	µg/L	--	**0.127**	--	--	0.05 U	--	**0.552**	--	--	--	**2**	--	**0.159**	--	**0.332**	--	--	--
Magnesium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	70	µg/L	--	**4.23**	--	--	**10.2**	--	**2.03**	--	--	--	**4.52**	--	**3.42**	--	**1.74**	--	--	--
Nickel	100	µg/L	--	**2.01**	--	--	**1.02**	--	**7.18**	--	--	--	**5.67**	--	**5.33**	--	**3.27**	--	--	--
Selenium	10	µg/L	--	**0.323**	--	--	**5.83**	--	**0.107**	--	--	--	**0.778**	--	**0.536**	--	**0.926**	--	--	--
Silver	1.2	µg/L	--	0.05 U	--	--	0.05 U	--	0.05 U	--	--	--	0.05 U	--	0.05 U	--	0.05 U	--	--	--
Sodium	490000	µg/L	--	--	--	--	**127000**	--	--	--	--	--	**138000**	--	**110000**	--	**5180**	--	--	--
Thallium	2	µg/L	--	**0.042**	--	--	0.01 U	--	**0.016**	--	--	--	**0.043**	--	**0.233**	--	**0.077**	--	--	--
Uranium	20	µg/L	--	**3.14**	--	--	**3.91**	--	**2.64**	--	--	--	**7.03**	--	**5.5**	--	**2.07**	--	--	--
Vanadium	6.2	µg/L	--	**0.65**	--	--	0.5 U	--	0.5 U	--	--	--	0.5 U	--	0.5 U	--	0.5 U	--	--	--
Zinc	890	µg/L	--	**163**	--	--	1 U	--	**505**	--	--	--	**734**	--	**436**	--	**338**	--	--	--
Non-Regulated Metals																				
Aluminum	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cesium (Cs)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoride	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lithium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Rubidium (Rb)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silicon	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tellurium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thorium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tungsten	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																				
Chromium, Hexavalent (Cr6+)	25	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloride (Cl)	790000	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Free	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs																				
1-Methylnaphthalene	NV	µg/L	--	--	--	--	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--	--	--	--
2-(1-)Methylnaphthalene	3.2	µg/L	--	--	--	--	--	--	--	0.028 U	0.028 U	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	NV	µg/L	--	--	--	--	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--	--	--	--
Acenaphthene	4.1	µg/L	--	--	--	--	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--	--	--	--
Acenaphthylene	1	µg/L	--	--	--	--	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--	--	--	--
Anthracene	1	µg/L	--	--	--	--	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	1	µg/L	--	--	--	--	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.01	µg/L	--	--	--	--	--	--	--	0.01 U	0.01 U	--	--	--	--	--	--	--	--	--
Benzo(b&j)fluoranthene	0.1	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.1	µg/L	--	--	--	--	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	0.2	µg/L	--	--	--	--	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.1	µg/L	--	--	--	--	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--	--	--	--
Chrysene	0.1	µg/L	--	--	--	--	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.2	µg/L	--	--	--	--	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--	--	--	--
Fluoranthene	0.41	µg/L	--	--	--	--	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--	--	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location		MW18-114S			MW18-115D		MW18-115S				MW18-116D		MW18-116S		MW18-117S			
		Sample ID	MW18-114D	MW18-114S	MW18-114S	MW18-114S	MW18-115D	MW18-115D	MW18-115S	DUP2	MW18-115S	MW18-115S	MW18-116D	MW18-116D	MW18-116S	MW18-116S	MW18-117S	MW18-117S	DUP1	MW18-117S
		Start Depth (m)	19.20	3.37	3.37	3.37	19.20	19.20	3.20	3.20	3.20	3.20	6.50	6.50	2.51	2.51	3.35	3.35	3.35	3.35
		End Depth (m)	20.73	4.90	4.90	4.90	20.73	20.73	4.72	4.72	4.72	4.72	8.02	8.02	4.03	4.03	4.87	4.87	4.87	4.87
		Sample Type	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	FD	N
		Sample Date	24 Feb 2020	02 Aug 2018	24 Feb 2020	11 Mar 2020	12 Dec 2018	24 Feb 2020	02 Aug 2018	24 Feb 2020	24 Feb 2020	11 Mar 2020	03 Aug 2018	26 Feb 2020	03 Aug 2018	26 Feb 2020	02 Aug 2018	24 Feb 2020	11 Mar 2020	11 Mar 2020
Analyte	**Table 6 SCS [a]**	**Unit**																		
Fluorene	120	µg/L	--	--	--	--	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-Cd)Pyrene	0.2	µg/L	--	--	--	--	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--	--	--	--
Naphthalene	7	µg/L	--	--	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--
Phenanthrene	1	µg/L	--	--	--	--	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--	--	--	--
Pyrene	4.1	µg/L	--	--	--	--	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--	--	--	--
PCBs																				
Aroclor 1016	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1221	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1232	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1242	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1262	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1268	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PHCs																				
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	420	µg/L	--	--	--	--	--	--	--	25 UJ	25 UJ	--	--	--	--	--	--	25 UJ	--	--
Petroleum Hydrocarbons F1 (C6-C10)	420	µg/L	--	--	--	--	--	--	--	25 UJ	25 UJ	--	--	--	--	--	--	25 UJ	--	--
Petroleum Hydrocarbons F1+F2	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	NV	µg/L	--	--	--	--	--	--	--	100 UJ	100 UJ	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16)	150	µg/L	--	--	--	--	--	--	--	100 UJ	100 UJ	--	--	--	--	--	--	100 UJ	--	--
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	NV	µg/L	--	--	--	--	--	--	--	250 UJ	250 UJ	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34)	500	µg/L	--	--	--	--	--	--	--	250 UJ	250 UJ	--	--	--	--	--	--	250 UJ	--	--
Petroleum Hydrocarbons F3+F4	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3a (C16-C22)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3b (C22-C34)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F4 (C34-C50)	500	µg/L	--	--	--	--	--	--	--	250 UJ	250 UJ	--	--	--	--	--	--	250 UJ	--	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/L	--	--	--	--	--	--	--	370 UJ	370 UJ	--	--	--	--	--	--	370 UJ	--	--
SVOCs																				
2-Hexanone	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(e)pyrene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Perylene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																				
1,1,1,2-Tetrachloroethane	1.1	µg/L	0.5 UJ	--	0.5 UJ	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U
1,1,1-Trichloroethane	23	µg/L	0.5 UJ	--	0.5 UJ	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 UJ	0.5 U	**0.82**	**0.98**	**1.07**	**0.72**	--	0.5 UJ	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	0.5	µg/L	0.5 UJ	--	0.5 UJ	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U
1,1,2-Trichloroethane	0.5	µg/L	0.5 UJ	--	0.5 UJ	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U
1,1-Dichloroethane	5	µg/L	0.5 UJ	--	0.5 UJ	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 UJ	0.5 U	**1.6**	**0.79**	**0.52**	0.5 U	--	0.5 UJ	0.5 U	0.5 U
1,1-Dichloroethene	0.5	µg/L	0.5 UJ	--	0.5 UJ	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U
1,2-Dibromoethane	0.2	µg/L	0.2 UJ	--	0.2 UJ	0.2 U	0.2 U	0.2 UJ	--	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 UJ	0.2 U	0.2 U
1,2-Dichlorobenzene	3	µg/L	0.5 UJ	--	0.5 UJ	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U
1,2-Dichloroethane	0.5	µg/L	0.5 UJ	--	0.5 UJ	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U
1,2-Dichloropropane	0.58	µg/L	0.5 UJ	--	0.5 UJ	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U
1,3-Dichlorobenzene	59	µg/L	0.5 UJ	--	0.5 UJ	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U
1,3-Dichloropropene	0.5	µg/L	0.5 UJ	--	0.5 UJ	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U
1,4-Dichlorobenzene	0.5	µg/L	0.5 UJ	--	0.5 UJ	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U
1,4-Dioxane	50	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	1800	µg/L	20 UJ	--	20 UJ	20 U	20 U	20 UJ	--	20 UJ	20 UJ	20 U	20 U	20 U	20 U	20 U	--	20 UJ	20 U	20 U
4-Methyl-2-Pentanone	640	µg/L	20 UJ	--	20 UJ	20 U	20 U	20 UJ	--	20 UJ	20 UJ	20 U	20 U	20 U	20 U	20 U	--	20 UJ	20 U	20 U
Acetone	2700	µg/L	30 UJ	--	30 UJ	30 U	30 U	30 UJ	--	30 UJ	30 UJ	30 U	30 U	30 U	30 U	30 U	--	30 UJ	30 U	30 U
Bromodichloromethane	16	µg/L	2 UJ	--	2 UJ	2 U	2 U	2 UJ	--	2 UJ	2 UJ	2 U	2 U	2 U	2 U	2 U	--	2 UJ	2 U	2 U
Bromoform	5	µg/L	5 UJ	--	5 UJ	5 U	5 U	5 UJ	--	5 UJ	5 UJ	5 U	5 U	5 U	5 U	5 U	--	5 UJ	5 U	5 U
Bromomethane	0.89	µg/L	0.5 UJ	--	0.5 UJ	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U
Carbon tetrachloride	0.2	µg/L	0.2 UJ	--	0.2 UJ	0.2 U	0.2 U	0.2 UJ	--	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 UJ	0.2 U	0.2 U
Chlorobenzene	30	µg/L	0.5 UJ	--	0.5 UJ	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U
Chlorodibromomethane	25	µg/L	2 UJ	--	2 UJ	2 U	2 U	2 UJ	--	2 UJ	2 UJ	2 U	2 U	2 U	2 U	2 U	--	2 UJ	2 U	2 U

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location		MW18-114S			MW18-115D		MW18-115S				MW18-116D		MW18-116S		MW18-117S			
		Sample ID	MW18-114D	MW18-114S	MW18-114S	MW18-114S	MW18-115D	MW18-115D	MW18-115S	DUP2	MW18-115S	MW18-115S	MW18-116D	MW18-116D	MW18-116S	MW18-116S	MW18-117S	MW18-117S	DUP1	MW18-117S
		Start Depth (m)	19.20	3.37	3.37	3.37	19.20	19.20	3.20	3.20	3.20	3.20	6.50	6.50	2.51	2.51	3.35	3.35	3.35	3.35
		End Depth (m)	20.73	4.90	4.90	4.90	20.73	20.73	4.72	4.72	4.72	4.72	8.02	8.02	4.03	4.03	4.87	4.87	4.87	4.87
		Sample Type	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	FD	N
		Sample Date	24 Feb 2020	02 Aug 2018	24 Feb 2020	11 Mar 2020	12 Dec 2018	24 Feb 2020	02 Aug 2018	24 Feb 2020	24 Feb 2020	11 Mar 2020	03 Aug 2018	26 Feb 2020	03 Aug 2018	26 Feb 2020	02 Aug 2018	24 Feb 2020	11 Mar 2020	11 Mar 2020
Analyte	**Table 6 SCS [a]**	**Unit**																		
Chloroform	2	µg/L	1 UJ	--	1 UJ	1 U	1 U	1 UJ	--	1 UJ	1 UJ	1 U	1 U	1 U	1 U	1 U	--	1 UJ	1 U	1 U
cis-1,2-Dichloroethene	1.6	µg/L	**1.71 J**	--	0.5 UJ	0.5 U	**1.63**	**0.83 J**	--	0.5 UJ	0.5 UJ	0.5 U	**0.71**	0.5 U	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U
cis-1,3-Dichloropropene	NV	µg/L	0.3 UJ	--	0.3 UJ	0.3 U	0.3 U	0.3 UJ	--	0.3 UJ	0.3 UJ	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	--	0.3 UJ	0.3 U	0.3 U
Dichlorodifluoromethane	590	µg/L	2 UJ	--	2 UJ	2 U	2 U	2 UJ	--	2 UJ	2 UJ	2 U	2 U	2 U	2 U	2 U	--	2 UJ	2 U	2 U
Dichloromethane	26	µg/L	5 UJ	--	5 UJ	5 U	5 U	5 UJ	--	5 UJ	5 UJ	5 U	5 U	5 U	5 U	5 U	--	5 UJ	5 U	5 U
Methyl tert-butyl ether (MTBE)	15	µg/L	2 UJ	--	2 UJ	2 U	2 U	2 UJ	--	2 UJ	2 UJ	2 U	2 U	2 U	2 U	2 U	--	2 UJ	2 U	2 U
n-Hexane	5	µg/L	0.5 UJ	--	0.5 UJ	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U
Styrene	5.4	µg/L	0.5 UJ	--	0.5 UJ	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U
Tetrachloroethene	0.5	µg/L	0.5 UJ	--	0.5 UJ	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U
trans-1,2-Dichloroethene	1.6	µg/L	0.5 UJ	--	0.5 UJ	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U
trans-1,3-Dichloropropene	NV	µg/L	0.3 UJ	--	0.3 UJ	0.3 U	0.3 U	0.3 UJ	--	0.3 UJ	0.3 UJ	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	--	0.3 UJ	0.3 U	0.3 U
Trichloroethylene	0.5	µg/L	0.5 UJ	--	0.5 UJ	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 UJ	0.5 U	**0.85**	**0.57**	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U
Trichlorofluoromethane	150	µg/L	5 UJ	--	5 UJ	5 U	5 U	5 UJ	--	5 UJ	5 UJ	5 U	5 U	5 U	5 U	5 U	--	5 UJ	5 U	5 U
Vinyl Chloride	0.5	µg/L	0.5 UJ	--	0.5 UJ	0.5 U	0.5 U	0.5 UJ	--	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act.* Ministry of the Environment. April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/L = microgram(s) per litre

ABNs = acid, base and neutral compounds

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mS/cm = milliSiemen(s) per centimetre

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW18-118S		MW18-119D		MW18-119S		MW18-120D		MW18-121D			MW18-121S		MW18-122D		MW18-122G		MW18-123D	
		Sample ID	MW18-118S	MW18-118S	MW18-119D	MW18-119D	MW18-119S	MW18-119S	MW18-120D	MW18-120D	MW18-121D	DUP4	MW18-121D	MW18-121S	MW18-121S	MW18-122D	MW18-122D	MW18-122G	MW18-122G	MW18-123D	MW18-123D
		Start Depth (m)	3.25	3.25	16.89	16.89	3.45	3.45	18.59	18.59	16.33	16.33	16.33	3.12	3.12	12.44	12.44	19.51	19.51	18.79	18.79
		End Depth (m)	4.77	4.77	18.42	18.42	4.97	4.97	20.11	20.11	17.85	17.85	17.85	4.64	4.64	13.96	13.96	21.03	21.03	20.32	20.32
		Sample Type	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N
		Sample Date	02 Aug 2018	24 Feb 2020	10 Dec 2018	25 Feb 2020	03 Aug 2018	25 Feb 2020	30 Jul 2018	25 Feb 2020	30 Jul 2018	26 Feb 2020	26 Feb 2020	03 Aug 2018	26 Feb 2020	03 Aug 2018	25 Feb 2020	10 Dec 2018	25 Feb 2020	30 Jul 2018	26 Feb 2020
Analyte	**Table 6 SCS [a]**	**Unit**																			
ABNs																					
1,1'-Biphenyl	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	3	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,2'-oxybis(1-chloropropane)	120	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	59	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	890	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BTEX																					
Benzene	0.5	µg/L	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U
Ethylbenzene	2.4	µg/L	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U
Toluene	24	µg/L	0.5 U	0.5 UJ	**0.72**	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	**0.53**	0.5 U	0.5 U	**0.62**	0.5 U	0.5 U	0.5 UJ	**0.51**	0.5 UJ	**0.84**	0.5 U
Xylene, o	NV	µg/L	0.3 U	0.3 UJ	**0.59**	0.3 UJ	0.3 U	0.3 UJ	0.3 U	0.3 UJ	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 UJ	0.3 U	0.3 UJ	**0.33**	0.3 U
Xylenes, m & p	NV	µg/L	0.4 U	0.4 UJ	**0.9**	0.4 UJ	0.4 U	0.4 UJ	0.4 U	0.4 UJ	**0.43**	0.4 U	0.4 U	**0.45**	0.4 U	0.4 U	0.4 UJ	**0.43**	0.4 UJ	**0.45**	0.4 U
Xylenes, Total	72	µg/L	0.5 U	0.5 UJ	**1.49**	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	**0.78**	0.5 U
Chlorophenyls																					
2,4,5-Trichlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	20	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																					
Alkalinity, Bicarbonate (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Carbonate (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Hydroxide (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Total (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon, dissolved organic (DOC)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cation - Anion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Color	NV	CU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity % Difference	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	NV	mS/cm	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardness (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate, as NO3	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate-Nitrite, as N, Total	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite, as NO2	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
pH (Laboratory)	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus, Total Orthophosphate (As P)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Saturation pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (as SIO2)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfur	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total dissolved solids	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Turbidity	NV	NTU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																					
Antimony	6	µg/L	**0.3**	--	--	--	**1.73**	--	**0.5**	--	--	--	--	**0.54**	--	--	--	--	--	--	--
Arsenic	25	µg/L	**18**	--	--	--	**1.05**	--	**1.74**	--	--	--	--	**3.24**	--	--	--	--	--	--	--
Barium	1000	µg/L	**41**	--	--	--	**50.5**	--	**67.8**	--	--	--	--	**116**	--	--	--	--	--	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW18-118S		MW18-119D		MW18-119S		MW18-120D		MW18-121D			MW18-121S		MW18-122D		MW18-122G		MW18-123D	
		Sample ID	MW18-118S	MW18-118S	MW18-119D	MW18-119D	MW18-119S	MW18-119S	MW18-120D	MW18-120D	MW18-121D	DUP4	MW18-121D	MW18-121S	MW18-121S	MW18-122D	MW18-122D	MW18-122G	MW18-122G	MW18-123D	MW18-123D
		Start Depth (m)	3.25	3.25	16.89	16.89	3.45	3.45	18.59	18.59	16.33	16.33	16.33	3.12	3.12	12.44	12.44	19.51	19.51	18.79	18.79
		End Depth (m)	4.77	4.77	18.42	18.42	4.97	4.97	20.11	20.11	17.85	17.85	17.85	4.64	4.64	13.96	13.96	21.03	21.03	20.32	20.32
		Sample Type	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N
		Sample Date	02 Aug 2018	24 Feb 2020	10 Dec 2018	25 Feb 2020	03 Aug 2018	25 Feb 2020	30 Jul 2018	25 Feb 2020	30 Jul 2018	26 Feb 2020	26 Feb 2020	03 Aug 2018	26 Feb 2020	03 Aug 2018	25 Feb 2020	10 Dec 2018	25 Feb 2020	30 Jul 2018	26 Feb 2020
Analyte	**Table 6 SCS [a]**	**Unit**																			
Beryllium	4	µg/L	0.1 U	--	--	--	0.1 U	--	0.1 U	--	--	--	--	0.1 U	--	--	--	--	--	--	--
Boron	5000	µg/L	**67**	--	--	--	**90**	--	**67**	--	--	--	--	**98**	--	--	--	--	--	--	--
Cadmium	2.1	µg/L	**0.011**	--	--	--	**0.185**	--	0.01 U	--	--	--	--	**0.139**	--	--	--	--	--	--	--
Calcium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	50	µg/L	0.5 U	--	--	--	0.5 U	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	--	--	--
Cobalt	3.8	µg/L	**0.76**	--	--	--	**0.12**	--	**0.24**	--	--	--	--	**0.41**	--	--	--	--	--	--	--
Copper	69	µg/L	**0.55**	--	--	--	**1.09**	--	**0.95**	--	--	--	--	**1.01**	--	--	--	--	--	--	--
Lead	10	µg/L	**0.061**	--	--	--	**0.075**	--	**0.067**	--	--	--	--	**0.156**	--	--	--	--	--	--	--
Magnesium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	70	µg/L	**2.07**	--	--	--	**2.8**	--	**5.96**	--	--	--	--	**1.5**	--	--	--	--	--	--	--
Nickel	100	µg/L	**5.27**	--	--	--	**1.91**	--	**9.03**	--	--	--	--	**2.83**	--	--	--	--	--	--	--
Selenium	10	µg/L	**0.262**	--	--	--	**0.412**	--	**0.178**	--	--	--	--	**0.656**	--	--	--	--	--	--	--
Silver	1.2	µg/L	0.05 U	--	--	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U	--	--	--	--	--	--	--
Sodium	490000	µg/L	**58200**	--	--	--	**7730**	--	**183000**	--	--	--	--	**5800**	--	--	--	--	--	--	--
Thallium	2	µg/L	**0.019**	--	--	--	**0.159**	--	0.01 U	--	--	--	--	**0.294**	--	--	--	--	--	--	--
Uranium	20	µg/L	**1.93**	--	--	--	**2.83**	--	**7.24**	--	--	--	--	**1.87**	--	--	--	--	--	--	--
Vanadium	6.2	µg/L	0.5 U	--	--	--	0.5 U	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	--	--	--
Zinc	890	µg/L	**154**	--	--	--	**214**	--	**3**	--	--	--	--	**217**	--	--	--	--	--	--	--
Non-Regulated Metals																					
Aluminum	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cesium (Cs)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoride	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lithium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Rubidium (Rb)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silicon	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tellurium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thorium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tungsten	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																					
Chromium, Hexavalent (Cr6+)	25	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloride (Cl)	790000	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Free	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs																					
1-Methylnaphthalene	NV	µg/L	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-(1-)Methylnaphthalene	3.2	µg/L	0.028 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	NV	µg/L	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	4.1	µg/L	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	1	µg/L	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	1	µg/L	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	1	µg/L	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.01	µg/L	0.01 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b&j)fluoranthene	0.1	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.1	µg/L	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	0.2	µg/L	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.1	µg/L	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	0.1	µg/L	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.2	µg/L	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	0.41	µg/L	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW18-118S		MW18-119D		MW18-119S		MW18-120D		MW18-121D			MW18-121S		MW18-122D		MW18-122G		MW18-123D	
		Sample ID	MW18-118S	MW18-118S	MW18-119D	MW18-119D	MW18-119S	MW18-119S	MW18-120D	MW18-120D	MW18-121D	DUP4	MW18-121D	MW18-121S	MW18-121S	MW18-122D	MW18-122D	MW18-122G	MW18-122G	MW18-123D	MW18-123D
		Start Depth (m)	3.25	3.25	16.89	16.89	3.45	3.45	18.59	18.59	16.33	16.33	16.33	3.12	3.12	12.44	12.44	19.51	19.51	18.79	18.79
		End Depth (m)	4.77	4.77	18.42	18.42	4.97	4.97	20.11	20.11	17.85	17.85	17.85	4.64	4.64	13.96	13.96	21.03	21.03	20.32	20.32
		Sample Type	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N
		Sample Date	02 Aug 2018	24 Feb 2020	10 Dec 2018	25 Feb 2020	03 Aug 2018	25 Feb 2020	30 Jul 2018	25 Feb 2020	30 Jul 2018	26 Feb 2020	26 Feb 2020	03 Aug 2018	26 Feb 2020	03 Aug 2018	25 Feb 2020	10 Dec 2018	25 Feb 2020	30 Jul 2018	26 Feb 2020
Analyte	**Table 6 SCS [a]**	**Unit**																			
Fluorene	120	µg/L	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-Cd)Pyrene	0.2	µg/L	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	7	µg/L	0.05 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	1	µg/L	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	4.1	µg/L	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCBs																					
Aroclor 1016	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1221	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1232	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1242	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1262	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1268	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PHCs																					
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	420	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F1 (C6-C10)	420	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F1+F2	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16)	150	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34)	500	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3+F4	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3a (C16-C22)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3b (C22-C34)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F4 (C34-C50)	500	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SVOCs																					
2-Hexanone	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(e)pyrene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Perylene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																					
1,1,1,2-Tetrachloroethane	1.1	µg/L	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U
1,1,1-Trichloroethane	23	µg/L	0.5 U	0.5 UJ	0.5 U	0.5 UJ	**19.2**	**12.4 J**	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	**3.64**	**0.81**	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	0.5	µg/L	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U
1,1,2-Trichloroethane	0.5	µg/L	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U
1,1-Dichloroethane	5	µg/L	0.5 U	0.5 UJ	0.5 U	0.5 UJ	**16.1**	**5.83 J**	0.5 U	0.5 UJ	**1.82**	**1.33**	**1.16**	**3.75**	0.5 U	**6.43**	**5.89 J**	0.5 U	0.5 UJ	**0.89**	**0.77**
1,1-Dichloroethene	0.5	µg/L	0.5 U	0.5 UJ	0.5 U	0.5 UJ	**0.77**	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U
1,2-Dibromoethane	0.2	µg/L	0.2 U	0.2 UJ	0.2 U	0.2 UJ	0.2 U	0.2 UJ	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 UJ	0.2 U	0.2 U
1,2-Dichlorobenzene	3	µg/L	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U
1,2-Dichloroethane	0.5	µg/L	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U
1,2-Dichloropropane	0.58	µg/L	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U
1,3-Dichlorobenzene	59	µg/L	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U
1,3-Dichloropropene	0.5	µg/L	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U
1,4-Dichlorobenzene	0.5	µg/L	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U
1,4-Dioxane	50	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	1800	µg/L	20 U	20 UJ	20 U	20 UJ	20 U	20 UJ	20 U	20 UJ	20 U	20 U	20 U	20 U	20 U	20 U	20 UJ	20 U	20 UJ	20 U	20 U
4-Methyl-2-Pentanone	640	µg/L	20 U	20 UJ	20 U	20 UJ	20 U	20 UJ	20 U	20 UJ	20 U	20 U	20 U	20 U	20 U	20 U	20 UJ	20 U	20 UJ	20 U	20 U
Acetone	2700	µg/L	30 U	30 UJ	30 U	30 UJ	30 U	30 UJ	30 U	30 UJ	30 U	30 U	30 U	30 U	30 U	30 U	30 UJ	30 U	30 UJ	30 U	30 U
Bromodichloromethane	16	µg/L	2 U	2 UJ	2 U	2 UJ	2 U	2 UJ	2 U	2 UJ	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	2 UJ	2 U	2 U
Bromoform	5	µg/L	5 U	5 UJ	5 U	5 UJ	5 U	5 UJ	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 UJ	5 U	5 U
Bromomethane	0.89	µg/L	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U
Carbon tetrachloride	0.2	µg/L	0.2 U	0.2 UJ	0.2 U	0.2 UJ	0.2 U	0.2 UJ	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 UJ	0.2 U	0.2 U
Chlorobenzene	30	µg/L	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U
Chlorodibromomethane	25	µg/L	2 U	2 UJ	2 U	2 UJ	2 U	2 UJ	2 U	2 UJ	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	2 UJ	2 U	2 U

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW18-118S		MW18-119D		MW18-119S		MW18-120D		MW18-121D			MW18-121S		MW18-122D		MW18-122G		MW18-123D	
		Sample ID	MW18-118S	MW18-118S	MW18-119D	MW18-119D	MW18-119S	MW18-119S	MW18-120D	MW18-120D	MW18-121D	DUP4	MW18-121D	MW18-121S	MW18-121S	MW18-122D	MW18-122D	MW18-122G	MW18-122G	MW18-123D	MW18-123D
		Start Depth (m)	3.25	3.25	16.89	16.89	3.45	3.45	18.59	18.59	16.33	16.33	16.33	3.12	3.12	12.44	12.44	19.51	19.51	18.79	18.79
		End Depth (m)	4.77	4.77	18.42	18.42	4.97	4.97	20.11	20.11	17.85	17.85	17.85	4.64	4.64	13.96	13.96	21.03	21.03	20.32	20.32
		Sample Type	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N
		Sample Date	02 Aug 2018	24 Feb 2020	10 Dec 2018	25 Feb 2020	03 Aug 2018	25 Feb 2020	30 Jul 2018	25 Feb 2020	30 Jul 2018	26 Feb 2020	26 Feb 2020	03 Aug 2018	26 Feb 2020	03 Aug 2018	25 Feb 2020	10 Dec 2018	25 Feb 2020	30 Jul 2018	26 Feb 2020
Analyte	**Table 6 SCS [a]**	**Unit**																			
Chloroform	2	µg/L	1 U	1 UJ	1 U	1 UJ	**1.1**	1 UJ	1 U	1 UJ	**1.5**	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 UJ	1 U	1 U
cis-1,2-Dichloroethene	1.6	µg/L	0.5 U	0.5 UJ	**1.67**	**0.66 J**	0.5 U	0.5 UJ	0.5 U	0.5 UJ	**3.17**	**2.12**	**2.09**	0.5 U	0.5 U	**1.72**	**1.82 J**	0.5 U	**0.53 J**	**2.78**	**2.05**
cis-1,3-Dichloropropene	NV	µg/L	0.3 U	0.3 UJ	0.3 U	0.3 UJ	0.3 U	0.3 UJ	0.3 U	0.3 UJ	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 UJ	0.3 U	0.3 UJ	0.3 U	0.3 U
Dichlorodifluoromethane	590	µg/L	2 U	2 UJ	2 U	2 UJ	2 U	2 UJ	2 U	2 UJ	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	2 UJ	2 U	2 U
Dichloromethane	26	µg/L	5 U	5 UJ	5 U	5 UJ	5 U	5 UJ	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 UJ	5 U	5 U
Methyl tert-butyl ether (MTBE)	15	µg/L	2 U	2 UJ	2 U	2 UJ	2 U	2 UJ	2 U	2 UJ	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	2 UJ	2 U	2 U
n-Hexane	5	µg/L	0.5 U	0.5 UJ	**1.62**	**0.71 J**	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	**0.72**	0.5 UJ	0.5 U	0.5 U
Styrene	5.4	µg/L	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U
Tetrachloroethene	0.5	µg/L	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U
trans-1,2-Dichloroethene	1.6	µg/L	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U
trans-1,3-Dichloropropene	NV	µg/L	0.3 U	0.3 UJ	0.3 U	0.3 UJ	0.3 U	0.3 UJ	0.3 U	0.3 UJ	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 UJ	0.3 U	0.3 UJ	0.3 U	0.3 U
Trichloroethylene	0.5	µg/L	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U
Trichlorofluoromethane	150	µg/L	5 U	5 UJ	5 U	5 UJ	5 U	5 UJ	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 UJ	5 U	5 U
Vinyl Chloride	0.5	µg/L	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	**0.67**	**0.62**	**0.63**	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act.* Ministry of the Environment. April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/L = microgram(s) per litre

ABNs = acid, base and neutral compounds

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mS/cm = milliSiemen(s) per centimetre

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW18-123S		MW18-124S			MW18-125S		MW18-126D			MW18-127S		MW18-128D			MW18-129D	
		Sample ID	MW18-123S	MW18-123S	MW18-124S	MW18-124S	MW18-124S	MW18-125S	MW18-125S	MW18-126D	DUP2	MW18-126D	MW18-127S	MW18-127S	MW18-128D	MW18-128D	MW18-128D	MW18-129D	MW18-129D
		Start Depth (m)	3.40	3.40	3.55	3.55	3.55	4.26	4.26	6.45	6.45	6.45	3.42	3.42	18.74	18.74	18.74	7.97	7.97
		End Depth (m)	4.92	4.92	5.08	5.08	5.08	5.79	5.79	7.97	7.97	7.97	4.95	4.95	20.26	20.26	20.26	9.49	9.49
		Sample Type	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N
		Sample Date	03 Aug 2018	26 Feb 2020	02 Aug 2018	24 Feb 2020	11 Mar 2020	02 Aug 2018	27 Feb 2020	02 Aug 2018	02 Aug 2018	27 Feb 2020	03 Aug 2018	03 Mar 2020	30 Jul 2018	17 Oct 2018	03 Mar 2020	30 Jul 2018	28 Feb 2020
Analyte	**Table 6 SCS [a]**	**Unit**																	
ABNs																			
1,1'-Biphenyl	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	3	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,2'-oxybis(1-chloropropane)	120	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	59	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	890	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BTEX																			
Benzene	0.5	µg/L	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	**4.57**	**3.14**
Ethylbenzene	2.4	µg/L	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	24	µg/L	0.5 U	0.5 U	--	0.5 UJ	0.5 U	**0.66**	0.5 U	**0.79**	**0.54**	**1.55**	**0.57**	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U
Xylene, o	NV	µg/L	0.3 U	0.3 U	--	0.3 UJ	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	--	0.3 U	0.3 U	0.3 U	0.3 U
Xylenes, m & p	NV	µg/L	0.4 U	0.4 U	--	0.4 UJ	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	**0.42**	0.4 U	--	0.4 U	0.4 U	0.4 U	0.4 U
Xylenes, Total	72	µg/L	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U
Chlorophenyls																			
2,4,5-Trichlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	20	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																			
Alkalinity, Bicarbonate (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Carbonate (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Hydroxide (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Total (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon, dissolved organic (DOC)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cation - Anion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Color	NV	CU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity % Difference	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	NV	mS/cm	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardness (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate, as NO3	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate-Nitrite, as N, Total	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite, as NO2	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
pH (Laboratory)	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus, Total Orthophosphate (As P)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Saturation pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (as SIO2)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfur	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total dissolved solids	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Turbidity	NV	NTU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																			
Antimony	6	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	--
Arsenic	25	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**20.7**	--
Barium	1000	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**166**	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW18-123S		MW18-124S			MW18-125S		MW18-126D			MW18-127S		MW18-128D			MW18-129D	
		Sample ID	MW18-123S	MW18-123S	MW18-124S	MW18-124S	MW18-124S	MW18-125S	MW18-125S	MW18-126D	DUP2	MW18-126D	MW18-127S	MW18-127S	MW18-128D	MW18-128D	MW18-128D	MW18-129D	MW18-129D
		Start Depth (m)	3.40	3.40	3.55	3.55	3.55	4.26	4.26	6.45	6.45	6.45	3.42	3.42	18.74	18.74	18.74	7.97	7.97
		End Depth (m)	4.92	4.92	5.08	5.08	5.08	5.79	5.79	7.97	7.97	7.97	4.95	4.95	20.26	20.26	20.26	9.49	9.49
		Sample Type	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N
		Sample Date	03 Aug 2018	26 Feb 2020	02 Aug 2018	24 Feb 2020	11 Mar 2020	02 Aug 2018	27 Feb 2020	02 Aug 2018	02 Aug 2018	27 Feb 2020	03 Aug 2018	03 Mar 2020	30 Jul 2018	17 Oct 2018	03 Mar 2020	30 Jul 2018	28 Feb 2020
Analyte	**Table 6 SCS [a]**	**Unit**																	
Beryllium	4	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	--
Boron	5000	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**76**	--
Cadmium	2.1	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01 U	--
Calcium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	50	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--
Cobalt	3.8	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.21**	--
Copper	69	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--
Lead	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.06**	--
Magnesium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	70	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.35**	--
Nickel	100	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.76**	--
Selenium	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--
Silver	1.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--
Sodium	490000	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**35000**	--
Thallium	2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.032**	--
Uranium	20	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.26**	--
Vanadium	6.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--
Zinc	890	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**156**	--
Non-Regulated Metals																			
Aluminum	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cesium (Cs)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoride	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lithium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Rubidium (Rb)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silicon	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tellurium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thorium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tungsten	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																			
Chromium, Hexavalent (Cr6+)	25	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloride (Cl)	790000	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Free	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs																			
1-Methylnaphthalene	NV	µg/L	--	--	0.02 U	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	--
2-(1-)Methylnaphthalene	3.2	µg/L	--	--	0.028 U	--	--	0.028 U	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	NV	µg/L	--	--	0.02 U	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	4.1	µg/L	--	--	0.02 U	--	--	**0.041 J**	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	1	µg/L	--	--	0.02 U	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	--
Anthracene	1	µg/L	--	--	0.02 U	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	1	µg/L	--	--	0.02 U	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.01	µg/L	--	--	0.01 U	--	--	0.01 U	--	--	--	--	--	--	--	--	--	--	--
Benzo(b&j)fluoranthene	0.1	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.1	µg/L	--	--	0.02 U	--	--	2 U	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	0.2	µg/L	--	--	0.02 U	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.1	µg/L	--	--	0.02 U	--	--	2 U	--	--	--	--	--	--	--	--	--	--	--
Chrysene	0.1	µg/L	--	--	0.02 U	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.2	µg/L	--	--	0.02 U	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	0.41	µg/L	--	--	0.02 U	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW18-123S		MW18-124S			MW18-125S		MW18-126D			MW18-127S		MW18-128D			MW18-129D	
		Sample ID	MW18-123S	MW18-123S	MW18-124S	MW18-124S	MW18-124S	MW18-125S	MW18-125S	MW18-126D	DUP2	MW18-126D	MW18-127S	MW18-127S	MW18-128D	MW18-128D	MW18-128D	MW18-129D	MW18-129D
		Start Depth (m)	3.40	3.40	3.55	3.55	3.55	4.26	4.26	6.45	6.45	6.45	3.42	3.42	18.74	18.74	18.74	7.97	7.97
		End Depth (m)	4.92	4.92	5.08	5.08	5.08	5.79	5.79	7.97	7.97	7.97	4.95	4.95	20.26	20.26	20.26	9.49	9.49
		Sample Type	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N
		Sample Date	03 Aug 2018	26 Feb 2020	02 Aug 2018	24 Feb 2020	11 Mar 2020	02 Aug 2018	27 Feb 2020	02 Aug 2018	02 Aug 2018	27 Feb 2020	03 Aug 2018	03 Mar 2020	30 Jul 2018	17 Oct 2018	03 Mar 2020	30 Jul 2018	28 Feb 2020
Analyte	**Table 6 SCS [a]**	**Unit**																	
Fluorene	120	µg/L	--	--	0.02 U	--	--	**0.029**	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-Cd)Pyrene	0.2	µg/L	--	--	0.02 U	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	7	µg/L	--	--	0.05 U	--	--	0.05 U	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	1	µg/L	--	--	0.02 U	--	--	**0.021**	--	--	--	--	--	--	--	--	--	--	--
Pyrene	4.1	µg/L	--	--	0.02 U	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	--
PCBs																			
Aroclor 1016	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1221	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1232	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1242	NV	µg/L	--	--	--	--	--	**0.037**	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/L	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/L	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/L	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1262	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1268	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.2	µg/L	--	--	--	--	--	0.04 U	--	--	--	--	--	--	--	--	--	--	--
PHCs																			
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	420	µg/L	--	--	--	--	--	25 U	--	25 U	25 U	--	25 U	--	--	--	--	--	--
Petroleum Hydrocarbons F1 (C6-C10)	420	µg/L	--	--	--	--	--	25 U	--	25 U	25 U	--	25 U	--	**60**	--	--	--	--
Petroleum Hydrocarbons F1+F2	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	NV	µg/L	--	--	--	--	--	100 U	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16)	150	µg/L	--	--	--	--	--	100 U	--	100 U	100 U	--	100 U	--	100 U	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	NV	µg/L	--	--	--	--	--	250 U	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34)	500	µg/L	--	--	--	--	--	250 U	--	250 U	250 U	--	250 U	--	250 U	--	--	--	--
Petroleum Hydrocarbons F3+F4	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3a (C16-C22)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3b (C22-C34)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F4 (C34-C50)	500	µg/L	--	--	--	--	--	250 U	--	250 U	250 U	--	250 U	--	250 U	--	--	--	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/L	--	--	--	--	--	370 U	--	370 U	370 U	--	370 U	--	370 U	--	--	--	--
SVOCs																			
2-Hexanone	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(e)pyrene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Perylene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																			
1,1,1,2-Tetrachloroethane	1.1	µg/L	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane	23	µg/L	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**0.62**	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	0.5	µg/L	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	0.5	µg/L	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	5	µg/L	0.5 U	0.5 U	--	0.5 UJ	0.5 U	**0.69**	**0.77**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	**1.13**	**0.93**	0.5 U	0.5 U
1,1-Dichloroethene	0.5	µg/L	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	0.2	µg/L	0.2 U	0.2 U	--	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichlorobenzene	3	µg/L	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	0.5	µg/L	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	0.58	µg/L	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	59	µg/L	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropene	0.5	µg/L	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dichlorobenzene	0.5	µg/L	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dioxane	50	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	1800	µg/L	20 U	20 U	--	20 UJ	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	--	20 U	20 U	20 U	20 U
4-Methyl-2-Pentanone	640	µg/L	20 U	20 U	--	20 UJ	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	--	20 U	20 U	20 U	20 U
Acetone	2700	µg/L	30 U	30 U	--	30 UJ	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	--	30 U	30 U	30 U	30 U
Bromodichloromethane	16	µg/L	2 U	2 U	--	2 UJ	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U	2 U	2 U
Bromoform	5	µg/L	5 U	5 U	--	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U
Bromomethane	0.89	µg/L	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride	0.2	µg/L	0.2 U	0.2 U	--	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U
Chlorobenzene	30	µg/L	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U
Chlorodibromomethane	25	µg/L	2 U	2 U	--	2 UJ	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U	2 U	2 U

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW18-123S		MW18-124S			MW18-125S		MW18-126D			MW18-127S		MW18-128D			MW18-129D	
		Sample ID	MW18-123S	MW18-123S	MW18-124S	MW18-124S	MW18-124S	MW18-125S	MW18-125S	MW18-126D	DUP2	MW18-126D	MW18-127S	MW18-127S	MW18-128D	MW18-128D	MW18-128D	MW18-129D	MW18-129D
		Start Depth (m)	3.40	3.40	3.55	3.55	3.55	4.26	4.26	6.45	6.45	6.45	3.42	3.42	18.74	18.74	18.74	7.97	7.97
		End Depth (m)	4.92	4.92	5.08	5.08	5.08	5.79	5.79	7.97	7.97	7.97	4.95	4.95	20.26	20.26	20.26	9.49	9.49
		Sample Type	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N
		Sample Date	03 Aug 2018	26 Feb 2020	02 Aug 2018	24 Feb 2020	11 Mar 2020	02 Aug 2018	27 Feb 2020	02 Aug 2018	02 Aug 2018	27 Feb 2020	03 Aug 2018	03 Mar 2020	30 Jul 2018	17 Oct 2018	03 Mar 2020	30 Jul 2018	28 Feb 2020
Analyte	**Table 6 SCS [a]**	**Unit**																	
Chloroform	2	µg/L	1 U	1 U	--	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	1.6	µg/L	**3.43**	0.5 U	--	0.5 UJ	0.5 U	**0.75**	**1.57**	**1.34**	**1.37**	**0.57**	0.5 U	0.5 U	--	**3.8**	**3.53**	**3.52**	**3.67**
cis-1,3-Dichloropropene	NV	µg/L	0.3 U	0.3 U	--	0.3 UJ	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	--	0.3 U	0.3 U	0.3 U	0.3 U
Dichlorodifluoromethane	590	µg/L	2 U	2 U	--	2 UJ	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U	2 U	2 U
Dichloromethane	26	µg/L	5 U	5 U	--	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U
Methyl tert-butyl ether (MTBE)	15	µg/L	2 U	2 U	--	2 UJ	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U	2 U	2 U
n-Hexane	5	µg/L	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.55 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	**0.72**	0.5 U	0.5 U	0.5 U
Styrene	5.4	µg/L	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	0.5	µg/L	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	1.6	µg/L	0.5 U	0.5 U	--	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	NV	µg/L	0.3 U	0.3 U	--	0.3 UJ	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	--	0.3 U	0.3 U	0.3 U	0.3 U
Trichloroethylene	0.5	µg/L	**2.64**	**1.19**	--	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	**0.85**	**0.63**	0.5 U	0.5 U
Trichlorofluoromethane	150	µg/L	5 U	5 U	--	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U
Vinyl Chloride	0.5	µg/L	0.5 U	0.5 U	--	0.5 UJ	0.5 U	**0.71**	**0.88**	**1.03**	**0.99**	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	**4.93**	**5.63**

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act.* Ministry of the Environment. April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/L = microgram(s) per litre

ABNs = acid, base and neutral compounds

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mS/cm = milliSiemen(s) per centimetre

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW18-130D			MW18-131S			MW18-132D				MW18-133D			MW18-134D			MW18-134S	
		Sample ID	MW18-130D	MW18-130D	MW18-130D	MW18-131S	MW18-131S	MW18-131S	MW18-132D	DUP1	MW18-132D	MW18-132D	MW18-133D	MW18-133D	MW18-133D	DUP2	MW18-134D	MW18-134D	MW18-134S	MW18-134S
		Start Depth (m)	6.40	6.40	6.40	3.20	3.20	3.20	7.97	7.97	7.97	7.97	17.17	17.17	17.17	6.40	6.40	6.40	2.74	2.74
		End Depth (m)	7.92	7.92	7.92	4.72	4.72	4.72	9.49	9.49	9.49	9.49	18.69	18.69	18.69	7.92	7.92	7.92	4.27	4.27
		Sample Type	N	N	N	N	N	N	N	FD	N	N	N	N	N	FD	N	N	N	N
		Sample Date	31 Jul 2018	17 Oct 2018	02 Mar 2020	31 Jul 2018	17 Oct 2018	02 Mar 2020	31 Jul 2018	17 Oct 2018	17 Oct 2018	02 Mar 2020	31 Jul 2018	17 Oct 2018	02 Mar 2020	12 Dec 2018	12 Dec 2018	27 Feb 2020	12 Dec 2018	27 Feb 2020
Analyte	**Table 6 SCS [a]**	**Unit**																		
ABNs																				
1,1'-Biphenyl	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	3	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,2'-oxybis(1-chloropropane)	120	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	59	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	890	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BTEX																				
Benzene	0.5	µg/L	--	**0.74**	**0.77**	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	**2.95**	**3.19**	**6.34**	0.5 U	0.5 U
Ethylbenzene	2.4	µg/L	--	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	24	µg/L	--	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Xylene, o	NV	µg/L	--	0.3 U	0.3 U	--	0.3 U	0.3 U	--	0.3 U	0.3 U	0.3 U	--	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Xylenes, m & p	NV	µg/L	--	0.4 U	0.4 U	--	0.4 U	0.4 U	--	0.4 U	0.4 U	0.4 U	--	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Xylenes, Total	72	µg/L	--	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorophenyls																				
2,4,5-Trichlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	20	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																				
Alkalinity, Bicarbonate (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Carbonate (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Hydroxide (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Total (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon, dissolved organic (DOC)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cation - Anion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Color	NV	CU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity % Difference	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	NV	mS/cm	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardness (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate, as NO3	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate-Nitrite, as N, Total	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite, as NO2	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
pH (Laboratory)	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus, Total Orthophosphate (As P)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Saturation pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (as SIO2)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfur	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total dissolved solids	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Turbidity	NV	NTU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																				
Antimony	6	µg/L	**0.19**	--	--	**0.2**	--	--	**0.22**	--	--	--	**0.29**	--	--	--	--	--	--	--
Arsenic	25	µg/L	**8.33**	--	--	**0.48**	--	--	**5.13**	--	--	--	**9.46**	--	--	--	--	--	--	--
Barium	1000	µg/L	**88.7**	--	--	**38.8**	--	--	**202**	--	--	--	**102**	--	--	--	--	--	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW18-130D			MW18-131S			MW18-132D				MW18-133D			MW18-134D			MW18-134S	
		Sample ID	MW18-130D	MW18-130D	MW18-130D	MW18-131S	MW18-131S	MW18-131S	MW18-132D	DUP1	MW18-132D	MW18-132D	MW18-133D	MW18-133D	MW18-133D	DUP2	MW18-134D	MW18-134D	MW18-134S	MW18-134S
		Start Depth (m)	6.40	6.40	6.40	3.20	3.20	3.20	7.97	7.97	7.97	7.97	17.17	17.17	17.17	6.40	6.40	6.40	2.74	2.74
		End Depth (m)	7.92	7.92	7.92	4.72	4.72	4.72	9.49	9.49	9.49	9.49	18.69	18.69	18.69	7.92	7.92	7.92	4.27	4.27
		Sample Type	N	N	N	N	N	N	N	FD	N	N	N	N	N	FD	N	N	N	N
		Sample Date	31 Jul 2018	17 Oct 2018	02 Mar 2020	31 Jul 2018	17 Oct 2018	02 Mar 2020	31 Jul 2018	17 Oct 2018	17 Oct 2018	02 Mar 2020	31 Jul 2018	17 Oct 2018	02 Mar 2020	12 Dec 2018	12 Dec 2018	27 Feb 2020	12 Dec 2018	27 Feb 2020
Analyte	**Table 6 SCS [a]**	**Unit**																		
Beryllium	4	µg/L	0.1 U	--	--	0.1 U	--	--	0.1 U	--	--	--	0.1 U	--	--	--	--	--	--	--
Boron	5000	µg/L	**63**	--	--	**52**	--	--	**72**	--	--	--	**66**	--	--	--	--	--	--	--
Cadmium	2.1	µg/L	0.01 U	--	--	**0.014**	--	--	0.01 U	--	--	--	0.01 U	--	--	--	--	--	--	--
Calcium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	50	µg/L	0.5 U	--	--	0.5 U	--	--	0.5 U	--	--	--	0.5 U	--	--	--	--	--	--	--
Cobalt	3.8	µg/L	**0.82**	--	--	**1.03**	--	--	**0.15**	--	--	--	**0.16**	--	--	--	--	--	--	--
Copper	69	µg/L	**0.92**	--	--	**4.09**	--	--	**0.86**	--	--	--	**3.93**	--	--	--	--	--	--	--
Lead	10	µg/L	**0.378**	--	--	**0.079**	--	--	**1.16**	--	--	--	**1.92**	--	--	--	--	--	--	--
Magnesium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	70	µg/L	**2.73**	--	--	**1.43**	--	--	**3.02**	--	--	--	**3.81**	--	--	--	--	--	--	--
Nickel	100	µg/L	**7.3**	--	--	**7.68**	--	--	**1.79**	--	--	--	**3.22**	--	--	--	--	--	--	--
Selenium	10	µg/L	**0.09**	--	--	**0.375**	--	--	0.05 U	--	--	--	**0.134**	--	--	--	--	--	--	--
Silver	1.2	µg/L	0.05 U	--	--	0.05 U	--	--	0.05 U	--	--	--	0.05 U	--	--	--	--	--	--	--
Sodium	490000	µg/L	**25400**	--	--	**13400**	--	--	**41500**	--	--	--	**96900**	--	--	--	--	--	--	--
Thallium	2	µg/L	**0.082**	--	--	**0.614**	--	--	**0.028**	--	--	--	0.01 U	--	--	--	--	--	--	--
Uranium	20	µg/L	**4.98**	--	--	**3.41**	--	--	**3.78**	--	--	--	**4.08**	--	--	--	--	--	--	--
Vanadium	6.2	µg/L	0.5 U	--	--	0.5 U	--	--	0.5 U	--	--	--	0.5 U	--	--	--	--	--	--	--
Zinc	890	µg/L	**803**	--	--	**1160**	--	--	**212**	--	--	--	**473**	--	--	--	--	--	--	--
Non-Regulated Metals																				
Aluminum	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cesium (Cs)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoride	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lithium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Rubidium (Rb)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silicon	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tellurium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thorium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tungsten	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																				
Chromium, Hexavalent (Cr6+)	25	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloride (Cl)	790000	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Free	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs																				
1-Methylnaphthalene	NV	µg/L	--	--	--	--	**0.263**	--	--	--	--	--	--	--	--	--	--	--	--	--
2-(1-)Methylnaphthalene	3.2	µg/L	--	--	--	--	**0.263**	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	NV	µg/L	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	4.1	µg/L	--	--	--	--	**0.077**	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	1	µg/L	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	1	µg/L	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	1	µg/L	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.01	µg/L	--	--	--	--	0.01 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b&j)fluoranthene	0.1	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.1	µg/L	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	0.2	µg/L	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.1	µg/L	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	0.1	µg/L	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.2	µg/L	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	0.41	µg/L	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW18-130D			MW18-131S			MW18-132D				MW18-133D			MW18-134D			MW18-134S	
		Sample ID	MW18-130D	MW18-130D	MW18-130D	MW18-131S	MW18-131S	MW18-131S	MW18-132D	DUP1	MW18-132D	MW18-132D	MW18-133D	MW18-133D	MW18-133D	DUP2	MW18-134D	MW18-134D	MW18-134S	MW18-134S
		Start Depth (m)	6.40	6.40	6.40	3.20	3.20	3.20	7.97	7.97	7.97	7.97	17.17	17.17	17.17	6.40	6.40	6.40	2.74	2.74
		End Depth (m)	7.92	7.92	7.92	4.72	4.72	4.72	9.49	9.49	9.49	9.49	18.69	18.69	18.69	7.92	7.92	7.92	4.27	4.27
		Sample Type	N	N	N	N	N	N	N	FD	N	N	N	N	N	FD	N	N	N	N
		Sample Date	31 Jul 2018	17 Oct 2018	02 Mar 2020	31 Jul 2018	17 Oct 2018	02 Mar 2020	31 Jul 2018	17 Oct 2018	17 Oct 2018	02 Mar 2020	31 Jul 2018	17 Oct 2018	02 Mar 2020	12 Dec 2018	12 Dec 2018	27 Feb 2020	12 Dec 2018	27 Feb 2020
Analyte	**Table 6 SCS [a]**	**Unit**																		
Fluorene	120	µg/L	--	--	--	--	**0.097**	--	--	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-Cd)Pyrene	0.2	µg/L	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	7	µg/L	--	--	--	--	**0.088**	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	1	µg/L	--	--	--	--	**0.099**	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	4.1	µg/L	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--	--
PCBs																				
Aroclor 1016	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1221	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1232	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1242	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1262	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1268	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PHCs																				
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	420	µg/L	--	25 U	--	--	--	--	--	25 U	25 U	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F1 (C6-C10)	420	µg/L	--	25 U	--	25 U	--	--	--	25 U	25 U	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F1+F2	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16)	150	µg/L	--	100 U	--	100 U	--	--	--	100 U	100 U	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34)	500	µg/L	--	250 U	--	250 U	--	--	--	250 U	250 U	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3+F4	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3a (C16-C22)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3b (C22-C34)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F4 (C34-C50)	500	µg/L	--	250 U	--	250 U	--	--	--	250 U	250 U	--	--	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/L	--	370 U	--	370 U	--	--	--	370 U	370 U	--	--	--	--	--	--	--	--	--
SVOCs																				
2-Hexanone	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(e)pyrene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Perylene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																				
1,1,1,2-Tetrachloroethane	1.1	µg/L	--	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane	23	µg/L	--	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	0.5	µg/L	--	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	0.5	µg/L	--	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	5	µg/L	--	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	**1.27**	**0.97**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	0.5	µg/L	--	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	0.2	µg/L	--	0.2 U	0.2 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichlorobenzene	3	µg/L	--	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	0.5	µg/L	--	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	0.58	µg/L	--	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	59	µg/L	--	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropene	0.5	µg/L	--	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dichlorobenzene	0.5	µg/L	--	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dioxane	50	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	1800	µg/L	--	20 U	20 U	--	20 U	20 U	--	20 U	20 U	20 U	--	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4-Methyl-2-Pentanone	640	µg/L	--	20 U	20 U	--	20 U	20 U	--	20 U	20 U	20 U	--	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Acetone	2700	µg/L	--	30 U	30 U	--	30 U	30 U	--	30 U	30 U	30 U	--	30 U	30 U	30 U	30 U	30 U	30 U	30 U
Bromodichloromethane	16	µg/L	--	2 U	2 U	--	2 U	2 U	--	2 U	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromoform	5	µg/L	--	5 U	5 U	--	5 U	5 U	--	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromomethane	0.89	µg/L	--	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride	0.2	µg/L	--	0.2 U	0.2 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chlorobenzene	30	µg/L	--	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorodibromomethane	25	µg/L	--	2 U	2 U	--	2 U	2 U	--	2 U	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW18-130D			MW18-131S			MW18-132D				MW18-133D			MW18-134D			MW18-134S	
		Sample ID	MW18-130D	MW18-130D	MW18-130D	MW18-131S	MW18-131S	MW18-131S	MW18-132D	DUP1	MW18-132D	MW18-132D	MW18-133D	MW18-133D	MW18-133D	DUP2	MW18-134D	MW18-134D	MW18-134S	MW18-134S
		Start Depth (m)	6.40	6.40	6.40	3.20	3.20	3.20	7.97	7.97	7.97	7.97	17.17	17.17	17.17	6.40	6.40	6.40	2.74	2.74
		End Depth (m)	7.92	7.92	7.92	4.72	4.72	4.72	9.49	9.49	9.49	9.49	18.69	18.69	18.69	7.92	7.92	7.92	4.27	4.27
		Sample Type	N	N	N	N	N	N	N	FD	N	N	N	N	N	FD	N	N	N	N
		Sample Date	31 Jul 2018	17 Oct 2018	02 Mar 2020	31 Jul 2018	17 Oct 2018	02 Mar 2020	31 Jul 2018	17 Oct 2018	17 Oct 2018	02 Mar 2020	31 Jul 2018	17 Oct 2018	02 Mar 2020	12 Dec 2018	12 Dec 2018	27 Feb 2020	12 Dec 2018	27 Feb 2020
Analyte	**Table 6 SCS [a]**	**Unit**																		
Chloroform	2	µg/L	--	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	1.6	µg/L	--	**42.2**	**31.1**	--	**2.43**	**1.28**	--	**19.3**	**19**	**12.8**	--	**3.63**	**2.97**	**1.55**	**1.59**	**1.09**	0.5 U	0.5 U
cis-1,3-Dichloropropene	NV	µg/L	--	0.3 U	0.3 U	--	0.3 U	0.3 U	--	0.3 U	0.3 U	0.3 U	--	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Dichlorodifluoromethane	590	µg/L	--	2 U	2 U	--	2 U	2 U	--	2 U	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Dichloromethane	26	µg/L	--	5 U	5 U	--	5 U	5 U	--	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl tert-butyl ether (MTBE)	15	µg/L	--	2 U	2 U	--	2 U	2 U	--	2 U	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U
n-Hexane	5	µg/L	--	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	5.4	µg/L	--	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	0.5	µg/L	--	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	1.6	µg/L	--	**1.42**	**0.92**	--	0.5 U	0.5 U	--	**0.54**	**0.54**	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	NV	µg/L	--	0.3 U	0.3 U	--	0.3 U	0.3 U	--	0.3 U	0.3 U	0.3 U	--	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Trichloroethylene	0.5	µg/L	--	0.5 U	0.5 U	--	**4.7**	**3.15**	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichlorofluoromethane	150	µg/L	--	5 U	5 U	--	5 U	5 U	--	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Vinyl Chloride	0.5	µg/L	--	**5.41**	**6.93**	--	0.5 U	0.5 U	--	**4.51**	**4.41**	**3.05**	--	0.5 U	0.5 U	**0.51**	**0.54**	**0.89**	0.5 U	0.5 U

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act.* Ministry of the Environment. April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/L = microgram(s) per litre

ABNs = acid, base and neutral compounds

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mS/cm = milliSiemen(s) per centimetre

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW18-135D		MW18-135S		MW18-136D		MW18-136G		MW19-137S		OW02								
		Sample ID	MW18-135D	MW18-135D	DUP1	MW18-135S	MW18-136D	MW18-136D	MW18-136G	MW18-136G	MW19-137S	MW19-137S	OW2	OW2	OW 2	OW 2	OW2	OW2	OW2	OW2	OW2
		Start Depth (m)	9.75	9.75	4.27	4.27	11.58	11.58	23.80	23.80	2.21	2.21	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
		End Depth (m)	11.28	11.28	5.79	5.79	13.11	13.11	25.32	25.32	5.25	5.25	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96
		Sample Type	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	11 Dec 2018	03 Mar 2020	11 Dec 2018	11 Dec 2018	11 Dec 2018	27 Feb 2020	11 Dec 2018	27 Feb 2020	27 Feb 2020	11 Mar 2020	24 Mar 2010	07 Oct 2010	17 Jun 2011	19 Sep 2011	12 Dec 2012	25 Oct 2013	24 Oct 2014	19 Nov 2015	26 Oct 2016
Analyte	**Table 6 SCS [a]**	**Unit**																			
ABNs																					
1,1'-Biphenyl	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--	--	--	0.05 U	--	--
1,2,4-Trichlorobenzene	3	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,2'-oxybis(1-chloropropane)	120	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	59	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	890	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BTEX																					
Benzene	0.5	µg/L	0.5 U	0.5 U	**0.78**	**0.8**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U
Ethylbenzene	2.4	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U
Toluene	24	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Xylene, o	NV	µg/L	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U
Xylenes, m & p	NV	µg/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U
Xylenes, Total	72	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U
Chlorophenyls																					
2,4,5-Trichlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	20	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																					
Alkalinity, Bicarbonate (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**460000**	**420000**	**430000**	--	--
Alkalinity, Carbonate (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1700**	**1600**	**1300**	--	--
Alkalinity, Hydroxide (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Total (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	**360000**	**370000**	**370000**	**340000**	**460000**	**420000**	**430000**	--	--
Ammonia	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50 U	50 U	**55**	--	--
Carbon, dissolved organic (DOC)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4600**	**3600**	**4200**	--	--
Cation - Anion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Color	NV	CU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity % Difference	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	NV	mS/cm	--	--	--	--	--	--	--	--	--	--	**0.71**	**0.98**	**0.72**	**0.75**	**0.87**	**0.83**	**0.84**	--	--
Hardness (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**500000**	**440000**	**450000**	--	--
Ion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate, as NO3	NV	µg/L	--	--	--	--	--	--	--	--	--	--	100 U	100 U	100 U	100 U	100 U	100 U	100 U	--	--
Nitrate-Nitrite, as N, Total	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite, as NO2	NV	µg/L	--	--	--	--	--	--	--	--	--	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	--
pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	**7.61**	**7.58**	**7.61**	**7.54**	**7.59**	**7.61**	**7.49**	--	--
pH (Laboratory)	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus, Total Orthophosphate (As P)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	10 U	10 U	10 U	10 U	10 U	**12**	10 U	--	--
Saturation pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (as SIO2)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	NV	µg/L	--	--	--	--	--	--	--	--	--	--	**40000**	**180000**	**31000**	**59000**	**47000**	**39000**	**33000**	--	--
Sulfur	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total dissolved solids	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**520000**	**470000**	**480000**	--	--
Turbidity	NV	NTU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																					
Antimony	6	µg/L	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	25	µg/L	--	--	1 U	1 U	--	--	--	--	--	--	1 U	1 U	1 U	**1.3**	--	--	--	--	--
Barium	1000	µg/L	--	--	**81.9**	**80.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW18-135D		MW18-135S		MW18-136D		MW18-136G		MW19-137S		OW02								
		Sample ID	MW18-135D	MW18-135D	DUP1	MW18-135S	MW18-136D	MW18-136D	MW18-136G	MW18-136G	MW19-137S	MW19-137S	OW2	OW2	OW 2	OW 2	OW2	OW2	OW2	OW2	OW2
		Start Depth (m)	9.75	9.75	4.27	4.27	11.58	11.58	23.80	23.80	2.21	2.21	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
		End Depth (m)	11.28	11.28	5.79	5.79	13.11	13.11	25.32	25.32	5.25	5.25	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96
		Sample Type	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	11 Dec 2018	03 Mar 2020	11 Dec 2018	11 Dec 2018	11 Dec 2018	27 Feb 2020	11 Dec 2018	27 Feb 2020	27 Feb 2020	11 Mar 2020	24 Mar 2010	07 Oct 2010	17 Jun 2011	19 Sep 2011	12 Dec 2012	25 Oct 2013	24 Oct 2014	19 Nov 2015	26 Oct 2016
Analyte	**Table 6 SCS [a]**	**Unit**																			
Beryllium	4	µg/L	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Boron	5000	µg/L	--	--	100 U	100 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	2.1	µg/L	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Calcium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	**100000**	**150000**	**110000**	**110000**	**130000**	**120000**	**120000**	--	--
Chromium	50	µg/L	--	--	5 U	5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	3.8	µg/L	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	69	µg/L	--	--	2 U	2 U	--	--	--	--	--	--	--	--	--	--	20 U	20 U	20 U	--	--
Lead	10	µg/L	--	--	0.5 U	0.5 U	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--
Magnesium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	**30000**	**37000**	**33000**	**31000**	**41000**	**37000**	**38000**	--	--
Molybdenum	70	µg/L	--	--	**0.71**	**0.94**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	100	µg/L	--	--	5 U	5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	10	µg/L	--	--	**2.28**	**2.31**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	1.2	µg/L	--	--	0.5 U	0.5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	490000	µg/L	--	--	**3990**	**4030**	--	--	--	--	--	--	**4000**	**5900**	**4500**	**7400**	**5000**	**4800**	**4400**	--	--
Thallium	2	µg/L	--	--	0.1 U	0.1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Uranium	20	µg/L	--	--	**1.61**	**1.63**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	6.2	µg/L	--	--	5 U	5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	890	µg/L	--	--	10 U	10 U	--	--	--	--	--	--	**260**	**480**	**320**	**600**	**490**	**480**	**400**	--	--
Non-Regulated Metals																					
Aluminum	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	NV	µg/L	--	--	--	--	--	--	--	--	--	--	1000 U	1000 U	1000 U	1000 U	--	--	--	--	--
Cesium (Cs)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoride	NV	µg/L	--	--	--	--	--	--	--	--	--	--	**350**	**630**	**350**	**300**	--	--	--	--	--
Iron	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**30**	**180**	**520**	--	--
Lithium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**30**	**280**	**270**	--	--
Potassium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	**1400**	**9300**	**2400**	**3700**	**2000**	**3000**	**3000**	--	--
Rubidium (Rb)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silicon	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tellurium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thorium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tungsten	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																					
Chromium, Hexavalent (Cr6+)	25	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloride (Cl)	790000	µg/L	--	--	--	--	--	--	--	--	--	--	**5000**	**4500**	**3900**	**5700**	**4900**	**3600**	**3700**	--	--
Cyanide, Free	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs																					
1-Methylnaphthalene	NV	µg/L	0.02 U	--	**0.352**	**0.348**	--	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2-(1-)Methylnaphthalene	3.2	µg/L	0.028 U	--	**0.374**	**0.371**	--	--	--	--	--	--	--	--	--	--	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U
2-Methylnaphthalene	NV	µg/L	0.02 U	--	**0.022**	**0.023**	--	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Acenaphthene	4.1	µg/L	0.02 U	--	**1.03**	**1.04**	--	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Acenaphthylene	1	µg/L	0.02 U	--	**0.128**	**0.13**	--	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Anthracene	1	µg/L	0.02 U	--	**0.072**	**0.073**	--	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Benzo(a)anthracene	1	µg/L	0.02 U	--	0.02 U	0.02 U	--	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Benzo(a)pyrene	0.01	µg/L	0.01 U	--	0.01 U	0.01 U	--	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Benzo(b&j)fluoranthene	0.1	µg/L	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Benzo(b)fluoranthene	0.1	µg/L	0.02 U	--	0.02 U	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	0.2	µg/L	0.02 U	--	0.02 U	0.02 U	--	--	--	--	--	--	0.1 U	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Benzo(k)fluoranthene	0.1	µg/L	0.02 U	--	0.02 U	0.02 U	--	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Chrysene	0.1	µg/L	0.02 U	--	0.02 U	0.02 U	--	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dibenzo(a,h)anthracene	0.2	µg/L	0.02 U	--	0.02 U	0.02 U	--	--	--	--	--	--	0.1 U	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Fluoranthene	0.41	µg/L	0.02 U	--	**0.025**	**0.026**	--	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW18-135D		MW18-135S		MW18-136D		MW18-136G		MW19-137S		OW02								
		Sample ID	MW18-135D	MW18-135D	DUP1	MW18-135S	MW18-136D	MW18-136D	MW18-136G	MW18-136G	MW19-137S	MW19-137S	OW2	OW2	OW 2	OW 2	OW2	OW2	OW2	OW2	OW2
		Start Depth (m)	9.75	9.75	4.27	4.27	11.58	11.58	23.80	23.80	2.21	2.21	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
		End Depth (m)	11.28	11.28	5.79	5.79	13.11	13.11	25.32	25.32	5.25	5.25	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96
		Sample Type	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	11 Dec 2018	03 Mar 2020	11 Dec 2018	11 Dec 2018	11 Dec 2018	27 Feb 2020	11 Dec 2018	27 Feb 2020	27 Feb 2020	11 Mar 2020	24 Mar 2010	07 Oct 2010	17 Jun 2011	19 Sep 2011	12 Dec 2012	25 Oct 2013	24 Oct 2014	19 Nov 2015	26 Oct 2016
Analyte	**Table 6 SCS [a]**	**Unit**																			
Fluorene	120	µg/L	0.02 U	--	**1.39**	**1.4**	--	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Indeno(1,2,3-Cd)Pyrene	0.2	µg/L	0.02 U	--	0.02 U	0.02 U	--	--	--	--	--	--	0.1 U	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Naphthalene	7	µg/L	0.05 U	--	0.47 U	0.47 U	--	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Phenanthrene	1	µg/L	0.02 U	--	**0.127**	**0.119**	--	--	--	--	--	--	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Pyrene	4.1	µg/L	0.02 U	--	**0.068**	**0.069**	--	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
PCBs																					
Aroclor 1016	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1221	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1232	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1242	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1262	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1268	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PHCs																					
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	420	µg/L	25 U	--	25 U	25 U	--	--	--	--	25 U	--	100 U	100 U	100 U	25 U	25 U	25 U	25 U	25 U	25 U
Petroleum Hydrocarbons F1 (C6-C10)	420	µg/L	25 U	--	25 U	25 U	--	--	--	--	25 U	--	100 U	100 U	100 U	25 U	25 U	25 U	25 U	25 U	25 U
Petroleum Hydrocarbons F1+F2	NV	µg/L	--	--	--	--	--	--	--	--	--	--	100 U	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	NV	µg/L	100 U	--	**180**	**190**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16)	150	µg/L	100 U	--	**180**	**190**	--	--	--	--	100 U	--	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	NV	µg/L	250 U	--	250 U	250 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34)	500	µg/L	250 U	--	250 U	250 U	--	--	--	--	250 U	--	100 U	100 U	100 U	100 U	100 U	200 U	200 U	200 U	200 U
Petroleum Hydrocarbons F3+F4	NV	µg/L	--	--	--	--	--	--	--	--	--	--	100 U	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3a (C16-C22)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3b (C22-C34)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F4 (C34-C50)	500	µg/L	250 U	--	250 U	250 U	--	--	--	--	250 U	--	100 U	100 U	100 U	100 U	100 U	200 U	200 U	200 U	200 U
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/L	370 U	--	370 U	370 U	--	--	--	--	370 U	--	--	--	--	--	--	--	--	--	--
SVOCs																					
2-Hexanone	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(e)pyrene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--	--	--
Chloroethane	NV	µg/L	--	--	--	--	--	--	--	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	--	--
Chloromethane	NV	µg/L	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	--
Perylene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--	--	--
VOCs																					
1,1,1,2-Tetrachloroethane	1.1	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U
1,1,1-Trichloroethane	23	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U
1,1,2,2-Tetrachloroethane	0.5	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U
1,1,2-Trichloroethane	0.5	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U
1,1-Dichloroethane	5	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**0.94**	**0.69**	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U
1,1-Dichloroethene	0.5	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U
1,2-Dibromoethane	0.2	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichlorobenzene	3	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U
1,2-Dichloroethane	0.5	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U
1,2-Dichloropropane	0.58	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U
1,3-Dichlorobenzene	59	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U
1,3-Dichloropropene	0.5	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	0.28 U	0.28 U	0.28 U	0.5 U
1,4-Dichlorobenzene	0.5	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U
1,4-Dioxane	50	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	1800	µg/L	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U
4-Methyl-2-Pentanone	640	µg/L	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	2700	µg/L	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	16	µg/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U
Bromoform	5	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U
Bromomethane	0.89	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride	0.2	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U
Chlorobenzene	30	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U
Chlorodibromomethane	25	µg/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	MW18-135D		MW18-135S		MW18-136D		MW18-136G		MW19-137S		OW02								
		Sample ID	MW18-135D	MW18-135D	DUP1	MW18-135S	MW18-136D	MW18-136D	MW18-136G	MW18-136G	MW19-137S	MW19-137S	OW2	OW2	OW 2	OW 2	OW2	OW2	OW2	OW2	OW2
		Start Depth (m)	9.75	9.75	4.27	4.27	11.58	11.58	23.80	23.80	2.21	2.21	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
		End Depth (m)	11.28	11.28	5.79	5.79	13.11	13.11	25.32	25.32	5.25	5.25	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96
		Sample Type	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	11 Dec 2018	03 Mar 2020	11 Dec 2018	11 Dec 2018	11 Dec 2018	27 Feb 2020	11 Dec 2018	27 Feb 2020	27 Feb 2020	11 Mar 2020	24 Mar 2010	07 Oct 2010	17 Jun 2011	19 Sep 2011	12 Dec 2012	25 Oct 2013	24 Oct 2014	19 Nov 2015	26 Oct 2016
Analyte	**Table 6 SCS [a]**	**Unit**																			
Chloroform	2	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U
cis-1,2-Dichloroethene	1.6	µg/L	**0.89**	**0.79**	0.5 U	0.5 U	**1.65**	**0.86**	**3.14**	**2.46**	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U
cis-1,3-Dichloropropene	NV	µg/L	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.3 U
Dichlorodifluoromethane	590	µg/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	--	0.5 U	1 U
Dichloromethane	26	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U
Methyl tert-butyl ether (MTBE)	15	µg/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U
n-Hexane	5	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	--	0.5 U	1 U
Styrene	5.4	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U
Tetrachloroethene	0.5	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U
trans-1,2-Dichloroethene	1.6	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U
trans-1,3-Dichloropropene	NV	µg/L	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U
Trichloroethylene	0.5	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**8.22**	**0.55**	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U
Trichlorofluoromethane	150	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U
Vinyl Chloride	0.5	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	**0.84**	**0.64**	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act.* Ministry of the Environment. April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/L = microgram(s) per litre

ABNs = acid, base and neutral compounds

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mS/cm = milliSiemen(s) per centimetre

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location			OW03-I								OW03-II						
		Sample ID	OW02	OW02	OW3-I	OW3-I	OW3-I	OW3-I	OW3-I	OW03-I	OW03-1	OW03-I	OW3-II	OW3-II	OW3-II	OW3-II	OW3-II	OW03-II	OW03-II
		Start Depth (m)	0.91	0.91	1.07	1.07	1.07	1.07	1.07	1.07	1.44	1.22	6.33	6.33	6.33	6.33	6.33	6.33	6.33
		End Depth (m)	3.96	3.96	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	7.85	7.85	7.85	7.85	7.85	7.85	7.85
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	05 Sep 2017	03 Mar 2020	12 Dec 2012	24 Oct 2013	24 Oct 2014	19 Nov 2015	26 Oct 2016	06 Sep 2017	27 Mar 2019	03 Mar 2020	12 Dec 2012	24 Oct 2013	24 Oct 2014	19 Nov 2015	26 Oct 2016	06 Sep 2017	03 Mar 2020
Analyte	**Table 6 SCS [a]**	**Unit**																	
ABNs																			
1,1'-Biphenyl	0.5	µg/L	0.4 U	--	0.05 U	--	0.05 U	--	--	0.4 U	--	--	--	--	0.05 U	--	--	--	--
1,2,4-Trichlorobenzene	3	µg/L	0.4 U	--	--	--	--	--	--	0.4 U	--	--	--	--	--	--	--	--	--
2,2'-oxybis(1-chloropropane)	120	µg/L	0.4 U	--	--	--	--	--	--	0.4 U	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	5	µg/L	0.57 U	--	--	--	--	--	--	0.57 U	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	59	µg/L	0.5 U	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	10	µg/L	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/L	0.4 U	--	--	--	--	--	--	0.4 U	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/L	0.4 U	--	--	--	--	--	--	0.4 U	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	0.5	µg/L	0.4 U	--	--	--	--	--	--	0.4 U	--	--	--	--	--	--	--	--	--
4-Chloroaniline	10	µg/L	0.4 U	--	--	--	--	--	--	0.4 U	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	5	µg/L	0.4 U	--	--	--	--	--	--	0.4 U	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	10	µg/L	2 U	--	--	--	--	--	--	2 U	--	--	--	--	--	--	--	--	--
Diethylphthalate	30	µg/L	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--	--	--	--	--	--	--
Dimethylphthalate	30	µg/L	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--	--	--	--	--	--	--
Phenol	890	µg/L	0.5 U	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--
BTEX																			
Benzene	0.5	µg/L	0.5 U	0.5 U	--	--	--	--	--	0.5 U	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U
Ethylbenzene	2.4	µg/L	0.5 U	0.5 U	--	--	--	--	--	0.5 U	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U
Toluene	24	µg/L	0.5 U	0.5 U	--	--	--	--	--	0.5 U	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U
Xylene, o	NV	µg/L	0.3 U	0.3 U	--	--	--	--	--	0.3 U	--	0.3 U	--	--	--	--	--	0.3 U	0.3 U
Xylenes, m & p	NV	µg/L	0.4 U	0.4 U	--	--	--	--	--	0.4 U	--	0.4 U	--	--	--	--	--	0.4 U	0.4 U
Xylenes, Total	72	µg/L	0.5 U	0.5 U	--	--	--	--	--	0.5 U	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U
Chlorophenyls																			
2,4,5-Trichlorophenol	8.9	µg/L	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2	µg/L	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	20	µg/L	0.3 U	--	--	--	--	--	--	0.3 U	--	--	--	--	--	--	--	--	--
2-Chlorophenol	8.9	µg/L	0.3 U	--	--	--	--	--	--	0.3 U	--	--	--	--	--	--	--	--	--
Pentachlorophenol	30	µg/L	0.5 U	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--
Chemistry																			
Alkalinity, Bicarbonate (as CaCO3)	NV	µg/L	--	--	**470000**	**490000**	**470000**	--	--	--	--	--	**370000**	**380000**	**390000**	--	--	--	--
Alkalinity, Carbonate (as CaCO3)	NV	µg/L	--	--	**1400**	**1600**	1000 U	--	--	--	--	--	**1200**	**1400**	**1300**	--	--	--	--
Alkalinity, Hydroxide (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Total (as CaCO3)	NV	µg/L	--	--	**470000**	**490000**	**480000**	--	--	--	--	--	**370000**	**380000**	**390000**	--	--	--	--
Ammonia	NV	µg/L	--	--	50 U	50 U	50 U	--	--	--	--	--	**740**	50 U	**140**	--	--	--	--
Carbon, dissolved organic (DOC)	NV	µg/L	--	--	**3900**	**3600**	**3700**	--	--	--	--	--	**2700**	**2400**	**2700**	--	--	--	--
Cation - Anion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Color	NV	CU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity % Difference	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	NV	mS/cm	**0.724**	--	**0.9**	**0.91**	**0.9**	--	--	**0.847**	--	--	**0.78**	**0.8**	**0.82**	--	--	**0.815**	--
Hardness (as CaCO3)	NV	µg/L	--	--	**510000**	**520000**	**490000**	--	--	--	--	--	**430000**	**430000**	**430000**	--	--	--	--
Ion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate, as NO3	NV	µg/L	--	--	100 U	100 U	100 U	--	--	--	--	--	100 U	100 U	100 U	--	--	--	--
Nitrate-Nitrite, as N, Total	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite, as NO2	NV	µg/L	--	--	10 U	10 U	10 U	--	--	--	--	--	10 U	10 U	10 U	--	--	--	--
pH	NV	pH UNITS	**7.28**	--	**7.51**	**7.54**	**7.34**	--	--	**7.24**	--	--	**7.53**	**7.59**	**7.55**	--	--	**7.41**	--
pH (Laboratory)	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus, Total Orthophosphate (As P)	NV	µg/L	--	--	**11**	**13**	**12**	--	--	--	--	--	10 U	10 U	10 U	--	--	--	--
Saturation pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (as SIO2)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	NV	µg/L	--	--	**44000**	**29000**	**25000**	--	--	--	--	--	**66000**	**57000**	**57000**	--	--	--	--
Sulfur	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total dissolved solids	NV	µg/L	--	--	**540000**	**540000**	**520000**	--	--	--	--	--	**480000**	**480000**	**480000**	--	--	--	--
Turbidity	NV	NTU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																			
Antimony	6	µg/L	**0.34**	--	--	--	--	--	--	**0.27**	--	--	--	--	--	--	--	0.1 U	--
Arsenic	25	µg/L	**1**	--	--	--	--	--	--	**0.41**	--	--	--	--	--	--	--	**16.5**	--
Barium	1000	µg/L	**45.5**	--	--	--	--	--	--	**49.5**	--	--	--	--	--	--	--	**63.6**	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location			OW03-I								OW03-II						
		Sample ID	OW02	OW02	OW3-I	OW3-I	OW3-I	OW3-I	OW3-I	OW03-I	OW03-1	OW03-I	OW3-II	OW3-II	OW3-II	OW3-II	OW3-II	OW03-II	OW03-II
		Start Depth (m)	0.91	0.91	1.07	1.07	1.07	1.07	1.07	1.07	1.44	1.22	6.33	6.33	6.33	6.33	6.33	6.33	6.33
		End Depth (m)	3.96	3.96	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	7.85	7.85	7.85	7.85	7.85	7.85	7.85
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	05 Sep 2017	03 Mar 2020	12 Dec 2012	24 Oct 2013	24 Oct 2014	19 Nov 2015	26 Oct 2016	06 Sep 2017	27 Mar 2019	03 Mar 2020	12 Dec 2012	24 Oct 2013	24 Oct 2014	19 Nov 2015	26 Oct 2016	06 Sep 2017	03 Mar 2020
Analyte	**Table 6 SCS [a]**	**Unit**																	
Beryllium	4	µg/L	0.1 U	--	--	--	--	--	--	0.1 U	--	--	--	--	--	--	--	0.1 U	--
Boron	5000	µg/L	**82**	--	--	--	--	--	--	**105**	--	--	--	--	--	--	--	**121**	--
Cadmium	2.1	µg/L	**0.012**	--	--	--	--	--	--	**0.766**	--	--	--	--	--	--	--	0.01 U	--
Calcium	NV	µg/L	--	--	**150000**	**160000**	**150000**	--	--	--	--	--	**120000**	**120000**	**120000**	--	--	--	--
Chromium	50	µg/L	0.5 U	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--	--	0.5 U	--
Cobalt	3.8	µg/L	**0.82**	--	--	--	--	--	--	**0.13**	--	--	--	--	--	--	--	0.1 U	--
Copper	69	µg/L	**0.85**	--	20 U	20 U	20 U	--	--	**3.77**	--	--	20 U	20 U	20 U	--	--	0.2 U	--
Lead	10	µg/L	0.05 U	--	--	--	--	--	--	**0.962**	--	--	--	--	--	--	--	0.05 U	--
Magnesium	NV	µg/L	--	--	**31000**	**31000**	**28000**	--	--	--	--	--	**31000**	**31000**	**31000**	--	--	--	--
Molybdenum	70	µg/L	**1.86**	--	--	--	--	--	--	**0.638**	--	--	--	--	--	--	--	**4.47**	--
Nickel	100	µg/L	**7.14**	--	--	--	--	--	--	**5.57**	--	--	--	--	--	--	--	**2.33**	--
Selenium	10	µg/L	**0.11**	--	--	--	--	--	--	**0.103**	--	--	--	--	--	--	--	0.05 U	--
Silver	1.2	µg/L	0.05 U	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	0.05 U	--
Sodium	490000	µg/L	**6050**	--	**3300**	**3900**	**3700**	--	--	**3550**	--	--	**7300**	**7900**	**7300**	--	--	**6620**	--
Thallium	2	µg/L	**0.084**	--	--	--	--	--	--	**0.042**	--	--	--	--	--	--	--	**0.013**	--
Uranium	20	µg/L	**2.5**	--	--	--	--	--	--	**3.11**	--	--	--	--	--	--	--	**1.59**	--
Vanadium	6.2	µg/L	0.5 U	--	--	--	--	--	--	**0.51**	--	--	--	--	--	--	--	0.5 U	--
Zinc	890	µg/L	**154**	--	**390**	**440**	**350**	--	--	**562**	--	--	10 U	**30**	**20**	--	--	**22.5**	--
Non-Regulated Metals																			
Aluminum	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cesium (Cs)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoride	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	NV	µg/L	--	--	20 U	20 U	**30**	--	--	--	--	--	**4900**	**3000**	**2900**	--	--	--	--
Lithium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/L	--	--	10 U	10 U	10 U	--	--	--	--	--	**80**	**50**	**60**	--	--	--	--
Potassium	NV	µg/L	--	--	**3000**	**3000**	**3000**	--	--	--	--	--	**8000**	**7000**	**7000**	--	--	--	--
Rubidium (Rb)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silicon	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tellurium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thorium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tungsten	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																			
Chromium, Hexavalent (Cr6+)	25	µg/L	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	1 U	--
Chloride (Cl)	790000	µg/L	**7510**	--	**4000**	**3000**	**3100**	--	--	**2640**	--	--	**4100**	**3900**	**3900**	--	--	**3420**	--
Cyanide, Free	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	µg/L	0.01 U	--	--	--	--	--	--	0.01 U	--	--	--	--	--	--	--	0.01 U	--
PAHs																			
1-Methylnaphthalene	NV	µg/L	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	**0.058**	0.02 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--
2-(1-)Methylnaphthalene	3.2	µg/L	0.028 U	--	0.071 U	0.071 U	0.071 U	0.071 U	**0.12**	0.028 U	**0.032**	--	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.028 U	--
2-Methylnaphthalene	NV	µg/L	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	**0.066**	0.02 U	**0.032**	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--
Acenaphthene	4.1	µg/L	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--
Acenaphthylene	1	µg/L	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--
Anthracene	1	µg/L	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--
Benzo(a)anthracene	1	µg/L	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--
Benzo(a)pyrene	0.01	µg/L	0.01 U	--	0.01 U	0.01 U	**0.011**	0.01 U	**0.02**	0.01 U	0.01 U	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	--
Benzo(b&j)fluoranthene	0.1	µg/L	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--
Benzo(b)fluoranthene	0.1	µg/L	0.02 U	--	--	--	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--	0.02 U	--
Benzo(g,h,i)perylene	0.2	µg/L	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--
Benzo(k)fluoranthene	0.1	µg/L	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--
Chrysene	0.1	µg/L	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--
Dibenzo(a,h)anthracene	0.2	µg/L	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--
Fluoranthene	0.41	µg/L	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	**0.067**	0.02 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location			OW03-I								OW03-II						
		Sample ID	OW02	OW02	OW3-I	OW3-I	OW3-I	OW3-I	OW3-I	OW03-I	OW03-1	OW03-I	OW3-II	OW3-II	OW3-II	OW3-II	OW3-II	OW03-II	OW03-II
		Start Depth (m)	0.91	0.91	1.07	1.07	1.07	1.07	1.07	1.07	1.44	1.22	6.33	6.33	6.33	6.33	6.33	6.33	6.33
		End Depth (m)	3.96	3.96	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	7.85	7.85	7.85	7.85	7.85	7.85	7.85
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	05 Sep 2017	03 Mar 2020	12 Dec 2012	24 Oct 2013	24 Oct 2014	19 Nov 2015	26 Oct 2016	06 Sep 2017	27 Mar 2019	03 Mar 2020	12 Dec 2012	24 Oct 2013	24 Oct 2014	19 Nov 2015	26 Oct 2016	06 Sep 2017	03 Mar 2020
Analyte	**Table 6 SCS [a]**	**Unit**																	
Fluorene	120	µg/L	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--
Indeno(1,2,3-Cd)Pyrene	0.2	µg/L	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--
Naphthalene	7	µg/L	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**0.066**	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--
Phenanthrene	1	µg/L	0.02 U	--	0.03 U	0.05 U	**0.035**	0.03 U	**0.096**	0.02 U	0.02 U	--	0.03 U	0.03 U	0.03 U	**0.05**	0.03 U	0.02 U	--
Pyrene	4.1	µg/L	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	**0.06**	0.02 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--
PCBs																			
Aroclor 1016	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1221	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1232	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1242	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1262	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1268	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PHCs																			
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	420	µg/L	25 U	--	--	--	--	--	--	25 U	--	--	--	--	--	--	--	25 U	--
Petroleum Hydrocarbons F1 (C6-C10)	420	µg/L	25 U	--	--	--	--	--	--	25 U	--	--	--	--	--	--	--	25 U	--
Petroleum Hydrocarbons F1+F2	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	NV	µg/L	--	--	--	--	--	--	--	100 U	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16)	150	µg/L	100 U	--	--	--	--	--	--	100 U	--	--	--	--	--	--	--	100 U	--
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	NV	µg/L	--	--	--	--	--	--	--	250 U	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34)	500	µg/L	250 U	--	--	--	--	--	--	250 U	--	--	--	--	--	--	--	250 U	--
Petroleum Hydrocarbons F3+F4	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3a (C16-C22)	NV	µg/L	130 U	--	--	--	--	--	--	130 U	--	--	--	--	--	--	--	130 U	--
Petroleum Hydrocarbons F3b (C22-C34)	NV	µg/L	130 U	--	--	--	--	--	--	130 U	--	--	--	--	--	--	--	130 U	--
Petroleum Hydrocarbons F4 (C34-C50)	500	µg/L	250 U	--	--	--	--	--	--	250 U	--	--	--	--	--	--	--	250 U	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/L	--	--	--	--	--	--	--	370 U	--	--	--	--	--	--	--	--	--
SVOCs																			
2-Hexanone	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(e)pyrene	NV	µg/L	--	--	--	0.05 U	--	--	--	--	--	--	--	0.05 U	--	--	--	--	--
Chloroethane	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Perylene	NV	µg/L	--	--	--	0.05 U	--	--	--	--	--	--	--	0.05 U	--	--	--	--	--
VOCs																			
1,1,1,2-Tetrachloroethane	1.1	µg/L	0.5 U	0.5 U	--	--	--	--	--	0.5 U	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U
1,1,1-Trichloroethane	23	µg/L	0.5 U	0.5 U	--	--	--	--	--	0.5 U	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	0.5	µg/L	0.5 U	0.5 U	--	--	--	--	--	0.5 U	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U
1,1,2-Trichloroethane	0.5	µg/L	0.5 U	0.5 U	--	--	--	--	--	0.5 U	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U
1,1-Dichloroethane	5	µg/L	0.5 U	0.5 U	--	--	--	--	--	0.5 U	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U
1,1-Dichloroethene	0.5	µg/L	0.5 U	0.5 U	--	--	--	--	--	0.5 U	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U
1,2-Dibromoethane	0.2	µg/L	0.2 U	0.2 U	--	--	--	--	--	0.2 U	--	0.2 U	--	--	--	--	--	0.2 U	0.2 U
1,2-Dichlorobenzene	3	µg/L	0.5 U	0.5 U	--	--	--	--	--	0.5 U	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U
1,2-Dichloroethane	0.5	µg/L	0.5 U	0.5 U	--	--	--	--	--	0.5 U	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U
1,2-Dichloropropane	0.58	µg/L	0.5 U	0.5 U	--	--	--	--	--	0.5 U	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U
1,3-Dichlorobenzene	59	µg/L	0.5 U	0.5 U	--	--	--	--	--	0.5 U	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U
1,3-Dichloropropene	0.5	µg/L	0.5 U	0.5 U	--	--	--	--	--	0.5 U	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U
1,4-Dichlorobenzene	0.5	µg/L	0.5 U	0.5 U	--	--	--	--	--	0.5 U	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U
1,4-Dioxane	50	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	1800	µg/L	20 U	20 U	--	--	--	--	--	20 U	--	20 U	--	--	--	--	--	20 U	20 U
4-Methyl-2-Pentanone	640	µg/L	20 U	20 U	--	--	--	--	--	20 U	--	20 U	--	--	--	--	--	20 U	20 U
Acetone	2700	µg/L	30 U	30 U	--	--	--	--	--	30 U	--	30 U	--	--	--	--	--	30 U	30 U
Bromodichloromethane	16	µg/L	2 U	2 U	--	--	--	--	--	2 U	--	2 U	--	--	--	--	--	2 U	2 U
Bromoform	5	µg/L	5 U	5 U	--	--	--	--	--	5 U	--	5 U	--	--	--	--	--	5 U	5 U
Bromomethane	0.89	µg/L	0.5 U	0.5 U	--	--	--	--	--	0.5 U	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U
Carbon tetrachloride	0.2	µg/L	0.2 U	0.2 U	--	--	--	--	--	0.2 U	--	0.2 U	--	--	--	--	--	0.2 U	0.2 U
Chlorobenzene	30	µg/L	0.5 U	0.5 U	--	--	--	--	--	0.5 U	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U
Chlorodibromomethane	25	µg/L	2 U	2 U	--	--	--	--	--	2 U	--	2 U	--	--	--	--	--	2 U	2 U

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location			OW03-I								OW03-II						
		Sample ID	OW02	OW02	OW3-I	OW3-I	OW3-I	OW3-I	OW3-I	OW03-I	OW03-1	OW03-I	OW3-II	OW3-II	OW3-II	OW3-II	OW3-II	OW03-II	OW03-II
		Start Depth (m)	0.91	0.91	1.07	1.07	1.07	1.07	1.07	1.07	1.44	1.22	6.33	6.33	6.33	6.33	6.33	6.33	6.33
		End Depth (m)	3.96	3.96	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	7.85	7.85	7.85	7.85	7.85	7.85	7.85
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	05 Sep 2017	03 Mar 2020	12 Dec 2012	24 Oct 2013	24 Oct 2014	19 Nov 2015	26 Oct 2016	06 Sep 2017	27 Mar 2019	03 Mar 2020	12 Dec 2012	24 Oct 2013	24 Oct 2014	19 Nov 2015	26 Oct 2016	06 Sep 2017	03 Mar 2020
Analyte	**Table 6 SCS [a]**	**Unit**																	
Chloroform	2	µg/L	1 U	1 U	--	--	--	--	--	1 U	--	1 U	--	--	--	--	--	1 U	1 U
cis-1,2-Dichloroethene	1.6	µg/L	0.5 U	0.5 U	--	--	--	--	--	0.5 U	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U
cis-1,3-Dichloropropene	NV	µg/L	0.3 U	0.3 U	--	--	--	--	--	0.3 U	--	0.3 U	--	--	--	--	--	0.3 U	0.3 U
Dichlorodifluoromethane	590	µg/L	2 U	2 U	--	--	--	--	--	2 U	--	2 U	--	--	--	--	--	2 U	2 U
Dichloromethane	26	µg/L	5 U	5 U	--	--	--	--	--	5 U	--	5 U	--	--	--	--	--	5 U	5 U
Methyl tert-butyl ether (MTBE)	15	µg/L	2 U	2 U	--	--	--	--	--	2 U	--	2 U	--	--	--	--	--	2 U	2 U
n-Hexane	5	µg/L	0.5 U	0.5 U	--	--	--	--	--	0.5 U	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U
Styrene	5.4	µg/L	0.5 U	0.5 U	--	--	--	--	--	0.5 U	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U
Tetrachloroethene	0.5	µg/L	0.5 U	0.5 U	--	--	--	--	--	0.5 U	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U
trans-1,2-Dichloroethene	1.6	µg/L	0.5 U	0.5 U	--	--	--	--	--	0.5 U	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U
trans-1,3-Dichloropropene	NV	µg/L	0.3 U	0.3 U	--	--	--	--	--	0.3 U	--	0.3 U	--	--	--	--	--	0.3 U	0.3 U
Trichloroethylene	0.5	µg/L	0.5 U	0.5 U	--	--	--	--	--	0.5 U	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U
Trichlorofluoromethane	150	µg/L	5 U	5 U	--	--	--	--	--	5 U	--	5 U	--	--	--	--	--	5 U	5 U
Vinyl Chloride	0.5	µg/L	0.5 U	0.5 U	--	--	--	--	--	0.5 U	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act.* Ministry of the Environment. April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/L = microgram(s) per litre

ABNs = acid, base and neutral compounds

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mS/cm = milliSiemen(s) per centimetre

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW07-31			OW07-32					OW07-33						
		Sample ID	OW07- 31	OW07-31	OW07-31	OW07- 32	OW07-32	GW-DUP2	OW07-32	OW07-32	OW07- 33	OW07-33	DUP1	OW07-33	DUP1	OW07-33	OW07-33
		Start Depth (m)	1.50	1.50	1.50	3.17	3.17	3.17	3.17	3.17	3.10	3.10	3.10	3.10	3.10	3.10	3.10
		End Depth (m)	6.22	6.22	6.22	6.22	6.22	6.22	6.22	6.22	6.15	6.15	6.15	6.15	6.15	6.15	6.15
		Sample Type	N	N	N	N	N	FD	N	N	N	N	FD	N	FD	N	N
		Sample Date	29 Mar 2007	05 Sep 2017	21 Mar 2018	29 Mar 2007	06 Sep 2017	27 Mar 2019	27 Mar 2019	03 Mar 2020	29 Mar 2007	31 Aug 2017	01 Sep 2017	20 Mar 2018	13 Apr 2018	13 Apr 2018	27 Feb 2020
Analyte	**Table 6 SCS [a]**	**Unit**															
ABNs																	
1,1'-Biphenyl	0.5	µg/L	--	0.4 U	--	--	--	--	--	--	--	0.4 U	0.4 U	--	--	--	--
1,2,4-Trichlorobenzene	3	µg/L	0.3 U	0.4 U	--	0.3 U	--	--	--	--	0.3 U	0.4 U	0.4 U	--	--	--	--
2,2'-oxybis(1-chloropropane)	120	µg/L	--	0.4 U	--	--	--	--	--	--	--	0.4 U	0.4 U	--	--	--	--
2,4 & 2,6-Dinitrotoluene	5	µg/L	--	0.57 U	--	--	--	--	--	--	--	0.57 U	0.57 U	--	--	--	--
2,4-Dimethylphenol	59	µg/L	--	0.5 U	--	--	--	--	--	--	--	0.5 U	0.5 U	--	--	--	--
2,4-Dinitrophenol	10	µg/L	--	1 U	--	--	--	--	--	--	--	1 U	1 U	--	--	--	--
2,4-Dinitrotoluene	NV	µg/L	--	0.4 U	--	--	--	--	--	--	--	0.4 U	0.4 U	--	--	--	--
2,6-Dinitrotoluene	NV	µg/L	--	0.4 U	--	--	--	--	--	--	--	0.4 U	0.4 U	--	--	--	--
3,3'-Dichlorobenzidine	0.5	µg/L	--	0.4 U	--	--	--	--	--	--	--	0.4 U	0.4 U	--	--	--	--
4-Chloroaniline	10	µg/L	--	0.4 U	--	--	--	--	--	--	--	0.4 U	0.4 U	--	--	--	--
Bis (2-chloroethyl) ether	5	µg/L	--	0.4 U	--	--	--	--	--	--	--	0.4 U	0.4 U	--	--	--	--
Bis (2-ethylhexyl) phthalate	10	µg/L	--	2 U	--	--	--	--	--	--	--	2 U	2 U	--	--	--	--
Diethylphthalate	30	µg/L	--	0.2 U	--	--	--	--	--	--	--	0.2 U	0.2 U	--	--	--	--
Dimethylphthalate	30	µg/L	--	0.2 U	--	--	--	--	--	--	--	0.2 U	0.2 U	--	--	--	--
Phenol	890	µg/L	--	0.5 U	--	--	--	--	--	--	--	0.5 U	0.5 U	--	--	--	--
BTEX																	
Benzene	0.5	µg/L	0.2 U	0.5 U	--	0.2 U	0.5 U	--	--	0.5 U	0.2 U	0.5 U	0.5 U	--	--	--	0.5 U
Ethylbenzene	2.4	µg/L	0.1 U	0.5 U	--	0.1 U	0.5 U	--	--	0.5 U	0.1 U	0.5 U	0.5 U	--	--	--	0.5 U
Toluene	24	µg/L	0.2 U	0.5 U	--	0.2 U	0.5 U	--	--	0.5 U	0.2 U	0.5 U	0.5 U	--	--	--	0.5 U
Xylene, o	NV	µg/L	0.1 U	0.3 U	--	0.1 U	0.3 U	--	--	0.3 U	0.1 U	0.3 U	0.3 U	--	--	--	0.3 U
Xylenes, m & p	NV	µg/L	0.2 U	0.4 U	--	0.2 U	0.4 U	--	--	0.4 U	0.2 U	0.4 U	0.4 U	--	--	--	0.4 U
Xylenes, Total	72	µg/L	0.2 U	0.5 U	--	0.2 U	0.5 U	--	--	0.5 U	0.2 U	0.5 U	0.5 U	--	--	--	0.5 U
Chlorophenyls																	
2,4,5-Trichlorophenol	8.9	µg/L	--	0.2 U	--	--	--	--	--	--	--	0.2 U	0.2 U	--	--	--	--
2,4,6-Trichlorophenol	2	µg/L	--	0.2 U	--	--	--	--	--	--	--	0.2 U	0.2 U	--	--	--	--
2,4-Dichlorophenol	20	µg/L	--	0.3 U	--	--	--	--	--	--	--	0.3 U	0.3 U	--	--	--	--
2-Chlorophenol	8.9	µg/L	--	0.3 U	--	--	--	--	--	--	--	0.3 U	0.3 U	--	--	--	--
Pentachlorophenol	30	µg/L	--	0.5 U	--	--	--	--	--	--	--	0.5 U	0.5 U	--	--	--	--
Chemistry																	
Alkalinity, Bicarbonate (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Carbonate (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Hydroxide (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Total (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon, dissolved organic (DOC)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cation - Anion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Color	NV	CU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity % Difference	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	NV	mS/cm	**0.819**	**1.53**	--	**0.712**	**1.03**	--	--	--	**0.769**	**1.16**	**1.16**	--	--	--	--
Hardness (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate, as NO3	NV	µg/L	**550**	--	--	**1200**	--	--	--	--	**460**	--	--	--	--	--	--
Nitrate-Nitrite, as N, Total	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite, as NO2	NV	µg/L	50 U	--	--	50 U	--	--	--	--	50 U	--	--	--	--	--	--
pH	NV	pH UNITS	--	**7.42**	--	--	**7.53**	--	--	--	--	**7.34 J**	**7.34**	--	--	--	--
pH (Laboratory)	NV	pH UNITS	**7.25**	--	--	**7.42**	--	--	--	--	**7.52**	--	--	--	--	--	--
Phosphorus	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus, Total Orthophosphate (As P)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Saturation pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (as SIO2)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfur	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total dissolved solids	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Turbidity	NV	NTU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																	
Antimony	6	µg/L	1 U	0.1 U	**0.14**	1 U	**0.41**	--	--	--	1 U	**0.38**	**0.39**	**0.23**	**0.25**	**0.23**	--
Arsenic	25	µg/L	**2.15**	**45.7**	**33.9**	0.6 U	**0.73**	--	--	--	**0.7**	**0.67**	**0.7**	**0.42**	**0.41**	**0.46**	--
Barium	1000	µg/L	**34.5**	**72.8**	**50.6**	**27.8**	**47.5**	--	--	--	**42.1**	**51.3**	**51.9**	**41.7**	**45.8**	**45.3**	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW07-31			OW07-32					OW07-33						
		Sample ID	OW07- 31	OW07-31	OW07-31	OW07- 32	OW07-32	GW-DUP2	OW07-32	OW07-32	OW07- 33	OW07-33	DUP1	OW07-33	DUP1	OW07-33	OW07-33
		Start Depth (m)	1.50	1.50	1.50	3.17	3.17	3.17	3.17	3.17	3.10	3.10	3.10	3.10	3.10	3.10	3.10
		End Depth (m)	6.22	6.22	6.22	6.22	6.22	6.22	6.22	6.22	6.15	6.15	6.15	6.15	6.15	6.15	6.15
		Sample Type	N	N	N	N	N	FD	N	N	N	N	FD	N	FD	N	N
		Sample Date	29 Mar 2007	05 Sep 2017	21 Mar 2018	29 Mar 2007	06 Sep 2017	27 Mar 2019	27 Mar 2019	03 Mar 2020	29 Mar 2007	31 Aug 2017	01 Sep 2017	20 Mar 2018	13 Apr 2018	13 Apr 2018	27 Feb 2020
Analyte	**Table 6 SCS [a]**	**Unit**															
Beryllium	4	µg/L	1 U	0.1 U	0.1 U	1 U	0.1 U	--	--	--	1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--
Boron	5000	µg/L	**238**	**53**	**52**	**132**	**74**	--	--	--	**109**	**64**	**65**	**56**	**52**	**53**	--
Cadmium	2.1	µg/L	0.5 U	**0.017**	**0.018**	**0.51**	**0.613**	--	--	--	0.5 U	**0.673**	**0.691**	**0.712**	**0.765**	**0.779**	--
Calcium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	50	µg/L	**2.87**	**0.53**	0.5 U	**0.98**	0.5 U	--	--	--	**1.18**	0.5 U	0.5 U	0.5 U	0.5 U	**0.51**	--
Cobalt	3.8	µg/L	0.5 U	**0.38**	**0.51**	**0.64**	**2.29**	--	--	--	**0.51**	**1.08**	**1.07**	**1.28**	**1.27**	**1.28**	--
Copper	69	µg/L	**8.96**	**0.24**	**0.39**	**5.47**	**6.58**	--	--	--	**3.82**	**5.7**	**5.73**	**4.33**	**4.54**	**4.63**	--
Lead	10	µg/L	**0.68**	**0.244**	**0.299**	**1.8**	**1.08**	--	--	--	**4.07**	**15**	**15.6**	**8.92**	**7.68**	**7.37**	--
Magnesium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	70	µg/L	**2.36**	**1.78**	**1.67**	**2.28**	**3.48**	--	--	--	**2.48**	**3.2**	**3.16**	**2.98**	**2.75**	**2.76**	--
Nickel	100	µg/L	**4.53**	**1.39**	**1.37**	**9.15**	**10.1**	--	--	--	**6.58**	**5.5**	**5.48**	**4.68**	**4.7**	**4.72**	--
Selenium	10	µg/L	**2.63**	**0.26**	**0.318**	**2.36**	**0.292**	--	--	--	**2.02**	**0.506**	**0.509**	**0.422**	**0.485**	**0.48**	--
Silver	1.2	µg/L	0.2 U	0.05 U	0.05 U	0.2 U	0.05 U	--	--	--	0.2 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--
Sodium	490000	µg/L	--	**165000**	**97500**	--	**72900**	--	--	--	--	**99800**	**99800**	**122000**	**128000**	**129000**	--
Thallium	2	µg/L	0.3 U	**0.014**	**0.012**	**0.49**	**0.984**	--	--	--	0.3 U	**0.111**	**0.114**	**0.108**	**0.093**	**0.088**	--
Uranium	20	µg/L	--	**1.23**	**1.77**	--	**4.71**	--	--	--	--	**5.05**	**5.18**	**4.23**	**4.43**	**4.25**	--
Vanadium	6.2	µg/L	**0.91**	**1.66**	**1.14**	0.4 U	0.5 U	--	--	--	0.4 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--
Zinc	890	µg/L	**116**	**47**	**73.3**	**1290**	**1270**	--	--	--	**755**	**637**	**639**	**655**	**680**	**685**	--
Non-Regulated Metals																	
Aluminum	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cesium (Cs)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoride	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lithium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Rubidium (Rb)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silicon	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tellurium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thorium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tungsten	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																	
Chromium, Hexavalent (Cr6+)	25	µg/L	5 U	1 U	--	5 U	1 U	--	--	--	5 U	1 U	1 U	--	--	--	--
Chloride (Cl)	790000	µg/L	--	**327000**	--	--	**123000**	--	--	--	--	**181000**	**182000**	--	--	--	--
Cyanide, Free	52	µg/L	2 U	--	--	2 U	--	--	--	--	2 U	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	µg/L	0.02 U	0.01 U	--	0.02 U	0.01 U	--	--	--	0.02 U	0.01 U	0.01 U	--	--	--	--
PAHs																	
1-Methylnaphthalene	NV	µg/L	--	0.02 U	--	--	0.02 U	--	--	--	--	0.02 U	0.02 U	--	--	--	--
2-(1-)Methylnaphthalene	3.2	µg/L	--	0.028 U	--	--	0.028 U	--	--	--	--	0.028 U	0.028 U	--	--	--	--
2-Methylnaphthalene	NV	µg/L	--	0.02 U	--	--	0.02 U	--	--	--	--	0.02 U	0.02 U	--	--	--	--
Acenaphthene	4.1	µg/L	0.1 U	0.02 U	--	0.1 U	0.02 U	--	--	--	0.1 U	0.02 U	0.02 U	--	--	--	--
Acenaphthylene	1	µg/L	0.11 U	0.02 U	--	0.11 U	0.02 U	--	--	--	0.11 U	0.02 U	0.02 U	--	--	--	--
Anthracene	1	µg/L	0.05 U	0.02 U	--	0.05 U	0.02 U	--	--	--	0.05 U	0.02 U	0.02 U	--	--	--	--
Benzo(a)anthracene	1	µg/L	0.08 U	0.02 U	--	0.08 U	0.02 U	--	--	--	0.08 U	0.02 U	0.02 U	--	--	--	--
Benzo(a)pyrene	0.01	µg/L	0.01 U	0.01 U	--	0.01 U	0.01 U	--	--	--	0.01 U	0.01 U	0.01 U	--	--	--	--
Benzo(b&j)fluoranthene	0.1	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.1	µg/L	**0.04**	0.02 U	--	0.03 U	0.02 U	--	--	--	0.03 U	0.02 U	0.02 U	--	--	--	--
Benzo(g,h,i)perylene	0.2	µg/L	**0.1**	0.02 U	--	0.06 U	0.02 U	--	--	--	**0.06**	0.02 U	0.02 U	--	--	--	--
Benzo(k)fluoranthene	0.1	µg/L	0.05 U	0.02 U	--	0.05 U	0.02 U	--	--	--	0.05 U	0.02 U	0.02 U	--	--	--	--
Chrysene	0.1	µg/L	0.05 U	0.02 U	--	0.05 U	0.02 U	--	--	--	0.05 U	0.02 U	0.02 U	--	--	--	--
Dibenzo(a,h)anthracene	0.2	µg/L	**0.1**	0.02 U	--	0.09 U	0.02 U	--	--	--	0.09 U	0.02 U	0.02 U	--	--	--	--
Fluoranthene	0.41	µg/L	0.12 U	0.02 U	--	0.12 U	0.02 U	--	--	--	0.12 U	0.02 U	0.02 U	--	--	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW07-31			OW07-32					OW07-33						
		Sample ID	OW07- 31	OW07-31	OW07-31	OW07- 32	OW07-32	GW-DUP2	OW07-32	OW07-32	OW07- 33	OW07-33	DUP1	OW07-33	DUP1	OW07-33	OW07-33
		Start Depth (m)	1.50	1.50	1.50	3.17	3.17	3.17	3.17	3.17	3.10	3.10	3.10	3.10	3.10	3.10	3.10
		End Depth (m)	6.22	6.22	6.22	6.22	6.22	6.22	6.22	6.22	6.15	6.15	6.15	6.15	6.15	6.15	6.15
		Sample Type	N	N	N	N	N	FD	N	N	N	N	FD	N	FD	N	N
		Sample Date	29 Mar 2007	05 Sep 2017	21 Mar 2018	29 Mar 2007	06 Sep 2017	27 Mar 2019	27 Mar 2019	03 Mar 2020	29 Mar 2007	31 Aug 2017	01 Sep 2017	20 Mar 2018	13 Apr 2018	13 Apr 2018	27 Feb 2020
Analyte	**Table 6 SCS [a]**	**Unit**															
Fluorene	120	µg/L	0.09 U	0.02 U	--	0.09 U	0.02 U	--	--	--	0.09 U	0.02 U	0.02 U	--	--	--	--
Indeno(1,2,3-Cd)Pyrene	0.2	µg/L	**0.1**	0.02 U	--	**0.04**	0.02 U	--	--	--	**0.05**	0.02 U	0.02 U	--	--	--	--
Naphthalene	7	µg/L	0.12 U	0.05 U	--	0.12 U	0.05 U	--	--	--	0.12 U	0.05 U	0.05 U	--	--	--	--
Phenanthrene	1	µg/L	0.11 U	0.02 U	--	0.11 U	0.02 U	--	--	--	0.11 U	0.02 U	0.02 U	--	--	--	--
Pyrene	4.1	µg/L	0.05 U	0.02 U	--	0.05 U	0.02 U	--	--	--	0.05 U	0.02 U	0.02 U	--	--	--	--
PCBs																	
Aroclor 1016	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1221	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1232	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1242	NV	µg/L	--	--	--	--	--	0.02 U	0.02 U	--	--	0.02 U	0.02 U	--	--	--	--
Aroclor 1248	NV	µg/L	--	--	--	--	--	0.02 U	0.02 U	--	--	0.02 U	0.02 U	--	--	--	--
Aroclor 1254	NV	µg/L	--	--	--	--	--	0.02 U	0.02 U	--	--	0.02 U	0.02 U	--	--	--	--
Aroclor 1260	NV	µg/L	--	--	--	--	--	0.02 U	0.02 U	--	--	0.02 U	0.02 U	--	--	--	--
Aroclor 1262	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1268	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.2	µg/L	0.1 U	--	--	0.1 U	--	0.04 U	0.04 U	--	0.1 U	0.04 U	0.04 U	--	--	--	--
PHCs																	
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	420	µg/L	100 U	25 U	--	100 U	25 U	--	--	--	100 U	25 U	25 U	--	--	--	--
Petroleum Hydrocarbons F1 (C6-C10)	420	µg/L	100 U	25 U	--	100 U	25 U	--	--	--	100 U	25 U	25 U	--	--	--	--
Petroleum Hydrocarbons F1+F2	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	NV	µg/L	--	--	--	--	--	--	--	--	--	100 U	100 U	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16)	150	µg/L	100 U	100 U	--	100 U	100 U	--	--	--	100 U	100 U	100 U	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	NV	µg/L	--	--	--	--	--	--	--	--	--	250 U	250 U	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34)	500	µg/L	500 U	250 U	--	500 U	250 U	--	--	--	500 U	250 U	250 U	--	--	--	--
Petroleum Hydrocarbons F3+F4	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3a (C16-C22)	NV	µg/L	--	130 U	--	--	130 U	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3b (C22-C34)	NV	µg/L	--	130 U	--	--	130 U	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F4 (C34-C50)	500	µg/L	500 U	250 U	--	500 U	250 U	--	--	--	500 U	250 U	250 U	--	--	--	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/L	--	--	--	--	--	--	--	--	--	370 U	370 U	--	--	--	--
SVOCs																	
2-Hexanone	NV	µg/L	0.3 U	--	--	0.3 U	--	--	--	--	0.3 U	--	--	--	--	--	--
Benzo(e)pyrene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/L	0.2 U	--	--	0.2 U	--	--	--	--	0.2 U	--	--	--	--	--	--
Chloromethane	NV	µg/L	0.4 U	--	--	0.4 U	--	--	--	--	0.4 U	--	--	--	--	--	--
Perylene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																	
1,1,1,2-Tetrachloroethane	1.1	µg/L	0.1 U	0.5 U	--	0.1 U	0.5 U	--	--	0.5 U	0.1 U	0.5 U	0.5 U	--	--	--	0.5 U
1,1,1-Trichloroethane	23	µg/L	0.3 U	0.5 U	--	**4.9**	**1.36**	--	--	0.5 U	**8**	**1.92**	**1.82**	--	--	--	**1.18**
1,1,2,2-Tetrachloroethane	0.5	µg/L	0.2 U	0.5 U	--	0.2 U	0.5 U	--	--	0.5 U	0.2 U	0.5 U	0.5 U	--	--	--	0.5 U
1,1,2-Trichloroethane	0.5	µg/L	--	0.5 U	--	--	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	--	--	--	0.5 U
1,1-Dichloroethane	5	µg/L	0.3 U	0.5 U	--	**2.4**	**1.58**	--	--	0.5 U	**5.3**	**1.71**	**1.55**	--	--	--	**0.94**
1,1-Dichloroethene	0.5	µg/L	0.2 U	0.5 U	--	0.2 U	0.5 U	--	--	0.5 U	0.2 U	0.5 U	0.5 U	--	--	--	0.5 U
1,2-Dibromoethane	0.2	µg/L	0.2 U	0.2 U	--	0.2 U	0.2 U	--	--	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	0.2 U
1,2-Dichlorobenzene	3	µg/L	0.1 U	0.5 U	--	0.1 U	0.5 U	--	--	0.5 U	0.1 U	0.5 U	0.5 U	--	--	--	0.5 U
1,2-Dichloroethane	0.5	µg/L	0.2 U	0.5 U	--	0.2 U	0.5 U	--	--	0.5 U	0.2 U	0.5 U	0.5 U	--	--	--	0.5 U
1,2-Dichloropropane	0.58	µg/L	0.2 U	0.5 U	--	0.2 U	0.5 U	--	--	0.5 U	0.2 U	0.5 U	0.5 U	--	--	--	0.5 U
1,3-Dichlorobenzene	59	µg/L	0.1 U	0.5 U	--	0.1 U	0.5 U	--	--	0.5 U	0.1 U	0.5 U	0.5 U	--	--	--	0.5 U
1,3-Dichloropropene	0.5	µg/L	--	0.5 U	--	--	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	--	--	--	0.5 U
1,4-Dichlorobenzene	0.5	µg/L	0.1 U	0.5 U	--	0.1 U	0.5 U	--	--	0.5 U	0.1 U	0.5 U	0.5 U	--	--	--	0.5 U
1,4-Dioxane	50	µg/L	--	--	--	--	--	--	--	--	--	20 U	20 U	--	--	--	--
2-Butanone	1800	µg/L	0.3 U	20 U	--	0.3 U	20 U	--	--	20 U	0.3 U	20 U	20 U	--	--	--	20 U
4-Methyl-2-Pentanone	640	µg/L	--	20 U	--	--	20 U	--	--	20 U	--	20 U	20 U	--	--	--	20 U
Acetone	2700	µg/L	0.5 U	30 U	--	0.5 U	30 U	--	--	30 U	0.5 U	30 U	30 U	--	--	--	30 U
Bromodichloromethane	16	µg/L	0.2 U	2 U	--	0.2 U	2 U	--	--	2 U	0.2 U	2 U	2 U	--	--	--	2 U
Bromoform	5	µg/L	0.1 U	5 U	--	0.1 U	5 U	--	--	5 U	0.1 U	5 U	5 U	--	--	--	5 U
Bromomethane	0.89	µg/L	0.2 U	0.5 U	--	0.2 U	0.5 U	--	--	0.5 U	0.2 U	0.5 U	0.5 U	--	--	--	0.5 U
Carbon tetrachloride	0.2	µg/L	0.2 U	0.2 U	--	0.2 U	0.2 U	--	--	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	0.2 U
Chlorobenzene	30	µg/L	0.1 U	0.5 U	--	0.1 U	0.5 U	--	--	0.5 U	0.1 U	0.5 U	0.5 U	--	--	--	0.5 U
Chlorodibromomethane	25	µg/L	--	2 U	--	--	2 U	--	--	2 U	--	2 U	2 U	--	--	--	2 U

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW07-31			OW07-32					OW07-33						
		Sample ID	OW07- 31	OW07-31	OW07-31	OW07- 32	OW07-32	GW-DUP2	OW07-32	OW07-32	OW07- 33	OW07-33	DUP1	OW07-33	DUP1	OW07-33	OW07-33
		Start Depth (m)	1.50	1.50	1.50	3.17	3.17	3.17	3.17	3.17	3.10	3.10	3.10	3.10	3.10	3.10	3.10
		End Depth (m)	6.22	6.22	6.22	6.22	6.22	6.22	6.22	6.22	6.15	6.15	6.15	6.15	6.15	6.15	6.15
		Sample Type	N	N	N	N	N	FD	N	N	N	N	FD	N	FD	N	N
		Sample Date	29 Mar 2007	05 Sep 2017	21 Mar 2018	29 Mar 2007	06 Sep 2017	27 Mar 2019	27 Mar 2019	03 Mar 2020	29 Mar 2007	31 Aug 2017	01 Sep 2017	20 Mar 2018	13 Apr 2018	13 Apr 2018	27 Feb 2020
Analyte	**Table 6 SCS [a]**	**Unit**															
Chloroform	2	µg/L	0.2 U	1 U	--	0.2 U	1 U	--	--	1 U	0.2 U	1 U	1 U	--	--	--	1 U
cis-1,2-Dichloroethene	1.6	µg/L	0.2 U	0.5 U	--	**0.77**	**1.08**	--	--	0.5 U	0.2 U	**0.6 J**	**0.57 J**	--	--	--	0.5 U
cis-1,3-Dichloropropene	NV	µg/L	0.2 U	0.3 U	--	0.2 U	0.3 U	--	--	0.3 U	0.2 U	0.3 U	0.3 U	--	--	--	0.3 U
Dichlorodifluoromethane	590	µg/L	--	2 U	--	--	2 U	--	--	2 U	--	2 U	2 U	--	--	--	2 U
Dichloromethane	26	µg/L	0.3 U	5 U	--	0.3 U	5 U	--	--	5 U	0.3 U	5 U	5 U	--	--	--	5 U
Methyl tert-butyl ether (MTBE)	15	µg/L	0.2 U	2 U	--	0.2 U	2 U	--	--	2 U	0.2 U	2 U	2 U	--	--	--	2 U
n-Hexane	5	µg/L	--	0.5 U	--	--	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	--	--	--	0.5 U
Styrene	5.4	µg/L	0.1 U	0.5 U	--	0.1 U	0.5 U	--	--	0.5 U	0.1 U	0.5 U	0.5 U	--	--	--	0.5 U
Tetrachloroethene	0.5	µg/L	0.1 U	0.5 U	--	0.1 U	0.5 U	--	--	0.5 U	0.1 U	0.5 U	0.5 U	--	--	--	0.5 U
trans-1,2-Dichloroethene	1.6	µg/L	0.2 U	0.5 U	--	0.2 U	0.5 U	--	--	0.5 U	0.2 U	0.5 U	0.5 U	--	--	--	0.5 U
trans-1,3-Dichloropropene	NV	µg/L	0.3 U	0.3 U	--	0.3 U	0.3 U	--	--	0.3 U	0.3 U	0.3 U	0.3 U	--	--	--	0.3 U
Trichloroethylene	0.5	µg/L	0.2 U	0.5 U	--	**1**	**0.92**	--	--	0.5 U	**0.56**	**0.89**	**0.86**	--	--	--	**0.55**
Trichlorofluoromethane	150	µg/L	0.4 U	5 U	--	0.4 U	5 U	--	--	5 U	0.4 U	5 U	5 U	--	--	--	5 U
Vinyl Chloride	0.5	µg/L	0.17 U	0.5 U	--	0.17 U	0.5 U	--	--	0.5 U	0.17 U	0.5 U	0.5 U	--	--	--	0.5 U

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act.* Ministry of the Environment. April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/L = microgram(s) per litre

ABNs = acid, base and neutral compounds

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mS/cm = milliSiemen(s) per centimetre

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW07-34D								OW07-34S			OW07-37					OW07-38S		
		Sample ID	OW07- 34D	OW07-34(D)	OW07-34D	OW07-34D	OW07-34D	OW07-34D	OW07-34D	OW07-34D	OW07- 34S	OW07-34S	OW07-34S	OW07- 37	OW07-37	GW-DUP3	OW07-37	OW07-37	OW07- 38S	OW07-38S	OW07-38S
		Start Depth (m)	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	1.55	1.55	1.55	3.10	3.10	3.13	3.13	3.10	1.79	1.79	1.79
		End Depth (m)	9.17	9.17	9.17	9.17	9.17	9.17	9.17	9.17	4.60	4.60	4.60	6.17	6.17	6.17	6.17	6.17	4.84	4.84	4.84
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N
		Sample Date	29 Mar 2007	11 Dec 2012	24 Oct 2013	24 Oct 2014	19 Nov 2015	26 Oct 2016	01 Sep 2017	27 Feb 2020	29 Mar 2007	01 Sep 2017	27 Feb 2020	29 Mar 2007	06 Sep 2017	27 Mar 2019	27 Mar 2019	03 Mar 2020	29 Mar 2007	06 Sep 2017	02 Mar 2020
Analyte	**Table 6 SCS [a]**	**Unit**																			
ABNs																					
1,1'-Biphenyl	0.5	µg/L	--	0.05 U	--	0.05 U	--	--	--	--	--	--	--	--	0.4 U	--	--	--	--	--	--
1,2,4-Trichlorobenzene	3	µg/L	0.3 U	--	--	--	--	--	--	--	0.3 U	--	--	0.3 U	0.4 U	--	--	--	0.3 U	--	--
2,2'-oxybis(1-chloropropane)	120	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	0.57 U	--	--	--	--	--	--
2,4-Dimethylphenol	59	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--
2,4-Dinitrophenol	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	--	--	--	--	--	--
3,3'-Dichlorobenzidine	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	--	--	--	--	--	--
4-Chloroaniline	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	--	--	--	--	--	--
Bis (2-chloroethyl) ether	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	2 U	--	--	--	--	--	--
Diethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	--
Dimethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	--
Phenol	890	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--
BTEX																					
Benzene	0.5	µg/L	0.2 U	0.5 U	0.25 U	0.1 U	0.2 U	0.2 U	0.5 U	0.5 U	**0.33**	0.5 U	0.5 U	0.2 U	0.5 U	--	--	0.5 U	0.2 U	0.5 U	0.5 U
Ethylbenzene	2.4	µg/L	0.1 U	0.5 U	0.25 U	0.1 U	0.2 U	0.2 U	0.5 U	0.5 U	**0.23**	0.5 U	0.5 U	**0.11**	0.5 U	--	--	0.5 U	0.1 U	0.5 U	0.5 U
Toluene	24	µg/L	0.2 U	1 U	0.5 U	0.2 U	0.4 U	0.2 U	0.5 U	0.5 U	**1.1**	0.5 U	0.5 U	**0.22**	0.5 U	--	--	0.5 U	0.2 U	0.5 U	0.5 U
Xylene, o	NV	µg/L	0.1 U	0.5 U	0.25 U	0.1 U	0.2 U	0.2 U	0.3 U	0.3 U	0.1 U	0.3 U	0.3 U	**0.12**	0.3 U	--	--	0.3 U	0.1 U	0.3 U	0.3 U
Xylenes, m & p	NV	µg/L	0.2 U	0.5 U	0.25 U	0.1 U	0.2 U	0.2 U	0.4 U	0.4 U	**0.42**	0.4 U	0.4 U	**0.21**	0.4 U	--	--	0.4 U	0.2 U	0.4 U	0.4 U
Xylenes, Total	72	µg/L	0.2 U	0.5 U	0.25 U	0.1 U	0.2 U	0.2 U	0.5 U	0.5 U	**0.42**	0.5 U	0.5 U	**0.33**	0.5 U	--	--	0.5 U	0.2 U	0.5 U	0.5 U
Chlorophenyls																					
2,4,5-Trichlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	--
2,4,6-Trichlorophenol	2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	--
2,4-Dichlorophenol	20	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	0.3 U	--	--	--	--	--	--
2-Chlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	0.3 U	--	--	--	--	--	--
Pentachlorophenol	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--
Chemistry																					
Alkalinity, Bicarbonate (as CaCO3)	NV	µg/L	--	**300000**	**280000**	**250000**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Carbonate (as CaCO3)	NV	µg/L	--	**1700**	**1600**	1000 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Hydroxide (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Total (as CaCO3)	NV	µg/L	--	**300000**	**280000**	**250000**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia	NV	µg/L	--	**320**	**110**	**170**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon, dissolved organic (DOC)	NV	µg/L	--	**12000**	**14000**	**12000**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cation - Anion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Color	NV	CU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity % Difference	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	NV	mS/cm	**0.812**	**1**	**0.89**	**0.97**	--	--	**1.1**	--	**0.633**	**0.966**	--	**0.663**	**1.3**	--	--	--	**0.785**	**0.815**	--
Hardness (as CaCO3)	NV	µg/L	--	**360000**	**320000**	**270000**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate, as NO3	NV	µg/L	**190**	100 U	100 U	100 U	--	--	--	--	**1200**	--	--	**180**	--	--	--	--	**70**	--	--
Nitrate-Nitrite, as N, Total	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite, as NO2	NV	µg/L	50 U	10 U	10 U	10 U	--	--	--	--	50 U	--	--	50 U	--	--	--	--	50 U	--	--
pH	NV	pH UNITS	--	**7.78**	**7.77**	**7.52**	--	--	**7.34 J**	--	--	**7.36**	--	--	**7.37**	--	--	--	--	**7.61**	--
pH (Laboratory)	NV	pH UNITS	**7.71**	--	--	--	--	--	--	--	**8.03**	--	--	**7.7**	--	--	--	--	**7.8**	--	--
Phosphorus	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus, Total Orthophosphate (As P)	NV	µg/L	--	**50**	**32**	**26**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Saturation pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (as SIO2)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	NV	µg/L	--	**64000**	**40000**	**34000**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfur	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total dissolved solids	NV	µg/L	--	**580000**	**510000**	**530000**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Turbidity	NV	NTU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																					
Antimony	6	µg/L	1 U	--	--	--	--	--	**0.13**	--	1 U	**0.48**	--	1 U	**0.63**	**0.42**	**0.42**	--	1 U	**0.36**	--
Arsenic	25	µg/L	0.6 U	--	--	--	--	--	**3.62**	--	0.6 U	**0.81**	--	0.6 U	**0.34**	**0.21**	**0.24**	--	0.6 U	**0.32**	--
Barium	1000	µg/L	**41.6**	--	--	--	--	--	**52.2**	--	**18.4**	**58.7**	--	**31.4**	**38.7**	**27.1**	**27.4**	--	**39.2**	**36.7**	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW07-34D								OW07-34S			OW07-37					OW07-38S		
		Sample ID	OW07- 34D	OW07-34(D)	OW07-34D	OW07-34D	OW07-34D	OW07-34D	OW07-34D	OW07-34D	OW07- 34S	OW07-34S	OW07-34S	OW07- 37	OW07-37	GW-DUP3	OW07-37	OW07-37	OW07- 38S	OW07-38S	OW07-38S
		Start Depth (m)	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	1.55	1.55	1.55	3.10	3.10	3.13	3.13	3.10	1.79	1.79	1.79
		End Depth (m)	9.17	9.17	9.17	9.17	9.17	9.17	9.17	9.17	4.60	4.60	4.60	6.17	6.17	6.17	6.17	6.17	4.84	4.84	4.84
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N
		Sample Date	29 Mar 2007	11 Dec 2012	24 Oct 2013	24 Oct 2014	19 Nov 2015	26 Oct 2016	01 Sep 2017	27 Feb 2020	29 Mar 2007	01 Sep 2017	27 Feb 2020	29 Mar 2007	06 Sep 2017	27 Mar 2019	27 Mar 2019	03 Mar 2020	29 Mar 2007	06 Sep 2017	02 Mar 2020
Analyte	**Table 6 SCS [a]**	**Unit**																			
Beryllium	4	µg/L	1 U	--	--	--	--	--	0.1 U	--	1 U	0.1 U	--	1 U	0.1 U	0.1 U	0.1 U	--	1 U	0.1 U	--
Boron	5000	µg/L	**122**	--	--	--	--	--	**59**	--	**111**	**81**	--	**72.9**	**65**	**46**	**46**	--	**104**	**135**	--
Cadmium	2.1	µg/L	0.5 U	--	--	--	--	--	**0.021**	--	0.5 U	**0.537**	--	**1.01**	**1.05**	**0.849**	**0.842**	--	0.5 U	**0.293**	--
Calcium	NV	µg/L	--	**110000**	**98000**	**85000**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	50	µg/L	**1.37**	--	--	--	--	--	0.5 U	--	**0.75**	0.5 U	--	**3.08**	0.5 U	0.5 U	0.5 U	--	**2.29**	0.5 U	--
Cobalt	3.8	µg/L	**1.27**	--	--	--	--	--	0.1 U	--	**0.92**	**0.35**	--	0.5 U	**0.18**	0.1 U	0.1 U	--	0.5 U	0.1 U	--
Copper	69	µg/L	**3.34**	20 U	20 U	20 U	--	--	**0.25**	--	**1.87**	**4.36**	--	**6.75**	**14.4**	**9.96**	**9.99**	--	**3.12**	**1.56**	--
Lead	10	µg/L	0.5 U	--	--	--	--	--	**8.26**	--	0.5 U	**0.112**	--	0.5 U	**1.02**	**0.89**	**0.899**	--	0.5 U	**0.057**	--
Magnesium	NV	µg/L	--	**20000**	**17000**	**14000**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	70	µg/L	**2.94**	--	--	--	--	--	**4.19**	--	**9.28**	**2.73**	--	**2.33**	**4**	**2.84**	**2.85**	--	**0.94**	**0.966**	--
Nickel	100	µg/L	**7.09**	--	--	--	--	--	**3.96**	--	**7.99**	**5.53**	--	**7.38**	**6.43**	**4.78**	**4.86**	--	**6.17**	**7.3**	--
Selenium	10	µg/L	0.8 U	--	--	--	--	--	**0.211**	--	0.8 U	**0.218**	--	**1.78**	**0.869**	**3.87**	**3.73**	--	**3.1**	**0.395**	--
Silver	1.2	µg/L	0.2 U	--	--	--	--	--	0.05 U	--	0.2 U	0.05 U	--	0.2 U	0.05 U	0.05 U	0.05 U	--	0.2 U	0.05 U	--
Sodium	490000	µg/L	--	**75000**	**65000**	**86000**	--	--	**90600**	--	--	**62000**	--	--	**130000**	**106000**	**104000**	--	--	**6030**	--
Thallium	2	µg/L	0.3 U	--	--	--	--	--	**0.012**	--	0.3 U	**0.178**	--	0.3 U	**0.162**	**0.086**	**0.083**	--	0.3 U	**0.157**	--
Uranium	20	µg/L	--	--	--	--	--	--	**5.96**	--	--	**3.59**	--	--	**9.48**	**5.34**	**5.35**	--	--	**2.05**	--
Vanadium	6.2	µg/L	0.4 U	--	--	--	--	--	0.5 U	--	0.4 U	0.5 U	--	**0.92**	0.5 U	0.5 U	0.5 U	--	**1.11**	0.5 U	--
Zinc	890	µg/L	**516**	**770**	**730**	**620**	--	--	**626**	--	**212**	**552**	--	**1630**	**681**	**747**	**744**	--	**71**	**455**	--
Non-Regulated Metals																					
Aluminum	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cesium (Cs)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoride	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	NV	µg/L	--	**1500**	**1300**	**970**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lithium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/L	--	**110**	**90**	**70**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	NV	µg/L	--	**4000**	**4000**	**3000**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Rubidium (Rb)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silicon	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tellurium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thorium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tungsten	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																					
Chromium, Hexavalent (Cr6+)	25	µg/L	5 U	--	--	--	--	--	1 U	--	5 U	1 U	--	5 U	1 U	--	--	--	5 U	1 U	--
Chloride (Cl)	790000	µg/L	--	**110000**	**99000**	**140000**	--	--	**161000**	--	--	**112000**	--	--	**215000**	--	--	--	--	**2880**	--
Cyanide, Free	52	µg/L	2 U	--	--	--	--	--	--	--	2 U	--	--	2 U	--	--	--	--	2 U	--	--
Cyanide, Weak Acid Dissociable	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	µg/L	0.02 U	--	--	--	--	--	0.01 U	--	0.02 U	0.01 U	--	0.02 U	0.01 U	--	--	--	0.02 U	0.01 U	--
PAHs																					
1-Methylnaphthalene	NV	µg/L	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.02 U	--	--	0.02 U	--	--	--	--	0.02 U	--
2-(1-)Methylnaphthalene	3.2	µg/L	--	--	0.071 U	0.071 U	0.071 U	0.071 U	--	--	--	0.028 U	--	--	0.028 U	--	--	--	--	0.028 U	--
2-Methylnaphthalene	NV	µg/L	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	0.02 U	--	--	0.02 U	--	--	--	--	0.02 U	--
Acenaphthene	4.1	µg/L	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.1 U	0.02 U	--	0.1 U	0.02 U	--	--	--	0.1 U	0.02 U	--
Acenaphthylene	1	µg/L	0.11 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.11 U	0.02 U	--	0.11 U	0.02 U	--	--	--	0.11 U	0.02 U	--
Anthracene	1	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.02 U	--	0.05 U	0.02 U	--	--	--	0.05 U	0.02 U	--
Benzo(a)anthracene	1	µg/L	0.08 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.08 U	0.02 U	--	0.08 U	0.02 U	--	--	--	0.08 U	0.02 U	--
Benzo(a)pyrene	0.01	µg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	--	--	0.01 U	0.01 U	--	0.01 U	0.01 U	--	--	--	0.01 U	0.01 U	--
Benzo(b&j)fluoranthene	0.1	µg/L	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.1	µg/L	0.03 U	--	--	--	--	--	--	--	0.03 U	0.02 U	--	0.03 U	0.02 U	--	--	--	0.03 U	0.02 U	--
Benzo(g,h,i)perylene	0.2	µg/L	0.06 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.06 U	0.02 U	--	0.06 U	0.02 U	--	--	--	0.06 U	0.02 U	--
Benzo(k)fluoranthene	0.1	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.02 U	--	0.05 U	0.02 U	--	--	--	0.05 U	0.02 U	--
Chrysene	0.1	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.02 U	--	0.05 U	0.02 U	--	--	--	0.05 U	0.02 U	--
Dibenzo(a,h)anthracene	0.2	µg/L	0.09 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.09 U	0.02 U	--	0.09 U	0.02 U	--	--	--	0.09 U	0.02 U	--
Fluoranthene	0.41	µg/L	0.12 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.12 U	0.02 U	--	0.12 U	0.02 U	--	--	--	0.12 U	0.02 U	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW07-34D								OW07-34S			OW07-37					OW07-38S		
		Sample ID	OW07- 34D	OW07-34(D)	OW07-34D	OW07-34D	OW07-34D	OW07-34D	OW07-34D	OW07-34D	OW07- 34S	OW07-34S	OW07-34S	OW07- 37	OW07-37	GW-DUP3	OW07-37	OW07-37	OW07- 38S	OW07-38S	OW07-38S
		Start Depth (m)	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	1.55	1.55	1.55	3.10	3.10	3.13	3.13	3.10	1.79	1.79	1.79
		End Depth (m)	9.17	9.17	9.17	9.17	9.17	9.17	9.17	9.17	4.60	4.60	4.60	6.17	6.17	6.17	6.17	6.17	4.84	4.84	4.84
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N
		Sample Date	29 Mar 2007	11 Dec 2012	24 Oct 2013	24 Oct 2014	19 Nov 2015	26 Oct 2016	01 Sep 2017	27 Feb 2020	29 Mar 2007	01 Sep 2017	27 Feb 2020	29 Mar 2007	06 Sep 2017	27 Mar 2019	27 Mar 2019	03 Mar 2020	29 Mar 2007	06 Sep 2017	02 Mar 2020
Analyte	**Table 6 SCS [a]**	**Unit**																			
Fluorene	120	µg/L	0.09 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.09 U	0.02 U	--	0.09 U	0.02 U	--	--	--	0.09 U	0.02 U	--
Indeno(1,2,3-Cd)Pyrene	0.2	µg/L	**0.04**	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	**0.03**	0.02 U	--	0.03 U	0.02 U	--	--	--	0.03 U	0.02 U	--
Naphthalene	7	µg/L	0.12 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.12 U	0.05 U	--	0.12 U	0.05 U	--	--	--	0.12 U	0.05 U	--
Phenanthrene	1	µg/L	0.11 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	--	--	0.11 U	0.02 U	--	0.11 U	0.02 U	--	--	--	0.11 U	0.02 U	--
Pyrene	4.1	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.02 U	--	0.05 U	0.02 U	--	--	--	0.05 U	0.02 U	--
PCBs																					
Aroclor 1016	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1221	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1232	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1242	NV	µg/L	--	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	0.02 U	--
Aroclor 1248	NV	µg/L	--	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	0.02 U	--
Aroclor 1254	NV	µg/L	--	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	0.02 U	--
Aroclor 1260	NV	µg/L	--	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	0.02 U	--
Aroclor 1262	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1268	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.2	µg/L	0.1 U	--	--	--	--	--	--	--	0.1 U	0.04 U	--	0.1 U	--	--	--	--	0.1 U	0.04 U	--
PHCs																					
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	420	µg/L	100 U	--	--	--	--	--	25 U	--	100 U	25 U	--	100 U	25 U	--	--	--	100 U	25 U	--
Petroleum Hydrocarbons F1 (C6-C10)	420	µg/L	100 U	--	--	--	--	--	25 U	--	100 U	25 U	--	100 U	25 U	--	--	--	100 U	25 U	--
Petroleum Hydrocarbons F1+F2	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	NV	µg/L	--	--	--	--	--	--	--	--	--	100 U	--	--	100 U	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16)	150	µg/L	100 U	--	--	--	--	--	100 U	--	100 U	100 U	--	100 U	100 U	--	--	--	100 U	100 U	--
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	NV	µg/L	--	--	--	--	--	--	--	--	--	250 U	--	--	250 U	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34)	500	µg/L	500 U	--	--	--	--	--	250 U	--	500 U	250 U	--	500 U	250 U	--	--	--	500 U	250 U	--
Petroleum Hydrocarbons F3+F4	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3a (C16-C22)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	130 U	--	--	--	--	130 U	--
Petroleum Hydrocarbons F3b (C22-C34)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	130 U	--	--	--	--	130 U	--
Petroleum Hydrocarbons F4 (C34-C50)	500	µg/L	500 U	--	--	--	--	--	250 U	--	500 U	250 U	--	500 U	250 U	--	--	--	500 U	250 U	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/L	--	--	--	--	--	--	370 U	--	--	370 U	--	--	370 U	--	--	--	--	--	--
SVOCs																					
2-Hexanone	NV	µg/L	0.3 U	--	--	--	--	--	--	--	0.3 U	--	--	0.3 U	--	--	--	--	0.3 U	--	--
Benzo(e)pyrene	NV	µg/L	--	--	0.05 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/L	0.2 U	5 U	--	0.2 U	--	--	--	--	0.2 U	--	--	0.2 U	--	--	--	--	0.2 U	--	--
Chloromethane	NV	µg/L	0.4 U	2.5 U	--	0.5 U	--	--	--	--	0.4 U	--	--	0.4 U	--	--	--	--	0.4 U	--	--
Perylene	NV	µg/L	--	--	0.05 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																					
1,1,1,2-Tetrachloroethane	1.1	µg/L	0.1 U	1 U	0.5 U	0.2 U	0.4 U	0.5 U	0.5 U	0.5 U	0.1 U	0.5 U	0.5 U	0.1 U	0.5 U	--	--	0.5 U	0.1 U	0.5 U	0.5 U
1,1,1-Trichloroethane	23	µg/L	**4.5**	0.5 U	0.25 U	**0.23**	**0.38**	0.2 U	0.5 U	0.5 U	0.3 U	**1.19**	**1.03**	**4.1**	0.5 U	--	--	0.5 U	0.3 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	0.5	µg/L	0.2 U	1 U	0.5 U	0.2 U	0.4 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	--	--	0.5 U	0.2 U	0.5 U	0.5 U
1,1,2-Trichloroethane	0.5	µg/L	--	1 U	0.5 U	0.2 U	0.4 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U
1,1-Dichloroethane	5	µg/L	**9.5**	**1.3**	**0.91**	**0.88**	**1.4**	**0.64**	0.5 U	0.5 U	0.3 U	**2.11**	**1.07**	**1.2**	0.5 U	--	--	0.5 U	0.3 U	0.5 U	0.5 U
1,1-Dichloroethene	0.5	µg/L	0.2 U	0.5 U	0.25 U	0.1 U	0.2 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	--	--	0.5 U	0.2 U	0.5 U	0.5 U
1,2-Dibromoethane	0.2	µg/L	0.2 U	1 U	0.5 U	0.2 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichlorobenzene	3	µg/L	0.1 U	1 U	0.5 U	0.2 U	0.4 U	0.5 U	0.5 U	0.5 U	0.1 U	0.5 U	0.5 U	0.1 U	0.5 U	--	--	0.5 U	0.1 U	0.5 U	0.5 U
1,2-Dichloroethane	0.5	µg/L	0.2 U	1 U	0.5 U	0.2 U	0.4 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	--	--	0.5 U	0.2 U	0.5 U	0.5 U
1,2-Dichloropropane	0.58	µg/L	0.2 U	0.5 U	0.25 U	0.1 U	0.2 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	--	--	0.5 U	0.2 U	0.5 U	0.5 U
1,3-Dichlorobenzene	59	µg/L	0.1 U	1 U	0.5 U	0.2 U	0.4 U	0.5 U	0.5 U	0.5 U	0.1 U	0.5 U	0.5 U	0.1 U	0.5 U	--	--	0.5 U	0.1 U	0.5 U	0.5 U
1,3-Dichloropropene	0.5	µg/L	--	--	0.71 U	0.28 U	0.57 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U
1,4-Dichlorobenzene	0.5	µg/L	0.1 U	1 U	0.5 U	0.2 U	0.4 U	0.5 U	0.5 U	0.5 U	0.1 U	0.5 U	0.5 U	0.1 U	0.5 U	--	--	0.5 U	0.1 U	0.5 U	0.5 U
1,4-Dioxane	50	µg/L	--	--	--	--	--	--	20 U	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	1800	µg/L	0.3 U	25 U	13 U	5 U	10 U	10 U	20 U	20 U	0.3 U	20 U	20 U	0.3 U	20 U	--	--	20 U	0.3 U	20 U	20 U
4-Methyl-2-Pentanone	640	µg/L	--	25 U	13 U	5 U	10 U	5 U	20 U	20 U	--	20 U	20 U	--	20 U	--	--	20 U	--	20 U	20 U
Acetone	2700	µg/L	0.5 U	50 U	25 U	10 U	20 U	10 U	30 U	30 U	0.5 U	30 U	30 U	0.5 U	30 U	--	--	30 U	0.5 U	30 U	30 U
Bromodichloromethane	16	µg/L	0.2 U	0.5 U	0.25 U	0.1 U	0.2 U	0.5 U	2 U	2 U	0.2 U	2 U	2 U	0.2 U	2 U	--	--	2 U	0.2 U	2 U	2 U
Bromoform	5	µg/L	0.1 U	1 U	0.5 U	0.2 U	0.4 U	1 U	5 U	5 U	0.1 U	5 U	5 U	0.1 U	5 U	--	--	5 U	0.1 U	5 U	5 U
Bromomethane	0.89	µg/L	0.2 U	2.5 U	1.3 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	--	--	0.5 U	0.2 U	0.5 U	0.5 U
Carbon tetrachloride	0.2	µg/L	0.2 U	0.5 U	0.25 U	0.1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	0.2 U	0.2 U	0.2 U	0.2 U
Chlorobenzene	30	µg/L	0.1 U	0.5 U	0.25 U	0.1 U	0.2 U	0.2 U	0.5 U	0.5 U	0.1 U	0.5 U	0.5 U	0.1 U	0.5 U	--	--	0.5 U	0.1 U	0.5 U	0.5 U
Chlorodibromomethane	25	µg/L	--	1 U	0.5 U	0.2 U	0.4 U	0.5 U	2 U	2 U	--	2 U	2 U	--	2 U	--	--	2 U	--	2 U	2 U

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW07-34D								OW07-34S			OW07-37					OW07-38S		
		Sample ID	OW07- 34D	OW07-34(D)	OW07-34D	OW07-34D	OW07-34D	OW07-34D	OW07-34D	OW07-34D	OW07- 34S	OW07-34S	OW07-34S	OW07- 37	OW07-37	GW-DUP3	OW07-37	OW07-37	OW07- 38S	OW07-38S	OW07-38S
		Start Depth (m)	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	1.55	1.55	1.55	3.10	3.10	3.13	3.13	3.10	1.79	1.79	1.79
		End Depth (m)	9.17	9.17	9.17	9.17	9.17	9.17	9.17	9.17	4.60	4.60	4.60	6.17	6.17	6.17	6.17	6.17	4.84	4.84	4.84
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N
		Sample Date	29 Mar 2007	11 Dec 2012	24 Oct 2013	24 Oct 2014	19 Nov 2015	26 Oct 2016	01 Sep 2017	27 Feb 2020	29 Mar 2007	01 Sep 2017	27 Feb 2020	29 Mar 2007	06 Sep 2017	27 Mar 2019	27 Mar 2019	03 Mar 2020	29 Mar 2007	06 Sep 2017	02 Mar 2020
Analyte	**Table 6 SCS [a]**	**Unit**																			
Chloroform	2	µg/L	0.2 U	0.5 U	0.25 U	0.1 U	0.2 U	0.2 U	1 U	1 U	0.2 U	1 U	1 U	0.2 U	1 U	--	--	1 U	0.2 U	1 U	1 U
cis-1,2-Dichloroethene	1.6	µg/L	**0.93**	**0.92**	**0.98**	**0.89**	**0.98**	**0.97**	**0.85**	**0.57**	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	--	--	0.5 U	0.2 U	0.5 U	0.5 U
cis-1,3-Dichloropropene	NV	µg/L	0.2 U	1 U	0.5 U	0.2 U	0.4 U	0.3 U	0.3 U	0.3 U	0.2 U	0.3 U	0.3 U	0.2 U	0.3 U	--	--	0.3 U	0.2 U	0.3 U	0.3 U
Dichlorodifluoromethane	590	µg/L	--	--	1.3 U	--	1 U	1 U	2 U	2 U	--	2 U	2 U	--	2 U	--	--	2 U	--	2 U	2 U
Dichloromethane	26	µg/L	0.3 U	2.5 U	1.3 U	0.5 U	1 U	2 U	5 U	5 U	0.3 U	5 U	5 U	0.3 U	5 U	--	--	5 U	0.3 U	5 U	5 U
Methyl tert-butyl ether (MTBE)	15	µg/L	0.2 U	1 U	0.5 U	0.2 U	0.4 U	0.5 U	2 U	2 U	0.2 U	2 U	2 U	0.2 U	2 U	--	--	2 U	0.2 U	2 U	2 U
n-Hexane	5	µg/L	--	--	1.3 U	--	1 U	1 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U
Styrene	5.4	µg/L	0.1 U	1 U	0.5 U	0.2 U	0.4 U	0.5 U	0.5 U	0.5 U	0.1 U	0.5 U	0.5 U	0.1 U	0.5 U	--	--	0.5 U	0.1 U	0.5 U	0.5 U
Tetrachloroethene	0.5	µg/L	0.1 U	0.5 U	0.25 U	0.1 U	0.2 U	0.2 U	0.5 U	0.5 U	0.1 U	0.5 U	0.5 U	0.1 U	0.5 U	--	--	0.5 U	0.1 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	1.6	µg/L	0.2 U	0.5 U	0.25 U	0.1 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	--	--	0.5 U	0.2 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	NV	µg/L	0.3 U	1 U	0.5 U	0.2 U	0.4 U	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	--	--	0.3 U	0.3 U	0.3 U	0.3 U
Trichloroethylene	0.5	µg/L	**0.97**	**0.7**	**0.5**	**0.46**	**0.55**	**0.32**	0.5 U	0.5 U	**0.52**	0.5 U	0.5 U	0.2 U	0.5 U	--	--	0.5 U	0.2 U	0.5 U	0.5 U
Trichlorofluoromethane	150	µg/L	0.4 U	1 U	0.5 U	0.2 U	0.4 U	0.5 U	5 U	5 U	0.4 U	5 U	5 U	0.4 U	5 U	--	--	5 U	0.4 U	5 U	5 U
Vinyl Chloride	0.5	µg/L	0.17 U	1 U	0.5 U	0.2 U	0.4 U	0.2 U	0.5 U	0.5 U	0.17 U	0.5 U	0.5 U	0.17 U	0.5 U	--	--	0.5 U	0.17 U	0.5 U	0.5 U

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act.* Ministry of the Environment. April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/L = microgram(s) per litre

ABNs = acid, base and neutral compounds

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mS/cm = milliSiemen(s) per centimetre

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW09-I											OW09-II							
		Sample ID	OW9-I	OW9-I	OW 9-I	OW 9-I	OW9-I	OW9-I	OW9-I	OW9-I	OW9-1	OW9-I	OW09-I	OW9-II	OW9-II	OW 9-II	OW 9-II	OW9-II	OW9-II	OW9-11	OW9-II
		Start Depth (m)	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	6.33	6.33	6.33	6.33	6.33	6.33	6.33	6.33
		End Depth (m)	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	7.85	7.85	7.85	7.85	7.85	7.85	7.85	7.85
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	24 Mar 2010	07 Oct 2010	16 Jun 2011	19 Sep 2011	12 Dec 2012	24 Oct 2013	22 Oct 2014	18 Nov 2015	24 Oct 2016	30 Aug 2017	28 Feb 2020	24 Mar 2010	07 Oct 2010	16 Jun 2011	20 Sep 2011	12 Dec 2012	24 Oct 2013	22 Oct 2014	18 Nov 2015
Analyte	**Table 6 SCS [a]**	**Unit**																			
ABNs																					
1,1'-Biphenyl	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	3	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,2'-oxybis(1-chloropropane)	120	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	59	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	890	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BTEX																					
Benzene	0.5	µg/L	0.1 U	1 U	0.2 U	**0.27**	0.2 U	0.25 U	2.5 U	1 U	**0.25**	0.5 U	0.5 U	**4.5**	**3.4**	**2.8**	**3.9**	**3.4**	**3.3**	**3.6**	**3.3**
Ethylbenzene	2.4	µg/L	0.1 U	1 U	0.2 U	0.25 U	0.2 U	0.25 U	2.5 U	1 U	0.2 U	0.5 U	0.5 U	0.1 U	0.5 U	0.2 U	0.1 U	0.2 U	0.25 U	1 U	0.5 U
Toluene	24	µg/L	0.2 U	2 U	0.4 U	0.5 U	0.4 U	0.5 U	5 U	2 U	0.2 U	0.5 U	0.5 U	0.2 U	1 U	0.4 U	0.2 U	0.4 U	0.5 U	2 U	1 U
Xylene, o	NV	µg/L	0.1 U	1 U	0.2 U	0.25 U	0.2 U	0.25 U	2.5 U	1 U	0.2 U	0.3 U	0.3 U	0.1 U	0.5 U	0.2 U	0.1 U	0.2 U	0.25 U	1 U	0.5 U
Xylenes, m & p	NV	µg/L	0.1 U	1 U	0.2 U	0.25 U	0.2 U	0.25 U	2.5 U	1 U	0.2 U	0.4 U	0.4 U	0.1 U	0.5 U	0.2 U	0.1 U	0.2 U	0.25 U	1 U	0.5 U
Xylenes, Total	72	µg/L	0.1 U	1 U	0.2 U	0.25 U	0.2 U	0.25 U	2.5 U	1 U	0.2 U	0.5 U	0.5 U	0.1 U	0.5 U	0.2 U	0.1 U	0.2 U	0.25 U	1 U	0.5 U
Chlorophenyls																					
2,4,5-Trichlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	20	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																					
Alkalinity, Bicarbonate (as CaCO3)	NV	µg/L	--	--	--	--	**340000**	**390000**	**420000**	--	--	--	--	--	--	--	--	**370000**	**350000**	**340000**	--
Alkalinity, Carbonate (as CaCO3)	NV	µg/L	--	--	--	--	**1000**	**2100**	**2800**	--	--	--	--	--	--	--	--	**1700**	**2000**	**1900**	--
Alkalinity, Hydroxide (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Total (as CaCO3)	NV	µg/L	**250000**	**400000**	**320000**	**400000**	**340000**	**390000**	**420000**	--	--	--	--	**370000**	**360000**	**350000**	**320000**	**380000**	**350000**	**340000**	--
Ammonia	NV	µg/L	--	--	--	--	**61**	50 U	**72**	--	--	--	--	--	--	--	--	**390**	**310**	**420**	--
Carbon, dissolved organic (DOC)	NV	µg/L	--	--	--	--	**14000**	**16000**	**19000**	--	--	--	--	--	--	--	--	**9300**	**8500**	**7800**	--
Cation - Anion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Color	NV	CU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity % Difference	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	NV	mS/cm	**0.5**	**0.85**	**0.63**	**0.85**	**0.69**	**0.75**	**0.83**	--	--	**0.784**	--	**0.78**	**0.9**	**0.78**	**0.89**	**0.94**	**0.93**	**0.94**	--
Hardness (as CaCO3)	NV	µg/L	--	--	--	--	**380000**	**430000**	**460000**	--	--	--	--	--	--	--	--	**440000**	**440000**	**440000**	--
Ion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate, as NO3	NV	µg/L	100 U	100 U	100 U	100 U	100 U	100 U	100 U	--	--	--	--	100 U	100 U	100 U	100 U	100 U	100 U	100 U	--
Nitrate-Nitrite, as N, Total	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite, as NO2	NV	µg/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	--	--	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--
pH	NV	pH UNITS	**7.74**	**7.43**	**7.66**	**7.3**	**7.5**	**7.76**	**7.85**	--	--	**7.35**	--	**7.43**	**7.37**	**7.48**	**7.35**	**7.67**	**7.78**	**7.78**	--
pH (Laboratory)	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus, Total Orthophosphate (As P)	NV	µg/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	--	--	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--
Saturation pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (as SIO2)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	NV	µg/L	**13000**	**56000**	**22000**	**45000**	**32000**	**24000**	**34000**	--	--	--	--	**48000**	**84000**	**58000**	**93000**	**70000**	**75000**	**78000**	--
Sulfur	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total dissolved solids	NV	µg/L	--	--	--	--	**400000**	**440000**	**490000**	--	--	--	--	--	--	--	--	**550000**	**550000**	**560000**	--
Turbidity	NV	NTU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																					
Antimony	6	µg/L	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--
Arsenic	25	µg/L	1 U	**1.1**	1 U	**1**	--	--	--	--	--	1 U	--	**16**	**23**	**20**	**22**	--	--	--	--
Barium	1000	µg/L	--	--	--	--	--	--	--	--	--	**101**	--	--	--	--	--	--	--	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW09-I											OW09-II							
		Sample ID	OW9-I	OW9-I	OW 9-I	OW 9-I	OW9-I	OW9-I	OW9-I	OW9-I	OW9-1	OW9-I	OW09-I	OW9-II	OW9-II	OW 9-II	OW 9-II	OW9-II	OW9-II	OW9-11	OW9-II
		Start Depth (m)	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	6.33	6.33	6.33	6.33	6.33	6.33	6.33	6.33
		End Depth (m)	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	7.85	7.85	7.85	7.85	7.85	7.85	7.85	7.85
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	24 Mar 2010	07 Oct 2010	16 Jun 2011	19 Sep 2011	12 Dec 2012	24 Oct 2013	22 Oct 2014	18 Nov 2015	24 Oct 2016	30 Aug 2017	28 Feb 2020	24 Mar 2010	07 Oct 2010	16 Jun 2011	20 Sep 2011	12 Dec 2012	24 Oct 2013	22 Oct 2014	18 Nov 2015
Analyte	**Table 6 SCS [a]**	**Unit**																			
Beryllium	4	µg/L	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--
Boron	5000	µg/L	--	--	--	--	--	--	--	--	--	**110**	--	--	--	--	--	--	--	--	--
Cadmium	2.1	µg/L	--	--	--	--	--	--	--	--	--	**0.21**	--	--	--	--	--	--	--	--	--
Calcium	NV	µg/L	**81000**	**140000**	**110000**	**140000**	**120000**	**140000**	**150000**	--	--	--	--	**120000**	**130000**	**130000**	**130000**	**140000**	**130000**	**130000**	--
Chromium	50	µg/L	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--
Cobalt	3.8	µg/L	--	--	--	--	--	--	--	--	--	**1.7**	--	--	--	--	--	--	--	--	--
Copper	69	µg/L	--	--	--	--	20 U	20 U	20 U	--	--	2 U	--	--	--	--	--	20 U	20 U	20 U	--
Lead	10	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	0.5 U	--	**4.2**	**10**	**16**	**11**	--	--	--	--
Magnesium	NV	µg/L	**16000**	**24000**	**19000**	**25000**	**19000**	**21000**	**22000**	--	--	--	--	**23000**	**28000**	**26000**	**27000**	**25000**	**25000**	**25000**	--
Molybdenum	70	µg/L	--	--	--	--	--	--	--	--	--	**0.54**	--	--	--	--	--	--	--	--	--
Nickel	100	µg/L	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--
Selenium	10	µg/L	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--
Silver	1.2	µg/L	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--
Sodium	490000	µg/L	**2800**	**5900**	**3500**	**9900**	**3300**	**4600**	**4400**	--	--	**7500**	--	**10000**	**21000**	**13000**	**23000**	**29000**	**32000**	**36000**	--
Thallium	2	µg/L	--	--	--	--	--	--	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--
Uranium	20	µg/L	--	--	--	--	--	--	--	--	--	**0.46**	--	--	--	--	--	--	--	--	--
Vanadium	6.2	µg/L	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--
Zinc	890	µg/L	**660**	**1800**	**1500**	**2000**	**1900**	**2500**	**2600**	**1700**	**2600**	**1180**	--	**530**	**710**	**690**	**690**	**720**	**690**	**680**	**610**
Non-Regulated Metals																					
Aluminum	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	NV	µg/L	1000 U	1000 U	1000 U	1000 U	--	--	--	--	--	--	--	1000 U	1000 U	1000 U	1000 U	--	--	--	--
Cesium (Cs)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoride	NV	µg/L	**1900**	**2300**	**2400**	**1900**	--	--	--	--	--	--	--	**940**	**820**	**850**	**830**	--	--	--	--
Iron	NV	µg/L	--	--	--	--	**100**	**310**	**240**	--	--	--	--	--	--	--	--	**4400**	**4400**	**4500**	--
Lithium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/L	--	--	--	--	**110**	**830**	**700**	--	--	--	--	--	--	--	--	**180**	**190**	**190**	--
Potassium	NV	µg/L	**1800**	**5700**	**3800**	**6600**	**4000**	**5000**	**5000**	--	--	--	--	**4400**	**5200**	**4200**	**4800**	**5000**	**5000**	**5000**	--
Rubidium (Rb)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silicon	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tellurium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thorium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tungsten	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																					
Chromium, Hexavalent (Cr6+)	25	µg/L	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--
Chloride (Cl)	790000	µg/L	**2400**	**6700**	**2400**	**14000**	**3500**	**3100**	**4300**	--	--	**11500**	--	**13000**	**34000**	**16000**	**41000**	**40000**	**48000**	**57000**	--
Cyanide, Free	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	µg/L	--	--	--	--	--	--	--	--	--	0.01 U	--	--	--	--	--	--	--	--	--
PAHs																					
1-Methylnaphthalene	NV	µg/L	--	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--
2-(1-)Methylnaphthalene	3.2	µg/L	--	--	--	--	--	--	--	--	--	0.028 U	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	NV	µg/L	--	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--
Acenaphthene	4.1	µg/L	--	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--
Acenaphthylene	1	µg/L	--	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--
Anthracene	1	µg/L	--	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	1	µg/L	--	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.01	µg/L	--	--	--	--	--	--	--	--	--	0.01 U	--	--	--	--	--	--	--	--	--
Benzo(b&j)fluoranthene	0.1	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.1	µg/L	--	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	0.2	µg/L	--	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.1	µg/L	--	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--
Chrysene	0.1	µg/L	--	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.2	µg/L	--	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--
Fluoranthene	0.41	µg/L	--	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW09-I											OW09-II							
		Sample ID	OW9-I	OW9-I	OW 9-I	OW 9-I	OW9-I	OW9-I	OW9-I	OW9-I	OW9-1	OW9-I	OW09-I	OW9-II	OW9-II	OW 9-II	OW 9-II	OW9-II	OW9-II	OW9-11	OW9-II
		Start Depth (m)	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	6.33	6.33	6.33	6.33	6.33	6.33	6.33	6.33
		End Depth (m)	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	7.85	7.85	7.85	7.85	7.85	7.85	7.85	7.85
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	24 Mar 2010	07 Oct 2010	16 Jun 2011	19 Sep 2011	12 Dec 2012	24 Oct 2013	22 Oct 2014	18 Nov 2015	24 Oct 2016	30 Aug 2017	28 Feb 2020	24 Mar 2010	07 Oct 2010	16 Jun 2011	20 Sep 2011	12 Dec 2012	24 Oct 2013	22 Oct 2014	18 Nov 2015
Analyte	**Table 6 SCS [a]**	**Unit**																			
Fluorene	120	µg/L	--	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-Cd)Pyrene	0.2	µg/L	--	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--
Naphthalene	7	µg/L	--	--	--	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--
Phenanthrene	1	µg/L	--	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--
Pyrene	4.1	µg/L	--	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--
PCBs																					
Aroclor 1016	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1221	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1232	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1242	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1262	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1268	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PHCs																					
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	420	µg/L	100 U	100 U	100 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	--	100 U	100 U	100 U	25 U	25 U	25 U	25 U	25 U
Petroleum Hydrocarbons F1 (C6-C10)	420	µg/L	100 U	100 U	100 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	--	100 U	100 U	100 U	25 U	25 U	25 U	25 U	25 U
Petroleum Hydrocarbons F1+F2	NV	µg/L	100 U	--	--	--	--	--	--	--	--	--	--	100 U	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	NV	µg/L	--	--	--	--	--	--	--	--	--	100 U	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16)	150	µg/L	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	--	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	NV	µg/L	--	--	--	--	--	--	--	--	--	250 U	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34)	500	µg/L	100 U	100 U	100 U	100 U	100 U	200 U	200 U	200 U	**200**	250 U	--	100 U	100 U	100 U	100 U	100 U	200 U	200 U	200 U
Petroleum Hydrocarbons F3+F4	NV	µg/L	100 U	--	--	--	--	--	--	--	--	--	--	100 U	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3a (C16-C22)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3b (C22-C34)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F4 (C34-C50)	500	µg/L	100 U	100 U	100 U	100 U	100 U	200 U	200 U	200 U	200 U	250 U	--	100 U	100 U	100 U	100 U	100 U	200 U	200 U	200 U
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/L	--	--	--	--	--	--	--	--	--	370 U	--	--	--	--	--	--	--	--	--
SVOCs																					
2-Hexanone	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(e)pyrene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/L	0.2 U	2 U	0.4 U	0.5 U	0.4 U	--	5 U	--	--	--	--	0.2 U	1 U	0.4 U	0.2 U	0.4 U	--	2 U	--
Chloromethane	NV	µg/L	0.5 U	5 U	1 U	1.3 U	1 U	--	13 U	--	--	--	--	0.5 U	2.5 U	1 U	0.5 U	1 U	--	5 U	--
Perylene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																					
1,1,1,2-Tetrachloroethane	1.1	µg/L	0.1 U	1 U	0.2 U	0.25 U	0.4 U	0.5 U	5 U	2 U	0.5 U	0.5 U	0.5 U	0.1 U	0.5 U	0.2 U	0.1 U	0.4 U	0.5 U	2 U	1 U
1,1,1-Trichloroethane	23	µg/L	0.1 U	1 U	0.2 U	0.25 U	0.2 U	0.25 U	2.5 U	1 U	0.2 U	0.5 U	0.5 U	0.1 U	0.5 U	0.2 U	0.1 U	0.2 U	0.25 U	1 U	0.5 U
1,1,2,2-Tetrachloroethane	0.5	µg/L	0.2 U	2 U	0.4 U	0.5 U	0.4 U	0.5 U	5 U	2 U	0.5 U	0.5 U	0.5 U	0.2 U	1 U	0.4 U	0.2 U	0.4 U	0.5 U	2 U	1 U
1,1,2-Trichloroethane	0.5	µg/L	0.2 U	2 U	0.4 U	0.5 U	0.4 U	0.5 U	5 U	2 U	0.5 U	0.5 U	0.5 U	0.2 U	1 U	0.4 U	0.2 U	0.4 U	0.5 U	2 U	1 U
1,1-Dichloroethane	5	µg/L	0.1 U	1 U	0.2 U	0.25 U	0.2 U	0.25 U	2.5 U	1 U	0.2 U	0.5 U	0.5 U	0.1 U	0.5 U	0.2 U	0.1 U	0.2 U	0.25 U	1 U	0.5 U
1,1-Dichloroethene	0.5	µg/L	0.1 U	1 U	0.2 U	0.25 U	0.2 U	0.25 U	2.5 U	1 U	0.2 U	0.5 U	0.5 U	0.1 U	0.5 U	0.2 U	0.1 U	0.2 U	0.25 U	1 U	0.5 U
1,2-Dibromoethane	0.2	µg/L	0.2 U	2 U	0.4 U	0.5 U	0.4 U	0.5 U	5 U	2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.4 U	0.2 U	0.4 U	0.5 U	2 U	1 U
1,2-Dichlorobenzene	3	µg/L	0.2 U	2 U	0.4 U	0.5 U	0.4 U	0.5 U	5 U	2 U	0.5 U	0.5 U	0.5 U	0.2 U	1 U	0.4 U	0.2 U	0.4 U	0.5 U	2 U	1 U
1,2-Dichloroethane	0.5	µg/L	0.2 U	2 U	0.4 U	0.5 U	0.4 U	0.5 U	5 U	2 U	0.5 U	0.5 U	0.5 U	0.2 U	1 U	0.4 U	0.2 U	0.4 U	0.5 U	2 U	1 U
1,2-Dichloropropane	0.58	µg/L	0.1 U	1 U	0.2 U	0.25 U	0.2 U	0.25 U	2.5 U	1 U	0.2 U	0.5 U	0.5 U	0.1 U	0.5 U	0.2 U	0.1 U	0.2 U	0.25 U	1 U	0.5 U
1,3-Dichlorobenzene	59	µg/L	0.2 U	2 U	0.4 U	0.5 U	0.4 U	0.5 U	5 U	2 U	0.5 U	0.5 U	0.5 U	0.2 U	1 U	0.4 U	0.2 U	0.4 U	0.5 U	2 U	1 U
1,3-Dichloropropene	0.5	µg/L	--	--	--	--	--	0.71 U	--	2.8 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	0.71 U	--	1.4 U
1,4-Dichlorobenzene	0.5	µg/L	0.2 U	2 U	0.4 U	0.5 U	0.4 U	0.5 U	5 U	2 U	0.5 U	0.5 U	0.5 U	0.2 U	1 U	0.4 U	0.2 U	0.4 U	0.5 U	2 U	1 U
1,4-Dioxane	50	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	1800	µg/L	5 U	50 U	10 U	13 U	10 U	13 U	130 U	50 U	10 U	20 U	20 U	5 U	25 U	10 U	5 U	10 U	13 U	50 U	25 U
4-Methyl-2-Pentanone	640	µg/L	5 U	50 U	10 U	13 U	10 U	13 U	130 U	50 U	5 U	20 U	20 U	5 U	25 U	10 U	5 U	10 U	13 U	50 U	25 U
Acetone	2700	µg/L	10 U	100 U	20 U	25 U	20 U	25 U	250 U	100 U	10 U	30 U	30 U	10 U	50 U	20 U	10 U	20 U	25 U	100 U	50 U
Bromodichloromethane	16	µg/L	0.1 U	1 U	0.2 U	0.25 U	0.2 U	0.25 U	2.5 U	1 U	0.5 U	2 U	2 U	0.1 U	0.5 U	0.2 U	0.1 U	0.2 U	0.25 U	1 U	0.5 U
Bromoform	5	µg/L	0.2 U	2 U	0.4 U	0.5 U	0.4 U	0.5 U	5 U	2 U	1 U	5 U	5 U	0.2 U	1 U	0.4 U	0.2 U	0.4 U	0.5 U	2 U	1 U
Bromomethane	0.89	µg/L	0.5 U	5 U	1 U	1.3 U	1 U	1.3 U	13 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	1 U	0.5 U	1 U	1.3 U	5 U	2.5 U
Carbon tetrachloride	0.2	µg/L	0.1 U	1 U	0.2 U	0.25 U	0.2 U	0.25 U	2.5 U	1 U	0.2 U	0.2 U	0.2 U	0.1 U	0.5 U	0.2 U	0.1 U	0.2 U	0.25 U	1 U	0.5 U
Chlorobenzene	30	µg/L	0.1 U	1 U	0.2 U	0.25 U	0.2 U	0.25 U	2.5 U	1 U	0.2 U	0.5 U	0.5 U	0.1 U	0.5 U	0.2 U	0.1 U	0.2 U	0.25 U	1 U	0.5 U
Chlorodibromomethane	25	µg/L	0.2 U	2 U	0.4 U	0.5 U	0.4 U	0.5 U	5 U	2 U	0.5 U	2 U	2 U	0.2 U	1 U	0.4 U	0.2 U	0.4 U	0.5 U	2 U	1 U

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW09-I											OW09-II							
		Sample ID	OW9-I	OW9-I	OW 9-I	OW 9-I	OW9-I	OW9-I	OW9-I	OW9-I	OW9-1	OW9-I	OW09-I	OW9-II	OW9-II	OW 9-II	OW 9-II	OW9-II	OW9-II	OW9-11	OW9-II
		Start Depth (m)	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	6.33	6.33	6.33	6.33	6.33	6.33	6.33	6.33
		End Depth (m)	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	7.85	7.85	7.85	7.85	7.85	7.85	7.85	7.85
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	24 Mar 2010	07 Oct 2010	16 Jun 2011	19 Sep 2011	12 Dec 2012	24 Oct 2013	22 Oct 2014	18 Nov 2015	24 Oct 2016	30 Aug 2017	28 Feb 2020	24 Mar 2010	07 Oct 2010	16 Jun 2011	20 Sep 2011	12 Dec 2012	24 Oct 2013	22 Oct 2014	18 Nov 2015
Analyte	**Table 6 SCS [a]**	**Unit**																			
Chloroform	2	µg/L	0.1 U	1 U	0.2 U	0.25 U	0.2 U	0.25 U	2.5 U	1 U	0.2 U	1 U	1 U	0.1 U	0.5 U	0.2 U	0.1 U	0.2 U	0.25 U	1 U	0.5 U
cis-1,2-Dichloroethene	1.6	µg/L	0.1 U	1 U	0.2 U	**7.4**	0.2 U	0.25 U	2.5 U	1 U	**4.6**	**2.29**	0.5 U	**8.5**	**6.6**	**7.3**	**7.1**	**9**	**9.1**	**8.5**	**6.7**
cis-1,3-Dichloropropene	NV	µg/L	0.2 U	2 U	0.4 U	0.5 U	0.4 U	0.5 U	5 U	2 U	0.3 U	0.3 U	0.3 U	0.2 U	1 U	0.4 U	0.2 U	0.4 U	0.5 U	2 U	1 U
Dichlorodifluoromethane	590	µg/L	0.5 U	--	1 U	1.3 U	--	1.3 U	--	5 U	1 U	2 U	2 U	0.5 U	--	1 U	0.5 U	--	1.3 U	--	2.5 U
Dichloromethane	26	µg/L	0.5 U	5 U	1 U	1.3 U	1 U	1.3 U	13 U	5 U	2 U	5 U	5 U	0.5 U	2.5 U	1 U	0.5 U	1 U	1.3 U	5 U	2.5 U
Methyl tert-butyl ether (MTBE)	15	µg/L	0.2 U	2 U	0.4 U	0.5 U	0.4 U	0.5 U	5 U	2 U	0.5 U	2 U	2 U	0.2 U	1 U	0.4 U	0.2 U	0.4 U	0.5 U	2 U	1 U
n-Hexane	5	µg/L	0.5 U	--	1 U	1.3 U	--	1.3 U	--	5 U	1 U	0.5 U	0.5 U	0.5 U	--	1 U	0.5 U	--	1.3 U	--	2.5 U
Styrene	5.4	µg/L	0.2 U	2 U	0.4 U	0.5 U	0.4 U	0.5 U	5 U	2 U	0.5 U	0.5 U	0.5 U	0.2 U	1 U	0.4 U	0.2 U	0.4 U	0.5 U	2 U	1 U
Tetrachloroethene	0.5	µg/L	0.1 U	1 U	0.2 U	0.25 U	0.2 U	0.25 U	2.5 U	1 U	0.2 U	0.5 U	0.5 U	0.1 U	0.5 U	0.2 U	0.1 U	0.2 U	0.25 U	1 U	0.5 U
trans-1,2-Dichloroethene	1.6	µg/L	0.1 U	1 U	0.2 U	0.25 U	0.2 U	0.25 U	2.5 U	1 U	0.5 U	0.5 U	0.5 U	**0.13**	0.5 U	0.2 U	0.1 U	0.2 U	0.25 U	1 U	0.5 U
trans-1,3-Dichloropropene	NV	µg/L	0.2 U	2 U	0.4 U	0.5 U	0.4 U	0.5 U	5 U	2 U	0.4 U	0.3 U	0.3 U	0.2 U	1 U	0.4 U	0.2 U	0.4 U	0.5 U	2 U	1 U
Trichloroethylene	0.5	µg/L	0.1 U	1 U	0.2 U	**0.98**	0.2 U	0.25 U	2.5 U	1 U	**1.4**	**0.74**	0.5 U	**0.31**	0.5 U	**0.29**	**0.17**	**0.26**	0.25 U	1 U	0.5 U
Trichlorofluoromethane	150	µg/L	0.2 U	2 U	0.4 U	0.5 U	0.4 U	0.5 U	5 U	2 U	0.5 U	5 U	5 U	0.2 U	1 U	0.4 U	0.2 U	0.4 U	0.5 U	2 U	1 U
Vinyl Chloride	0.5	µg/L	0.2 U	2 U	0.4 U	**2.2**	0.4 U	0.5 U	5 U	2 U	**0.76**	**0.55**	0.5 U	**4.3**	**4**	**3.7**	**6.7**	**6.8**	**8.9**	**9.9**	**11**

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act.* Ministry of the Environment. April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/L = microgram(s) per litre

ABNs = acid, base and neutral compounds

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mS/cm = milliSiemen(s) per centimetre

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location						OW10					OW11-I								
		Sample ID	OW9-11	OW9-II	OW9-II	OW9-11	OW09-II	OW10	OW 10	OW 10	OW10	OW10	OW11-1	OW 11-I	OW 11-I	DUP2	OW11-I	OW11-I	OW11-II	OW 11-II	OW 11-II
		Start Depth (m)	6.33	6.33	6.33	6.33	6.33	1.80	1.80	1.80	1.80	1.80	1.60	1.60	1.60	1.60	1.60	1.60	6.28	6.28	6.28
		End Depth (m)	7.85	7.85	7.85	7.85	7.85	4.85	4.85	4.85	4.85	4.85	4.65	4.65	4.65	4.65	4.65	4.65	7.80	7.80	7.80
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N
		Sample Date	24 Oct 2016	30 Aug 2017	20 Mar 2018	13 Apr 2018	28 Feb 2020	24 Mar 2010	16 Jun 2011	20 Sep 2011	30 Aug 2017	03 Mar 2020	24 Mar 2010	16 Jun 2011	20 Sep 2011	01 Sep 2017	01 Sep 2017	25 Feb 2020	24 Mar 2010	16 Jun 2011	20 Sep 2011
Analyte	**Table 6 SCS [a]**	**Unit**																			
ABNs																					
1,1'-Biphenyl	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	3	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,2'-oxybis(1-chloropropane)	120	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	59	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	890	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BTEX																					
Benzene	0.5	µg/L	**3**	**3.27**	--	--	**2.2**	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U	0.5 UJ	--	--	--
Ethylbenzene	2.4	µg/L	0.2 U	0.5 U	--	--	0.5 U	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U	0.5 UJ	--	--	--
Toluene	24	µg/L	0.2 U	0.5 U	--	--	0.5 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 UJ	--	--	--
Xylene, o	NV	µg/L	0.2 U	0.3 U	--	--	0.3 U	0.1 U	0.1 U	0.1 U	0.3 U	0.3 U	0.1 U	0.1 U	0.1 U	0.3 U	0.3 U	0.3 UJ	--	--	--
Xylenes, m & p	NV	µg/L	0.2 U	0.4 U	--	--	0.4 U	0.1 U	0.1 U	0.1 U	0.4 U	0.4 U	0.1 U	0.1 U	0.1 U	0.4 U	0.4 U	0.4 UJ	--	--	--
Xylenes, Total	72	µg/L	0.2 U	0.5 U	--	--	0.5 U	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U	0.5 UJ	--	--	--
Chlorophenyls																					
2,4,5-Trichlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	20	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																					
Alkalinity, Bicarbonate (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Carbonate (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Hydroxide (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Total (as CaCO3)	NV	µg/L	--	--	--	--	--	**340000**	**280000**	**330000**	--	--	**410000**	**360000**	**340000**	--	--	--	**380000**	**320000**	**310000**
Ammonia	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon, dissolved organic (DOC)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cation - Anion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Color	NV	CU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity % Difference	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	NV	mS/cm	--	**0.877**	--	--	--	**0.78**	**0.68**	**0.95**	**0.703**	--	**0.77**	**0.68**	**0.69**	**0.591**	**0.594**	--	**0.73**	**0.67**	**0.94**
Hardness (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate, as NO3	NV	µg/L	--	--	--	--	--	100 U	100 U	100 U	--	--	**160**	100 U	100 U	--	--	--	100 U	100 U	100 U
Nitrate-Nitrite, as N, Total	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite, as NO2	NV	µg/L	--	--	--	--	--	10 U	10 U	10 U	--	--	**14**	10 U	10 U	--	--	--	10 U	10 U	10 U
pH	NV	pH UNITS	--	**7.36**	--	--	--	**7.64**	**7.68**	**7.54**	**7.58**	--	**7.58**	**7.48**	**7.68**	**7.6**	**7.61**	--	**7.52**	**7.71**	**7.61**
pH (Laboratory)	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus, Total Orthophosphate (As P)	NV	µg/L	--	--	--	--	--	10 U	**11**	**14**	--	--	10 U	10 U	10 U	--	--	--	10 U	10 U	10 U
Saturation pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (as SIO2)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	NV	µg/L	--	--	--	--	--	**96000**	**91000**	**190000**	--	--	**29000**	**17000**	**30000**	--	--	--	**26000**	**27000**	**30000**
Sulfur	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total dissolved solids	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Turbidity	NV	NTU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																					
Antimony	6	µg/L	--	0.1 U	0.1 U	0.1 U	--	--	--	--	0.1 U	--	--	--	--	**0.13**	**0.13**	--	--	--	--
Arsenic	25	µg/L	--	**24.3**	**17.9**	**21.4**	--	1 U	**1**	1 U	**1.29**	--	1 U	1 U	1 U	**0.19**	**0.18**	--	1 U	1 U	1 U
Barium	1000	µg/L	--	**152**	**135**	**154**	--	--	--	--	**40.1**	--	--	--	--	**46.5**	**46.4**	--	--	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location						OW10					OW11-I								
		Sample ID	OW9-11	OW9-II	OW9-II	OW9-11	OW09-II	OW10	OW 10	OW 10	OW10	OW10	OW11-1	OW 11-I	OW 11-I	DUP2	OW11-I	OW11-I	OW11-II	OW 11-II	OW 11-II
		Start Depth (m)	6.33	6.33	6.33	6.33	6.33	1.80	1.80	1.80	1.80	1.80	1.60	1.60	1.60	1.60	1.60	1.60	6.28	6.28	6.28
		End Depth (m)	7.85	7.85	7.85	7.85	7.85	4.85	4.85	4.85	4.85	4.85	4.65	4.65	4.65	4.65	4.65	4.65	7.80	7.80	7.80
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N
		Sample Date	24 Oct 2016	30 Aug 2017	20 Mar 2018	13 Apr 2018	28 Feb 2020	24 Mar 2010	16 Jun 2011	20 Sep 2011	30 Aug 2017	03 Mar 2020	24 Mar 2010	16 Jun 2011	20 Sep 2011	01 Sep 2017	01 Sep 2017	25 Feb 2020	24 Mar 2010	16 Jun 2011	20 Sep 2011
Analyte	**Table 6 SCS [a]**	**Unit**																			
Beryllium	4	µg/L	--	0.1 U	0.1 U	0.1 U	--	--	--	--	0.1 U	--	--	--	--	0.1 U	0.1 U	--	--	--	--
Boron	5000	µg/L	--	**83**	**76**	**72**	--	--	--	--	**55**	--	--	--	--	**80**	**80**	--	--	--	--
Cadmium	2.1	µg/L	--	0.01 U	0.01 U	0.01 U	--	--	--	--	0.01 U	--	--	--	--	**0.1**	**0.099**	--	--	--	--
Calcium	NV	µg/L	--	--	--	--	--	**130000**	**120000**	**180000**	--	--	**110000**	**110000**	**110000**	--	--	--	**110000**	**95000**	**100000**
Chromium	50	µg/L	--	0.5 U	0.5 U	0.5 U	--	--	--	--	0.5 U	--	--	--	--	0.5 U	0.5 U	--	--	--	--
Cobalt	3.8	µg/L	--	**0.48**	**0.46**	**0.47**	--	--	--	--	**0.28**	--	--	--	--	0.1 U	0.1 U	--	--	--	--
Copper	69	µg/L	--	0.2 U	0.2 U	0.2 U	--	--	--	--	0.2 U	--	--	--	--	**1.53**	**1.52**	--	--	--	--
Lead	10	µg/L	--	**9.41**	**2.38**	**14.3**	--	0.5 U	0.5 U	0.5 U	0.05 U	--	**1.1**	**2.5**	**2**	**7.69**	**8.09**	--	**2.4**	**3.2**	**5.3**
Magnesium	NV	µg/L	--	--	--	--	--	**22000**	**22000**	**30000**	--	--	**33000**	**32000**	**31000**	--	--	--	**32000**	**28000**	**29000**
Molybdenum	70	µg/L	--	**2.23**	**2**	**1.82**	--	--	--	--	**0.267**	--	--	--	--	**0.172**	**0.165**	--	--	--	--
Nickel	100	µg/L	--	**5.1**	**4.81**	**4.96**	--	--	--	--	0.5 U	--	--	--	--	0.5 U	0.5 U	--	--	--	--
Selenium	10	µg/L	--	**0.059**	**0.074**	**0.073**	--	--	--	--	**0.19**	--	--	--	--	**2.14**	**2.26**	--	--	--	--
Silver	1.2	µg/L	--	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	--	--	--	--	0.05 U	0.05 U	--	--	--	--
Sodium	490000	µg/L	--	**15300**	**12200**	**13700**	--	**6100**	**4200**	**4500**	**6230**	--	**4900**	**3600**	**4200**	**2900**	**3000**	--	**4300**	**9600**	**63000**
Thallium	2	µg/L	--	**0.13**	**0.11**	**0.109**	--	--	--	--	0.01 U	--	--	--	--	**0.065**	**0.062**	--	--	--	--
Uranium	20	µg/L	--	**1.46**	**1.11**	**1.18**	--	--	--	--	**0.714**	--	--	--	--	**1.38**	**1.25**	--	--	--	--
Vanadium	6.2	µg/L	--	0.5 U	0.5 U	0.5 U	--	--	--	--	0.5 U	--	--	--	--	0.5 U	0.5 U	--	--	--	--
Zinc	890	µg/L	**670**	**639**	**581**	**601**	--	**8.3**	**70**	**7.5**	**39.4**	--	**57**	**68**	**98**	**55.8**	**56.9**	--	**510**	**430**	**530**
Non-Regulated Metals																					
Aluminum	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	NV	µg/L	--	--	--	--	--	1000 U	1000 U	1000 U	--	--	1000 U	1000 U	1000 U	--	--	--	1000 U	1000 U	1000 U
Cesium (Cs)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoride	NV	µg/L	--	--	--	--	--	**490**	**520**	**570**	--	--	**150**	**160**	**210**	--	--	--	**260**	**300**	**900**
Iron	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lithium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	NV	µg/L	--	--	--	--	--	**3200**	**3500**	**4900**	--	--	**800**	**1300**	**2000**	--	--	--	**1700**	**1800**	**3500**
Rubidium (Rb)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silicon	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tellurium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thorium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tungsten	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																					
Chromium, Hexavalent (Cr6+)	25	µg/L	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	1 U	1 U	--	--	--	--
Chloride (Cl)	790000	µg/L	--	**33000**	--	--	--	**3500**	**2000**	**2100**	**6620**	--	**2400**	**2000**	**1800**	**2920**	**3030**	--	**3600**	**12000**	**95000**
Cyanide, Free	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	µg/L	--	0.01 U	--	--	--	--	--	--	0.01 U	--	--	--	--	0.01 U	0.01 U	--	--	--	--
PAHs																					
1-Methylnaphthalene	NV	µg/L	--	0.02 U	--	--	--	--	--	--	0.02 U	--	--	--	--	0.02 U	0.02 U	--	--	--	--
2-(1-)Methylnaphthalene	3.2	µg/L	--	0.028 U	--	--	--	--	--	--	0.028 U	--	--	--	--	0.028 U	0.028 U	--	--	--	--
2-Methylnaphthalene	NV	µg/L	--	0.02 U	--	--	--	--	--	--	0.02 U	--	--	--	--	0.02 U	0.02 U	--	--	--	--
Acenaphthene	4.1	µg/L	--	0.02 U	--	--	--	--	--	--	**0.196**	--	--	--	--	0.02 U	0.02 U	--	--	--	--
Acenaphthylene	1	µg/L	--	0.02 U	--	--	--	--	--	--	**0.032**	--	--	--	--	0.02 U	0.02 U	--	--	--	--
Anthracene	1	µg/L	--	0.02 U	--	--	--	--	--	--	**0.03 J**	--	--	--	--	0.02 U	0.02 U	--	--	--	--
Benzo(a)anthracene	1	µg/L	--	0.02 U	--	--	--	--	--	--	0.02 U	--	--	--	--	0.02 U	0.02 U	--	--	--	--
Benzo(a)pyrene	0.01	µg/L	--	0.01 U	--	--	--	--	--	--	0.01 U	--	--	--	--	0.01 U	0.01 U	--	--	--	--
Benzo(b&j)fluoranthene	0.1	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.1	µg/L	--	0.02 U	--	--	--	--	--	--	0.02 U	--	--	--	--	0.02 U	0.02 U	--	--	--	--
Benzo(g,h,i)perylene	0.2	µg/L	--	0.02 U	--	--	--	--	--	--	0.02 U	--	--	--	--	0.02 U	0.02 U	--	--	--	--
Benzo(k)fluoranthene	0.1	µg/L	--	0.02 U	--	--	--	--	--	--	0.02 U	--	--	--	--	0.02 U	0.02 U	--	--	--	--
Chrysene	0.1	µg/L	--	0.02 U	--	--	--	--	--	--	0.02 U	--	--	--	--	0.02 U	0.02 U	--	--	--	--
Dibenzo(a,h)anthracene	0.2	µg/L	--	0.02 U	--	--	--	--	--	--	0.02 U	--	--	--	--	0.02 U	0.02 U	--	--	--	--
Fluoranthene	0.41	µg/L	--	0.02 U	--	--	--	--	--	--	0.02 U	--	--	--	--	0.02 U	0.02 U	--	--	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location						OW10					OW11-I								
		Sample ID	OW9-11	OW9-II	OW9-II	OW9-11	OW09-II	OW10	OW 10	OW 10	OW10	OW10	OW11-1	OW 11-I	OW 11-I	DUP2	OW11-I	OW11-I	OW11-II	OW 11-II	OW 11-II
		Start Depth (m)	6.33	6.33	6.33	6.33	6.33	1.80	1.80	1.80	1.80	1.80	1.60	1.60	1.60	1.60	1.60	1.60	6.28	6.28	6.28
		End Depth (m)	7.85	7.85	7.85	7.85	7.85	4.85	4.85	4.85	4.85	4.85	4.65	4.65	4.65	4.65	4.65	4.65	7.80	7.80	7.80
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N
		Sample Date	24 Oct 2016	30 Aug 2017	20 Mar 2018	13 Apr 2018	28 Feb 2020	24 Mar 2010	16 Jun 2011	20 Sep 2011	30 Aug 2017	03 Mar 2020	24 Mar 2010	16 Jun 2011	20 Sep 2011	01 Sep 2017	01 Sep 2017	25 Feb 2020	24 Mar 2010	16 Jun 2011	20 Sep 2011
Analyte	**Table 6 SCS [a]**	**Unit**																			
Fluorene	120	µg/L	--	0.02 U	--	--	--	--	--	--	**0.084**	--	--	--	--	0.02 U	0.02 U	--	--	--	--
Indeno(1,2,3-Cd)Pyrene	0.2	µg/L	--	0.02 U	--	--	--	--	--	--	0.02 U	--	--	--	--	0.02 U	0.02 U	--	--	--	--
Naphthalene	7	µg/L	--	0.05 U	--	--	--	--	--	--	0.05 U	--	--	--	--	0.05 U	0.05 U	--	--	--	--
Phenanthrene	1	µg/L	--	0.02 U	--	--	--	--	--	--	0.02 U	--	--	--	--	0.02 U	0.02 U	--	--	--	--
Pyrene	4.1	µg/L	--	0.02 U	--	--	--	--	--	--	0.02 U	--	--	--	--	0.02 U	0.02 U	--	--	--	--
PCBs																					
Aroclor 1016	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1221	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1232	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1242	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1262	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1268	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PHCs																					
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	420	µg/L	25 U	25 U	--	--	--	100 U	100 U	25 U	25 U	--	100 U	100 U	25 U	25 U	25 U	--	--	--	--
Petroleum Hydrocarbons F1 (C6-C10)	420	µg/L	25 U	25 U	--	--	--	100 U	100 U	25 U	25 U	--	100 U	100 U	25 U	25 U	25 U	--	--	--	--
Petroleum Hydrocarbons F1+F2	NV	µg/L	--	--	--	--	--	100 U	--	--	--	--	100 U	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	NV	µg/L	--	100 U	--	--	--	--	--	--	100 U	--	--	--	--	100 U	100 U	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16)	150	µg/L	100 U	100 U	--	--	--	100 U	100 U	100 U	100 U	--	100 U	100 U	100 U	100 U	100 U	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	NV	µg/L	--	250 U	--	--	--	--	--	--	250 U	--	--	--	--	250 U	250 U	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34)	500	µg/L	200 U	250 U	--	--	--	100 U	100 U	100 U	250 U	--	100 U	100 U	100 U	250 U	250 U	--	--	--	--
Petroleum Hydrocarbons F3+F4	NV	µg/L	--	--	--	--	--	100 U	--	--	--	--	100 U	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3a (C16-C22)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3b (C22-C34)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F4 (C34-C50)	500	µg/L	200 U	250 U	--	--	--	100 U	100 U	100 U	250 U	--	100 U	100 U	100 U	250 U	250 U	--	--	--	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/L	--	370 U	--	--	--	--	--	--	370 U	--	--	--	--	370 U	370 U	--	--	--	--
SVOCs																					
2-Hexanone	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(e)pyrene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/L	--	--	--	--	--	0.2 U	0.2 U	0.2 U	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
Chloromethane	NV	µg/L	--	--	--	--	--	0.5 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--
Perylene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																					
1,1,1,2-Tetrachloroethane	1.1	µg/L	0.5 U	0.5 U	--	--	0.5 U	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U	0.5 UJ	--	--	--
1,1,1-Trichloroethane	23	µg/L	0.2 U	0.5 U	--	--	0.5 U	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U	0.5 UJ	--	--	--
1,1,2,2-Tetrachloroethane	0.5	µg/L	0.5 U	0.5 U	--	--	0.5 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 UJ	--	--	--
1,1,2-Trichloroethane	0.5	µg/L	0.5 U	0.5 U	--	--	0.5 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 UJ	--	--	--
1,1-Dichloroethane	5	µg/L	0.2 U	0.5 U	--	--	0.5 U	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U	0.5 UJ	--	--	--
1,1-Dichloroethene	0.5	µg/L	0.2 U	0.5 U	--	--	0.5 U	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U	0.5 UJ	--	--	--
1,2-Dibromoethane	0.2	µg/L	0.2 U	0.2 U	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	--	--	--
1,2-Dichlorobenzene	3	µg/L	0.5 U	0.5 U	--	--	0.5 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 UJ	--	--	--
1,2-Dichloroethane	0.5	µg/L	0.5 U	0.5 U	--	--	0.5 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 UJ	--	--	--
1,2-Dichloropropane	0.58	µg/L	0.2 U	0.5 U	--	--	0.5 U	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U	0.5 UJ	--	--	--
1,3-Dichlorobenzene	59	µg/L	0.5 U	0.5 U	--	--	0.5 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 UJ	--	--	--
1,3-Dichloropropene	0.5	µg/L	0.5 U	0.5 U	--	--	0.5 U	--	--	--	0.5 U	0.5 U	--	--	--	0.5 U	0.5 U	0.5 UJ	--	--	--
1,4-Dichlorobenzene	0.5	µg/L	0.5 U	0.5 U	--	--	0.5 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 UJ	--	--	--
1,4-Dioxane	50	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	1800	µg/L	10 U	20 U	--	--	20 U	5 U	5 U	5 U	20 U	20 U	5 U	5 U	5 U	20 U	20 U	20 UJ	--	--	--
4-Methyl-2-Pentanone	640	µg/L	5 U	20 U	--	--	20 U	5 U	5 U	5 U	20 U	20 U	5 U	5 U	5 U	20 U	20 U	20 UJ	--	--	--
Acetone	2700	µg/L	10 U	30 U	--	--	30 U	10 U	10 U	10 U	30 U	30 U	10 U	10 U	10 U	30 U	30 U	30 UJ	--	--	--
Bromodichloromethane	16	µg/L	0.5 U	2 U	--	--	2 U	0.1 U	0.1 U	0.1 U	2 U	2 U	0.1 U	0.1 U	0.1 U	2 U	2 U	2 UJ	--	--	--
Bromoform	5	µg/L	1 U	5 U	--	--	5 U	0.2 U	0.2 U	0.2 U	5 U	5 U	0.2 U	0.2 U	0.2 U	5 U	5 U	5 UJ	--	--	--
Bromomethane	0.89	µg/L	0.5 U	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	--	--	--
Carbon tetrachloride	0.2	µg/L	0.2 U	0.2 U	--	--	0.2 U	0.1 U	0.1 U	0.1 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.2 U	0.2 U	0.2 UJ	--	--	--
Chlorobenzene	30	µg/L	0.2 U	0.5 U	--	--	0.5 U	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U	0.5 UJ	--	--	--
Chlorodibromomethane	25	µg/L	0.5 U	2 U	--	--	2 U	0.2 U	0.2 U	0.2 U	2 U	2 U	0.2 U	0.2 U	0.2 U	2 U	2 U	2 UJ	--	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location						OW10					OW11-I								
		Sample ID	OW9-11	OW9-II	OW9-II	OW9-11	OW09-II	OW10	OW 10	OW 10	OW10	OW10	OW11-1	OW 11-I	OW 11-I	DUP2	OW11-I	OW11-I	OW11-II	OW 11-II	OW 11-II
		Start Depth (m)	6.33	6.33	6.33	6.33	6.33	1.80	1.80	1.80	1.80	1.80	1.60	1.60	1.60	1.60	1.60	1.60	6.28	6.28	6.28
		End Depth (m)	7.85	7.85	7.85	7.85	7.85	4.85	4.85	4.85	4.85	4.85	4.65	4.65	4.65	4.65	4.65	4.65	7.80	7.80	7.80
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N
		Sample Date	24 Oct 2016	30 Aug 2017	20 Mar 2018	13 Apr 2018	28 Feb 2020	24 Mar 2010	16 Jun 2011	20 Sep 2011	30 Aug 2017	03 Mar 2020	24 Mar 2010	16 Jun 2011	20 Sep 2011	01 Sep 2017	01 Sep 2017	25 Feb 2020	24 Mar 2010	16 Jun 2011	20 Sep 2011
Analyte	**Table 6 SCS [a]**	**Unit**																			
Chloroform	2	µg/L	0.2 U	1 U	--	--	1 U	0.1 U	0.1 U	0.1 U	**1.6**	1 U	0.1 U	0.1 U	0.1 U	1 U	1 U	1 UJ	--	--	--
cis-1,2-Dichloroethene	1.6	µg/L	**6.6**	**6.54**	--	--	**6.51**	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U	0.5 UJ	--	--	--
cis-1,3-Dichloropropene	NV	µg/L	0.3 U	0.3 U	--	--	0.3 U	0.2 U	0.2 U	0.2 U	0.3 U	0.3 U	0.2 U	0.2 U	0.2 U	0.3 U	0.3 U	0.3 UJ	--	--	--
Dichlorodifluoromethane	590	µg/L	1 U	2 U	--	--	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 UJ	--	--	--
Dichloromethane	26	µg/L	2 U	5 U	--	--	5 U	0.5 U	0.5 U	0.5 U	5 U	5 U	0.5 U	0.5 U	0.5 U	5 U	5 U	5 UJ	--	--	--
Methyl tert-butyl ether (MTBE)	15	µg/L	0.5 U	2 U	--	--	2 U	0.2 U	0.2 U	0.2 U	2 U	2 U	0.2 U	0.2 U	0.2 U	2 U	2 U	2 UJ	--	--	--
n-Hexane	5	µg/L	1 U	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	--	--	--
Styrene	5.4	µg/L	0.5 U	0.5 U	--	--	0.5 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 UJ	--	--	--
Tetrachloroethene	0.5	µg/L	0.2 U	0.5 U	--	--	0.5 U	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U	0.5 UJ	--	--	--
trans-1,2-Dichloroethene	1.6	µg/L	0.5 U	0.5 U	--	--	0.5 U	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U	0.5 UJ	--	--	--
trans-1,3-Dichloropropene	NV	µg/L	0.4 U	0.3 U	--	--	0.3 U	0.2 U	0.2 U	0.2 U	0.3 U	0.3 U	0.2 U	0.2 U	0.2 U	0.3 U	0.3 U	0.3 UJ	--	--	--
Trichloroethylene	0.5	µg/L	0.2 U	0.5 U	--	--	0.5 U	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U	0.5 UJ	--	--	--
Trichlorofluoromethane	150	µg/L	0.5 U	5 U	--	--	5 U	0.2 U	0.2 U	0.2 U	5 U	5 U	0.2 U	0.2 U	0.2 U	5 U	5 U	5 UJ	--	--	--
Vinyl Chloride	0.5	µg/L	**8**	**7.48**	--	--	**6.07**	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 UJ	--	--	--

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act.* Ministry of the Environment. April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/L = microgram(s) per litre

ABNs = acid, base and neutral compounds

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mS/cm = milliSiemen(s) per centimetre

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW11-II						OW12							OW13					
		Sample ID	DUP3	OW11-II	OW11-II	OW11-11	DUP3	OW11-II	OW12	OW12	OW 12	OW 12	OW12	OW12	OW12	OW13	OW13	OW 13	OW 13	OW13-II	OW13
		Start Depth (m)	6.28	6.28	6.28	6.28	6.28	6.28	1.76	1.76	1.76	1.76	1.76	1.76	1.76	6.48	6.48	6.48	6.48	6.48	6.48
		End Depth (m)	7.80	7.80	7.80	7.80	7.80	7.80	4.81	4.81	4.81	4.81	4.81	4.81	4.81	8.00	8.00	8.00	8.00	8.00	8.00
		Sample Type	FD	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	01 Sep 2017	01 Sep 2017	20 Mar 2018	13 Apr 2018	25 Feb 2020	25 Feb 2020	23 Mar 2010	07 Oct 2010	16 Jun 2011	20 Sep 2011	05 Sep 2017	20 Mar 2018	25 Feb 2020	24 Mar 2010	07 Oct 2010	16 Jun 2011	20 Sep 2011	12 Dec 2012	30 Aug 2017
Analyte	**Table 6 SCS [a]**	**Unit**																			
ABNs																					
1,1'-Biphenyl	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U
1,2,4-Trichlorobenzene	3	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U
2,2'-oxybis(1-chloropropane)	120	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U
2,4 & 2,6-Dinitrotoluene	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.57 U
2,4-Dimethylphenol	59	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U
2,4-Dinitrophenol	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U
2,4-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U
2,6-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U
3,3'-Dichlorobenzidine	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U
4-Chloroaniline	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U
Bis (2-chloroethyl) ether	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U
Bis (2-ethylhexyl) phthalate	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2 U
Diethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U
Dimethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U
Phenol	890	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U
BTEX																					
Benzene	0.5	µg/L	0.5 U	0.5 U	--	--	0.5 UJ	0.5 UJ	0.1 U	0.2 U	0.1 U	0.1 U	0.5 U	0.5 U	0.5 UJ	0.1 U	0.5 U	0.2 U	**0.14**	--	0.5 U
Ethylbenzene	2.4	µg/L	0.5 U	0.5 U	--	--	0.5 UJ	0.5 UJ	0.1 U	0.2 U	0.1 U	0.1 U	0.5 U	0.5 U	0.5 UJ	0.1 U	0.5 U	0.2 U	0.1 U	--	0.5 U
Toluene	24	µg/L	0.5 U	0.5 U	--	--	0.5 UJ	0.5 UJ	0.2 U	0.4 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 UJ	0.2 U	1 U	0.4 U	0.2 U	--	0.5 U
Xylene, o	NV	µg/L	0.3 U	0.3 U	--	--	0.3 UJ	0.3 UJ	0.1 U	0.2 U	0.1 U	0.1 U	0.3 U	0.3 U	0.3 UJ	0.1 U	0.5 U	0.2 U	0.1 U	--	0.3 U
Xylenes, m & p	NV	µg/L	0.4 U	0.4 U	--	--	0.4 UJ	0.4 UJ	0.1 U	0.2 U	0.1 U	0.1 U	0.4 U	0.4 U	0.4 UJ	0.1 U	0.5 U	0.2 U	0.1 U	--	0.4 U
Xylenes, Total	72	µg/L	0.5 U	0.5 U	--	--	0.5 UJ	0.5 UJ	0.1 U	0.2 U	0.1 U	0.1 U	0.5 U	0.5 U	0.5 UJ	0.1 U	0.5 U	0.2 U	0.1 U	--	0.5 U
Chlorophenyls																					
2,4,5-Trichlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U
2,4,6-Trichlorophenol	2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U
2,4-Dichlorophenol	20	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3 U
2-Chlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3 U
Pentachlorophenol	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U
Chemistry																					
Alkalinity, Bicarbonate (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Carbonate (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Hydroxide (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Total (as CaCO3)	NV	µg/L	--	--	--	--	--	--	**370000**	**340000**	**340000**	**310000**	--	--	--	**290000**	**320000**	**290000**	**340000**	--	--
Ammonia	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon, dissolved organic (DOC)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cation - Anion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Color	NV	CU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity % Difference	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	NV	mS/cm	**0.822**	**0.819**	--	--	--	--	**0.7**	**0.66**	**0.65**	**0.64**	**0.589**	--	--	**0.7**	**0.82**	**0.67**	**0.8**	--	**0.784**
Hardness (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate, as NO3	NV	µg/L	--	--	--	--	--	--	**840**	**230**	**310**	**120**	--	--	--	100 U	100 U	100 U	100 U	--	--
Nitrate-Nitrite, as N, Total	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite, as NO2	NV	µg/L	--	--	--	--	--	--	**15**	10 U	10 U	10 U	--	--	--	10 U	10 U	10 U	10 U	--	--
pH	NV	pH UNITS	**7.6**	**7.57**	--	--	--	--	**7.47**	**7.71**	**7.66**	**7.62**	**7.51**	--	--	**7.51**	**7.55**	**7.6**	**7.5**	--	**7.34**
pH (Laboratory)	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus, Total Orthophosphate (As P)	NV	µg/L	--	--	--	--	--	--	10 U	10 U	10 U	10 U	--	--	--	10 U	10 U	10 U	10 U	--	--
Saturation pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (as SIO2)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	NV	µg/L	--	--	--	--	--	--	**17000**	**22000**	**13000**	**19000**	--	--	--	**60000**	**87000**	**58000**	**61000**	--	--
Sulfur	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total dissolved solids	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Turbidity	NV	NTU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																					
Antimony	6	µg/L	0.1 U	0.1 U	0.1 U	**0.13**	--	--	--	--	--	--	**0.37**	--	--	--	--	--	--	--	1 U
Arsenic	25	µg/L	**1.91**	**1.78**	**2.09**	**0.19**	--	--	1 U	1 U	1 U	1 U	**0.2**	--	--	**11**	**6.7**	**5.5**	**7.9**	--	**16.1**
Barium	1000	µg/L	**140**	**137**	**134**	**37.4**	--	--	--	--	--	--	**44.4**	--	--	--	--	--	--	--	**152**

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW11-II						OW12							OW13					
		Sample ID	DUP3	OW11-II	OW11-II	OW11-11	DUP3	OW11-II	OW12	OW12	OW 12	OW 12	OW12	OW12	OW12	OW13	OW13	OW 13	OW 13	OW13-II	OW13
		Start Depth (m)	6.28	6.28	6.28	6.28	6.28	6.28	1.76	1.76	1.76	1.76	1.76	1.76	1.76	6.48	6.48	6.48	6.48	6.48	6.48
		End Depth (m)	7.80	7.80	7.80	7.80	7.80	7.80	4.81	4.81	4.81	4.81	4.81	4.81	4.81	8.00	8.00	8.00	8.00	8.00	8.00
		Sample Type	FD	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	01 Sep 2017	01 Sep 2017	20 Mar 2018	13 Apr 2018	25 Feb 2020	25 Feb 2020	23 Mar 2010	07 Oct 2010	16 Jun 2011	20 Sep 2011	05 Sep 2017	20 Mar 2018	25 Feb 2020	24 Mar 2010	07 Oct 2010	16 Jun 2011	20 Sep 2011	12 Dec 2012	30 Aug 2017
Analyte	**Table 6 SCS [a]**	**Unit**																			
Beryllium	4	µg/L	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	--	--	--	0.1 U	--	--	--	--	--	--	--	1 U
Boron	5000	µg/L	**135**	**143**	**123**	**54**	--	--	--	--	--	--	**74**	--	--	--	--	--	--	--	**110**
Cadmium	2.1	µg/L	**0.354**	**0.363**	**0.174**	**0.103**	--	--	--	--	--	--	**1.33**	--	--	--	--	--	--	--	0.1 U
Calcium	NV	µg/L	--	--	--	--	--	--	**110000**	**110000**	**110000**	**110000**	--	--	--	**100000**	**120000**	**110000**	**130000**	--	--
Chromium	50	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--	--	5 U
Cobalt	3.8	µg/L	**5.79**	**5.74**	**1.36**	0.1 U	--	--	--	--	--	--	0.1 U	--	--	--	--	--	--	--	1 U
Copper	69	µg/L	**0.64**	**0.73**	**0.46**	**1.7**	--	--	--	--	--	--	**3.29**	--	--	--	--	--	--	--	2 U
Lead	10	µg/L	**1.68**	**1.6**	**4.08**	**4.76**	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.05 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Magnesium	NV	µg/L	--	--	--	--	--	--	**26000**	**22000**	**23000**	**22000**	--	--	--	**22000**	**25000**	**20000**	**26000**	--	--
Molybdenum	70	µg/L	**1.34**	**1.41**	**1.06**	**0.172**	--	--	--	--	--	--	**0.65**	--	--	--	--	--	--	--	**0.99**
Nickel	100	µg/L	**2.7**	**2.74**	**1.54**	0.5 U	--	--	--	--	--	--	**1.85**	--	--	--	--	--	--	--	5 U
Selenium	10	µg/L	**0.078**	**0.086**	**0.432**	**3.25**	--	--	--	--	--	--	**0.802**	--	--	--	--	--	--	--	0.5 U
Silver	1.2	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	0.5 U
Sodium	490000	µg/L	**50200**	**48400**	**92700**	**2810**	--	--	**3600**	**4000**	**3100**	**4100**	**2990**	--	--	**12000**	**16000**	**6900**	**13000**	--	**9900**
Thallium	2	µg/L	**0.282**	**0.265**	**0.225**	**0.025**	--	--	--	--	--	--	**0.12**	--	--	--	--	--	--	--	**0.24**
Uranium	20	µg/L	**1.07**	**1.06**	**1.15**	**0.99**	--	--	--	--	--	--	**1.39**	--	--	--	--	--	--	--	**0.74**
Vanadium	6.2	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--	--	5 U
Zinc	890	µg/L	**435**	**435**	**383**	**50.4**	--	--	**94**	**910**	**44**	**510**	**367**	--	--	**1700**	**1900**	**1500**	**1900**	--	**1010**
Non-Regulated Metals																					
Aluminum	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	NV	µg/L	--	--	--	--	--	--	1000 U	1000 U	1000 U	1000 U	--	--	--	1000 U	1000 U	1000 U	1000 U	--	--
Cesium (Cs)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoride	NV	µg/L	--	--	--	--	--	--	**240**	**350**	**230**	**390**	--	--	--	**2300**	**2000**	**2200**	**1900**	--	--
Iron	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lithium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	NV	µg/L	--	--	--	--	--	--	**2300**	**4200**	**2000**	**3200**	--	--	--	**3900**	**4500**	**4100**	**5000**	--	--
Rubidium (Rb)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silicon	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tellurium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thorium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tungsten	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																					
Chromium, Hexavalent (Cr6+)	25	µg/L	1 U	1 U	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	1 U
Chloride (Cl)	790000	µg/L	**66100**	**65600**	--	--	--	--	**2200**	**1700**	**2800**	**2000**	**1840**	--	--	**16000**	**24000**	**11000**	**15000**	--	**10900**
Cyanide, Free	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	µg/L	0.01 U	0.01 U	--	--	--	--	--	--	--	--	0.01 U	--	--	--	--	--	--	--	0.01 U
PAHs																					
1-Methylnaphthalene	NV	µg/L	0.02 U	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	0.02 U
2-(1-)Methylnaphthalene	3.2	µg/L	0.028 U	0.028 U	--	--	--	--	--	--	--	--	0.028 U	--	--	--	--	--	--	--	0.57 U
2-Methylnaphthalene	NV	µg/L	0.02 U	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	0.02 U
Acenaphthene	4.1	µg/L	0.02 U	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	0.02 U
Acenaphthylene	1	µg/L	0.02 U	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	0.02 U
Anthracene	1	µg/L	0.02 U	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	0.02 U
Benzo(a)anthracene	1	µg/L	0.02 U	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	0.02 U
Benzo(a)pyrene	0.01	µg/L	0.01 U	0.01 U	--	--	--	--	--	--	--	--	0.01 U	--	--	--	--	--	--	--	0.01 U
Benzo(b&j)fluoranthene	0.1	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.1	µg/L	0.02 U	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	0.02 U
Benzo(g,h,i)perylene	0.2	µg/L	0.02 U	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	0.02 U
Benzo(k)fluoranthene	0.1	µg/L	0.02 U	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	0.02 U
Chrysene	0.1	µg/L	0.02 U	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	0.02 U
Dibenzo(a,h)anthracene	0.2	µg/L	0.02 U	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	0.02 U
Fluoranthene	0.41	µg/L	0.02 U	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	0.02 U

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW11-II						OW12							OW13					
		Sample ID	DUP3	OW11-II	OW11-II	OW11-11	DUP3	OW11-II	OW12	OW12	OW 12	OW 12	OW12	OW12	OW12	OW13	OW13	OW 13	OW 13	OW13-II	OW13
		Start Depth (m)	6.28	6.28	6.28	6.28	6.28	6.28	1.76	1.76	1.76	1.76	1.76	1.76	1.76	6.48	6.48	6.48	6.48	6.48	6.48
		End Depth (m)	7.80	7.80	7.80	7.80	7.80	7.80	4.81	4.81	4.81	4.81	4.81	4.81	4.81	8.00	8.00	8.00	8.00	8.00	8.00
		Sample Type	FD	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	01 Sep 2017	01 Sep 2017	20 Mar 2018	13 Apr 2018	25 Feb 2020	25 Feb 2020	23 Mar 2010	07 Oct 2010	16 Jun 2011	20 Sep 2011	05 Sep 2017	20 Mar 2018	25 Feb 2020	24 Mar 2010	07 Oct 2010	16 Jun 2011	20 Sep 2011	12 Dec 2012	30 Aug 2017
Analyte	**Table 6 SCS [a]**	**Unit**																			
Fluorene	120	µg/L	0.02 U	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	0.02 U
Indeno(1,2,3-Cd)Pyrene	0.2	µg/L	0.02 U	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	0.02 U
Naphthalene	7	µg/L	0.05 U	0.05 U	--	--	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	0.05 U
Phenanthrene	1	µg/L	0.02 U	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	0.02 U
Pyrene	4.1	µg/L	0.02 U	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	0.02 U
PCBs																					
Aroclor 1016	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1221	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1232	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1242	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1262	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1268	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PHCs																					
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	420	µg/L	25 U	25 U	--	--	--	--	--	--	--	--	25 U	--	--	100 U	100 U	100 U	25 U	--	25 U
Petroleum Hydrocarbons F1 (C6-C10)	420	µg/L	25 U	25 U	--	--	--	--	--	--	--	--	25 U	--	--	100 U	100 U	100 U	25 U	--	25 U
Petroleum Hydrocarbons F1+F2	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	100 U	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	NV	µg/L	100 U	100 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16)	150	µg/L	100 U	100 U	--	--	--	--	--	--	--	--	100 U	--	--	100 U	100 U	100 U	100 U	--	100 U
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	NV	µg/L	250 U	250 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	250 U
Petroleum Hydrocarbons F3 (C16-C34)	500	µg/L	250 U	250 U	--	--	--	--	--	--	--	--	250 U	--	--	100 U	100 U	100 U	100 U	--	250 U
Petroleum Hydrocarbons F3+F4	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	100 U	--	--	--	--	--
Petroleum Hydrocarbons F3a (C16-C22)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	130 U	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3b (C22-C34)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	130 U	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F4 (C34-C50)	500	µg/L	250 U	250 U	--	--	--	--	--	--	--	--	250 U	--	--	100 U	100 U	100 U	100 U	--	250 U
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/L	370 U	370 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	370 U
SVOCs																					
2-Hexanone	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(e)pyrene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/L	--	--	--	--	--	--	0.2 U	0.4 U	0.2 U	0.2 U	--	--	--	0.2 U	1 U	0.4 U	0.2 U	--	--
Chloromethane	NV	µg/L	--	--	--	--	--	--	0.5 U	1 U	0.5 U	0.5 U	--	--	--	0.5 U	2.5 U	1 U	0.5 U	--	--
Perylene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																					
1,1,1,2-Tetrachloroethane	1.1	µg/L	0.5 U	0.5 U	--	--	0.5 UJ	0.5 UJ	0.1 U	0.2 U	0.1 U	0.1 U	0.5 U	0.5 U	0.5 UJ	0.1 U	0.5 U	0.2 U	0.1 U	--	0.5 U
1,1,1-Trichloroethane	23	µg/L	**34.5**	**37.1**	--	--	0.5 UJ	**27.1 J**	**13**	**31**	**6**	**22**	**11.7**	**6.58**	**5.8 J**	0.1 U	0.5 U	0.2 U	0.1 U	--	0.5 U
1,1,2,2-Tetrachloroethane	0.5	µg/L	0.5 U	0.5 U	--	--	0.5 UJ	0.5 UJ	0.2 U	0.4 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 UJ	0.2 U	--	0.4 U	0.2 U	--	0.5 U
1,1,2-Trichloroethane	0.5	µg/L	0.5 U	0.5 U	--	--	0.5 UJ	0.5 UJ	0.2 U	0.4 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 UJ	0.2 U	--	0.4 U	0.2 U	--	0.5 U
1,1-Dichloroethane	5	µg/L	**28.1**	**29.5**	--	--	0.5 UJ	**22.6 J**	**1.3**	**3.8**	**0.35**	**2**	**2.26**	**0.83**	**0.91 J**	0.1 U	0.5 U	0.2 U	0.1 U	--	0.5 U
1,1-Dichloroethene	0.5	µg/L	**0.67**	**0.74**	--	--	0.5 UJ	**0.75 J**	0.1 U	0.2 U	0.1 U	0.1 U	0.5 U	0.5 U	0.5 UJ	0.1 U	0.5 U	0.2 U	0.1 U	--	0.5 U
1,2-Dibromoethane	0.2	µg/L	0.2 U	0.2 U	--	--	0.2 UJ	0.2 UJ	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	--	--	0.2 U	--	0.2 U
1,2-Dichlorobenzene	3	µg/L	0.5 U	0.5 U	--	--	0.5 UJ	0.5 UJ	0.2 U	0.4 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 UJ	0.2 U	1 U	0.4 U	0.2 U	--	0.5 U
1,2-Dichloroethane	0.5	µg/L	0.5 U	0.5 U	--	--	0.5 UJ	0.5 UJ	0.2 U	0.4 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 UJ	0.2 U	--	0.4 U	0.2 U	--	0.5 U
1,2-Dichloropropane	0.58	µg/L	0.5 U	0.5 U	--	--	0.5 UJ	0.5 UJ	0.1 U	0.2 U	0.1 U	0.1 U	0.5 U	0.5 U	0.5 UJ	0.1 U	0.5 U	0.2 U	0.1 U	--	0.5 U
1,3-Dichlorobenzene	59	µg/L	0.5 U	0.5 U	--	--	0.5 UJ	0.5 UJ	0.2 U	0.4 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 UJ	0.2 U	1 U	0.4 U	0.2 U	--	0.5 U
1,3-Dichloropropene	0.5	µg/L	0.5 U	0.5 U	--	--	0.5 UJ	0.5 UJ	--	--	--	--	0.5 U	0.5 U	0.5 UJ	--	--	--	--	--	0.5 U
1,4-Dichlorobenzene	0.5	µg/L	0.5 U	0.5 U	--	--	0.5 UJ	0.5 UJ	0.2 U	0.4 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 UJ	0.2 U	--	0.4 U	0.2 U	--	0.5 U
1,4-Dioxane	50	µg/L	--	--	--	--	--	--	--	--	--	--	20 U	--	--	--	--	--	--	--	--
2-Butanone	1800	µg/L	20 U	20 U	--	--	20 UJ	20 UJ	5 U	10 U	5 U	5 U	20 U	20 U	20 UJ	5 U	25 U	10 U	5 U	--	20 U
4-Methyl-2-Pentanone	640	µg/L	20 U	20 U	--	--	20 UJ	20 UJ	5 U	10 U	5 U	5 U	20 U	20 U	20 UJ	5 U	25 U	10 U	5 U	--	20 U
Acetone	2700	µg/L	30 U	30 U	--	--	30 UJ	30 UJ	10 U	20 U	10 U	10 U	30 U	30 U	30 UJ	10 U	50 U	20 U	10 U	--	30 U
Bromodichloromethane	16	µg/L	2 U	2 U	--	--	2 UJ	2 UJ	0.1 U	0.2 U	0.1 U	0.1 U	2 U	2 U	2 UJ	0.1 U	0.5 U	0.2 U	0.1 U	--	2 U
Bromoform	5	µg/L	5 U	5 U	--	--	5 UJ	5 UJ	0.2 U	0.4 U	0.2 U	0.2 U	5 U	5 U	5 UJ	0.2 U	1 U	0.4 U	0.2 U	--	5 U
Bromomethane	0.89	µg/L	0.5 U	0.5 U	--	--	0.5 UJ	0.5 UJ	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	--	--	0.5 U	--	0.5 U
Carbon tetrachloride	0.2	µg/L	0.2 U	0.2 U	--	--	0.2 UJ	0.2 UJ	0.1 U	0.2 U	0.1 U	0.1 U	0.2 U	0.2 U	0.2 UJ	0.1 U	--	0.2 U	0.1 U	--	0.2 U
Chlorobenzene	30	µg/L	0.5 U	0.5 U	--	--	0.5 UJ	0.5 UJ	0.1 U	0.2 U	0.1 U	0.1 U	0.5 U	0.5 U	0.5 UJ	0.1 U	0.5 U	0.2 U	0.1 U	--	0.5 U
Chlorodibromomethane	25	µg/L	2 U	2 U	--	--	2 UJ	2 UJ	0.2 U	0.4 U	0.2 U	0.2 U	2 U	2 U	2 UJ	0.2 U	1 U	0.4 U	0.2 U	--	2 U

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW11-II						OW12							OW13					
		Sample ID	DUP3	OW11-II	OW11-II	OW11-11	DUP3	OW11-II	OW12	OW12	OW 12	OW 12	OW12	OW12	OW12	OW13	OW13	OW 13	OW 13	OW13-II	OW13
		Start Depth (m)	6.28	6.28	6.28	6.28	6.28	6.28	1.76	1.76	1.76	1.76	1.76	1.76	1.76	6.48	6.48	6.48	6.48	6.48	6.48
		End Depth (m)	7.80	7.80	7.80	7.80	7.80	7.80	4.81	4.81	4.81	4.81	4.81	4.81	4.81	8.00	8.00	8.00	8.00	8.00	8.00
		Sample Type	FD	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	01 Sep 2017	01 Sep 2017	20 Mar 2018	13 Apr 2018	25 Feb 2020	25 Feb 2020	23 Mar 2010	07 Oct 2010	16 Jun 2011	20 Sep 2011	05 Sep 2017	20 Mar 2018	25 Feb 2020	24 Mar 2010	07 Oct 2010	16 Jun 2011	20 Sep 2011	12 Dec 2012	30 Aug 2017
Analyte	**Table 6 SCS [a]**	**Unit**																			
Chloroform	2	µg/L	1 U	1 U	--	--	1 UJ	1 UJ	0.1 U	0.2 U	0.1 U	0.1 U	1 U	1 U	1 UJ	0.1 U	0.5 U	0.2 U	0.1 U	--	1 U
cis-1,2-Dichloroethene	1.6	µg/L	**0.96**	**1.01**	--	--	0.5 UJ	1.4 UJ	0.1 U	0.2 U	0.1 U	0.1 U	0.95 U	0.5 U	0.5 UJ	**0.92**	**1.3**	**0.91**	**3**	--	**4.88**
cis-1,3-Dichloropropene	NV	µg/L	0.3 U	0.3 U	--	--	0.3 UJ	0.3 UJ	0.2 U	0.4 U	0.2 U	0.2 U	0.3 U	0.3 U	0.3 UJ	0.2 U	1 U	0.4 U	0.2 U	--	0.3 U
Dichlorodifluoromethane	590	µg/L	2 U	2 U	--	--	2 UJ	2 UJ	0.5 U	--	0.5 U	0.5 U	2 U	2 U	2 UJ	0.5 U	--	1 U	0.5 U	--	2 U
Dichloromethane	26	µg/L	5 U	5 U	--	--	5 UJ	5 UJ	0.5 U	1 U	0.5 U	0.5 U	5 U	5 U	5 UJ	0.5 U	2.5 U	1 U	0.5 U	--	5 U
Methyl tert-butyl ether (MTBE)	15	µg/L	2 U	2 U	--	--	2 UJ	2 UJ	0.2 U	0.4 U	0.2 U	0.2 U	2 U	2 U	2 UJ	0.2 U	1 U	0.4 U	0.2 U	--	2 U
n-Hexane	5	µg/L	0.5 U	0.5 U	--	--	0.5 UJ	0.5 UJ	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	--	1 U	0.5 U	--	0.5 U
Styrene	5.4	µg/L	0.5 U	0.5 U	--	--	0.5 UJ	0.5 UJ	0.2 U	0.4 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 UJ	0.2 U	1 U	0.4 U	0.2 U	--	0.5 U
Tetrachloroethene	0.5	µg/L	0.5 U	0.5 U	--	--	0.5 UJ	0.5 UJ	0.1 U	0.2 U	0.1 U	**0.13**	0.5 U	0.5 U	0.5 UJ	0.1 U	0.5 U	0.2 U	0.1 U	--	0.5 U
trans-1,2-Dichloroethene	1.6	µg/L	0.5 U	0.5 U	--	--	0.5 UJ	0.5 UJ	0.1 U	0.2 U	0.1 U	0.1 U	0.5 U	0.5 U	0.5 UJ	0.1 U	0.5 U	0.2 U	**0.16**	--	0.5 U
trans-1,3-Dichloropropene	NV	µg/L	0.3 U	0.3 U	--	--	0.3 UJ	0.3 UJ	0.2 U	0.4 U	0.2 U	0.2 U	0.3 U	0.3 U	0.3 UJ	0.2 U	1 U	0.4 U	0.2 U	--	0.3 U
Trichloroethylene	0.5	µg/L	0.5 U	0.5 U	--	--	0.5 UJ	0.5 UJ	**0.22**	**0.41**	**0.11**	**0.43**	0.5 U	0.5 U	0.5 UJ	**1.1**	**1.2**	**0.79**	**1.2**	--	**0.76**
Trichlorofluoromethane	150	µg/L	5 U	5 U	--	--	5 UJ	5 UJ	0.2 U	0.4 U	0.2 U	0.2 U	5 U	5 U	5 UJ	0.2 U	1 U	0.4 U	0.2 U	--	5 U
Vinyl Chloride	0.5	µg/L	**0.77**	**0.87**	--	--	0.5 UJ	**0.86 J**	0.2 U	0.4 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 UJ	0.2 U	1 U	0.4 U	**1.1**	--	**1.2**

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act.* Ministry of the Environment. April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/L = microgram(s) per litre

ABNs = acid, base and neutral compounds

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mS/cm = milliSiemen(s) per centimetre

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location				OW13-39D							OW13-39S								
		Sample ID	OW13	DUP5	OW13	MW13-39D	OW13-39D	MW13-39D	MW13-39D	OW13-39D	DUP6	OW13-39D	MW13-39S	OW13-39S	MW13-39S	MW13-39S	OW13-39S	OW13-39S	OW14	OW14	OW 14
		Start Depth (m)	6.48	6.48	6.48	10.68	10.68	10.68	10.68	10.68	10.68	10.68	3.04	3.04	3.04	3.04	3.04	3.04	6.29	6.29	6.29
		End Depth (m)	8.00	8.00	8.00	12.20	12.20	12.20	12.20	12.20	12.20	12.20	6.09	6.09	6.09	6.09	6.09	6.09	7.81	7.81	7.81
		Sample Type	N	FD	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N
		Sample Date	20 Mar 2018	28 Feb 2020	28 Feb 2020	06 Jan 2014	24 Oct 2014	20 Nov 2015	24 Oct 2016	07 Sep 2017	28 Feb 2020	28 Feb 2020	06 Jan 2014	24 Oct 2014	20 Nov 2015	24 Oct 2016	07 Sep 2017	28 Feb 2020	23 Mar 2010	07 Oct 2010	16 Jun 2011
Analyte	**Table 6 SCS [a]**	**Unit**																			
ABNs																					
1,1'-Biphenyl	0.5	µg/L	--	--	--	--	0.05 U	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	3	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,2'-oxybis(1-chloropropane)	120	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	59	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	890	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BTEX																					
Benzene	0.5	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	5 U	5 U	0.4 U	**0.61**	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.1 U	0.1 U	0.2 U
Ethylbenzene	2.4	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	5 U	5 U	0.4 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.1 U	0.1 U	0.2 U
Toluene	24	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	10 U	10 U	0.4 U	0.5 U	0.5 U	0.5 U	0.2 U	1 U	1 U	0.2 U	0.5 U	0.5 U	0.2 U	0.2 U	0.4 U
Xylene, o	NV	µg/L	0.3 U	0.3 U	0.3 U	0.5 U	5 U	5 U	0.4 U	0.3 U	0.3 U	0.3 U	0.2 U	0.5 U	0.5 U	0.2 U	0.3 U	0.3 U	0.1 U	0.1 U	0.2 U
Xylenes, m & p	NV	µg/L	0.4 U	0.4 U	0.4 U	0.5 U	5 U	5 U	0.4 U	0.4 U	0.4 U	0.4 U	0.2 U	0.5 U	0.5 U	0.2 U	0.4 U	0.4 U	0.1 U	0.1 U	0.2 U
Xylenes, Total	72	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	5 U	5 U	0.4 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.1 U	0.1 U	0.2 U
Chlorophenyls																					
2,4,5-Trichlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	20	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																					
Alkalinity, Bicarbonate (as CaCO3)	NV	µg/L	--	--	--	--	**290000**	--	--	--	--	--	--	**400000**	--	--	--	--	--	--	--
Alkalinity, Carbonate (as CaCO3)	NV	µg/L	--	--	--	--	**1400**	--	--	--	--	--	--	**1300**	--	--	--	--	--	--	--
Alkalinity, Hydroxide (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Total (as CaCO3)	NV	µg/L	--	--	--	--	**300000**	--	--	--	--	--	--	**410000**	--	--	--	--	**280000**	**310000**	**260000**
Ammonia	NV	µg/L	--	--	--	--	**320**	--	--	--	--	--	--	**130**	--	--	--	--	--	--	--
Carbon, dissolved organic (DOC)	NV	µg/L	--	--	--	--	**2300**	--	--	--	--	--	--	**3800**	--	--	--	--	--	--	--
Cation - Anion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Color	NV	CU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity % Difference	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	NV	mS/cm	--	--	--	--	**0.85**	--	--	**0.93**	--	--	--	**0.81**	--	--	**0.761**	--	**0.63**	**0.9**	**0.81**
Hardness (as CaCO3)	NV	µg/L	--	--	--	--	**390000**	--	--	--	--	--	--	**410000**	--	--	--	--	--	--	--
Ion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate, as NO3	NV	µg/L	--	--	--	--	100 U	--	--	--	--	--	--	100 U	--	--	--	--	**140**	100 U	100 U
Nitrate-Nitrite, as N, Total	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite, as NO2	NV	µg/L	--	--	--	--	**12**	--	--	--	--	--	--	**13**	--	--	--	--	10 U	10 U	10 U
pH	NV	pH UNITS	--	--	--	--	**7.71**	--	--	**7.57**	--	--	--	**7.53**	--	--	**7.51**	--	**7.69**	**7.48**	**7.49**
pH (Laboratory)	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus, Total Orthophosphate (As P)	NV	µg/L	--	--	--	--	10 U	--	--	--	--	--	--	10 U	--	--	--	--	10 U	10 U	10 U
Saturation pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (as SIO2)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	NV	µg/L	--	--	--	--	**90000**	--	--	--	--	--	--	**26000**	--	--	--	--	**47000**	**160000**	**160000**
Sulfur	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total dissolved solids	NV	µg/L	--	--	--	--	**480000**	--	--	--	--	--	--	**460000**	--	--	--	--	--	--	--
Turbidity	NV	NTU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																					
Antimony	6	µg/L	--	--	--	--	--	--	--	**0.23**	--	--	--	--	--	--	0.1 U	--	--	--	--
Arsenic	25	µg/L	--	--	--	--	--	--	--	**9.58**	--	--	--	--	--	--	**0.73**	--	1 U	1 U	1 U
Barium	1000	µg/L	--	--	--	--	--	--	--	**283**	--	--	--	--	--	--	**68**	--	--	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location				OW13-39D							OW13-39S								
		Sample ID	OW13	DUP5	OW13	MW13-39D	OW13-39D	MW13-39D	MW13-39D	OW13-39D	DUP6	OW13-39D	MW13-39S	OW13-39S	MW13-39S	MW13-39S	OW13-39S	OW13-39S	OW14	OW14	OW 14
		Start Depth (m)	6.48	6.48	6.48	10.68	10.68	10.68	10.68	10.68	10.68	10.68	3.04	3.04	3.04	3.04	3.04	3.04	6.29	6.29	6.29
		End Depth (m)	8.00	8.00	8.00	12.20	12.20	12.20	12.20	12.20	12.20	12.20	6.09	6.09	6.09	6.09	6.09	6.09	7.81	7.81	7.81
		Sample Type	N	FD	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N
		Sample Date	20 Mar 2018	28 Feb 2020	28 Feb 2020	06 Jan 2014	24 Oct 2014	20 Nov 2015	24 Oct 2016	07 Sep 2017	28 Feb 2020	28 Feb 2020	06 Jan 2014	24 Oct 2014	20 Nov 2015	24 Oct 2016	07 Sep 2017	28 Feb 2020	23 Mar 2010	07 Oct 2010	16 Jun 2011
Analyte	**Table 6 SCS [a]**	**Unit**																			
Beryllium	4	µg/L	--	--	--	--	--	--	--	0.1 U	--	--	--	--	--	--	0.1 U	--	--	--	--
Boron	5000	µg/L	--	--	--	--	--	--	--	**251**	--	--	--	--	--	--	**133**	--	--	--	--
Cadmium	2.1	µg/L	--	--	--	--	--	--	--	0.01 U	--	--	--	--	--	--	**0.245**	--	--	--	--
Calcium	NV	µg/L	--	--	--	--	**110000**	--	--	--	--	--	--	**130000**	--	--	--	--	**87000**	**140000**	**130000**
Chromium	50	µg/L	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--	**0.74**	--	--	--	--
Cobalt	3.8	µg/L	--	--	--	--	--	--	--	**0.28**	--	--	--	--	--	--	**0.59**	--	--	--	--
Copper	69	µg/L	--	--	--	--	20 U	--	--	0.2 U	--	--	--	20 U	--	--	**0.55**	--	--	--	--
Lead	10	µg/L	--	--	--	--	--	--	--	**3.92**	--	--	--	--	--	--	**0.476**	--	0.5 U	0.5 U	0.5 U
Magnesium	NV	µg/L	--	--	--	--	**28000**	--	--	--	--	--	--	**22000**	--	--	--	--	**27000**	**35000**	**33000**
Molybdenum	70	µg/L	--	--	--	--	--	--	--	**3.82**	--	--	--	--	--	--	**0.563**	--	--	--	--
Nickel	100	µg/L	--	--	--	--	--	--	--	**2.16**	--	--	--	--	--	--	**2.27**	--	--	--	--
Selenium	10	µg/L	--	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	**0.313**	--	--	--	--
Silver	1.2	µg/L	--	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	0.05 U	--	--	--	--
Sodium	490000	µg/L	--	--	--	--	**25000**	--	--	**25000**	--	--	--	**9900**	--	--	**15300**	--	**5400**	**6600**	**6300**
Thallium	2	µg/L	--	--	--	--	--	--	--	0.01 U	--	--	--	--	--	--	**0.06**	--	--	--	--
Uranium	20	µg/L	--	--	--	--	--	--	--	**3.65**	--	--	--	--	--	--	**0.881**	--	--	--	--
Vanadium	6.2	µg/L	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--	0.5 U	--	--	--	--
Zinc	890	µg/L	--	--	--	--	10 U	--	--	**260**	--	--	--	**600**	--	--	**698**	--	**1300**	**3700**	**2100**
Non-Regulated Metals																					
Aluminum	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1000 U	1000 U	1000 U
Cesium (Cs)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoride	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3100**	**3900**	**2600**
Iron	NV	µg/L	--	--	--	--	**1700**	--	--	--	--	--	--	**630**	--	--	--	--	--	--	--
Lithium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/L	--	--	--	--	**30**	--	--	--	--	--	--	**220**	--	--	--	--	--	--	--
Potassium	NV	µg/L	--	--	--	--	**2000**	--	--	--	--	--	--	**4000**	--	--	--	--	**3000**	**6000**	**4900**
Rubidium (Rb)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silicon	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tellurium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thorium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tungsten	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																					
Chromium, Hexavalent (Cr6+)	25	µg/L	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--
Chloride (Cl)	790000	µg/L	--	--	--	--	**40000**	--	--	**44300**	--	--	--	**15000**	--	--	**19300**	--	**11000**	**12000**	**14000**
Cyanide, Free	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	µg/L	--	--	--	--	--	--	--	0.01 U	--	--	--	--	--	--	0.01 U	--	--	--	--
PAHs																					
1-Methylnaphthalene	NV	µg/L	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	**0.054**	**0.072**	--	--	--	--	--
2-(1-)Methylnaphthalene	3.2	µg/L	--	--	--	--	0.071 U	0.071 U	0.071 U	--	--	--	--	0.071 U	0.071 U	**0.15**	--	--	--	--	--
2-Methylnaphthalene	NV	µg/L	--	--	--	--	0.05 U	0.05 U	**0.056**	--	--	--	--	0.05 U	0.05 U	**0.073**	--	--	--	--	--
Acenaphthene	4.1	µg/L	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--	--	--	**1.4**	**1.2**	**0.85**	--	--	--	--	--
Acenaphthylene	1	µg/L	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--	--	--	--
Anthracene	1	µg/L	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	**0.052**	**0.069**	--	--	--	--	--
Benzo(a)anthracene	1	µg/L	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--	--	--	--
Benzo(a)pyrene	0.01	µg/L	--	--	--	--	0.01 U	0.01 U	0.01 U	--	--	--	--	0.01 U	0.01 U	0.01 U	--	--	--	--	--
Benzo(b&j)fluoranthene	0.1	µg/L	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--	--	--	--
Benzo(b)fluoranthene	0.1	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	0.2	µg/L	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--	--	--	--
Benzo(k)fluoranthene	0.1	µg/L	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--	--	--	--
Chrysene	0.1	µg/L	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--	--	--	--
Dibenzo(a,h)anthracene	0.2	µg/L	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--	--	--	--
Fluoranthene	0.41	µg/L	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--	--	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location				OW13-39D							OW13-39S								
		Sample ID	OW13	DUP5	OW13	MW13-39D	OW13-39D	MW13-39D	MW13-39D	OW13-39D	DUP6	OW13-39D	MW13-39S	OW13-39S	MW13-39S	MW13-39S	OW13-39S	OW13-39S	OW14	OW14	OW 14
		Start Depth (m)	6.48	6.48	6.48	10.68	10.68	10.68	10.68	10.68	10.68	10.68	3.04	3.04	3.04	3.04	3.04	3.04	6.29	6.29	6.29
		End Depth (m)	8.00	8.00	8.00	12.20	12.20	12.20	12.20	12.20	12.20	12.20	6.09	6.09	6.09	6.09	6.09	6.09	7.81	7.81	7.81
		Sample Type	N	FD	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N
		Sample Date	20 Mar 2018	28 Feb 2020	28 Feb 2020	06 Jan 2014	24 Oct 2014	20 Nov 2015	24 Oct 2016	07 Sep 2017	28 Feb 2020	28 Feb 2020	06 Jan 2014	24 Oct 2014	20 Nov 2015	24 Oct 2016	07 Sep 2017	28 Feb 2020	23 Mar 2010	07 Oct 2010	16 Jun 2011
Analyte	**Table 6 SCS [a]**	**Unit**																			
Fluorene	120	µg/L	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--	--	--	**0.97**	**1.1**	**0.75**	--	--	--	--	--
Indeno(1,2,3-Cd)Pyrene	0.2	µg/L	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--	--	--	--
Naphthalene	7	µg/L	--	--	--	--	0.05 U	0.05 U	**0.051**	--	--	--	--	0.5 U	0.5 U	0.2 U	--	--	--	--	--
Phenanthrene	1	µg/L	--	--	--	--	**0.035**	0.03 U	0.03 U	--	--	--	--	0.03 U	0.03 U	0.03 U	--	--	--	--	--
Pyrene	4.1	µg/L	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	0.05 U	--	--	--	--	--
PCBs																					
Aroclor 1016	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1221	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1232	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1242	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1262	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1268	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PHCs																					
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	420	µg/L	--	--	--	--	**180**	**120**	**140**	**312**	--	--	--	25 U	25 U	**42**	**34**	--	100 U	100 U	100 U
Petroleum Hydrocarbons F1 (C6-C10)	420	µg/L	--	--	--	--	**180**	**120**	**140**	**313**	--	--	--	25 U	25 U	**42**	**34**	--	100 U	100 U	100 U
Petroleum Hydrocarbons F1+F2	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	100 U	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16)	150	µg/L	--	--	--	--	100 U	100 U	100 U	100 U	--	--	--	**150**	100 U	100 U	100 U	--	100 U	100 U	100 U
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34)	500	µg/L	--	--	--	--	200 U	200 U	200 U	250 U	--	--	--	200 U	200 U	200 U	250 U	--	100 U	100 U	100 U
Petroleum Hydrocarbons F3+F4	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	100 U	--	--
Petroleum Hydrocarbons F3a (C16-C22)	NV	µg/L	--	--	--	--	--	--	--	130 U	--	--	--	--	--	--	130 U	--	--	--	--
Petroleum Hydrocarbons F3b (C22-C34)	NV	µg/L	--	--	--	--	--	--	--	130 U	--	--	--	--	--	--	130 U	--	--	--	--
Petroleum Hydrocarbons F4 (C34-C50)	500	µg/L	--	--	--	--	200 U	200 U	200 U	250 U	--	--	--	200 U	200 U	200 U	250 U	--	100 U	100 U	100 U
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SVOCs																					
2-Hexanone	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(e)pyrene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/L	--	--	--	--	10 U	--	--	--	--	--	--	1 U	--	--	--	--	0.2 U	0.2 U	0.4 U
Chloromethane	NV	µg/L	--	--	--	--	25 U	--	--	--	--	--	--	2.5 U	--	--	--	--	0.5 U	0.5 U	1 U
Perylene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																					
1,1,1,2-Tetrachloroethane	1.1	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	10 U	10 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.2 U
1,1,1-Trichloroethane	23	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	5 U	5 U	0.4 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.1 U	0.1 U	0.2 U
1,1,2,2-Tetrachloroethane	0.5	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	10 U	10 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.4 U
1,1,2-Trichloroethane	0.5	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	10 U	10 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.4 U
1,1-Dichloroethane	5	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	5 U	5 U	0.4 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.1 U	0.1 U	0.2 U
1,1-Dichloroethene	0.5	µg/L	0.5 U	0.5 U	0.5 U	**4.4**	**11**	**8**	**5.2**	**15.2**	**4.94**	**5.02**	**2.1**	**2.5**	**2.4**	**0.79**	**1**	**0.55**	0.1 U	0.1 U	0.2 U
1,2-Dibromoethane	0.2	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	10 U	10 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--
1,2-Dichlorobenzene	3	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	10 U	10 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.4 U
1,2-Dichloroethane	0.5	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	10 U	10 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.4 U
1,2-Dichloropropane	0.58	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	5 U	5 U	0.4 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.1 U	0.1 U	0.2 U
1,3-Dichlorobenzene	59	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	10 U	10 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.4 U
1,3-Dichloropropene	0.5	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	14 U	14 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.4 U	1.4 U	0.5 U	0.5 U	0.5 U	--	--	--
1,4-Dichlorobenzene	0.5	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	10 U	10 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.4 U
1,4-Dioxane	50	µg/L	--	--	--	--	--	--	--	20 U	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	1800	µg/L	20 U	20 U	20 U	25 U	250 U	250 U	20 U	20 U	20 U	20 U	10 U	25 U	25 U	10 U	20 U	20 U	5 U	5 U	10 U
4-Methyl-2-Pentanone	640	µg/L	20 U	20 U	20 U	13 U	250 U	250 U	10 U	20 U	20 U	20 U	5 U	25 U	25 U	5 U	20 U	20 U	5 U	5 U	10 U
Acetone	2700	µg/L	30 U	30 U	30 U	25 U	500 U	500 U	20 U	30 U	30 U	30 U	10 U	50 U	50 U	10 U	30 U	30 U	10 U	10 U	20 U
Bromodichloromethane	16	µg/L	2 U	2 U	2 U	1.3 U	5 U	5 U	1 U	2 U	2 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	2 U	0.1 U	0.1 U	0.2 U
Bromoform	5	µg/L	5 U	5 U	5 U	2.5 U	10 U	10 U	2 U	5 U	5 U	5 U	1 U	1 U	1 U	1 U	5 U	5 U	0.2 U	0.2 U	0.4 U
Bromomethane	0.89	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	25 U	25 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	2.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U
Carbon tetrachloride	0.2	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	5 U	5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.2 U
Chlorobenzene	30	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	5 U	5 U	0.4 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.1 U	0.1 U	0.2 U
Chlorodibromomethane	25	µg/L	2 U	2 U	2 U	1.3 U	10 U	10 U	1 U	2 U	2 U	2 U	0.5 U	1 U	1 U	0.5 U	2 U	2 U	0.2 U	0.2 U	0.4 U

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location				OW13-39D							OW13-39S								
		Sample ID	OW13	DUP5	OW13	MW13-39D	OW13-39D	MW13-39D	MW13-39D	OW13-39D	DUP6	OW13-39D	MW13-39S	OW13-39S	MW13-39S	MW13-39S	OW13-39S	OW13-39S	OW14	OW14	OW 14
		Start Depth (m)	6.48	6.48	6.48	10.68	10.68	10.68	10.68	10.68	10.68	10.68	3.04	3.04	3.04	3.04	3.04	3.04	6.29	6.29	6.29
		End Depth (m)	8.00	8.00	8.00	12.20	12.20	12.20	12.20	12.20	12.20	12.20	6.09	6.09	6.09	6.09	6.09	6.09	7.81	7.81	7.81
		Sample Type	N	FD	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N
		Sample Date	20 Mar 2018	28 Feb 2020	28 Feb 2020	06 Jan 2014	24 Oct 2014	20 Nov 2015	24 Oct 2016	07 Sep 2017	28 Feb 2020	28 Feb 2020	06 Jan 2014	24 Oct 2014	20 Nov 2015	24 Oct 2016	07 Sep 2017	28 Feb 2020	23 Mar 2010	07 Oct 2010	16 Jun 2011
Analyte	**Table 6 SCS [a]**	**Unit**																			
Chloroform	2	µg/L	1 U	1 U	1 U	0.5 U	5 U	5 U	0.4 U	1 U	1 U	1 U	0.2 U	0.5 U	0.5 U	0.2 U	1 U	1 U	0.1 U	0.1 U	0.2 U
cis-1,2-Dichloroethene	1.6	µg/L	**2.67**	**2.22**	**2.26**	**180**	**280**	**180**	**110**	**192**	**68.4**	**69.9**	**100**	**60**	**69**	**57**	**51.2**	**25.5**	**2.3**	**0.65**	0.2 U
cis-1,3-Dichloropropene	NV	µg/L	0.3 U	0.3 U	0.3 U	0.3 U	10 U	10 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	1 U	1 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.4 U
Dichlorodifluoromethane	590	µg/L	2 U	2 U	2 U	2.5 U	--	25 U	2 U	2 U	2 U	2 U	1 U	--	2.5 U	1 U	2 U	2 U	0.5 U	--	1 U
Dichloromethane	26	µg/L	5 U	5 U	5 U	5 U	25 U	25 U	4 U	5 U	5 U	5 U	2 U	2.5 U	2.5 U	2 U	5 U	5 U	0.5 U	0.5 U	1 U
Methyl tert-butyl ether (MTBE)	15	µg/L	2 U	2 U	2 U	1.3 U	10 U	10 U	1 U	2 U	2 U	2 U	0.5 U	1 U	1 U	0.5 U	2 U	2 U	0.2 U	0.2 U	0.4 U
n-Hexane	5	µg/L	0.5 U	0.5 U	0.5 U	2.5 U	--	25 U	2 U	0.5 U	0.5 U	0.5 U	1 U	--	2.5 U	1 U	0.5 U	0.5 U	0.5 U	--	1 U
Styrene	5.4	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	10 U	10 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.4 U
Tetrachloroethene	0.5	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	5 U	5 U	0.4 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.1 U	0.1 U	0.2 U
trans-1,2-Dichloroethene	1.6	µg/L	0.5 U	0.5 U	0.5 U	**9.3**	**15**	**11**	**8.4**	**22.2**	**7.56**	**7.83**	**9.1**	**4.1**	**2.8**	**4**	**4.72**	**1.62**	**0.16**	0.1 U	0.2 U
trans-1,3-Dichloropropene	NV	µg/L	0.3 U	0.3 U	0.3 U	0.4 U	10 U	10 U	0.4 U	0.3 U	0.3 U	0.3 U	0.4 U	1 U	1 U	0.4 U	0.3 U	0.3 U	0.2 U	0.2 U	0.4 U
Trichloroethylene	0.5	µg/L	**0.75**	**0.5**	0.5 U	**560**	**860**	**770**	**580**	**1290**	**562**	**577**	**130**	**91**	**71**	**120**	**184**	**66.8**	**0.45**	**1.5**	**0.99**
Trichlorofluoromethane	150	µg/L	5 U	5 U	5 U	1.3 U	10 U	10 U	1 U	5 U	5 U	5 U	0.5 U	1 U	1 U	0.5 U	5 U	5 U	0.2 U	0.2 U	0.4 U
Vinyl Chloride	0.5	µg/L	0.5 U	0.5 U	0.5 U	**28**	**46**	**26**	**15**	**45.2**	**10.2**	**10.5**	**12**	**12**	**17**	**4**	**2.76**	**3.65**	0.2 U	0.2 U	0.4 U

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act.* Ministry of the Environment. April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/L = microgram(s) per litre

ABNs = acid, base and neutral compounds

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mS/cm = milliSiemen(s) per centimetre

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW14				OW15		OW16									OW17			
		Sample ID	OW 14	OW14	OW14	OW14	OW15	OW15	OW16	OW16	OW 16	OW 16	OW16	OW16	OW16	OW16	OW16	OW17	OW17	OW18-I	OW 18-1
		Start Depth (m)	6.29	6.29	6.29	6.29	1.75	1.75	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.79	1.79	1.81	1.81
		End Depth (m)	7.81	7.81	7.81	7.81	4.80	4.80	4.87	4.87	4.87	4.87	4.87	4.87	4.87	4.87	4.87	4.84	4.84	4.86	4.86
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	20 Sep 2011	30 Aug 2017	21 Mar 2018	27 Feb 2020	05 Sep 2017	25 Feb 2020	23 Mar 2010	07 Oct 2010	16 Jun 2011	19 Sep 2011	12 Dec 2012	24 Oct 2013	24 Oct 2014	05 Sep 2017	25 Feb 2020	05 Sep 2017	02 Mar 2020	23 Mar 2010	16 Jun 2011
Analyte	**Table 6 SCS [a]**	**Unit**																			
ABNs																					
1,1'-Biphenyl	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U
1,2,4-Trichlorobenzene	3	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,2'-oxybis(1-chloropropane)	120	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	59	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	890	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BTEX																					
Benzene	0.5	µg/L	0.1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.2 U	--	--	0.2 U	--	--	--	0.5 U	0.5 UJ	0.5 U	0.5 U	0.1 U	0.1 U
Ethylbenzene	2.4	µg/L	0.1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.2 U	--	--	0.2 U	--	--	--	0.5 U	0.5 UJ	0.5 U	0.5 U	0.1 U	0.1 U
Toluene	24	µg/L	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.2 U	--	--	0.2 U	--	--	--	0.5 U	0.5 UJ	0.5 U	0.5 U	0.2 U	0.2 U
Xylene, o	NV	µg/L	0.1 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 UJ	0.2 U	--	--	0.2 U	--	--	--	0.3 U	0.3 UJ	0.3 U	0.3 U	0.1 U	0.1 U
Xylenes, m & p	NV	µg/L	0.1 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 UJ	0.4 U	--	--	0.4 U	--	--	--	0.4 U	0.4 UJ	0.4 U	0.4 U	0.1 U	0.1 U
Xylenes, Total	72	µg/L	0.1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.4 U	--	--	0.4 U	--	--	--	0.5 U	0.5 UJ	0.5 U	0.5 U	0.1 U	0.1 U
Chlorophenyls																					
2,4,5-Trichlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	20	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																					
Alkalinity, Bicarbonate (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	**320000**	--	**370000**	--	--	--	--	--	--
Alkalinity, Carbonate (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	**1300**	--	**1300**	--	--	--	--	--	--
Alkalinity, Hydroxide (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Total (as CaCO3)	NV	µg/L	**410000**	--	--	--	--	--	**330000**	**260000**	**310000**	**280000**	**320000**	**340000**	**370000**	--	--	--	--	**340000**	**360000**
Ammonia	NV	µg/L	--	--	--	--	--	--	--	--	--	--	50 U	--	**140**	--	--	--	--	--	--
Carbon, dissolved organic (DOC)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	**3000**	--	**3700**	--	--	--	--	--	--
Cation - Anion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Color	NV	CU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity % Difference	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	NV	mS/cm	**1.1**	**0.86**	--	--	**0.571**	--	**0.64**	**0.93**	**0.62**	**0.77**	**0.61**	**0.62**	**0.69**	**0.532**	--	**0.83**	--	**0.95**	**0.75**
Hardness (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	**340000**	--	**380000**	--	--	--	--	--	--
Ion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate, as NO3	NV	µg/L	100 U	--	--	--	--	--	**200**	**320**	**180**	100 U	**330**	**160**	**190**	--	--	--	--	100 U	100 U
Nitrate-Nitrite, as N, Total	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	**160**	--	--	--	--	--	--	--
Nitrite, as NO2	NV	µg/L	10 U	--	--	--	--	--	**12**	10 U	10 U	**36**	10 U	10 U	10 U	--	--	--	--	**12**	10 U
pH	NV	pH UNITS	**7.32**	**7.38**	--	--	**7.38**	--	**7.51**	**7.64**	**7.54**	**7.43**	**7.62**	**7.89**	**7.57**	**7.42**	--	**7.49**	--	**7.59**	**7.61**
pH (Laboratory)	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus, Total Orthophosphate (As P)	NV	µg/L	10 U	--	--	--	--	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	--	--	--	10 U	10 U
Saturation pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (as SIO2)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	NV	µg/L	**140000**	--	--	--	--	--	**17000**	**91000**	**14000**	**40000**	**13000**	**7600**	**7800**	--	--	--	--	**34000**	**47000**
Sulfur	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total dissolved solids	NV	µg/L	--	--	--	--	--	--	--	--	--	--	**350000**	--	**390000**	--	--	--	--	--	--
Turbidity	NV	NTU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																					
Antimony	6	µg/L	--	1 U	--	--	0.1 U	--	--	--	--	--	--	--	--	**0.2**	--	**0.23**	--	--	--
Arsenic	25	µg/L	**2.2**	1 U	--	--	**2.01**	--	1 U	1 U	1 U	1 U	--	--	--	**0.58**	--	**3.92**	--	1 U	1 U
Barium	1000	µg/L	--	**94.4**	--	--	**44.7**	--	--	--	--	--	--	--	--	**31.8**	--	**56.2**	--	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW14				OW15		OW16									OW17			
		Sample ID	OW 14	OW14	OW14	OW14	OW15	OW15	OW16	OW16	OW 16	OW 16	OW16	OW16	OW16	OW16	OW16	OW17	OW17	OW18-I	OW 18-1
		Start Depth (m)	6.29	6.29	6.29	6.29	1.75	1.75	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.79	1.79	1.81	1.81
		End Depth (m)	7.81	7.81	7.81	7.81	4.80	4.80	4.87	4.87	4.87	4.87	4.87	4.87	4.87	4.87	4.87	4.84	4.84	4.86	4.86
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	20 Sep 2011	30 Aug 2017	21 Mar 2018	27 Feb 2020	05 Sep 2017	25 Feb 2020	23 Mar 2010	07 Oct 2010	16 Jun 2011	19 Sep 2011	12 Dec 2012	24 Oct 2013	24 Oct 2014	05 Sep 2017	25 Feb 2020	05 Sep 2017	02 Mar 2020	23 Mar 2010	16 Jun 2011
Analyte	**Table 6 SCS [a]**	**Unit**																			
Beryllium	4	µg/L	--	1 U	--	--	0.1 U	--	--	--	--	--	--	--	--	0.1 U	--	0.1 U	--	--	--
Boron	5000	µg/L	--	**130**	--	--	**76**	--	--	--	--	--	--	--	--	**63**	--	**90**	--	--	--
Cadmium	2.1	µg/L	--	0.1 U	--	--	**0.016**	--	--	--	--	--	--	--	--	**0.969**	--	**0.013**	--	--	--
Calcium	NV	µg/L	**170000**	--	--	--	--	--	**110000**	**140000**	**100000**	**120000**	**110000**	--	**120000**	--	--	--	--	**110000**	**120000**
Chromium	50	µg/L	--	5 U	--	--	0.5 U	--	--	--	--	--	--	--	--	0.5 U	--	0.5 U	--	--	--
Cobalt	3.8	µg/L	--	1 U	--	--	**0.16**	--	--	--	--	--	--	--	--	**0.93**	--	**1.12**	--	--	--
Copper	69	µg/L	--	2 U	--	--	0.2 U	--	--	--	--	--	20 U	--	20 U	**8**	--	**0.99**	--	--	--
Lead	10	µg/L	**1.2**	**0.57**	--	--	**0.275**	--	**2**	**2.4**	**1.6**	**2.6**	--	--	--	**3.25**	--	**0.083**	--	**0.6**	**0.59**
Magnesium	NV	µg/L	**46000**	--	--	--	--	--	**19000**	**20000**	**17000**	**20000**	**15000**	--	**17000**	--	--	--	--	**27000**	**27000**
Molybdenum	70	µg/L	--	0.5 U	--	--	**1.56**	--	--	--	--	--	--	--	--	**1.7**	--	**1.34**	--	--	--
Nickel	100	µg/L	--	5 U	--	--	**1.92**	--	--	--	--	--	--	--	--	**6.7**	--	**1.81**	--	--	--
Selenium	10	µg/L	--	0.5 U	--	--	**0.076**	--	--	--	--	--	--	--	--	**0.079**	--	**0.188**	--	--	--
Silver	1.2	µg/L	--	0.5 U	--	--	0.05 U	--	--	--	--	--	--	--	--	0.05 U	--	0.05 U	--	--	--
Sodium	490000	µg/L	**14000**	5000 U	--	--	**9730**	--	**5300**	**22000**	**6900**	**17000**	**1500**	--	**2200**	**2860**	--	**5090**	--	**39000**	**9000**
Thallium	2	µg/L	--	0.1 U	--	--	**0.015**	--	--	--	--	--	--	--	--	**0.157**	--	**0.023**	--	--	--
Uranium	20	µg/L	--	**1.41**	--	--	**0.452**	--	--	--	--	--	--	--	--	**0.826**	--	**1**	--	--	--
Vanadium	6.2	µg/L	--	5 U	--	--	0.5 U	--	--	--	--	--	--	--	--	0.5 U	--	0.5 U	--	--	--
Zinc	890	µg/L	**3200**	**1300**	--	--	**87.5**	--	**190**	**200**	**190**	**540**	**180**	--	**260**	**349**	--	**94.1**	--	**1300**	**1100**
Non-Regulated Metals																					
Aluminum	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	NV	µg/L	1000 U	--	--	--	--	--	1000 U	**1000**	1000 U	1000 U	--	--	--	--	--	--	--	1000 U	1000 U
Cesium (Cs)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoride	NV	µg/L	**3500**	--	--	--	--	--	**180**	**150**	**260**	**280**	--	--	--	--	--	--	--	**440**	**370**
Iron	NV	µg/L	--	--	--	--	--	--	--	--	--	--	20 U	--	20 U	--	--	--	--	--	--
Lithium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/L	--	--	--	--	--	--	--	--	--	--	10 U	--	10 U	--	--	--	--	--	--
Potassium	NV	µg/L	**7100**	--	--	--	--	--	**1000**	**1100**	**1400**	**2400**	1000 U	--	**1000**	--	--	--	--	**3900**	**4100**
Rubidium (Rb)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silicon	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tellurium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thorium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tungsten	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																					
Chromium, Hexavalent (Cr6+)	25	µg/L	--	1 U	--	--	1 U	--	--	--	--	--	--	--	--	1 U	--	1 U	--	--	--
Chloride (Cl)	790000	µg/L	**33000**	**5900**	--	--	**14800**	--	**5400**	**92000**	**7400**	**49000**	**2100**	**1600**	**2000**	**3270**	--	**2550**	--	**94000**	**5300**
Cyanide, Free	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	µg/L	--	0.01 U	--	--	0.01 U	--	--	--	--	--	--	--	--	0.01 U	--	0.01 U	--	--	--
PAHs																					
1-Methylnaphthalene	NV	µg/L	--	0.02 U	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	**0.025**	--	0.05 U	0.05 U
2-(1-)Methylnaphthalene	3.2	µg/L	--	0.028 U	--	--	0.028 U	--	--	--	--	--	--	--	--	0.028 U	--	0.028 U	--	--	--
2-Methylnaphthalene	NV	µg/L	--	0.02 U	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	0.02 U	--	0.05 U	0.05 U
Acenaphthene	4.1	µg/L	--	0.02 U	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	**0.062**	--	0.05 U	0.05 U
Acenaphthylene	1	µg/L	--	0.02 U	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	0.02 U	--	0.05 U	0.05 U
Anthracene	1	µg/L	--	0.02 U	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	0.02 U	--	0.05 U	0.05 U
Benzo(a)anthracene	1	µg/L	--	0.02 U	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	0.02 U	--	0.05 U	0.05 U
Benzo(a)pyrene	0.01	µg/L	--	0.01 U	--	--	0.01 U	--	--	--	--	--	--	--	--	0.01 U	--	0.01 U	--	**0.013**	0.01 U
Benzo(b&j)fluoranthene	0.1	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
Benzo(b)fluoranthene	0.1	µg/L	--	0.02 U	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	0.02 U	--	--	--
Benzo(g,h,i)perylene	0.2	µg/L	--	0.02 U	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	0.02 U	--	0.1 U	0.1 U
Benzo(k)fluoranthene	0.1	µg/L	--	0.02 U	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	0.02 U	--	0.05 U	0.05 U
Chrysene	0.1	µg/L	--	0.02 U	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	0.02 U	--	0.05 U	0.05 U
Dibenzo(a,h)anthracene	0.2	µg/L	--	0.02 U	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	0.02 U	--	0.1 U	0.1 U
Fluoranthene	0.41	µg/L	--	0.02 U	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	0.02 U	--	0.05 U	0.05 U

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW14				OW15		OW16									OW17			
		Sample ID	OW 14	OW14	OW14	OW14	OW15	OW15	OW16	OW16	OW 16	OW 16	OW16	OW16	OW16	OW16	OW16	OW17	OW17	OW18-I	OW 18-1
		Start Depth (m)	6.29	6.29	6.29	6.29	1.75	1.75	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.79	1.79	1.81	1.81
		End Depth (m)	7.81	7.81	7.81	7.81	4.80	4.80	4.87	4.87	4.87	4.87	4.87	4.87	4.87	4.87	4.87	4.84	4.84	4.86	4.86
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	20 Sep 2011	30 Aug 2017	21 Mar 2018	27 Feb 2020	05 Sep 2017	25 Feb 2020	23 Mar 2010	07 Oct 2010	16 Jun 2011	19 Sep 2011	12 Dec 2012	24 Oct 2013	24 Oct 2014	05 Sep 2017	25 Feb 2020	05 Sep 2017	02 Mar 2020	23 Mar 2010	16 Jun 2011
Analyte	**Table 6 SCS [a]**	**Unit**																			
Fluorene	120	µg/L	--	0.02 U	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	0.02 U	--	0.05 U	0.05 U
Indeno(1,2,3-Cd)Pyrene	0.2	µg/L	--	0.02 U	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	0.02 U	--	0.1 U	0.1 U
Naphthalene	7	µg/L	--	0.05 U	--	--	0.05 U	--	--	--	--	--	--	--	--	0.05 U	--	0.06 U	--	0.05 U	0.05 U
Phenanthrene	1	µg/L	--	0.02 U	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	0.02 U	--	0.03 U	0.03 U
Pyrene	4.1	µg/L	--	0.02 U	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	0.02 U	--	0.05 U	0.05 U
PCBs																					
Aroclor 1016	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1221	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1232	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1242	NV	µg/L	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--
Aroclor 1248	NV	µg/L	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--
Aroclor 1254	NV	µg/L	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--
Aroclor 1260	NV	µg/L	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--
Aroclor 1262	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1268	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.2	µg/L	--	--	--	--	0.04 U	--	--	--	--	--	--	--	--	0.04 U	--	--	--	--	--
PHCs																					
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	420	µg/L	25 U	25 U	--	--	25 U	--	100 U	--	--	25 U	--	--	--	25 U	--	25 U	--	100 U	100 U
Petroleum Hydrocarbons F1 (C6-C10)	420	µg/L	25 U	25 U	--	--	25 U	--	100 U	--	--	25 U	--	--	--	25 U	--	25 U	--	100 U	100 U
Petroleum Hydrocarbons F1+F2	NV	µg/L	--	--	--	--	--	--	100 U	--	--	--	--	--	--	--	--	--	--	100 U	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	NV	µg/L	--	100 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16)	150	µg/L	100 U	100 U	--	--	100 U	--	100 U	100 U	100 U	100 U	--	--	--	100 U	--	100 U	--	100 U	100 U
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	NV	µg/L	--	250 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34)	500	µg/L	100 U	250 U	--	--	250 U	--	100 U	100 U	100 U	100 U	--	--	--	250 U	--	250 U	--	100 U	100 U
Petroleum Hydrocarbons F3+F4	NV	µg/L	--	--	--	--	--	--	100 U	--	--	--	--	--	--	--	--	--	--	100 U	--
Petroleum Hydrocarbons F3a (C16-C22)	NV	µg/L	--	--	--	--	130 U	--	--	--	--	--	--	--	--	130 U	--	130 U	--	--	--
Petroleum Hydrocarbons F3b (C22-C34)	NV	µg/L	--	--	--	--	130 U	--	--	--	--	--	--	--	--	130 U	--	130 U	--	--	--
Petroleum Hydrocarbons F4 (C34-C50)	500	µg/L	100 U	250 U	--	--	250 U	--	100 U	100 U	100 U	100 U	--	--	--	250 U	--	250 U	--	100 U	100 U
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/L	--	370 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SVOCs																					
2-Hexanone	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(e)pyrene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/L	0.2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	0.2 U
Chloromethane	NV	µg/L	0.5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U
Perylene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																					
1,1,1,2-Tetrachloroethane	1.1	µg/L	0.1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	--	--	--	--	--	--	--	0.5 U	0.5 UJ	0.5 U	0.5 U	0.1 U	0.1 U
1,1,1-Trichloroethane	23	µg/L	0.1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	--	--	--	--	--	--	--	0.5 U	0.5 UJ	0.5 U	0.5 U	**0.15**	**0.16**
1,1,2,2-Tetrachloroethane	0.5	µg/L	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	--	--	--	--	--	--	--	0.5 U	0.5 UJ	0.5 U	0.5 U	0.2 U	0.2 U
1,1,2-Trichloroethane	0.5	µg/L	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	--	--	--	--	--	--	--	0.5 U	0.5 UJ	0.5 U	0.5 U	0.2 U	0.2 U
1,1-Dichloroethane	5	µg/L	0.1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	--	--	--	--	--	--	--	0.5 U	0.5 UJ	0.5 U	0.5 U	0.1 U	0.1 U
1,1-Dichloroethene	0.5	µg/L	0.1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	--	--	--	--	--	--	--	0.5 U	0.5 UJ	0.5 U	0.5 U	0.1 U	0.1 U
1,2-Dibromoethane	0.2	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	--	--	--	--	--	--	--	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichlorobenzene	3	µg/L	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	--	--	--	--	--	--	--	0.5 U	0.5 UJ	0.5 U	0.5 U	0.2 U	0.2 U
1,2-Dichloroethane	0.5	µg/L	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	--	--	--	--	--	--	--	0.5 U	0.5 UJ	0.5 U	0.5 U	0.2 U	0.2 U
1,2-Dichloropropane	0.58	µg/L	0.1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	--	--	--	--	--	--	--	0.5 U	0.5 UJ	0.5 U	0.5 U	0.1 U	0.1 U
1,3-Dichlorobenzene	59	µg/L	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	--	--	--	--	--	--	--	0.5 U	0.5 UJ	0.5 U	0.5 U	0.2 U	0.2 U
1,3-Dichloropropene	0.5	µg/L	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	--	--	--	--	--	--	--	0.5 U	0.5 UJ	0.5 U	0.5 U	--	--
1,4-Dichlorobenzene	0.5	µg/L	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	--	--	--	--	--	--	--	0.5 U	0.5 UJ	0.5 U	0.5 U	0.2 U	0.2 U
1,4-Dioxane	50	µg/L	--	20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	1800	µg/L	5 U	20 U	20 U	20 U	20 U	20 UJ	--	--	--	--	--	--	--	20 U	20 UJ	20 U	20 U	5 U	5 U
4-Methyl-2-Pentanone	640	µg/L	5 U	20 U	20 U	20 U	20 U	20 UJ	--	--	--	--	--	--	--	20 U	20 UJ	20 U	20 U	5 U	5 U
Acetone	2700	µg/L	10 U	30 U	30 U	30 U	30 U	30 UJ	--	--	--	--	--	--	--	30 U	30 UJ	30 U	30 U	10 U	10 U
Bromodichloromethane	16	µg/L	0.1 U	2 U	2 U	2 U	2 U	2 UJ	--	--	--	--	--	--	--	2 U	2 UJ	2 U	2 U	0.1 U	0.1 U
Bromoform	5	µg/L	0.2 U	5 U	5 U	5 U	5 U	5 UJ	--	--	--	--	--	--	--	5 U	5 UJ	5 U	5 U	0.2 U	0.2 U
Bromomethane	0.89	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	--	--	--	--	--	--	--	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride	0.2	µg/L	0.1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	--	--	--	--	--	--	--	0.2 U	0.2 UJ	0.2 U	0.2 U	0.1 U	0.1 U
Chlorobenzene	30	µg/L	0.1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	--	--	--	--	--	--	--	0.5 U	0.5 UJ	0.5 U	0.5 U	0.1 U	0.1 U
Chlorodibromomethane	25	µg/L	0.2 U	2 U	2 U	2 U	2 U	2 UJ	--	--	--	--	--	--	--	2 U	2 UJ	2 U	2 U	0.2 U	0.2 U

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW14				OW15		OW16									OW17			
		Sample ID	OW 14	OW14	OW14	OW14	OW15	OW15	OW16	OW16	OW 16	OW 16	OW16	OW16	OW16	OW16	OW16	OW17	OW17	OW18-I	OW 18-1
		Start Depth (m)	6.29	6.29	6.29	6.29	1.75	1.75	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.79	1.79	1.81	1.81
		End Depth (m)	7.81	7.81	7.81	7.81	4.80	4.80	4.87	4.87	4.87	4.87	4.87	4.87	4.87	4.87	4.87	4.84	4.84	4.86	4.86
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	20 Sep 2011	30 Aug 2017	21 Mar 2018	27 Feb 2020	05 Sep 2017	25 Feb 2020	23 Mar 2010	07 Oct 2010	16 Jun 2011	19 Sep 2011	12 Dec 2012	24 Oct 2013	24 Oct 2014	05 Sep 2017	25 Feb 2020	05 Sep 2017	02 Mar 2020	23 Mar 2010	16 Jun 2011
Analyte	**Table 6 SCS [a]**	**Unit**																			
Chloroform	2	µg/L	0.1 U	1 U	1 U	1 U	1 U	1 UJ	--	--	--	--	--	--	--	1 U	1 UJ	1 U	1 U	0.1 U	0.1 U
cis-1,2-Dichloroethene	1.6	µg/L	**3.6**	**0.98**	0.5 U	**11.1**	0.5 U	0.5 UJ	--	--	--	--	--	--	--	0.5 U	0.5 UJ	0.5 U	0.5 U	**3**	**0.28**
cis-1,3-Dichloropropene	NV	µg/L	0.2 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 UJ	--	--	--	--	--	--	--	0.3 U	0.3 UJ	0.3 U	0.3 U	0.2 U	0.2 U
Dichlorodifluoromethane	590	µg/L	0.5 U	2 U	2 U	2 U	2 U	2 UJ	--	--	--	--	--	--	--	2 U	2 UJ	2 U	2 U	0.5 U	0.5 U
Dichloromethane	26	µg/L	0.5 U	5 U	5 U	5 U	5 U	5 UJ	--	--	--	--	--	--	--	5 U	5 UJ	5 U	5 U	0.5 U	0.5 U
Methyl tert-butyl ether (MTBE)	15	µg/L	0.2 U	2 U	2 U	2 U	2 U	2 UJ	--	--	--	--	--	--	--	2 U	2 UJ	2 U	2 U	0.2 U	0.2 U
n-Hexane	5	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	--	--	--	--	--	--	--	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	5.4	µg/L	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	--	--	--	--	--	--	--	0.5 U	0.5 UJ	0.5 U	0.5 U	0.2 U	0.2 U
Tetrachloroethene	0.5	µg/L	0.1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	--	--	--	--	--	--	--	0.5 U	0.5 UJ	0.5 U	0.5 U	**0.14**	**0.11**
trans-1,2-Dichloroethene	1.6	µg/L	**0.29**	0.5 U	0.5 U	**0.89**	0.5 U	0.5 UJ	--	--	--	--	--	--	--	0.5 U	0.5 UJ	0.5 U	0.5 U	**0.47**	0.1 U
trans-1,3-Dichloropropene	NV	µg/L	0.2 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 UJ	--	--	--	--	--	--	--	0.3 U	0.3 UJ	0.3 U	0.3 U	0.2 U	0.2 U
Trichloroethylene	0.5	µg/L	**1.6**	**2.08**	**0.85**	**1.25**	0.5 U	0.5 UJ	--	--	--	--	--	--	--	0.5 U	0.5 UJ	0.5 U	0.5 U	**20**	**9.5**
Trichlorofluoromethane	150	µg/L	0.2 U	5 U	5 U	5 U	5 U	5 UJ	--	--	--	--	--	--	--	5 U	5 UJ	5 U	5 U	0.2 U	0.2 U
Vinyl Chloride	0.5	µg/L	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	--	--	--	--	--	--	--	0.5 U	0.5 UJ	0.5 U	0.5 U	0.2 U	0.2 U

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act.* Ministry of the Environment. April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/L = microgram(s) per litre

ABNs = acid, base and neutral compounds

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mS/cm = milliSiemen(s) per centimetre

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW18-I								OW18-II										
		Sample ID	OW 18-I	OW18-I	OW18-I	OW18-I	OW18-I	OW18-1	OW18-I	OW18-I	OW18-II	OW 18-II	OW 18-II	OW18-II	OW18-II	OW18-II	OW18-II	OW18-11	OW18-II	DUP8	OW18-II
		Start Depth (m)	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	6.32	6.32	6.32	6.32	6.32	6.32	6.32	6.32	6.32	6.32	6.32
		End Depth (m)	4.86	4.86	4.86	4.86	4.86	4.86	4.86	4.86	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N
		Sample Date	20 Sep 2011	12 Dec 2012	25 Oct 2013	24 Oct 2014	20 Nov 2015	24 Oct 2016	29 Aug 2017	02 Mar 2020	23 Mar 2010	17 Jun 2011	20 Sep 2011	12 Dec 2012	25 Oct 2013	24 Oct 2014	20 Nov 2015	25 Oct 2016	29 Aug 2017	02 Mar 2020	02 Mar 2020
Analyte	**Table 6 SCS [a]**	**Unit**																			
ABNs																					
1,1'-Biphenyl	0.5	µg/L	--	--	--	0.05 U	--	--	--	--	--	0.05 U	--	--	--	0.05 U	--	--	--	--	--
1,2,4-Trichlorobenzene	3	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,2'-oxybis(1-chloropropane)	120	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	59	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	890	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BTEX																					
Benzene	0.5	µg/L	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.5 U	0.5 U	**2.9**	**2.5**	**1.7**	**2.4**	**2.8**	**2.8**	**2.9**	**2.3**	**2.44**	**1.96**	**2.09**
Ethylbenzene	2.4	µg/L	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	0.5 U	0.2 U	0.5 U	0.5 U	0.5 U
Toluene	24	µg/L	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	0.2 U	0.5 U	0.5 U	0.5 U
Xylene, o	NV	µg/L	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.3 U	0.3 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	0.5 U	0.2 U	0.3 U	0.3 U	0.3 U
Xylenes, m & p	NV	µg/L	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.4 U	0.4 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	0.5 U	0.2 U	0.4 U	0.4 U	0.4 U
Xylenes, Total	72	µg/L	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	0.5 U	0.2 U	0.5 U	0.5 U	0.5 U
Chlorophenyls																					
2,4,5-Trichlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	20	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																					
Alkalinity, Bicarbonate (as CaCO3)	NV	µg/L	--	**390000**	**390000**	**410000**	--	--	--	--	--	--	--	**390000**	**390000**	**400000**	--	--	--	--	--
Alkalinity, Carbonate (as CaCO3)	NV	µg/L	--	**1500**	**1400**	**1200**	--	--	--	--	--	--	--	**2000**	**1600**	**1400**	--	--	--	--	--
Alkalinity, Hydroxide (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Total (as CaCO3)	NV	µg/L	**320000**	**390000**	**390000**	**420000**	--	--	--	--	**380000**	**370000**	**370000**	**390000**	**390000**	**400000**	--	--	--	--	--
Ammonia	NV	µg/L	--	**53**	50 U	50 U	--	--	--	--	--	--	--	**280**	**220**	**280**	--	--	--	--	--
Carbon, dissolved organic (DOC)	NV	µg/L	--	**2200**	**1900**	**2500**	--	--	--	--	--	--	--	**5100**	**5100**	**5000**	--	--	--	--	--
Cation - Anion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Color	NV	CU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity % Difference	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	NV	mS/cm	**0.83**	**0.72**	**0.73**	**0.78**	--	--	**0.787**	--	**0.94**	**0.86**	**0.89**	**0.85**	**0.86**	**0.86**	--	--	**0.849**	--	--
Hardness (as CaCO3)	NV	µg/L	--	**390000**	**390000**	**410000**	--	--	--	--	--	--	--	**440000**	**430000**	**430000**	--	--	--	--	--
Ion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate, as NO3	NV	µg/L	**200**	100 U	100 U	100 U	--	--	--	--	100 U	100 U	100 U	100 U	100 U	100 U	--	--	--	--	--
Nitrate-Nitrite, as N, Total	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite, as NO2	NV	µg/L	10 U	10 U	10 U	10 U	--	--	--	--	10 U	10 U	10 U	10 U	10 U	10 U	--	--	--	--	--
pH	NV	pH UNITS	**7.49**	**7.62**	**7.59**	**7.5**	--	--	**7.34**	--	**7.47**	**7.81**	**7.59**	**7.75**	**7.64**	**7.56**	--	--	**7.34**	--	--
pH (Laboratory)	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus, Total Orthophosphate (As P)	NV	µg/L	10 U	10 U	10 U	10 U	--	--	--	--	10 U	10 U	10 U	10 U	**760**	10 U	--	--	--	--	--
Saturation pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (as SIO2)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	NV	µg/L	**19000**	**18000**	**9400**	**15000**	--	--	--	--	**100000**	**75000**	**76000**	**55000**	**49000**	**45000**	--	--	--	--	--
Sulfur	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total dissolved solids	NV	µg/L	--	**420000**	**410000**	**440000**	--	--	--	--	--	--	--	**500000**	**500000**	**490000**	--	--	--	--	--
Turbidity	NV	NTU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																					
Antimony	6	µg/L	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	0.1 U	--	--
Arsenic	25	µg/L	1 U	--	--	--	--	--	1 U	--	**5.3**	**1.3**	**7.4**	--	--	--	--	--	**9.91**	--	--
Barium	1000	µg/L	--	--	--	--	--	--	**52.8**	--	--	--	--	--	--	--	--	--	**226**	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW18-I								OW18-II										
		Sample ID	OW 18-I	OW18-I	OW18-I	OW18-I	OW18-I	OW18-1	OW18-I	OW18-I	OW18-II	OW 18-II	OW 18-II	OW18-II	OW18-II	OW18-II	OW18-II	OW18-11	OW18-II	DUP8	OW18-II
		Start Depth (m)	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	6.32	6.32	6.32	6.32	6.32	6.32	6.32	6.32	6.32	6.32	6.32
		End Depth (m)	4.86	4.86	4.86	4.86	4.86	4.86	4.86	4.86	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N
		Sample Date	20 Sep 2011	12 Dec 2012	25 Oct 2013	24 Oct 2014	20 Nov 2015	24 Oct 2016	29 Aug 2017	02 Mar 2020	23 Mar 2010	17 Jun 2011	20 Sep 2011	12 Dec 2012	25 Oct 2013	24 Oct 2014	20 Nov 2015	25 Oct 2016	29 Aug 2017	02 Mar 2020	02 Mar 2020
Analyte	**Table 6 SCS [a]**	**Unit**																			
Beryllium	4	µg/L	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	0.1 U	--	--
Boron	5000	µg/L	--	--	--	--	--	--	**140**	--	--	--	--	--	--	--	--	--	**125**	--	--
Cadmium	2.1	µg/L	--	--	--	--	--	--	**0.44**	--	--	--	--	--	--	--	--	--	0.01 U	--	--
Calcium	NV	µg/L	**100000**	**120000**	**120000**	**120000**	--	--	--	--	**130000**	**130000**	**130000**	**130000**	**130000**	**130000**	--	--	--	--	--
Chromium	50	µg/L	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	0.5 U	--	--
Cobalt	3.8	µg/L	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	**1.27**	--	--
Copper	69	µg/L	--	20 U	20 U	20 U	--	--	2 U	--	--	--	--	20 U	20 U	20 U	--	--	**0.26**	--	--
Lead	10	µg/L	**1.9**	--	--	--	--	--	**1.08**	--	0.5 U	0.5 U	0.5 U	--	--	--	--	--	**0.209**	--	--
Magnesium	NV	µg/L	**20000**	**23000**	**22000**	**24000**	--	--	--	--	**33000**	**29000**	**30000**	**27000**	**27000**	**26000**	--	--	--	--	--
Molybdenum	70	µg/L	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--	**1.65**	--	--
Nickel	100	µg/L	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	**4.81**	--	--
Selenium	10	µg/L	--	--	--	--	--	--	**0.62**	--	--	--	--	--	--	--	--	--	0.05 U	--	--
Silver	1.2	µg/L	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--	0.05 U	--	--
Sodium	490000	µg/L	**47000**	**7900**	**4500**	**7400**	--	--	**6900**	--	**19000**	**16000**	**18000**	**16000**	**14000**	**13000**	--	--	**9620**	--	--
Thallium	2	µg/L	--	--	--	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--	**0.078**	--	--
Uranium	20	µg/L	--	--	--	--	--	--	**0.58**	--	--	--	--	--	--	--	--	--	**3.58**	--	--
Vanadium	6.2	µg/L	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	0.5 U	--	--
Zinc	890	µg/L	**1300**	**1100**	**1100**	**900**	**1700**	**1600**	**1720**	--	**960**	**860**	**820**	**820**	**910**	**850**	**850**	**1000**	**787**	--	--
Non-Regulated Metals																					
Aluminum	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	NV	µg/L	1000 U	--	--	--	--	--	--	--	1000 U	1000 U	1000 U	--	--	--	--	--	--	--	--
Cesium (Cs)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoride	NV	µg/L	**500**	--	--	--	--	--	--	--	**780**	**690**	**760**	--	--	--	--	--	--	--	--
Iron	NV	µg/L	--	20 U	20 U	20 U	--	--	--	--	--	--	--	**2300**	**2600**	**2400**	--	--	--	--	--
Lithium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/L	--	**70**	**60**	**60**	--	--	--	--	--	--	--	**50**	**40**	**50**	--	--	--	--	--
Potassium	NV	µg/L	**4400**	**4000**	**4000**	**4000**	--	--	--	--	**5500**	**5300**	**5800**	**6000**	**5000**	**5000**	--	--	--	--	--
Rubidium (Rb)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silicon	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tellurium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thorium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tungsten	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																					
Chromium, Hexavalent (Cr6+)	25	µg/L	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	1 U	--	--
Chloride (Cl)	790000	µg/L	**56000**	**5600**	**2500**	**3900**	--	--	**5500**	--	**22000**	**22000**	**20000**	**20000**	**18000**	**17000**	--	--	**11200**	--	--
Cyanide, Free	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	µg/L	--	--	--	--	--	--	0.01 U	--	--	--	--	--	--	--	--	--	0.01 U	--	--
PAHs																					
1-Methylnaphthalene	NV	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--
2-(1-)Methylnaphthalene	3.2	µg/L	--	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.028 U	--	--	--	--	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.028 U	--	--
2-Methylnaphthalene	NV	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**0.054**	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--
Acenaphthene	4.1	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--
Acenaphthylene	1	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--
Anthracene	1	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--
Benzo(a)anthracene	1	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--
Benzo(a)pyrene	0.01	µg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	**0.011**	0.01 U	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	--	--
Benzo(b&j)fluoranthene	0.1	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--
Benzo(b)fluoranthene	0.1	µg/L	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--	0.02 U	--	--
Benzo(g,h,i)perylene	0.2	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--
Benzo(k)fluoranthene	0.1	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--
Chrysene	0.1	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--
Dibenzo(a,h)anthracene	0.2	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--
Fluoranthene	0.41	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW18-I								OW18-II										
		Sample ID	OW 18-I	OW18-I	OW18-I	OW18-I	OW18-I	OW18-1	OW18-I	OW18-I	OW18-II	OW 18-II	OW 18-II	OW18-II	OW18-II	OW18-II	OW18-II	OW18-11	OW18-II	DUP8	OW18-II
		Start Depth (m)	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	6.32	6.32	6.32	6.32	6.32	6.32	6.32	6.32	6.32	6.32	6.32
		End Depth (m)	4.86	4.86	4.86	4.86	4.86	4.86	4.86	4.86	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N
		Sample Date	20 Sep 2011	12 Dec 2012	25 Oct 2013	24 Oct 2014	20 Nov 2015	24 Oct 2016	29 Aug 2017	02 Mar 2020	23 Mar 2010	17 Jun 2011	20 Sep 2011	12 Dec 2012	25 Oct 2013	24 Oct 2014	20 Nov 2015	25 Oct 2016	29 Aug 2017	02 Mar 2020	02 Mar 2020
Analyte	**Table 6 SCS [a]**	**Unit**																			
Fluorene	120	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--
Indeno(1,2,3-Cd)Pyrene	0.2	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--
Naphthalene	7	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**0.055**	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--
Phenanthrene	1	µg/L	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.02 U	--	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.02 U	--	--
Pyrene	4.1	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--
PCBs																					
Aroclor 1016	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1221	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1232	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1242	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1262	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1268	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PHCs																					
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	420	µg/L	25 U	25 U	25 U	25 U	25 U	25 U	25 U	--	100 U	100 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	--	--
Petroleum Hydrocarbons F1 (C6-C10)	420	µg/L	25 U	25 U	25 U	25 U	25 U	25 U	25 U	--	100 U	100 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	--	--
Petroleum Hydrocarbons F1+F2	NV	µg/L	--	--	--	--	--	--	--	--	100 U	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	NV	µg/L	--	--	--	--	--	--	100 U	--	--	--	--	--	--	--	--	--	100 U	--	--
Petroleum Hydrocarbons F2 (C10-C16)	150	µg/L	100 U	100 U	100 U	100 U	100 U	100 U	100 U	--	100 U	100 U	100 U	100 U	100 U	100 U	**210**	100 U	100 U	--	--
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	NV	µg/L	--	--	--	--	--	--	250 U	--	--	--	--	--	--	--	--	--	250 U	--	--
Petroleum Hydrocarbons F3 (C16-C34)	500	µg/L	100 U	100 U	200 U	200 U	200 U	200 U	250 U	--	100 U	100 U	100 U	100 U	200 U	**200**	200 U	200 U	250 U	--	--
Petroleum Hydrocarbons F3+F4	NV	µg/L	--	--	--	--	--	--	--	--	100 U	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3a (C16-C22)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3b (C22-C34)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F4 (C34-C50)	500	µg/L	100 U	100 U	200 U	200 U	200 U	200 U	250 U	--	100 U	100 U	100 U	100 U	200 U	200 U	200 U	200 U	250 U	--	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/L	--	--	--	--	--	--	370 U	--	--	--	--	--	--	--	--	--	370 U	--	--
SVOCs																					
2-Hexanone	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(e)pyrene	NV	µg/L	--	--	0.05 U	--	--	--	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--
Chloroethane	NV	µg/L	1 U	0.2 U	--	0.2 U	--	--	--	--	1 U	1 U	1 U	1 U	--	2 U	--	--	--	--	--
Chloromethane	NV	µg/L	2.5 U	0.5 U	--	0.5 U	--	--	--	--	2.5 U	2.5 U	2.5 U	2.5 U	--	5 U	--	--	--	--	--
Perylene	NV	µg/L	--	--	0.05 U	--	--	--	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--
VOCs																					
1,1,1,2-Tetrachloroethane	1.1	µg/L	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane	23	µg/L	0.5 U	**0.16**	**0.15**	**0.16**	**0.15**	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	0.5 U	0.2 U	0.5 U	0.75 U	0.5 U
1,1,2,2-Tetrachloroethane	0.5	µg/L	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	0.5	µg/L	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	5	µg/L	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	0.5 U	0.2 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	0.5	µg/L	**1.1**	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.5 U	0.5 U	**1.9**	**1.7**	**0.79**	**1.3**	**1.9**	**2**	**1.7**	**1.6**	**1.39**	**1.88**	**1.85**
1,2-Dibromoethane	0.2	µg/L	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichlorobenzene	3	µg/L	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	0.5	µg/L	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	0.58	µg/L	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	0.5 U	0.2 U	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	59	µg/L	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropene	0.5	µg/L	--	--	0.28 U	0.28 U	0.28 U	0.5 U	0.5 U	0.5 U	--	--	--	--	2.8 U	2.8 U	1.4 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dichlorobenzene	0.5	µg/L	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dioxane	50	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	1800	µg/L	25 U	5 U	5 U	5 U	5 U	10 U	20 U	20 U	25 U	25 U	25 U	25 U	50 U	50 U	25 U	10 U	20 U	20 U	20 U
4-Methyl-2-Pentanone	640	µg/L	25 U	5 U	5 U	5 U	5 U	5 U	20 U	20 U	25 U	25 U	25 U	25 U	50 U	50 U	25 U	5 U	20 U	20 U	20 U
Acetone	2700	µg/L	50 U	10 U	10 U	10 U	10 U	10 U	30 U	30 U	50 U	50 U	50 U	50 U	100 U	100 U	50 U	10 U	30 U	30 U	30 U
Bromodichloromethane	16	µg/L	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	2 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	0.5 U	0.5 U	2 U	2 U	2 U
Bromoform	5	µg/L	1 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	5 U	5 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	5 U	5 U	5 U
Bromomethane	0.89	µg/L	2.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	2.5 U	2.5 U	2.5 U	5 U	5 U	2.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride	0.2	µg/L	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U
Chlorobenzene	30	µg/L	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	0.5 U	0.2 U	0.5 U	0.5 U	0.5 U
Chlorodibromomethane	25	µg/L	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	2 U	2 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	0.5 U	2 U	2 U	2 U

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW18-I								OW18-II										
		Sample ID	OW 18-I	OW18-I	OW18-I	OW18-I	OW18-I	OW18-1	OW18-I	OW18-I	OW18-II	OW 18-II	OW 18-II	OW18-II	OW18-II	OW18-II	OW18-II	OW18-11	OW18-II	DUP8	OW18-II
		Start Depth (m)	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	6.32	6.32	6.32	6.32	6.32	6.32	6.32	6.32	6.32	6.32	6.32
		End Depth (m)	4.86	4.86	4.86	4.86	4.86	4.86	4.86	4.86	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N
		Sample Date	20 Sep 2011	12 Dec 2012	25 Oct 2013	24 Oct 2014	20 Nov 2015	24 Oct 2016	29 Aug 2017	02 Mar 2020	23 Mar 2010	17 Jun 2011	20 Sep 2011	12 Dec 2012	25 Oct 2013	24 Oct 2014	20 Nov 2015	25 Oct 2016	29 Aug 2017	02 Mar 2020	02 Mar 2020
Analyte	**Table 6 SCS [a]**	**Unit**																			
Chloroform	2	µg/L	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	0.5 U	0.2 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	1.6	µg/L	**42**	**0.71**	**0.84**	**0.57**	**0.33**	**9.1**	**4.2**	**0.54**	**130**	**110**	**79**	**110**	**120**	**130**	**130**	**110**	**93.2**	**98.6**	**105**
cis-1,3-Dichloropropene	NV	µg/L	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.3 U	0.3 U	0.3 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	0.3 U	0.3 U	0.3 U	0.3 U
Dichlorodifluoromethane	590	µg/L	2.5 U	--	0.5 U	--	0.5 U	1 U	2 U	2 U	2.5 U	2.5 U	2.5 U	--	5 U	--	2.5 U	1 U	2 U	2 U	2 U
Dichloromethane	26	µg/L	2.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	5 U	5 U	2.5 U	2 U	5 U	5 U	5 U
Methyl tert-butyl ether (MTBE)	15	µg/L	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	2 U	2 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	0.5 U	2 U	2 U	2 U
n-Hexane	5	µg/L	2.5 U	--	0.5 U	--	0.5 U	1 U	0.5 U	0.5 U	2.5 U	2.5 U	2.5 U	--	5 U	--	2.5 U	1 U	0.5 U	0.5 U	0.5 U
Styrene	5.4	µg/L	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	0.5	µg/L	0.5 U	0.1 U	**0.11**	**0.14**	0.1 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	0.5 U	0.2 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	1.6	µg/L	**7.3**	0.1 U	0.1 U	0.1 U	0.1 U	**2.1**	**1.06**	0.5 U	**3.1**	**2.7**	**1.7**	**2.7**	**3.1**	**3.1**	**2.4**	**3.3**	**2.57**	**2.61**	**2.42**
trans-1,3-Dichloropropene	NV	µg/L	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.3 U	0.3 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	0.4 U	0.3 U	0.3 U	0.3 U
Trichloroethylene	0.5	µg/L	**110**	**13**	**13**	**12**	**9.7**	**44**	**13**	**7.65**	**2.7**	**3.3**	**1**	**1.4**	**2.3**	**2.1**	**1.1**	**2.1**	**2.7**	**10.3**	**9.68**
Trichlorofluoromethane	150	µg/L	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	5 U	5 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	0.5 U	5 U	5 U	5 U
Vinyl Chloride	0.5	µg/L	**6.6**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	**48**	**33**	**19**	**26**	**45**	**42**	**46**	**34**	**35**	**31.7**	**33.5**

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act.* Ministry of the Environment. April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/L = microgram(s) per litre

ABNs = acid, base and neutral compounds

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mS/cm = milliSiemen(s) per centimetre

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW19												OW22D						
		Sample ID	OW19	OW 19	OW 19	OW19	OW19	OW19	OW19	OW19	OW19	OW19	DUP9	OW19	OW22-D	OW 22 (D)	OW 22(D)	OW22(D)	OW22(D)	OW22(D)	OW22D
		Start Depth (m)	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	6.71	6.71	6.71	6.71	6.71	6.71	6.71
		End Depth (m)	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	7.47	7.47	7.47	7.47	7.47	7.47	7.47
		Sample Type	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N
		Sample Date	23 Mar 2010	16 Jun 2011	20 Sep 2011	12 Dec 2012	25 Oct 2013	22 Oct 2014	20 Nov 2015	25 Oct 2016	07 Sep 2017	21 Mar 2018	02 Mar 2020	02 Mar 2020	24 Mar 2010	17 Jun 2011	20 Sep 2011	12 Dec 2012	25 Oct 2013	20 Oct 2014	19 Nov 2015
Analyte	**Table 6 SCS [a]**	**Unit**																			
ABNs																					
1,1'-Biphenyl	0.5	µg/L	--	0.05 U	--	--	--	0.05 U	--	--	--	--	--	--	--	0.05 U	--	--	--	0.05 U	--
1,2,4-Trichlorobenzene	3	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,2'-oxybis(1-chloropropane)	120	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	59	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	890	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BTEX																					
Benzene	0.5	µg/L	0.1 U	0.2 U	0.25 U	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	**2.2**	**2.3**	**2.2**	**1.3**	**1.7**	**1.5**	**1.1**
Ethylbenzene	2.4	µg/L	0.1 U	0.2 U	0.25 U	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.2 U	0.2 U	0.2 U	0.2 U
Toluene	24	µg/L	0.2 U	0.4 U	0.5 U	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Xylene, o	NV	µg/L	0.1 U	0.2 U	0.25 U	--	--	--	--	--	0.3 U	0.3 U	0.3 U	0.3 U	0.1 U	0.1 U	0.1 U	0.2 U	0.2 U	0.2 U	0.2 U
Xylenes, m & p	NV	µg/L	0.1 U	0.2 U	0.25 U	--	--	--	--	--	0.4 U	0.4 U	0.4 U	0.4 U	0.1 U	0.1 U	0.1 U	0.4 U	0.4 U	0.4 U	0.4 U
Xylenes, Total	72	µg/L	0.1 U	0.2 U	0.25 U	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.4 U	0.4 U	0.4 U	0.4 U
Chlorophenyls																					
2,4,5-Trichlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	20	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																					
Alkalinity, Bicarbonate (as CaCO3)	NV	µg/L	--	--	--	**380000**	**450000**	**390000**	--	--	--	--	--	--	--	--	--	**380000**	**370000**	**370000**	--
Alkalinity, Carbonate (as CaCO3)	NV	µg/L	--	--	--	1000 U	1000 U	**1400**	--	--	--	--	--	--	--	--	--	**1900**	**1400**	**2400**	--
Alkalinity, Hydroxide (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Total (as CaCO3)	NV	µg/L	**310000**	**240000**	**480000**	**380000**	**450000**	**390000**	--	--	--	--	--	--	**490000**	**430000**	**370000**	**380000**	**370000**	**380000**	--
Ammonia	NV	µg/L	--	--	--	**120**	**120**	**110**	--	--	--	--	--	--	--	--	--	**720**	**650**	**700**	--
Carbon, dissolved organic (DOC)	NV	µg/L	--	--	--	**6700**	**5200**	**4900**	--	--	--	--	--	--	--	--	--	**6700**	**6800**	**6700**	--
Cation - Anion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Color	NV	CU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity % Difference	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	NV	mS/cm	**0.8**	**1.1**	**0.89**	**0.82**	**0.94**	**0.96**	--	--	**0.777**	--	--	--	**1.8**	**1.7**	**1.8**	**1.7**	**1.7**	**1.7**	--
Hardness (as CaCO3)	NV	µg/L	--	--	--	**450000**	**500000**	**540000**	--	--	--	--	--	--	--	--	--	**990000**	**920000**	**970000**	--
Ion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate, as NO3	NV	µg/L	100 U	100 U	100 U	100 U	100 U	100 U	--	--	--	--	--	--	100 U	100 U	100 U	100 U	100 U	100 U	--
Nitrate-Nitrite, as N, Total	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite, as NO2	NV	µg/L	10 U	10 U	10 U	10 U	10 U	10 U	--	--	--	--	--	--	10 U	10 U	10 U	10 U	10 U	10 U	--
pH	NV	pH UNITS	**7.24**	**7.46**	**7.2**	**7.34**	**7.31**	**7.58**	--	--	**7.37**	--	--	--	**7.47**	**7.53**	**7.59**	**7.72**	**7.61**	**7.83**	--
pH (Laboratory)	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus, Total Orthophosphate (As P)	NV	µg/L	10 U	10 U	10 U	10 U	10 U	10 U	--	--	--	--	--	--	10 U	10 U	10 U	10 U	10 U	10 U	--
Saturation pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (as SIO2)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	NV	µg/L	**130000**	**380000**	**3800**	**64000**	**72000**	**150000**	--	--	--	--	--	--	**570000**	**540000**	**680000**	**550000**	**510000**	**520000**	--
Sulfur	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total dissolved solids	NV	µg/L	--	--	--	**490000**	**560000**	**610000**	--	--	--	--	--	--	--	--	--	**1200000**	**1200000**	**1200000**	--
Turbidity	NV	NTU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																					
Antimony	6	µg/L	--	--	--	--	--	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--	--
Arsenic	25	µg/L	1 U	1 U	1 U	--	--	--	--	--	**1.38**	--	--	--	**8.4**	**4.9**	**3.3**	--	--	--	--
Barium	1000	µg/L	--	--	--	--	--	--	--	--	**101**	--	--	--	--	--	--	--	--	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW19												OW22D						
		Sample ID	OW19	OW 19	OW 19	OW19	OW19	OW19	OW19	OW19	OW19	OW19	DUP9	OW19	OW22-D	OW 22 (D)	OW 22(D)	OW22(D)	OW22(D)	OW22(D)	OW22D
		Start Depth (m)	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	6.71	6.71	6.71	6.71	6.71	6.71	6.71
		End Depth (m)	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	7.47	7.47	7.47	7.47	7.47	7.47	7.47
		Sample Type	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N
		Sample Date	23 Mar 2010	16 Jun 2011	20 Sep 2011	12 Dec 2012	25 Oct 2013	22 Oct 2014	20 Nov 2015	25 Oct 2016	07 Sep 2017	21 Mar 2018	02 Mar 2020	02 Mar 2020	24 Mar 2010	17 Jun 2011	20 Sep 2011	12 Dec 2012	25 Oct 2013	20 Oct 2014	19 Nov 2015
Analyte	**Table 6 SCS [a]**	**Unit**																			
Beryllium	4	µg/L	--	--	--	--	--	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--	--
Boron	5000	µg/L	--	--	--	--	--	--	--	--	**91**	--	--	--	--	--	--	--	--	--	--
Cadmium	2.1	µg/L	--	--	--	--	--	--	--	--	0.01 U	--	--	--	--	--	--	--	--	--	--
Calcium	NV	µg/L	**170000**	**190000**	**150000**	**150000**	**170000**	**180000**	--	--	--	--	--	--	**370000**	**330000**	**340000**	**330000**	**310000**	**330000**	--
Chromium	50	µg/L	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--	--
Cobalt	3.8	µg/L	--	--	--	--	--	--	--	--	**2.22**	--	--	--	--	--	--	--	--	--	--
Copper	69	µg/L	--	--	--	20 U	20 U	20 U	--	--	0.2 U	--	--	--	--	--	--	20 U	20 U	20 U	--
Lead	10	µg/L	**0.97**	0.5 U	0.5 U	--	--	--	--	--	**0.37**	--	--	--	0.5 U	0.5 U	0.5 U	--	--	--	--
Magnesium	NV	µg/L	**30000**	**27000**	**29000**	**20000**	**21000**	**20000**	--	--	--	--	--	--	**44000**	**38000**	**40000**	**39000**	**34000**	**35000**	--
Molybdenum	70	µg/L	--	--	--	--	--	--	--	--	**0.945**	--	--	--	--	--	--	--	--	--	--
Nickel	100	µg/L	--	--	--	--	--	--	--	--	**10.1**	--	--	--	--	--	--	--	--	--	--
Selenium	10	µg/L	--	--	--	--	--	--	--	--	**0.063**	--	--	--	--	--	--	--	--	--	--
Silver	1.2	µg/L	--	--	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	--
Sodium	490000	µg/L	**8300**	**2100**	**7000**	**3800**	**3600**	**2900**	--	--	**4490**	--	--	--	**21000**	**35000**	**22000**	**23000**	**27000**	**20000**	--
Thallium	2	µg/L	--	--	--	--	--	--	--	--	**0.01**	--	--	--	--	--	--	--	--	--	--
Uranium	20	µg/L	--	--	--	--	--	--	--	--	**1.96**	--	--	--	--	--	--	--	--	--	--
Vanadium	6.2	µg/L	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--	--
Zinc	890	µg/L	**4500**	**2600**	**640**	**1800**	**1900**	**2500**	**3700**	**2700**	**1360**	--	--	--	**41**	**42**	**29**	**20**	**30**	10 U	--
Non-Regulated Metals																					
Aluminum	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	NV	µg/L	1000 U	1000 U	1000 U	--	--	--	--	--	--	--	--	--	1000 U	1000 U	2000 U	--	--	--	--
Cesium (Cs)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoride	NV	µg/L	**580**	**630**	**660**	--	--	--	--	--	--	--	--	--	**2300**	**2100**	**2200**	--	--	--	--
Iron	NV	µg/L	--	--	--	**2100**	**2500**	**1600**	--	--	--	--	--	--	--	--	--	**2500**	**2100**	**1800**	--
Lithium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/L	--	--	--	**600**	**480**	**480**	--	--	--	--	--	--	--	--	--	**150**	**140**	**150**	--
Potassium	NV	µg/L	**2800**	**1900**	**7300**	**2000**	**4000**	**3000**	--	--	--	--	--	--	**7500**	**7400**	**6900**	**7000**	**6000**	**6000**	--
Rubidium (Rb)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silicon	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tellurium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thorium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tungsten	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																					
Chromium, Hexavalent (Cr6+)	25	µg/L	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
Chloride (Cl)	790000	µg/L	**4800**	**4000**	**1900**	**5800**	**2100**	**1900**	--	--	**4370**	--	--	--	**35000**	**60000**	**35000**	**35000**	**42000**	**36000**	--
Cyanide, Free	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	µg/L	--	--	--	--	--	--	--	--	0.01 U	--	--	--	--	--	--	--	--	--	--
PAHs																					
1-Methylnaphthalene	NV	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	**0.11**	0.05 U	**0.28**	0.05 U	**0.25**	--	--	--	**0.071**	0.05 U	0.05 U	0.05 U	**0.055**	0.05 U	0.05 U
2-(1-)Methylnaphthalene	3.2	µg/L	--	--	--	0.071 U	**0.11**	--	**0.33**	0.071 U	**0.277**	--	--	--	--	--	--	0.071 U	0.071 U	--	0.071 U
2-Methylnaphthalene	NV	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**0.053**	0.05 U	**0.027**	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Acenaphthene	4.1	µg/L	0.05 U	0.05 U	**0.071**	**0.24**	**0.61**	**0.33**	**0.21**	**0.059**	**0.247**	--	--	--	**0.13**	**0.11**	**0.1**	**0.13**	**0.21**	**0.16**	**0.17**
Acenaphthylene	1	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.035 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Anthracene	1	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	**0.055**	0.05 U	**0.11**	0.05 U	0.065 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Benzo(a)anthracene	1	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Benzo(a)pyrene	0.01	µg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Benzo(b&j)fluoranthene	0.1	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Benzo(b)fluoranthene	0.1	µg/L	--	--	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	0.2	µg/L	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--	--	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Benzo(k)fluoranthene	0.1	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Chrysene	0.1	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dibenzo(a,h)anthracene	0.2	µg/L	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--	--	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Fluoranthene	0.41	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW19												OW22D						
		Sample ID	OW19	OW 19	OW 19	OW19	OW19	OW19	OW19	OW19	OW19	OW19	DUP9	OW19	OW22-D	OW 22 (D)	OW 22(D)	OW22(D)	OW22(D)	OW22(D)	OW22D
		Start Depth (m)	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	6.71	6.71	6.71	6.71	6.71	6.71	6.71
		End Depth (m)	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	7.47	7.47	7.47	7.47	7.47	7.47	7.47
		Sample Type	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N
		Sample Date	23 Mar 2010	16 Jun 2011	20 Sep 2011	12 Dec 2012	25 Oct 2013	22 Oct 2014	20 Nov 2015	25 Oct 2016	07 Sep 2017	21 Mar 2018	02 Mar 2020	02 Mar 2020	24 Mar 2010	17 Jun 2011	20 Sep 2011	12 Dec 2012	25 Oct 2013	20 Oct 2014	19 Nov 2015
Analyte	**Table 6 SCS [a]**	**Unit**																			
Fluorene	120	µg/L	0.05 U	0.05 U	0.05 U	**0.14**	**0.49**	**0.19**	0.5 U	**0.096**	**0.352**	--	--	--	**0.093**	**0.061**	**0.06**	0.05 U	**0.11**	**0.07**	**0.082**
Indeno(1,2,3-Cd)Pyrene	0.2	µg/L	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--	--	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Naphthalene	7	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.1 U	**0.071**	0.05 U	0.075 U	--	--	--	**0.058**	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Phenanthrene	1	µg/L	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	**0.091**	0.03 U	0.075 U	--	--	--	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Pyrene	4.1	µg/L	0.05 U	0.05 U	**0.057**	0.05 U	**0.065**	**0.065**	**0.052**	0.05 U	**0.051**	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
PCBs																					
Aroclor 1016	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1221	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1232	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1242	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1262	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1268	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PHCs																					
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	420	µg/L	100 U	100 U	**53**	--	--	--	--	--	25 U	--	--	--	100 U	100 U	25 U	25 U	25 U	25 U	25 U
Petroleum Hydrocarbons F1 (C6-C10)	420	µg/L	100 U	100 U	**53**	--	--	--	--	--	25 U	--	--	--	100 U	100 U	25 U	25 U	25 U	25 U	25 U
Petroleum Hydrocarbons F1+F2	NV	µg/L	100 U	--	--	--	--	--	--	--	--	--	--	--	100 U	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16)	150	µg/L	100 U	**130**	**110**	--	--	--	--	--	100 U	--	--	--	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34)	500	µg/L	100 U	**280**	100 U	--	--	--	--	--	250 U	--	--	--	100 U	100 U	100 U	100 U	200 U	200 U	200 U
Petroleum Hydrocarbons F3+F4	NV	µg/L	100 U	--	--	--	--	--	--	--	--	--	--	--	100 U	--	--	--	--	--	--
Petroleum Hydrocarbons F3a (C16-C22)	NV	µg/L	--	--	--	--	--	--	--	--	130 U	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3b (C22-C34)	NV	µg/L	--	--	--	--	--	--	--	--	130 U	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F4 (C34-C50)	500	µg/L	100 U	100 U	100 U	--	--	--	--	--	250 U	--	--	--	100 U	100 U	100 U	100 U	200 U	200 U	200 U
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SVOCs																					
2-Hexanone	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(e)pyrene	NV	µg/L	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--	--
Chloroethane	NV	µg/L	0.2 U	0.4 U	0.5 U	--	--	--	--	--	--	--	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
Chloromethane	NV	µg/L	0.5 U	1 U	1.3 U	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	--	--	--	--
Perylene	NV	µg/L	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--	--
VOCs																					
1,1,1,2-Tetrachloroethane	1.1	µg/L	0.1 U	0.2 U	0.25 U	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	--	--	--	--
1,1,1-Trichloroethane	23	µg/L	0.1 U	0.2 U	0.25 U	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	--	--	--	--
1,1,2,2-Tetrachloroethane	0.5	µg/L	0.2 U	0.4 U	0.5 U	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	--	--	--	--
1,1,2-Trichloroethane	0.5	µg/L	0.2 U	0.4 U	0.5 U	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	--	--	--	--
1,1-Dichloroethane	5	µg/L	0.1 U	0.2 U	0.25 U	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	**0.34**	**0.35**	**0.34**	--	--	--	--
1,1-Dichloroethene	0.5	µg/L	0.1 U	0.2 U	0.25 U	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	--	--	--	--
1,2-Dibromoethane	0.2	µg/L	0.2 U	--	--	--	--	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
1,2-Dichlorobenzene	3	µg/L	0.2 U	0.4 U	0.5 U	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	--	--	--	--
1,2-Dichloroethane	0.5	µg/L	0.2 U	0.4 U	0.5 U	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	--	--	--	--
1,2-Dichloropropane	0.58	µg/L	0.1 U	0.2 U	0.25 U	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	--	--	--	--
1,3-Dichlorobenzene	59	µg/L	0.2 U	0.4 U	0.5 U	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	--	--	--	--
1,3-Dichloropropene	0.5	µg/L	--	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	--
1,4-Dichlorobenzene	0.5	µg/L	0.2 U	0.4 U	0.5 U	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	--	--	--	--
1,4-Dioxane	50	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	1800	µg/L	5 U	10 U	13 U	--	--	--	--	--	20 U	20 U	20 U	20 U	5 U	5 U	5 U	--	--	--	--
4-Methyl-2-Pentanone	640	µg/L	5 U	10 U	13 U	--	--	--	--	--	20 U	20 U	20 U	20 U	5 U	5 U	5 U	--	--	--	--
Acetone	2700	µg/L	10 U	20 U	25 U	--	--	--	--	--	30 U	30 U	30 U	30 U	10 U	10 U	10 U	--	--	--	--
Bromodichloromethane	16	µg/L	0.1 U	0.2 U	0.25 U	--	--	--	--	--	2 U	2 U	2 U	2 U	0.1 U	0.1 U	0.1 U	--	--	--	--
Bromoform	5	µg/L	0.2 U	0.4 U	0.5 U	--	--	--	--	--	5 U	5 U	5 U	5 U	0.2 U	0.2 U	0.2 U	--	--	--	--
Bromomethane	0.89	µg/L	0.5 U	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--
Carbon tetrachloride	0.2	µg/L	0.1 U	0.2 U	--	--	--	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	--	--	--	--
Chlorobenzene	30	µg/L	0.1 U	0.2 U	0.25 U	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	--	--	--	--
Chlorodibromomethane	25	µg/L	0.2 U	0.4 U	0.5 U	--	--	--	--	--	2 U	2 U	2 U	2 U	0.2 U	0.2 U	0.2 U	--	--	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW19												OW22D						
		Sample ID	OW19	OW 19	OW 19	OW19	OW19	OW19	OW19	OW19	OW19	OW19	DUP9	OW19	OW22-D	OW 22 (D)	OW 22(D)	OW22(D)	OW22(D)	OW22(D)	OW22D
		Start Depth (m)	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	6.71	6.71	6.71	6.71	6.71	6.71	6.71
		End Depth (m)	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	7.47	7.47	7.47	7.47	7.47	7.47	7.47
		Sample Type	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N
		Sample Date	23 Mar 2010	16 Jun 2011	20 Sep 2011	12 Dec 2012	25 Oct 2013	22 Oct 2014	20 Nov 2015	25 Oct 2016	07 Sep 2017	21 Mar 2018	02 Mar 2020	02 Mar 2020	24 Mar 2010	17 Jun 2011	20 Sep 2011	12 Dec 2012	25 Oct 2013	20 Oct 2014	19 Nov 2015
Analyte	**Table 6 SCS [a]**	**Unit**																			
Chloroform	2	µg/L	0.1 U	0.2 U	0.25 U	--	--	--	--	--	1 U	1 U	1 U	1 U	0.1 U	0.1 U	0.1 U	--	--	--	--
cis-1,2-Dichloroethene	1.6	µg/L	0.1 U	0.2 U	**8.3**	--	--	--	--	--	**4.06**	0.5 U	0.5 U	0.5 U	**0.29**	**0.33**	**0.42**	--	--	--	--
cis-1,3-Dichloropropene	NV	µg/L	0.2 U	0.4 U	0.5 U	--	--	--	--	--	0.3 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.2 U	--	--	--	--
Dichlorodifluoromethane	590	µg/L	0.5 U	1 U	1.3 U	--	--	--	--	--	2 U	2 U	2 U	2 U	0.5 U	0.5 U	0.5 U	--	--	--	--
Dichloromethane	26	µg/L	0.5 U	1 U	1.3 U	--	--	--	--	--	5 U	5 U	5 U	5 U	0.5 U	0.5 U	0.5 U	--	--	--	--
Methyl tert-butyl ether (MTBE)	15	µg/L	0.2 U	0.4 U	0.5 U	--	--	--	--	--	2 U	2 U	2 U	2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
n-Hexane	5	µg/L	0.5 U	1 U	1.3 U	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--
Styrene	5.4	µg/L	0.2 U	0.4 U	0.5 U	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	--	--	--	--
Tetrachloroethene	0.5	µg/L	**0.37**	**0.21**	**0.51**	--	--	--	--	--	**0.91**	**1.14**	**0.79**	**0.83**	0.1 U	0.1 U	0.1 U	--	--	--	--
trans-1,2-Dichloroethene	1.6	µg/L	0.1 U	0.2 U	0.25 U	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	--	--	--	--
trans-1,3-Dichloropropene	NV	µg/L	0.2 U	0.4 U	0.5 U	--	--	--	--	--	0.3 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.2 U	--	--	--	--
Trichloroethylene	0.5	µg/L	**0.36**	0.2 U	**1.3**	--	--	--	--	--	**0.97**	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	--	--	--	--
Trichlorofluoromethane	150	µg/L	0.2 U	0.4 U	0.5 U	--	--	--	--	--	5 U	5 U	5 U	5 U	0.2 U	0.2 U	0.2 U	--	--	--	--
Vinyl Chloride	0.5	µg/L	0.2 U	0.4 U	**2.9**	--	--	--	--	--	**1.05**	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	--	--	--	--

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act.* Ministry of the Environment. April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/L = microgram(s) per litre

ABNs = acid, base and neutral compounds

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mS/cm = milliSiemen(s) per centimetre

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW22S																		
		Sample ID	OW22D	DUP 4	OW22D	OW22D	OW22 (S)	OW 22 (S)	OW 22(S)	OW22(S)	OW22(S)	OW22(S)	OW22S	OW22S	OW22S	OW22S	OW22S	OW22S	OW23(D)	OW23D	OW 23(D)
		Start Depth (m)	6.71	6.71	6.71	6.71	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	6.55	6.55	6.55
		End Depth (m)	7.47	7.47	7.47	7.47	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	7.77	7.77	7.77
		Sample Type	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	25 Oct 2016	06 Sep 2017	06 Sep 2017	26 Feb 2020	24 Mar 2010	17 Jun 2011	20 Sep 2011	12 Dec 2012	25 Oct 2013	20 Oct 2014	19 Nov 2015	25 Oct 2016	06 Sep 2017	21 Mar 2018	13 Apr 2018	26 Feb 2020	23 Mar 2010	07 Oct 2010	17 Jun 2011
Analyte	**Table 6 SCS [a]**	**Unit**																			
ABNs																					
1,1'-Biphenyl	0.5	µg/L	--	--	--	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	0.05 U
1,2,4-Trichlorobenzene	3	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,2'-oxybis(1-chloropropane)	120	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	59	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	890	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BTEX																					
Benzene	0.5	µg/L	**1.4**	**1.35**	**1.39**	**0.86**	0.1 U	0.1 U	**0.27**	0.2 U	0.2 U	0.2 U	0.2 U	**1.1**	0.5 U	0.5 U	--	0.5 U	**1.7**	**2.1**	**1.4**
Ethylbenzene	2.4	µg/L	0.2 U	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.2 U	0.2 U	0.2 U	0.2 U	**7.1**	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.1 U
Toluene	24	µg/L	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.52**	0.5 U	0.5 U	--	0.5 U	1 U	1 U	0.2 U
Xylene, o	NV	µg/L	0.2 U	0.3 U	0.3 U	0.3 U	0.1 U	0.1 U	**0.11**	0.2 U	0.2 U	0.2 U	0.2 U	**3.1**	0.3 U	0.3 U	--	0.3 U	0.5 U	0.5 U	0.1 U
Xylenes, m & p	NV	µg/L	0.4 U	0.4 U	0.4 U	0.4 U	0.1 U	0.1 U	0.1 U	0.4 U	0.4 U	0.4 U	0.4 U	**6.2**	0.4 U	0.4 U	--	0.4 U	0.5 U	0.5 U	0.1 U
Xylenes, Total	72	µg/L	0.4 U	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	**0.11**	0.4 U	0.4 U	0.4 U	0.4 U	**9.3**	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.1 U
Chlorophenyls																					
2,4,5-Trichlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	20	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																					
Alkalinity, Bicarbonate (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	**220000**	**230000**	**280000**	--	--	--	--	--	--	--	--	--
Alkalinity, Carbonate (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	1000 U	1000 U	**1800**	--	--	--	--	--	--	--	--	--
Alkalinity, Hydroxide (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Total (as CaCO3)	NV	µg/L	--	--	--	--	**150000**	**200000**	**350000**	**220000**	**230000**	**290000**	--	--	--	--	--	--	**360000**	**330000**	**340000**
Ammonia	NV	µg/L	--	--	--	--	--	--	--	50 U	50 U	**66**	--	--	--	--	--	--	--	--	--
Carbon, dissolved organic (DOC)	NV	µg/L	--	--	--	--	--	--	--	**4500**	**4900**	**4300**	--	--	--	--	--	--	--	--	--
Cation - Anion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Color	NV	CU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity % Difference	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	NV	mS/cm	--	**1.64**	**1.64**	--	**1.7**	**1.5**	**2**	**1.3**	**1.2**	**1**	--	--	**1.28**	--	--	--	**0.82**	**0.93**	**0.91**
Hardness (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	**790000**	**720000**	**580000**	--	--	--	--	--	--	--	--	--
Ion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate, as NO3	NV	µg/L	--	--	--	--	**490**	**250**	100 U	100 U	100 U	100 U	--	--	--	--	--	--	100 U	100 U	100 U
Nitrate-Nitrite, as N, Total	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite, as NO2	NV	µg/L	--	--	--	--	10 U	10 U	10 U	10 U	10 U	10 U	--	--	--	--	--	--	10 U	10 U	10 U
pH	NV	pH UNITS	--	**7.52**	**7.58**	--	**7.49**	**7.5**	**7.46**	**7.36**	**7.63**	**7.82**	--	--	**7.59**	--	--	--	**7.24**	**7.38**	**7.24**
pH (Laboratory)	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus, Total Orthophosphate (As P)	NV	µg/L	--	--	--	--	10 U	10 U	10 U	10 U	10 U	10 U	--	--	--	--	--	--	10 U	10 U	10 U
Saturation pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (as SIO2)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	NV	µg/L	--	--	--	--	**900000**	**740000**	**910000**	**510000**	**420000**	**280000**	--	--	--	--	--	--	**63000**	**120000**	**100000**
Sulfur	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total dissolved solids	NV	µg/L	--	--	--	--	--	--	--	**960000**	**850000**	**690000**	--	--	--	--	--	--	--	--	--
Turbidity	NV	NTU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																					
Antimony	6	µg/L	--	**0.28**	**0.28**	--	--	--	--	--	--	--	--	--	**0.59**	1 U	1 U	--	--	--	--
Arsenic	25	µg/L	--	**22.2**	**21.7**	--	1 U	1 U	1 U	--	--	--	--	--	**0.2**	1 U	1 U	--	**13**	**17**	**14**
Barium	1000	µg/L	--	**107**	**107**	--	--	--	--	--	--	--	--	--	**38.7**	**18.9**	**16.7**	--	--	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location					OW22S														
		Sample ID	OW22D	DUP 4	OW22D	OW22D	OW22 (S)	OW 22 (S)	OW 22(S)	OW22(S)	OW22(S)	OW22(S)	OW22S	OW22S	OW22S	OW22S	OW22S	OW22S	OW23(D)	OW23D	OW 23(D)
		Start Depth (m)	6.71	6.71	6.71	6.71	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	6.55	6.55	6.55
		End Depth (m)	7.47	7.47	7.47	7.47	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	7.77	7.77	7.77
		Sample Type	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	25 Oct 2016	06 Sep 2017	06 Sep 2017	26 Feb 2020	24 Mar 2010	17 Jun 2011	20 Sep 2011	12 Dec 2012	25 Oct 2013	20 Oct 2014	19 Nov 2015	25 Oct 2016	06 Sep 2017	21 Mar 2018	13 Apr 2018	26 Feb 2020	23 Mar 2010	07 Oct 2010	17 Jun 2011
Analyte	**Table 6 SCS [a]**	**Unit**																			
Beryllium	4	µg/L	--	0.1 U	0.1 U	--	--	--	--	--	--	--	--	--	0.1 U	1 U	1 U	--	--	--	--
Boron	5000	µg/L	--	**88**	**89**	--	--	--	--	--	--	--	--	--	**63**	100 U	100 U	--	--	--	--
Cadmium	2.1	µg/L	--	0.01 U	0.01 U	--	--	--	--	--	--	--	--	--	0.01 U	**0.24**	**0.193**	--	--	--	--
Calcium	NV	µg/L	--	--	--	--	**370000**	**350000**	**440000**	**280000**	**260000**	**200000**	--	--	--	--	--	--	**120000**	**130000**	**140000**
Chromium	50	µg/L	--	0.5 U	0.5 U	--	--	--	--	--	--	--	--	--	0.5 U	5 U	5 U	--	--	--	--
Cobalt	3.8	µg/L	--	**0.2**	**0.21**	--	--	--	--	--	--	--	--	--	**0.25**	1 U	1 U	--	--	--	--
Copper	69	µg/L	--	0.2 U	0.2 U	--	--	--	--	20 U	20 U	20 U	--	--	0.2 U	**6.7**	2 U	--	--	--	--
Lead	10	µg/L	--	0.05 U	0.05 U	--	**0.96**	**1.3**	0.5 U	--	--	--	--	--	**0.166**	**1.9**	**2.08**	--	**1.1**	**1.1**	**0.57**
Magnesium	NV	µg/L	--	--	--	--	**28000**	**20000**	**27000**	**24000**	**20000**	**20000**	--	--	--	--	--	--	**26000**	**28000**	**28000**
Molybdenum	70	µg/L	--	**3.25**	**3.25**	--	--	--	--	--	--	--	--	--	**3.46**	**12.5**	**11.9**	--	--	--	--
Nickel	100	µg/L	--	**3.32**	**3.45**	--	--	--	--	--	--	--	--	--	**16.2**	**12**	**10.3**	--	--	--	--
Selenium	10	µg/L	--	**0.057**	**0.053**	--	--	--	--	--	--	--	--	--	**0.393**	0.5 U	0.5 U	--	--	--	--
Silver	1.2	µg/L	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--	0.05 U	0.5 U	0.5 U	--	--	--	--
Sodium	490000	µg/L	--	**29200**	**29700**	--	**1500**	**1500**	**2200**	**1000**	**2100**	**1800**	--	--	**2480**	5000 U	**1300**	--	**21000**	**24000**	**23000**
Thallium	2	µg/L	--	**0.033**	**0.032**	--	--	--	--	--	--	--	--	--	0.01 U	0.1 U	0.1 U	--	--	--	--
Uranium	20	µg/L	--	**3.47**	**3.46**	--	--	--	--	--	--	--	--	--	**25.9**	**7.24**	**6.05**	--	--	--	--
Vanadium	6.2	µg/L	--	0.5 U	0.5 U	--	--	--	--	--	--	--	--	--	**0.57**	5 U	5 U	--	--	--	--
Zinc	890	µg/L	--	**846**	**860**	--	**2600**	**2900**	**14**	**3200**	**280**	**1000**	**1800**	**770**	**17.3**	**1740**	**1390**	--	**760**	**670**	**740**
Non-Regulated Metals																					
Aluminum	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	NV	µg/L	--	--	--	--	1000 U	1000 U	2000 U	--	--	--	--	--	--	--	--	--	1000 U	1000 U	1000 U
Cesium (Cs)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoride	NV	µg/L	--	--	--	--	**1600**	**1400**	**1800**	--	--	--	--	--	--	--	--	--	**870**	**630**	**630**
Iron	NV	µg/L	--	--	--	--	--	--	--	**30**	**60**	**540**	--	--	--	--	--	--	--	--	--
Lithium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/L	--	--	--	--	--	--	--	**20**	**70**	**40**	--	--	--	--	--	--	--	--	--
Potassium	NV	µg/L	--	--	--	--	**4100**	**4200**	**4800**	**3000**	**4000**	**4000**	--	--	--	--	--	--	**4400**	**4600**	**4700**
Rubidium (Rb)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silicon	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tellurium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thorium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tungsten	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																					
Chromium, Hexavalent (Cr6+)	25	µg/L	--	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--
Chloride (Cl)	790000	µg/L	--	**50000**	**48300**	--	**1900**	1000 U	2000 U	**2100**	**1900**	**1500**	--	--	2500 U	--	--	--	**16000**	**39000**	**37000**
Cyanide, Free	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	µg/L	--	0.01 U	0.01 U	--	--	--	--	--	--	--	--	--	0.01 U	--	--	--	--	--	--
PAHs																					
1-Methylnaphthalene	NV	µg/L	0.05 U	0.02 U	0.02 U	--	--	--	--	0.5 U	0.1 U	0.05 U	**0.18**	**180**	**2.55**	--	--	--	0.05 U	0.05 U	0.05 U
2-(1-)Methylnaphthalene	3.2	µg/L	0.071 U	0.028 U	0.028 U	--	--	--	--	0.71 U	0.11 U	--	0.5 U	**280**	**2.55**	--	--	--	--	--	--
2-Methylnaphthalene	NV	µg/L	0.05 U	0.02 U	0.02 U	--	--	--	--	0.5 U	0.05 U	0.05 U	0.5 U	**100**	0.11 U	--	--	--	0.05 U	0.05 U	0.05 U
Acenaphthene	4.1	µg/L	**0.13**	**0.066**	**0.065**	--	--	--	--	0.5 U	**0.15**	**0.33**	**2.4**	**40**	**1.01**	--	--	--	0.05 U	0.05 U	0.05 U
Acenaphthylene	1	µg/L	0.05 U	0.02 U	0.02 U	--	--	--	--	0.5 U	0.05 U	**0.05**	**0.074**	2.5 U	0.29 U	--	--	--	0.05 U	0.05 U	0.05 U
Anthracene	1	µg/L	0.05 U	0.02 U	0.02 U	--	--	--	--	0.5 U	0.5 U	**0.28**	**1.5**	**31**	0.2 U	--	--	--	0.05 U	0.05 U	0.05 U
Benzo(a)anthracene	1	µg/L	0.05 U	0.02 U	0.02 U	--	--	--	--	0.5 U	**0.085**	**0.15**	**0.4**	**5.2**	0.58 U	--	--	--	0.05 U	0.05 U	0.05 U
Benzo(a)pyrene	0.01	µg/L	0.01 U	0.01 U	0.01 U	--	--	--	--	0.1 U	**0.03**	**0.065**	**0.096**	**1.4**	**0.106**	--	--	--	0.01 U	0.01 U	0.01 U
Benzo(b&j)fluoranthene	0.1	µg/L	0.05 U	--	--	--	--	--	--	0.5 U	0.05 U	**0.15**	**0.13**	**2.7**	--	--	--	--	0.05 U	0.05 U	0.05 U
Benzo(b)fluoranthene	0.1	µg/L	--	0.02 U	0.02 U	--	--	--	--	--	--	--	--	--	**0.248**	--	--	--	--	--	--
Benzo(g,h,i)perylene	0.2	µg/L	0.05 U	0.02 U	0.02 U	--	--	--	--	0.5 U	0.05 U	0.05 U	0.05 U	2.5 U	**0.054**	--	--	--	0.1 U	0.1 U	0.1 U
Benzo(k)fluoranthene	0.1	µg/L	0.05 U	0.02 U	0.02 U	--	--	--	--	0.5 U	0.05 U	0.05 U	0.05 U	2.5 U	**0.06**	--	--	--	0.05 U	0.05 U	0.05 U
Chrysene	0.1	µg/L	0.05 U	0.02 U	0.02 U	--	--	--	--	2 U	0.2 U	**0.32**	**0.5**	**9.8**	1.4 U	--	--	--	0.05 U	0.05 U	0.05 U
Dibenzo(a,h)anthracene	0.2	µg/L	0.05 U	0.02 U	0.02 U	--	--	--	--	0.5 U	0.05 U	0.05 U	0.05 U	2.5 U	0.05 U	--	--	--	0.1 U	0.1 U	0.1 U
Fluoranthene	0.41	µg/L	0.05 U	0.02 U	0.02 U	--	--	--	--	0.5 U	**0.29**	**0.37**	**0.57**	**16**	**0.625**	--	--	--	0.05 U	0.05 U	0.05 U

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location					OW22S														
		Sample ID	OW22D	DUP 4	OW22D	OW22D	OW22 (S)	OW 22 (S)	OW 22(S)	OW22(S)	OW22(S)	OW22(S)	OW22S	OW22S	OW22S	OW22S	OW22S	OW22S	OW23(D)	OW23D	OW 23(D)
		Start Depth (m)	6.71	6.71	6.71	6.71	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	6.55	6.55	6.55
		End Depth (m)	7.47	7.47	7.47	7.47	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	7.77	7.77	7.77
		Sample Type	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	25 Oct 2016	06 Sep 2017	06 Sep 2017	26 Feb 2020	24 Mar 2010	17 Jun 2011	20 Sep 2011	12 Dec 2012	25 Oct 2013	20 Oct 2014	19 Nov 2015	25 Oct 2016	06 Sep 2017	21 Mar 2018	13 Apr 2018	26 Feb 2020	23 Mar 2010	07 Oct 2010	17 Jun 2011
Analyte	**Table 6 SCS [a]**	**Unit**																			
Fluorene	120	µg/L	**0.068**	**0.033**	**0.031**	--	--	--	--	0.5 U	0.5 U	0.1 U	5 U	**83**	**2.31**	--	--	--	0.05 U	0.05 U	0.05 U
Indeno(1,2,3-Cd)Pyrene	0.2	µg/L	0.05 U	0.02 U	0.02 U	--	--	--	--	0.5 U	0.05 U	0.05 U	0.05 U	2.5 U	**0.05**	--	--	--	0.1 U	0.1 U	0.1 U
Naphthalene	7	µg/L	0.05 U	0.05 U	0.05 U	--	--	--	--	0.5 U	0.05 U	0.1 U	0.05 U	**27**	0.25 U	--	--	--	0.05 U	0.05 U	0.05 U
Phenanthrene	1	µg/L	0.03 U	0.02 U	0.02 U	--	--	--	--	0.3 U	0.1 U	**0.14**	**0.5**	**84**	1.4 U	--	--	--	0.03 U	0.03 U	0.03 U
Pyrene	4.1	µg/L	0.05 U	0.02 U	0.02 U	--	--	--	--	**0.82**	**0.59**	**0.9**	**1.3**	**30**	**1.63**	--	--	--	0.05 U	0.05 U	0.05 U
PCBs																					
Aroclor 1016	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1221	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1232	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1242	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1262	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1268	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PHCs																					
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	420	µg/L	25 U	25 U	25 U	--	--	--	--	25 U	25 U	25 U	25 U	**530**	**94**	--	--	--	100 U	100 U	100 U
Petroleum Hydrocarbons F1 (C6-C10)	420	µg/L	25 U	25 U	25 U	--	--	--	--	25 U	25 U	25 U	25 U	**550**	**94**	--	--	--	100 U	100 U	100 U
Petroleum Hydrocarbons F1+F2	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	100 U	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16)	150	µg/L	100 U	100 U	100 U	--	--	--	--	**830**	**630**	**1400**	**5600**	**210000**	**6170**	--	--	--	100 U	100 U	100 U
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34)	500	µg/L	200 U	250 U	250 U	--	--	--	--	**7800**	**6000**	**13000**	**39000**	**850000**	**57500**	--	--	--	100 U	100 U	100 U
Petroleum Hydrocarbons F3+F4	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	100 U	--	--
Petroleum Hydrocarbons F3a (C16-C22)	NV	µg/L	--	130 U	130 U	--	--	--	--	--	--	--	--	--	**18500**	--	--	--	--	--	--
Petroleum Hydrocarbons F3b (C22-C34)	NV	µg/L	--	130 U	130 U	--	--	--	--	--	--	--	--	--	**38900**	--	--	--	--	--	--
Petroleum Hydrocarbons F4 (C34-C50)	500	µg/L	200 U	250 U	250 U	--	--	--	--	**360**	**300**	**810**	**2200**	**37000**	**4060**	--	--	--	100 U	100 U	100 U
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SVOCs																					
2-Hexanone	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(e)pyrene	NV	µg/L	--	--	--	--	--	--	--	--	**0.065**	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/L	--	--	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--	--	--	--	1 U	1 U	0.2 U
Chloromethane	NV	µg/L	--	--	--	--	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	--	--	--	2.5 U	2.5 U	0.5 U
Perylene	NV	µg/L	--	--	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	--
VOCs																					
1,1,1,2-Tetrachloroethane	1.1	µg/L	--	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	--	--	--	--	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.1 U
1,1,1-Trichloroethane	23	µg/L	--	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	--	--	--	--	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.1 U
1,1,2,2-Tetrachloroethane	0.5	µg/L	--	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	1.7 U	20 U	--	0.5 U	1 U	1 U	0.2 U
1,1,2-Trichloroethane	0.5	µg/L	--	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	0.5 U	3 U	--	0.5 U	1 U	1 U	0.2 U
1,1-Dichloroethane	5	µg/L	--	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	--	--	--	--	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.1 U
1,1-Dichloroethene	0.5	µg/L	--	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	--	--	--	--	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.1 U
1,2-Dibromoethane	0.2	µg/L	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	0.2 U	3 U	--	0.2 U	1 U	1 U	0.2 U
1,2-Dichlorobenzene	3	µg/L	--	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	0.5 U	0.5 U	--	0.5 U	1 U	1 U	0.2 U
1,2-Dichloroethane	0.5	µg/L	--	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	0.5 U	0.5 U	--	0.5 U	1 U	1 U	0.2 U
1,2-Dichloropropane	0.58	µg/L	--	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	--	--	--	--	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.1 U
1,3-Dichlorobenzene	59	µg/L	--	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	0.5 U	0.5 U	--	0.5 U	1 U	1 U	0.2 U
1,3-Dichloropropene	0.5	µg/L	--	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	--	--	0.5 U	0.5 U	--	0.5 U	--	--	--
1,4-Dichlorobenzene	0.5	µg/L	--	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	0.5 U	0.5 U	--	0.5 U	1 U	1 U	0.2 U
1,4-Dioxane	50	µg/L	--	20 U	20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	1800	µg/L	--	20 U	20 U	20 U	5 U	5 U	5 U	--	--	--	--	--	20 U	20 U	--	20 U	25 U	25 U	5 U
4-Methyl-2-Pentanone	640	µg/L	--	20 U	20 U	20 U	5 U	5 U	5 U	--	--	--	--	--	20 U	20 U	--	20 U	25 U	25 U	5 U
Acetone	2700	µg/L	--	30 U	30 U	30 U	10 U	10 U	10 U	--	--	--	--	--	30 U	30 U	--	30 U	50 U	50 U	10 U
Bromodichloromethane	16	µg/L	--	2 U	2 U	2 U	0.1 U	0.1 U	0.1 U	--	--	--	--	--	2 U	2 U	--	2 U	0.5 U	0.5 U	0.1 U
Bromoform	5	µg/L	--	5 U	5 U	5 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	5 U	5 U	--	5 U	1 U	1 U	0.2 U
Bromomethane	0.89	µg/L	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	0.5 U	0.5 U	--	0.5 U	2.5 U	2.5 U	0.5 U
Carbon tetrachloride	0.2	µg/L	--	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	--	--	--	--	--	0.2 U	0.2 U	--	0.2 U	0.5 U	0.5 U	0.1 U
Chlorobenzene	30	µg/L	--	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	--	--	--	--	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.1 U
Chlorodibromomethane	25	µg/L	--	2 U	2 U	2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	2 U	2 U	--	2 U	1 U	1 U	0.2 U

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW22S																		
		Sample ID	OW22D	DUP 4	OW22D	OW22D	OW22 (S)	OW 22 (S)	OW 22(S)	OW22(S)	OW22(S)	OW22(S)	OW22S	OW22S	OW22S	OW22S	OW22S	OW22S	OW23(D)	OW23D	OW 23(D)
		Start Depth (m)	6.71	6.71	6.71	6.71	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	6.55	6.55	6.55
		End Depth (m)	7.47	7.47	7.47	7.47	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	7.77	7.77	7.77
		Sample Type	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	25 Oct 2016	06 Sep 2017	06 Sep 2017	26 Feb 2020	24 Mar 2010	17 Jun 2011	20 Sep 2011	12 Dec 2012	25 Oct 2013	20 Oct 2014	19 Nov 2015	25 Oct 2016	06 Sep 2017	21 Mar 2018	13 Apr 2018	26 Feb 2020	23 Mar 2010	07 Oct 2010	17 Jun 2011
Analyte	**Table 6 SCS [a]**	**Unit**																			
Chloroform	2	µg/L	--	1 U	1 U	1 U	0.1 U	0.1 U	0.1 U	--	--	--	--	--	1 U	1 U	--	1 U	0.5 U	0.5 U	0.1 U
cis-1,2-Dichloroethene	1.6	µg/L	--	**0.59**	**0.61**	0.5 U	0.1 U	0.1 U	0.1 U	--	--	--	--	--	0.5 U	0.5 U	--	0.5 U	**23**	**29**	**23**
cis-1,3-Dichloropropene	NV	µg/L	--	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	0.3 U	0.3 U	--	0.3 U	1 U	1 U	0.2 U
Dichlorodifluoromethane	590	µg/L	--	2 U	2 U	2 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	2 U	2 U	--	2 U	2.5 U	--	0.5 U
Dichloromethane	26	µg/L	--	5 U	5 U	5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	5 U	5 U	--	5 U	2.5 U	2.5 U	0.5 U
Methyl tert-butyl ether (MTBE)	15	µg/L	--	2 U	2 U	2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	2 U	2 U	--	2 U	1 U	1 U	0.2 U
n-Hexane	5	µg/L	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	0.5 U	0.5 U	--	0.5 U	2.5 U	--	0.5 U
Styrene	5.4	µg/L	--	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	0.5 U	0.5 U	--	0.5 U	1 U	1 U	0.2 U
Tetrachloroethene	0.5	µg/L	--	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	--	--	--	--	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.1 U
trans-1,2-Dichloroethene	1.6	µg/L	--	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	--	--	--	--	--	0.5 U	0.5 U	--	0.5 U	**0.65**	**0.51**	**0.47**
trans-1,3-Dichloropropene	NV	µg/L	--	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	0.3 U	0.3 U	--	0.3 U	1 U	1 U	0.2 U
Trichloroethylene	0.5	µg/L	--	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	--	--	--	--	--	0.5 U	0.5 U	--	0.5 U	**2**	**1.9**	**1.6**
Trichlorofluoromethane	150	µg/L	--	5 U	5 U	5 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	5 U	5 U	--	5 U	1 U	1 U	0.2 U
Vinyl Chloride	0.5	µg/L	--	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	0.5 U	0.5 U	--	0.5 U	**4.3**	**10**	**3.4**

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act.* Ministry of the Environment. April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/L = microgram(s) per litre

ABNs = acid, base and neutral compounds

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mS/cm = milliSiemen(s) per centimetre

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW23D										OW23S								
		Sample ID	OW 23(D)	OW23(D)	OW23(D)	OW23(D)	OW23D	OW23D	OW23D	OW23D	DUP 7	OW23D	OW23(S)	OW23S	OW 23(S)	OW 23(S)	OW23(S)	OW23(S)	OW23(S)	OW23S	OW23S
		Start Depth (m)	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52
		End Depth (m)	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26
		Sample Type	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N
		Sample Date	20 Sep 2011	12 Dec 2012	25 Oct 2013	20 Oct 2014	20 Nov 2015	25 Oct 2016	07 Sep 2017	27 Mar 2019	03 Mar 2020	03 Mar 2020	23 Mar 2010	07 Oct 2010	17 Jun 2011	20 Sep 2011	12 Dec 2012	25 Oct 2013	20 Oct 2014	20 Nov 2015	25 Oct 2016
Analyte	**Table 6 SCS [a]**	**Unit**																			
ABNs																					
1,1'-Biphenyl	0.5	µg/L	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	--	--	--	2.5 U	--	--
1,2,4-Trichlorobenzene	3	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,2'-oxybis(1-chloropropane)	120	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	59	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	890	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BTEX																					
Benzene	0.5	µg/L	**1.4**	**2**	**1.5**	**1.7**	**1.4**	**1.2**	**1.1**	--	**0.78**	**0.82**	0.25 U	2.5 U	0.1 U	0.25 U	2.5 U	5 U	1 U	5 U	0.2 U
Ethylbenzene	2.4	µg/L	0.1 U	0.5 U	0.1 U	0.5 U	0.1 U	0.2 U	0.5 U	--	0.5 U	0.5 U	0.25 U	2.5 U	0.1 U	0.25 U	2.5 U	5 U	1 U	5 U	0.2 U
Toluene	24	µg/L	0.2 U	1 U	0.2 U	1 U	0.2 U	0.2 U	0.5 U	--	0.5 U	0.5 U	0.5 U	5 U	0.2 U	0.5 U	5 U	10 U	2 U	10 U	0.2 U
Xylene, o	NV	µg/L	0.1 U	0.5 U	0.1 U	0.5 U	0.1 U	0.2 U	0.3 U	--	0.3 U	0.3 U	0.25 U	2.5 U	**0.2**	**0.42**	2.5 U	5 U	1 U	5 U	**0.38**
Xylenes, m & p	NV	µg/L	0.1 U	0.5 U	0.1 U	0.5 U	0.1 U	0.2 U	0.4 U	--	0.4 U	0.4 U	0.25 U	2.5 U	0.1 U	0.25 U	2.5 U	5 U	1 U	5 U	**0.23**
Xylenes, Total	72	µg/L	0.1 U	0.5 U	0.1 U	0.5 U	0.1 U	0.2 U	0.5 U	--	0.5 U	0.5 U	0.25 U	2.5 U	**0.2**	**0.42**	2.5 U	5 U	1 U	5 U	**0.62**
Chlorophenyls																					
2,4,5-Trichlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	20	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																					
Alkalinity, Bicarbonate (as CaCO3)	NV	µg/L	--	**340000**	--	**330000**	--	--	--	--	--	--	--	--	--	--	**490000**	**490000**	**520000**	--	--
Alkalinity, Carbonate (as CaCO3)	NV	µg/L	--	**1600**	--	**2000**	--	--	--	--	--	--	--	--	--	--	1000 U	1000 U	**1600**	--	--
Alkalinity, Hydroxide (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Total (as CaCO3)	NV	µg/L	**290000**	**340000**	--	**330000**	--	--	--	--	--	--	**470000**	**520000**	**420000**	**490000**	**490000**	**500000**	**520000**	--	--
Ammonia	NV	µg/L	--	**360**	--	**380**	--	--	--	--	--	--	--	--	--	--	**380**	**340**	**390**	--	--
Carbon, dissolved organic (DOC)	NV	µg/L	--	**6800**	--	**5500**	--	--	--	--	--	--	--	--	--	--	**68000**	**58000**	**60000**	--	--
Cation - Anion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Color	NV	CU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity % Difference	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	NV	mS/cm	**0.92**	**0.97**	--	**0.92**	--	--	**0.902**	--	--	--	**1**	**0.96**	**0.84**	**0.91**	**0.95**	**0.96**	**0.95**	--	--
Hardness (as CaCO3)	NV	µg/L	--	**460000**	--	**430000**	--	--	--	--	--	--	--	--	--	--	**510000**	**480000**	**500000**	--	--
Ion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate, as NO3	NV	µg/L	100 U	100 U	--	100 U	--	--	--	--	--	--	1000 U	100 U	100 U	100 U	100 U	100 U	100 U	--	--
Nitrate-Nitrite, as N, Total	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite, as NO2	NV	µg/L	10 U	10 U	--	10 U	--	--	--	--	--	--	100 U	10 U	10 U	10 U	10 U	10 U	10 U	--	--
pH	NV	pH UNITS	**7.59**	**7.71**	--	**7.8**	--	--	**7.56**	--	--	--	**7.16**	**7.36**	**7.11**	**7.2**	**7.33**	**7.19**	**7.51**	--	--
pH (Laboratory)	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus, Total Orthophosphate (As P)	NV	µg/L	10 U	10 U	--	10 U	--	--	--	--	--	--	50 U	10 U	**91**	10 U	10 U	100 U	10 U	--	--
Saturation pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (as SIO2)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	NV	µg/L	**100000**	**100000**	--	**95000**	--	--	--	--	--	--	**95000**	**8700**	**37000**	**4500**	**30000**	**31000**	**12000**	--	--
Sulfur	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total dissolved solids	NV	µg/L	--	**580000**	--	**540000**	--	--	--	--	--	--	--	--	--	--	**570000**	**560000**	**560000**	--	--
Turbidity	NV	NTU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																					
Antimony	6	µg/L	--	--	--	--	--	--	**0.14**	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	25	µg/L	**13**	--	--	--	--	--	**14**	--	--	--	**1.2**	**1.2**	**1.4**	**1.8**	--	--	--	--	--
Barium	1000	µg/L	--	--	--	--	--	--	**102**	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW23D										OW23S								
		Sample ID	OW 23(D)	OW23(D)	OW23(D)	OW23(D)	OW23D	OW23D	OW23D	OW23D	DUP 7	OW23D	OW23(S)	OW23S	OW 23(S)	OW 23(S)	OW23(S)	OW23(S)	OW23(S)	OW23S	OW23S
		Start Depth (m)	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52
		End Depth (m)	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26
		Sample Type	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N
		Sample Date	20 Sep 2011	12 Dec 2012	25 Oct 2013	20 Oct 2014	20 Nov 2015	25 Oct 2016	07 Sep 2017	27 Mar 2019	03 Mar 2020	03 Mar 2020	23 Mar 2010	07 Oct 2010	17 Jun 2011	20 Sep 2011	12 Dec 2012	25 Oct 2013	20 Oct 2014	20 Nov 2015	25 Oct 2016
Analyte	**Table 6 SCS [a]**	**Unit**																			
Beryllium	4	µg/L	--	--	--	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--	--	--	--
Boron	5000	µg/L	--	--	--	--	--	--	**71**	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	2.1	µg/L	--	--	--	--	--	--	0.01 U	--	--	--	--	--	--	--	--	--	--	--	--
Calcium	NV	µg/L	**120000**	**140000**	**130000**	**130000**	--	--	--	--	--	--	**170000**	**160000**	**150000**	**150000**	**170000**	**160000**	**170000**	--	--
Chromium	50	µg/L	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	3.8	µg/L	--	--	--	--	--	--	**0.42**	--	--	--	--	--	--	--	--	--	--	--	--
Copper	69	µg/L	--	20 U	20 U	20 U	--	--	0.2 U	--	--	--	--	--	--	--	20 U	20 U	20 U	--	--
Lead	10	µg/L	**0.68**	--	--	--	--	--	**1.67**	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--
Magnesium	NV	µg/L	**25000**	**27000**	**26000**	**26000**	--	--	--	--	--	--	**28000**	**25000**	**23000**	**22000**	**23000**	**21000**	**22000**	--	--
Molybdenum	70	µg/L	--	--	--	--	--	--	**2.64**	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	100	µg/L	--	--	--	--	--	--	**4.27**	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	10	µg/L	--	--	--	--	--	--	**0.051**	--	--	--	--	--	--	--	--	--	--	--	--
Silver	1.2	µg/L	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	490000	µg/L	**30000**	**34000**	**29000**	**29000**	--	--	**35200**	--	--	--	**15000**	**9500**	**15000**	**8400**	**13000**	**11000**	**13000**	--	--
Thallium	2	µg/L	--	--	--	--	--	--	**0.063**	--	--	--	--	--	--	--	--	--	--	--	--
Uranium	20	µg/L	--	--	--	--	--	--	**2.19**	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	6.2	µg/L	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	890	µg/L	**530**	**690**	**610**	**620**	--	--	**553**	--	--	--	**10**	**7.2**	**24**	**7.1**	10 U	10 U	10 U	--	--
Non-Regulated Metals																					
Aluminum	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	NV	µg/L	1000 U	--	--	--	--	--	--	--	--	--	1000 U	1000 U	1000 U	1000 U	--	--	--	--	--
Cesium (Cs)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoride	NV	µg/L	**560**	--	--	--	--	--	--	--	--	--	**610**	**530**	**520**	**510**	--	--	--	--	--
Iron	NV	µg/L	--	**3800**	**2900**	**3400**	--	--	--	--	--	--	--	--	--	--	**8900**	**7700**	**6400**	--	--
Lithium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/L	--	**170**	**140**	**160**	--	--	--	--	--	--	--	--	--	--	**1200**	**1000**	**1100**	--	--
Potassium	NV	µg/L	**4600**	**5000**	**4000**	**5000**	--	--	--	--	--	--	**11000**	**11000**	**9600**	**9800**	**11000**	**10000**	**11000**	--	--
Rubidium (Rb)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silicon	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tellurium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thorium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tungsten	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																					
Chromium, Hexavalent (Cr6+)	25	µg/L	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--
Chloride (Cl)	790000	µg/L	**61000**	**56000**	--	**43000**	--	--	**67000**	--	--	--	**8000**	1000 U	**5400**	**2700**	**6100**	**5700**	**6400**	--	--
Cyanide, Free	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	µg/L	--	--	--	--	--	--	0.01 U	--	--	--	--	--	--	--	--	--	--	--	--
PAHs																					
1-Methylnaphthalene	NV	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--	--	--	--	--	--	10 U	5 U	2.5 U	**17**	**9.4**
2-(1-)Methylnaphthalene	3.2	µg/L	--	0.071 U	0.071 U	--	0.071 U	0.071 U	0.028 U	--	--	--	--	--	--	--	14 U	7.1 U	--	**24**	**15**
2-Methylnaphthalene	NV	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--	--	--	--	--	--	10 U	5 U	2.5 U	**7.1**	**5.3**
Acenaphthene	4.1	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--	--	--	--	--	--	10 U	5 U	**3.5**	**21**	**20**
Acenaphthylene	1	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--	--	--	--	--	--	10 U	5 U	2.5 U	5 U	5 U
Anthracene	1	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--	--	--	--	--	--	20 U	5 U	**3.8**	**30**	**15**
Benzo(a)anthracene	1	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--	--	--	--	--	--	**11**	5 U	**3.3**	**21**	**13**
Benzo(a)pyrene	0.01	µg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	--	--	--	--	--	--	--	2 U	1 U	**0.7**	**2.1**	**2.4**
Benzo(b&j)fluoranthene	0.1	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	10 U	5 U	2.5 U	**5.6**	**6.1**
Benzo(b)fluoranthene	0.1	µg/L	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	0.2	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--	--	--	--	--	--	10 U	5 U	2.5 U	5 U	5 U
Benzo(k)fluoranthene	0.1	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--	--	--	--	--	--	10 U	5 U	2.5 U	5 U	5 U
Chrysene	0.1	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--	--	--	--	--	--	10 U	**9**	**6.5**	**35**	**38**
Dibenzo(a,h)anthracene	0.2	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--	--	--	--	--	--	10 U	5 U	2.5 U	5 U	5 U
Fluoranthene	0.41	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--	--	--	--	--	--	20 U	**11**	**8.8**	**13**	**24**

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW23D										OW23S								
		Sample ID	OW 23(D)	OW23(D)	OW23(D)	OW23(D)	OW23D	OW23D	OW23D	OW23D	DUP 7	OW23D	OW23(S)	OW23S	OW 23(S)	OW 23(S)	OW23(S)	OW23(S)	OW23(S)	OW23S	OW23S
		Start Depth (m)	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52
		End Depth (m)	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26
		Sample Type	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N
		Sample Date	20 Sep 2011	12 Dec 2012	25 Oct 2013	20 Oct 2014	20 Nov 2015	25 Oct 2016	07 Sep 2017	27 Mar 2019	03 Mar 2020	03 Mar 2020	23 Mar 2010	07 Oct 2010	17 Jun 2011	20 Sep 2011	12 Dec 2012	25 Oct 2013	20 Oct 2014	20 Nov 2015	25 Oct 2016
Analyte	**Table 6 SCS [a]**	**Unit**																			
Fluorene	120	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**0.092**	0.02 U	--	--	--	--	--	--	--	20 U	**5.5**	**4.3**	50 U	**24**
Indeno(1,2,3-Cd)Pyrene	0.2	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--	--	--	--	--	--	10 U	5 U	2.5 U	5 U	5 U
Naphthalene	7	µg/L	0.05 U	0.05 U	**0.17**	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	10 U	5 U	2.5 U	5 U	5 U
Phenanthrene	1	µg/L	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.02 U	--	--	--	--	--	--	--	**56**	**23**	**11**	**110**	**74**
Pyrene	4.1	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	--	--	--	--	--	--	--	**38**	**16**	**16**	**47**	**59**
PCBs																					
Aroclor 1016	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1221	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1232	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1242	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1262	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1268	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PHCs																					
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	420	µg/L	25 U	25 U	25 U	25 U	25 U	25 U	25 U	--	--	--	--	--	--	--	25 U	25 U	25 U	--	--
Petroleum Hydrocarbons F1 (C6-C10)	420	µg/L	25 U	25 U	25 U	25 U	25 U	25 U	25 U	--	--	--	--	--	--	--	25 U	25 U	25 U	--	--
Petroleum Hydrocarbons F1+F2	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16)	150	µg/L	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	--	--	--	--	--	--	**10000**	**13000**	**6700**	--	--
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34)	500	µg/L	100 U	100 U	200 U	200 U	200 U	**1600**	**430**	250 U	--	--	--	--	--	--	**430000**	**580000**	**270000**	--	--
Petroleum Hydrocarbons F3+F4	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3a (C16-C22)	NV	µg/L	--	--	--	--	--	--	130 U	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3b (C22-C34)	NV	µg/L	--	--	--	--	--	--	**310**	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F4 (C34-C50)	500	µg/L	100 U	100 U	200 U	200 U	200 U	200 U	250 U	250 U	--	--	--	--	--	--	**24000**	**23000**	**16000**	--	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SVOCs																					
2-Hexanone	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(e)pyrene	NV	µg/L	--	--	0.05 U	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--
Chloroethane	NV	µg/L	0.2 U	1 U	--	1 U	--	--	--	--	--	--	0.5 U	5 U	0.2 U	0.5 U	5 U	--	2 U	--	--
Chloromethane	NV	µg/L	0.5 U	2.5 U	--	2.5 U	--	--	--	--	--	--	1.3 U	13 U	0.5 U	1.3 U	13 U	--	5 U	--	--
Perylene	NV	µg/L	--	--	0.05 U	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--
VOCs																					
1,1,1,2-Tetrachloroethane	1.1	µg/L	0.1 U	1 U	0.2 U	1 U	0.2 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.25 U	2.5 U	0.1 U	0.25 U	5 U	10 U	2 U	10 U	0.5 U
1,1,1-Trichloroethane	23	µg/L	0.1 U	0.5 U	0.1 U	0.5 U	0.1 U	0.2 U	0.5 U	--	0.5 U	0.5 U	0.25 U	2.5 U	0.1 U	0.25 U	2.5 U	5 U	1 U	5 U	0.2 U
1,1,2,2-Tetrachloroethane	0.5	µg/L	0.2 U	1 U	0.2 U	1 U	0.2 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	5 U	0.2 U	0.5 U	5 U	10 U	2 U	10 U	0.5 U
1,1,2-Trichloroethane	0.5	µg/L	0.2 U	1 U	0.2 U	1 U	0.2 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	5 U	0.2 U	0.5 U	5 U	10 U	2 U	10 U	0.5 U
1,1-Dichloroethane	5	µg/L	0.1 U	0.5 U	0.1 U	0.5 U	0.1 U	0.2 U	0.5 U	--	0.5 U	0.5 U	0.25 U	2.5 U	0.1 U	0.25 U	2.5 U	5 U	1 U	5 U	0.2 U
1,1-Dichloroethene	0.5	µg/L	**0.12**	0.5 U	**0.14**	0.5 U	**0.12**	0.2 U	0.5 U	--	0.5 U	0.5 U	0.25 U	2.5 U	0.1 U	0.25 U	2.5 U	5 U	1 U	5 U	0.2 U
1,2-Dibromoethane	0.2	µg/L	0.2 U	1 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.5 U	5 U	0.2 U	0.5 U	5 U	10 U	2 U	10 U	0.2 U
1,2-Dichlorobenzene	3	µg/L	0.2 U	1 U	0.2 U	1 U	0.2 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	5 U	0.2 U	0.5 U	5 U	10 U	2 U	10 U	0.5 U
1,2-Dichloroethane	0.5	µg/L	0.2 U	1 U	0.2 U	1 U	0.2 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	5 U	0.2 U	0.5 U	5 U	10 U	2 U	10 U	0.5 U
1,2-Dichloropropane	0.58	µg/L	0.1 U	0.5 U	0.1 U	0.5 U	0.1 U	0.2 U	0.5 U	--	0.5 U	0.5 U	0.25 U	2.5 U	0.1 U	0.25 U	2.5 U	5 U	1 U	5 U	0.2 U
1,3-Dichlorobenzene	59	µg/L	0.2 U	1 U	0.2 U	1 U	0.2 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	5 U	0.2 U	0.5 U	5 U	10 U	2 U	10 U	0.5 U
1,3-Dichloropropene	0.5	µg/L	--	--	0.28 U	--	0.28 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--	--	--	--	--	14 U	--	14 U	0.5 U
1,4-Dichlorobenzene	0.5	µg/L	0.2 U	1 U	0.2 U	1 U	0.2 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	5 U	0.2 U	0.5 U	5 U	10 U	2 U	10 U	0.5 U
1,4-Dioxane	50	µg/L	--	--	--	--	--	--	20 U	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	1800	µg/L	5 U	25 U	5 U	25 U	5 U	10 U	20 U	--	20 U	20 U	13 U	130 U	5 U	13 U	130 U	250 U	50 U	250 U	10 U
4-Methyl-2-Pentanone	640	µg/L	5 U	25 U	5 U	25 U	5 U	5 U	20 U	--	20 U	20 U	13 U	130 U	5 U	13 U	130 U	250 U	50 U	250 U	5 U
Acetone	2700	µg/L	10 U	50 U	10 U	50 U	10 U	10 U	30 U	--	30 U	30 U	25 U	250 U	**10**	25 U	250 U	500 U	100 U	500 U	**14**
Bromodichloromethane	16	µg/L	0.1 U	0.5 U	0.1 U	0.5 U	0.1 U	0.5 U	2 U	--	2 U	2 U	0.25 U	2.5 U	0.1 U	0.25 U	2.5 U	5 U	1 U	5 U	0.5 U
Bromoform	5	µg/L	0.2 U	1 U	0.2 U	1 U	0.2 U	1 U	5 U	--	5 U	5 U	0.5 U	5 U	0.2 U	0.5 U	5 U	10 U	2 U	10 U	1 U
Bromomethane	0.89	µg/L	0.5 U	2.5 U	0.5 U	2.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	1.3 U	13 U	0.5 U	1.3 U	13 U	25 U	5 U	25 U	0.5 U
Carbon tetrachloride	0.2	µg/L	0.1 U	0.5 U	0.1 U	0.5 U	0.1 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.25 U	2.5 U	0.1 U	0.25 U	2.5 U	5 U	1 U	5 U	0.2 U
Chlorobenzene	30	µg/L	0.1 U	0.5 U	0.1 U	0.5 U	0.1 U	0.2 U	0.5 U	--	0.5 U	0.5 U	0.25 U	2.5 U	0.1 U	0.25 U	2.5 U	5 U	1 U	5 U	0.2 U
Chlorodibromomethane	25	µg/L	0.2 U	1 U	0.2 U	1 U	0.2 U	0.5 U	2 U	--	2 U	2 U	0.5 U	5 U	0.2 U	0.5 U	5 U	10 U	2 U	10 U	0.5 U

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW23D										OW23S								
		Sample ID	OW 23(D)	OW23(D)	OW23(D)	OW23(D)	OW23D	OW23D	OW23D	OW23D	DUP 7	OW23D	OW23(S)	OW23S	OW 23(S)	OW 23(S)	OW23(S)	OW23(S)	OW23(S)	OW23S	OW23S
		Start Depth (m)	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52
		End Depth (m)	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26
		Sample Type	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N
		Sample Date	20 Sep 2011	12 Dec 2012	25 Oct 2013	20 Oct 2014	20 Nov 2015	25 Oct 2016	07 Sep 2017	27 Mar 2019	03 Mar 2020	03 Mar 2020	23 Mar 2010	07 Oct 2010	17 Jun 2011	20 Sep 2011	12 Dec 2012	25 Oct 2013	20 Oct 2014	20 Nov 2015	25 Oct 2016
Analyte	**Table 6 SCS [a]**	**Unit**																			
Chloroform	2	µg/L	0.1 U	0.5 U	0.1 U	0.5 U	0.1 U	0.2 U	1 U	--	1 U	1 U	0.25 U	2.5 U	0.1 U	0.25 U	2.5 U	5 U	1 U	5 U	0.2 U
cis-1,2-Dichloroethene	1.6	µg/L	**23**	**26**	**27**	**28**	**25**	**27**	**25.4**	--	**23.7**	**21.7**	0.25 U	2.5 U	0.1 U	0.25 U	2.5 U	5 U	1 U	5 U	**4**
cis-1,3-Dichloropropene	NV	µg/L	0.2 U	1 U	0.2 U	1 U	0.2 U	0.3 U	0.3 U	--	0.3 U	0.3 U	0.5 U	5 U	0.2 U	0.5 U	5 U	10 U	2 U	10 U	0.3 U
Dichlorodifluoromethane	590	µg/L	0.5 U	--	0.5 U	--	0.5 U	1 U	2 U	--	2 U	2 U	1.3 U	--	0.5 U	1.3 U	--	25 U	--	25 U	1 U
Dichloromethane	26	µg/L	0.5 U	2.5 U	0.5 U	2.5 U	0.5 U	2 U	5 U	--	5 U	5 U	1.3 U	13 U	0.5 U	1.3 U	13 U	25 U	5 U	25 U	2 U
Methyl tert-butyl ether (MTBE)	15	µg/L	0.2 U	1 U	0.2 U	1 U	0.2 U	0.5 U	2 U	--	2 U	2 U	0.5 U	5 U	0.2 U	0.5 U	5 U	10 U	2 U	10 U	0.5 U
n-Hexane	5	µg/L	0.5 U	--	0.5 U	--	0.5 U	1 U	0.5 U	--	0.5 U	0.5 U	1.3 U	--	0.5 U	1.3 U	--	25 U	--	25 U	1 U
Styrene	5.4	µg/L	0.2 U	1 U	0.2 U	1 U	0.2 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	5 U	0.2 U	0.5 U	5 U	10 U	2 U	10 U	0.5 U
Tetrachloroethene	0.5	µg/L	0.1 U	0.5 U	0.1 U	0.5 U	0.1 U	0.2 U	0.5 U	--	0.5 U	0.5 U	0.25 U	2.5 U	**0.11**	0.25 U	2.5 U	5 U	1 U	5 U	0.2 U
trans-1,2-Dichloroethene	1.6	µg/L	**0.32**	0.5 U	**0.43**	0.5 U	**0.38**	**0.7**	**0.55**	--	**0.69**	**0.76**	0.25 U	2.5 U	0.1 U	0.25 U	2.5 U	5 U	1 U	5 U	0.5 U
trans-1,3-Dichloropropene	NV	µg/L	0.2 U	1 U	0.2 U	1 U	0.2 U	0.4 U	0.3 U	--	0.3 U	0.3 U	0.5 U	5 U	0.2 U	0.5 U	5 U	10 U	2 U	10 U	0.4 U
Trichloroethylene	0.5	µg/L	**1.4**	**1.8**	**1.7**	**1.9**	**1.4**	**2.9**	**2.23**	--	**5.04**	**5.44**	0.25 U	2.5 U	**0.12**	**0.35**	2.5 U	5 U	1 U	5 U	**1.4**
Trichlorofluoromethane	150	µg/L	0.2 U	1 U	0.2 U	1 U	0.2 U	0.5 U	5 U	--	5 U	5 U	0.5 U	5 U	0.2 U	0.5 U	5 U	10 U	2 U	10 U	0.5 U
Vinyl Chloride	0.5	µg/L	**6.4**	**7**	**9.6**	**8.6**	**10**	**5.9**	**7.26**	--	**2.4**	**2.37**	0.5 U	5 U	0.2 U	0.5 U	5 U	10 U	2 U	10 U	**0.85**

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act.* Ministry of the Environment. April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/L = microgram(s) per litre

ABNs = acid, base and neutral compounds

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mS/cm = milliSiemen(s) per centimetre

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location			OW24D																
		Sample ID	DUP 1	OW235	OW24(D)	OW 24(D)	OW 24(D)	OW24(D)	OW24(D)	OW24D	OW24D	OW24D	GW-DUP5	OW24D	DUP10	OW24D	OW24(S)	OW 24 (S)	OW 24(S)	OW24(S)	OW24(S)
		Start Depth (m)	2.52	2.52	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	2.60	2.60	2.60	2.60	2.60
		End Depth (m)	5.26	5.26	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	5.34	5.34	5.34	5.34	5.34
		Sample Type	FD	N	N	N	N	N	N	N	N	N	FD	N	FD	N	N	N	N	N	N
		Sample Date	20 Mar 2018	20 Mar 2018	23 Mar 2010	17 Jun 2011	20 Sep 2011	12 Dec 2012	21 Oct 2014	20 Nov 2015	24 Oct 2016	07 Sep 2017	27 Mar 2019	27 Mar 2019	02 Mar 2020	02 Mar 2020	23 Mar 2010	17 Jun 2011	20 Sep 2011	12 Dec 2012	25 Oct 2013
Analyte	**Table 6 SCS [a]**	**Unit**																			
ABNs																					
1,1'-Biphenyl	0.5	µg/L	--	--	--	0.05 U	--	--	0.05 U	--	--	--	--	--	--	--	--	0.05 U	--	--	--
1,2,4-Trichlorobenzene	3	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,2'-oxybis(1-chloropropane)	120	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	59	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	890	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BTEX																					
Benzene	0.5	µg/L	0.5 U	0.5 U	25 U	20 U	20 U	20 U	25 U	50 U	**0.23**	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.25 U
Ethylbenzene	2.4	µg/L	0.5 U	0.5 U	25 U	20 U	20 U	20 U	25 U	50 U	0.2 U	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.25 U
Toluene	24	µg/L	0.5 U	0.5 U	50 U	40 U	40 U	40 U	50 U	100 U	0.2 U	0.5 U	--	--	0.5 U	0.5 U	1 U	1 U	1 U	0.4 U	0.5 U
Xylene, o	NV	µg/L	**0.48**	**0.49**	25 U	20 U	20 U	20 U	25 U	50 U	2 U	0.3 U	--	--	0.3 U	0.3 U	0.5 U	0.5 U	0.5 U	0.2 U	0.25 U
Xylenes, m & p	NV	µg/L	0.4 U	0.4 U	25 U	20 U	20 U	20 U	25 U	50 U	2 U	0.4 U	--	--	0.4 U	0.4 U	0.5 U	0.5 U	0.5 U	0.2 U	0.25 U
Xylenes, Total	72	µg/L	0.5 U	0.5 U	25 U	20 U	20 U	20 U	25 U	50 U	2 U	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.25 U
Chlorophenyls																					
2,4,5-Trichlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	20	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																					
Alkalinity, Bicarbonate (as CaCO3)	NV	µg/L	--	--	--	--	--	**350000**	**350000**	--	--	--	--	--	--	--	--	--	--	**310000**	**340000**
Alkalinity, Carbonate (as CaCO3)	NV	µg/L	--	--	--	--	--	**2000**	**2500**	--	--	--	--	--	--	--	--	--	--	**1800**	**1500**
Alkalinity, Hydroxide (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Total (as CaCO3)	NV	µg/L	--	--	**350000**	**330000**	**330000**	**350000**	**360000**	--	--	--	--	--	--	--	**260000**	**290000**	**340000**	**310000**	**350000**
Ammonia	NV	µg/L	--	--	--	--	--	**120**	**140**	--	--	--	--	--	--	--	--	--	--	50 U	50 U
Carbon, dissolved organic (DOC)	NV	µg/L	--	--	--	--	--	**3000**	**3300**	--	--	--	--	--	--	--	--	--	--	**2000**	**2200**
Cation - Anion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Color	NV	CU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity % Difference	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	NV	mS/cm	**0.835**	**0.827**	**1**	**1**	**1.1**	**1**	**1**	--	--	**0.814**	--	--	--	--	**0.64**	**0.59**	**0.72**	**0.6**	**0.65**
Hardness (as CaCO3)	NV	µg/L	--	--	--	--	--	**460000**	**450000**	--	--	--	--	--	--	--	--	--	--	**320000**	**350000**
Ion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate, as NO3	NV	µg/L	--	--	100 U	100 U	100 U	100 U	100 U	--	--	--	--	--	--	--	**1370**	**200**	**290**	**220**	100 U
Nitrate-Nitrite, as N, Total	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite, as NO2	NV	µg/L	--	--	10 U	10 U	10 U	10 U	10 U	--	--	--	--	--	--	--	10 U	10 U	10 U	10 U	10 U
pH	NV	pH UNITS	**7.01**	**7.02**	**7.35**	**7.65**	**7.65**	**7.78**	**7.87**	--	--	**7.56**	--	--	--	--	**7.83**	**7.66**	**7.69**	**7.78**	**7.67**
pH (Laboratory)	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus, Total Orthophosphate (As P)	NV	µg/L	--	--	10 U	10 U	10 U	10 U	10 U	--	--	--	--	--	--	--	10 U	10 U	10 U	10 U	10 U
Saturation pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (as SIO2)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	NV	µg/L	--	--	**110000**	**110000**	**100000**	**95000**	**86000**	--	--	--	--	--	--	--	**29000**	**19000**	**29000**	**12000**	**9600**
Sulfur	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total dissolved solids	NV	µg/L	--	--	--	--	--	**610000**	**590000**	--	--	--	--	--	--	--	--	--	--	**340000**	**370000**
Turbidity	NV	NTU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																					
Antimony	6	µg/L	0.1 U	0.1 U	--	--	--	--	--	--	--	**0.19**	--	--	--	--	--	--	--	--	--
Arsenic	25	µg/L	**1.17**	**1.13**	**1.5**	**1.8**	**4.1**	--	--	--	--	**1.01**	--	--	--	--	1 U	1 U	1 U	--	--
Barium	1000	µg/L	**83.1**	**84.4**	--	--	--	--	--	--	--	**187**	--	--	--	--	--	--	--	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location			OW24D																
		Sample ID	DUP 1	OW235	OW24(D)	OW 24(D)	OW 24(D)	OW24(D)	OW24(D)	OW24D	OW24D	OW24D	GW-DUP5	OW24D	DUP10	OW24D	OW24(S)	OW 24 (S)	OW 24(S)	OW24(S)	OW24(S)
		Start Depth (m)	2.52	2.52	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	2.60	2.60	2.60	2.60	2.60
		End Depth (m)	5.26	5.26	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	5.34	5.34	5.34	5.34	5.34
		Sample Type	FD	N	N	N	N	N	N	N	N	N	FD	N	FD	N	N	N	N	N	N
		Sample Date	20 Mar 2018	20 Mar 2018	23 Mar 2010	17 Jun 2011	20 Sep 2011	12 Dec 2012	21 Oct 2014	20 Nov 2015	24 Oct 2016	07 Sep 2017	27 Mar 2019	27 Mar 2019	02 Mar 2020	02 Mar 2020	23 Mar 2010	17 Jun 2011	20 Sep 2011	12 Dec 2012	25 Oct 2013
Analyte	**Table 6 SCS [a]**	**Unit**																			
Beryllium	4	µg/L	0.1 U	0.1 U	--	--	--	--	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--
Boron	5000	µg/L	**56**	**55**	--	--	--	--	--	--	--	**134**	--	--	--	--	--	--	--	--	--
Cadmium	2.1	µg/L	0.01 U	0.01 U	--	--	--	--	--	--	--	**0.751**	--	--	--	--	--	--	--	--	--
Calcium	NV	µg/L	--	--	**130000**	**130000**	**130000**	**140000**	**130000**	--	--	--	--	--	--	--	**87000**	**97000**	**120000**	**110000**	**110000**
Chromium	50	µg/L	0.5 U	0.5 U	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--
Cobalt	3.8	µg/L	0.1 U	0.1 U	--	--	--	--	--	--	--	**0.34**	--	--	--	--	--	--	--	--	--
Copper	69	µg/L	0.2 U	0.2 U	--	--	--	20 U	20 U	--	--	**0.67**	--	--	--	--	--	--	--	20 U	20 U
Lead	10	µg/L	0.05 U	0.05 U	0.5 U	0.5 U	0.5 U	--	--	--	--	**0.141**	--	--	--	--	0.5 U	0.5 U	0.5 U	--	--
Magnesium	NV	µg/L	--	--	**30000**	**28000**	**29000**	**29000**	**27000**	--	--	--	--	--	--	--	**17000**	**16000**	**20000**	**14000**	**15000**
Molybdenum	70	µg/L	**0.318**	**0.31**	--	--	--	--	--	--	--	**0.586**	--	--	--	--	--	--	--	--	--
Nickel	100	µg/L	0.5 U	0.5 U	--	--	--	--	--	--	--	**1.96**	--	--	--	--	--	--	--	--	--
Selenium	10	µg/L	**0.27**	**0.185**	--	--	--	--	--	--	--	**0.13**	--	--	--	--	--	--	--	--	--
Silver	1.2	µg/L	0.05 U	0.05 U	--	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--
Sodium	490000	µg/L	**8870**	**8740**	**43000**	**41000**	**51000**	**47000**	**43000**	--	--	**26900**	--	--	--	--	**22000**	**5600**	**11000**	**3700**	**4200**
Thallium	2	µg/L	0.01 U	0.01 U	--	--	--	--	--	--	--	**0.137**	--	--	--	--	--	--	--	--	--
Uranium	20	µg/L	**0.123**	**0.119**	--	--	--	--	--	--	--	**1.23**	--	--	--	--	--	--	--	--	--
Vanadium	6.2	µg/L	**0.63**	**0.64**	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--
Zinc	890	µg/L	**1**	1 U	**580**	**500**	**230**	**140**	**400**	--	--	**949**	--	--	--	--	**400**	**740**	**1300**	**890**	**1100**
Non-Regulated Metals																					
Aluminum	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	NV	µg/L	--	--	1000 U	1000 U	1000 U	--	--	--	--	--	--	--	--	--	1000 U	1000 U	1000 U	--	--
Cesium (Cs)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoride	NV	µg/L	--	--	**570**	**520**	**530**	--	--	--	--	--	--	--	--	--	**650**	**790**	**960**	--	--
Iron	NV	µg/L	--	--	--	--	--	**2100**	**1500**	--	--	--	--	--	--	--	--	--	--	20 U	20 U
Lithium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/L	--	--	--	--	--	**50**	**50**	--	--	--	--	--	--	--	--	--	--	10 U	**20**
Potassium	NV	µg/L	--	--	**4400**	**4200**	**4000**	**4000**	**4000**	--	--	--	--	--	--	--	**3300**	**4300**	**5600**	**4000**	**4000**
Rubidium (Rb)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silicon	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tellurium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thorium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tungsten	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																					
Chromium, Hexavalent (Cr6+)	25	µg/L	1 U	1 U	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--
Chloride (Cl)	790000	µg/L	**3040**	**3080**	**71000**	**75000**	**83000**	**74000**	**75000**	--	--	**41100**	--	--	--	--	**30000**	**5500**	**13000**	**4400**	**2800**
Cyanide, Free	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	52	µg/L	--	2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	µg/L	0.01 U	0.01 U	--	--	--	--	--	--	--	0.01 U	--	--	--	--	--	--	--	--	--
PAHs																					
1-Methylnaphthalene	NV	µg/L	**0.456**	**0.456**	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2-(1-)Methylnaphthalene	3.2	µg/L	**0.532**	**0.526**	--	--	--	0.071 U	--	0.071 U	0.071 U	--	--	--	--	--	--	--	--	0.071 U	0.071 U
2-Methylnaphthalene	NV	µg/L	**0.076**	**0.07**	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**0.053**	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Acenaphthene	4.1	µg/L	**0.072**	**0.086**	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Acenaphthylene	1	µg/L	**0.02**	**0.02**	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Anthracene	1	µg/L	**0.102 J**	**0.068 J**	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Benzo(a)anthracene	1	µg/L	**0.114**	**0.108**	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Benzo(a)pyrene	0.01	µg/L	0.025 U	0.025 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Benzo(b&j)fluoranthene	0.1	µg/L	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Benzo(b)fluoranthene	0.1	µg/L	**0.03**	**0.028**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	0.2	µg/L	0.02 U	0.02 U	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U
Benzo(k)fluoranthene	0.1	µg/L	0.02 U	0.02 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Chrysene	0.1	µg/L	**0.266**	**0.222**	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dibenzo(a,h)anthracene	0.2	µg/L	0.02 U	0.02 U	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U
Fluoranthene	0.41	µg/L	**0.14**	**0.142**	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location			OW24D																
		Sample ID	DUP 1	OW235	OW24(D)	OW 24(D)	OW 24(D)	OW24(D)	OW24(D)	OW24D	OW24D	OW24D	GW-DUP5	OW24D	DUP10	OW24D	OW24(S)	OW 24 (S)	OW 24(S)	OW24(S)	OW24(S)
		Start Depth (m)	2.52	2.52	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	2.60	2.60	2.60	2.60	2.60
		End Depth (m)	5.26	5.26	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	5.34	5.34	5.34	5.34	5.34
		Sample Type	FD	N	N	N	N	N	N	N	N	N	FD	N	FD	N	N	N	N	N	N
		Sample Date	20 Mar 2018	20 Mar 2018	23 Mar 2010	17 Jun 2011	20 Sep 2011	12 Dec 2012	21 Oct 2014	20 Nov 2015	24 Oct 2016	07 Sep 2017	27 Mar 2019	27 Mar 2019	02 Mar 2020	02 Mar 2020	23 Mar 2010	17 Jun 2011	20 Sep 2011	12 Dec 2012	25 Oct 2013
Analyte	**Table 6 SCS [a]**	**Unit**																			
Fluorene	120	µg/L	**0.332**	**0.318**	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Indeno(1,2,3-Cd)Pyrene	0.2	µg/L	0.02 U	0.02 U	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U
Naphthalene	7	µg/L	**0.112**	**0.118**	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**0.053**	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Phenanthrene	1	µg/L	**1.43**	**1.33**	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	**0.035**	0.03 U	--	--	--	--	--	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Pyrene	4.1	µg/L	**0.322**	**0.308**	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
PCBs																					
Aroclor 1016	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1221	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1232	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1242	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1262	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1268	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PHCs																					
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	420	µg/L	25 U	25 U	**600**	**830**	**1100**	--	--	--	--	**304**	--	--	--	--	100 U	100 U	25 U	--	--
Petroleum Hydrocarbons F1 (C6-C10)	420	µg/L	25 U	25 U	**600**	**830**	**1100**	--	--	--	--	**304**	**254**	**258**	--	--	100 U	100 U	25 U	--	--
Petroleum Hydrocarbons F1+F2	NV	µg/L	--	--	**600**	--	--	--	--	--	--	--	--	--	--	--	100 U	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	NV	µg/L	**130**	**120**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16)	150	µg/L	**130**	**120**	100 U	100 U	100 U	--	--	--	--	100 U	--	--	--	--	100 U	100 U	100 U	--	--
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	NV	µg/L	**8050**	**7350**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34)	500	µg/L	**8060**	**7360**	100 U	100 U	100 U	--	--	--	--	250 U	--	--	--	--	100 U	100 U	100 U	--	--
Petroleum Hydrocarbons F3+F4	NV	µg/L	--	--	100 U	--	--	--	--	--	--	--	--	--	--	--	100 U	--	--	--	--
Petroleum Hydrocarbons F3a (C16-C22)	NV	µg/L	--	--	--	--	--	--	--	--	--	130 U	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3b (C22-C34)	NV	µg/L	--	--	--	--	--	--	--	--	--	130 U	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F4 (C34-C50)	500	µg/L	**550**	**430**	100 U	100 U	100 U	--	--	--	--	250 U	--	--	--	--	100 U	100 U	100 U	--	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/L	**8730**	**7900**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SVOCs																					
2-Hexanone	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(e)pyrene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U
Chloroethane	NV	µg/L	--	--	50 U	40 U	40 U	40 U	50 U	--	--	--	--	--	--	--	1 U	1 U	1 U	0.4 U	--
Chloromethane	NV	µg/L	--	--	130 U	100 U	100 U	100 U	130 U	--	--	--	--	--	--	--	2.5 U	2.5 U	2.5 U	1 U	--
Perylene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U
VOCs																					
1,1,1,2-Tetrachloroethane	1.1	µg/L	0.5 U	0.5 U	25 U	20 U	20 U	40 U	50 U	100 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U	0.5 U
1,1,1-Trichloroethane	23	µg/L	0.5 U	0.5 U	25 U	20 U	20 U	20 U	25 U	50 U	0.2 U	0.5 U	--	--	0.65 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.25 U
1,1,2,2-Tetrachloroethane	0.5	µg/L	0.5 U	0.5 U	50 U	40 U	40 U	40 U	50 U	100 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	1 U	1 U	1 U	0.4 U	0.5 U
1,1,2-Trichloroethane	0.5	µg/L	0.5 U	0.5 U	50 U	40 U	40 U	40 U	50 U	100 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	1 U	1 U	1 U	0.4 U	0.5 U
1,1-Dichloroethane	5	µg/L	0.5 U	0.5 U	25 U	20 U	20 U	20 U	25 U	50 U	0.2 U	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.25 U
1,1-Dichloroethene	0.5	µg/L	0.5 U	0.5 U	25 U	**30**	**43**	**33**	**51**	**64**	**17**	**9.93**	--	--	**6.47**	**6.41**	0.5 U	0.5 U	0.5 U	0.2 U	0.25 U
1,2-Dibromoethane	0.2	µg/L	0.2 U	0.2 U	50 U	40 U	40 U	40 U	50 U	100 U	0.2 U	0.2 U	--	--	0.2 U	0.2 U	1 U	1 U	1 U	0.4 U	0.5 U
1,2-Dichlorobenzene	3	µg/L	0.5 U	0.5 U	50 U	40 U	40 U	40 U	50 U	100 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	1 U	1 U	1 U	0.4 U	0.5 U
1,2-Dichloroethane	0.5	µg/L	0.5 U	0.5 U	50 U	40 U	40 U	40 U	50 U	100 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	1 U	1 U	1 U	0.4 U	0.5 U
1,2-Dichloropropane	0.58	µg/L	0.5 U	0.5 U	25 U	20 U	20 U	20 U	25 U	50 U	0.2 U	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.25 U
1,3-Dichlorobenzene	59	µg/L	0.5 U	0.5 U	50 U	40 U	40 U	40 U	50 U	100 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	1 U	1 U	1 U	0.4 U	0.5 U
1,3-Dichloropropene	0.5	µg/L	0.5 U	0.5 U	--	--	--	--	--	140 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	--	--	--	--	0.71 U
1,4-Dichlorobenzene	0.5	µg/L	0.5 U	0.5 U	50 U	40 U	40 U	40 U	50 U	100 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	1 U	1 U	1 U	0.4 U	0.5 U
1,4-Dioxane	50	µg/L	--	--	--	--	--	--	--	--	--	20 U	--	--	--	--	--	--	--	--	--
2-Butanone	1800	µg/L	20 U	20 U	1300 U	1000 U	1000 U	1000 U	1300 U	2500 U	100 U	20 U	--	--	20 U	20 U	25 U	25 U	25 U	10 U	13 U
4-Methyl-2-Pentanone	640	µg/L	20 U	20 U	1300 U	1000 U	1000 U	1000 U	1300 U	2500 U	50 U	20 U	--	--	20 U	20 U	25 U	25 U	25 U	10 U	13 U
Acetone	2700	µg/L	30 U	30 U	2500 U	2000 U	2000 U	2000 U	2500 U	5000 U	100 U	30 U	--	--	30 U	30 U	50 U	50 U	50 U	20 U	25 U
Bromodichloromethane	16	µg/L	2 U	2 U	25 U	20 U	20 U	20 U	25 U	50 U	0.5 U	2 U	--	--	2 U	2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.25 U
Bromoform	5	µg/L	5 U	5 U	50 U	40 U	40 U	40 U	50 U	100 U	1 U	5 U	--	--	5 U	5 U	1 U	1 U	1 U	0.4 U	0.5 U
Bromomethane	0.89	µg/L	0.5 U	0.5 U	130 U	100 U	100 U	100 U	130 U	250 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	2.5 U	2.5 U	2.5 U	1 U	1.3 U
Carbon tetrachloride	0.2	µg/L	0.2 U	0.2 U	25 U	20 U	20 U	20 U	25 U	50 U	0.2 U	0.2 U	--	--	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.25 U
Chlorobenzene	30	µg/L	0.5 U	0.5 U	25 U	20 U	20 U	20 U	25 U	50 U	0.2 U	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.25 U
Chlorodibromomethane	25	µg/L	2 U	2 U	50 U	40 U	40 U	40 U	50 U	100 U	0.5 U	2 U	--	--	2 U	2 U	1 U	1 U	1 U	0.4 U	0.5 U

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location			OW24D																
		Sample ID	DUP 1	OW235	OW24(D)	OW 24(D)	OW 24(D)	OW24(D)	OW24(D)	OW24D	OW24D	OW24D	GW-DUP5	OW24D	DUP10	OW24D	OW24(S)	OW 24 (S)	OW 24(S)	OW24(S)	OW24(S)
		Start Depth (m)	2.52	2.52	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	2.60	2.60	2.60	2.60	2.60
		End Depth (m)	5.26	5.26	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	5.34	5.34	5.34	5.34	5.34
		Sample Type	FD	N	N	N	N	N	N	N	N	N	FD	N	FD	N	N	N	N	N	N
		Sample Date	20 Mar 2018	20 Mar 2018	23 Mar 2010	17 Jun 2011	20 Sep 2011	12 Dec 2012	21 Oct 2014	20 Nov 2015	24 Oct 2016	07 Sep 2017	27 Mar 2019	27 Mar 2019	02 Mar 2020	02 Mar 2020	23 Mar 2010	17 Jun 2011	20 Sep 2011	12 Dec 2012	25 Oct 2013
Analyte	**Table 6 SCS [a]**	**Unit**																			
Chloroform	2	µg/L	1 U	1 U	25 U	20 U	20 U	20 U	25 U	50 U	2 U	1 U	--	--	1 U	1 U	0.5 U	0.5 U	0.5 U	0.2 U	0.25 U
cis-1,2-Dichloroethene	1.6	µg/L	0.5 U	0.5 U	**450**	**530**	**720**	**600**	**740**	**960**	**340**	**225**	--	--	**139**	**141**	0.5 U	**4.2**	**20**	**3.8**	**4.1**
cis-1,3-Dichloropropene	NV	µg/L	0.3 U	0.3 U	50 U	40 U	40 U	40 U	50 U	100 U	0.3 U	0.3 U	--	--	0.3 U	0.3 U	1 U	1 U	1 U	0.4 U	0.5 U
Dichlorodifluoromethane	590	µg/L	2 U	2 U	130 U	100 U	100 U	--	--	250 U	10 U	2 U	--	--	2 U	2 U	2.5 U	2.5 U	2.5 U	--	1.3 U
Dichloromethane	26	µg/L	5 U	5 U	130 U	100 U	100 U	100 U	130 U	250 U	2 U	5 U	--	--	5 U	5 U	2.5 U	2.5 U	2.5 U	1 U	1.3 U
Methyl tert-butyl ether (MTBE)	15	µg/L	2 U	2 U	50 U	40 U	40 U	40 U	50 U	100 U	5 U	2 U	--	--	2 U	2 U	1 U	1 U	1 U	0.4 U	0.5 U
n-Hexane	5	µg/L	0.5 U	0.5 U	130 U	100 U	100 U	--	--	250 U	1 U	0.5 U	--	--	0.5 U	0.5 U	2.5 U	2.5 U	2.5 U	--	1.3 U
Styrene	5.4	µg/L	0.5 U	0.5 U	50 U	40 U	40 U	40 U	50 U	100 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	1 U	1 U	1 U	0.4 U	0.5 U
Tetrachloroethene	0.5	µg/L	0.5 U	0.5 U	25 U	20 U	20 U	20 U	25 U	50 U	0.2 U	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.25 U
trans-1,2-Dichloroethene	1.6	µg/L	0.5 U	0.5 U	**35**	**40**	**62**	**55**	**63**	**81**	**26**	**22.7**	--	--	**12.7**	**12.2**	0.5 U	0.5 U	**0.57**	0.2 U	0.25 U
trans-1,3-Dichloropropene	NV	µg/L	0.3 U	0.3 U	50 U	40 U	40 U	40 U	50 U	100 U	0.4 U	0.3 U	--	--	0.3 U	0.3 U	1 U	1 U	1 U	0.4 U	0.5 U
Trichloroethylene	0.5	µg/L	0.5 U	0.5 U	**2700**	**3400**	**5300**	**3900**	**5400**	**7900**	**2000**	**1170**	--	--	**861**	**991**	**85**	**64**	**76**	**52**	**54**
Trichlorofluoromethane	150	µg/L	5 U	5 U	50 U	40 U	40 U	40 U	50 U	100 U	5 U	5 U	--	--	5 U	5 U	1 U	1 U	1 U	0.4 U	0.5 U
Vinyl Chloride	0.5	µg/L	0.5 U	0.5 U	50 U	**46**	**86**	**45**	**64**	100 U	**17**	**14.2**	--	--	**3.36**	**3.46**	1 U	1 U	1 U	0.4 U	0.5 U

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act.* Ministry of the Environment. April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/L = microgram(s) per litre

ABNs = acid, base and neutral compounds

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mS/cm = milliSiemen(s) per centimetre

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW24S						OW25												
		Sample ID	OW24(S)	OW24S	OW24(S)	OW24S	OW24S	OW24S	OW25	OW25	OW 25	OW 25	OW25	OW25	OW25	OW25	OW25	OW25	DUP2	OW25	GW-DUP1
		Start Depth (m)	2.60	2.60	2.60	2.60	2.60	2.60	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98
		End Depth (m)	5.34	5.34	5.34	5.34	5.34	5.34	4.72	4.72	4.72	4.72	4.72	4.72	4.72	4.72	4.72	4.72	4.72	4.72	4.72
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	FD
		Sample Date	21 Oct 2014	20 Nov 2015	23 Dec 2015	24 Oct 2016	07 Sep 2017	02 Mar 2020	24 Mar 2010	07 Oct 2010	16 Jun 2011	19 Sep 2011	11 Dec 2012	24 Oct 2013	24 Oct 2014	19 Nov 2015	26 Oct 2016	01 Sep 2017	17 Oct 2018	17 Oct 2018	27 Mar 2019
Analyte	**Table 6 SCS [a]**	**Unit**																			
ABNs																					
1,1'-Biphenyl	0.5	µg/L	0.05 U	--	--	--	0.4 U	--	--	--	0.05 U	--	0.05 U	--	0.05 U	--	--	--	--	--	--
1,2,4-Trichlorobenzene	3	µg/L	--	--	--	--	0.4 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,2'-oxybis(1-chloropropane)	120	µg/L	--	--	--	--	0.4 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	5	µg/L	--	--	--	--	0.57 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	59	µg/L	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	10	µg/L	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/L	--	--	--	--	0.4 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/L	--	--	--	--	0.4 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	0.5	µg/L	--	--	--	--	0.4 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	10	µg/L	--	--	--	--	0.4 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	5	µg/L	--	--	--	--	0.4 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	10	µg/L	--	--	--	--	2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	30	µg/L	--	--	--	--	0.2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	30	µg/L	--	--	--	--	0.2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	890	µg/L	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BTEX																					
Benzene	0.5	µg/L	0.5 U	--	2.5 U	0.2 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.25 U	0.1 U	0.1 U	0.2 U	0.5 U	--	--	--
Ethylbenzene	2.4	µg/L	0.5 U	--	2.5 U	0.2 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.25 U	0.1 U	0.1 U	0.2 U	0.5 U	--	--	--
Toluene	24	µg/L	1 U	--	5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.5 U	--	--	--
Xylene, o	NV	µg/L	0.5 U	--	2.5 U	0.2 U	0.3 U	0.3 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.25 U	0.1 U	0.1 U	0.2 U	0.3 U	--	--	--
Xylenes, m & p	NV	µg/L	0.5 U	--	2.5 U	0.2 U	0.4 U	0.4 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.25 U	0.1 U	0.1 U	0.2 U	0.4 U	--	--	--
Xylenes, Total	72	µg/L	0.5 U	--	2.5 U	0.2 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.25 U	0.1 U	0.1 U	0.2 U	0.5 U	--	--	--
Chlorophenyls																					
2,4,5-Trichlorophenol	8.9	µg/L	--	--	--	--	0.2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2	µg/L	--	--	--	--	0.2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	20	µg/L	--	--	--	--	0.3 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	8.9	µg/L	--	--	--	--	0.3 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	30	µg/L	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																					
Alkalinity, Bicarbonate (as CaCO3)	NV	µg/L	**360000**	--	--	--	--	--	--	--	--	--	**380000**	**380000**	**380000**	--	--	--	--	--	--
Alkalinity, Carbonate (as CaCO3)	NV	µg/L	**2300**	--	--	--	--	--	--	--	--	--	**3000**	**2600**	**1300**	--	--	--	--	--	--
Alkalinity, Hydroxide (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Total (as CaCO3)	NV	µg/L	**370000**	--	--	--	--	--	**320000**	**350000**	**310000**	**330000**	**380000**	**380000**	**380000**	--	--	--	--	--	--
Ammonia	NV	µg/L	**69**	--	--	--	--	--	--	--	--	--	50 U	50 U	**65**	--	--	--	--	--	--
Carbon, dissolved organic (DOC)	NV	µg/L	**3800**	--	--	--	--	--	--	--	--	--	**1300**	**2000**	**1800**	--	--	--	--	--	--
Cation - Anion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Color	NV	CU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity % Difference	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	NV	mS/cm	**0.69**	--	--	--	**1.21**	--	**0.63**	**0.69**	**0.61**	**0.81**	**0.74**	**0.72**	**0.74**	--	--	**0.757**	--	--	--
Hardness (as CaCO3)	NV	µg/L	**360000**	--	--	--	--	--	--	--	--	--	**390000**	**390000**	**380000**	--	--	--	--	--	--
Ion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate, as NO3	NV	µg/L	100 U	--	--	--	--	--	**110**	100 U	100 U	100 U	100 U	100 U	100 U	--	--	--	--	--	--
Nitrate-Nitrite, as N, Total	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite, as NO2	NV	µg/L	10 U	--	--	--	--	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	--	--	--	--	--
pH	NV	pH UNITS	**7.82**	--	--	--	**7.55**	--	**7.65**	**7.66**	**7.77**	**7.82**	**7.92**	**7.86**	**7.57**	--	--	**7.44**	--	--	--
pH (Laboratory)	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus, Total Orthophosphate (As P)	NV	µg/L	10 U	--	--	--	--	--	**30**	**100**	**69**	**230**	**27**	**180**	**250**	--	--	--	--	--	--
Saturation pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (as SIO2)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	NV	µg/L	**8500**	--	--	--	--	--	**27000**	**30000**	**26000**	**30000**	**35000**	**22000**	**20000**	--	--	--	--	--	--
Sulfur	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total dissolved solids	NV	µg/L	**390000**	--	--	--	--	--	--	--	--	--	**440000**	**420000**	**420000**	--	--	--	--	--	--
Turbidity	NV	NTU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																					
Antimony	6	µg/L	--	--	--	--	**0.12**	--	--	--	--	--	--	--	--	--	--	**0.12**	--	--	--
Arsenic	25	µg/L	--	--	--	--	**0.11**	--	1 U	1 U	1 U	**1.5**	--	--	--	--	--	**1.96**	--	--	--
Barium	1000	µg/L	--	--	--	--	**65**	--	--	--	--	--	--	--	--	--	--	**36.4**	--	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW24S						OW25												
		Sample ID	OW24(S)	OW24S	OW24(S)	OW24S	OW24S	OW24S	OW25	OW25	OW 25	OW 25	OW25	OW25	OW25	OW25	OW25	OW25	DUP2	OW25	GW-DUP1
		Start Depth (m)	2.60	2.60	2.60	2.60	2.60	2.60	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98
		End Depth (m)	5.34	5.34	5.34	5.34	5.34	5.34	4.72	4.72	4.72	4.72	4.72	4.72	4.72	4.72	4.72	4.72	4.72	4.72	4.72
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	FD
		Sample Date	21 Oct 2014	20 Nov 2015	23 Dec 2015	24 Oct 2016	07 Sep 2017	02 Mar 2020	24 Mar 2010	07 Oct 2010	16 Jun 2011	19 Sep 2011	11 Dec 2012	24 Oct 2013	24 Oct 2014	19 Nov 2015	26 Oct 2016	01 Sep 2017	17 Oct 2018	17 Oct 2018	27 Mar 2019
Analyte	**Table 6 SCS [a]**	**Unit**																			
Beryllium	4	µg/L	--	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--	--	0.1 U	--	--	--
Boron	5000	µg/L	--	--	--	--	**125**	--	--	--	--	--	--	--	--	--	--	**65**	--	--	--
Cadmium	2.1	µg/L	--	--	--	--	**0.358**	--	--	--	--	--	--	--	--	--	--	0.01 U	--	--	--
Calcium	NV	µg/L	**120000**	--	--	--	--	--	**90000**	**98000**	**89000**	**92000**	**110000**	**110000**	**110000**	--	--	--	--	--	--
Chromium	50	µg/L	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--
Cobalt	3.8	µg/L	--	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--	--	0.1 U	--	--	--
Copper	69	µg/L	20 U	--	--	--	**1**	--	--	--	--	--	20 U	20 U	20 U	--	--	**0.26**	--	--	--
Lead	10	µg/L	--	--	--	--	0.05 U	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	0.05 U	--	--	--
Magnesium	NV	µg/L	**15000**	--	--	--	--	--	**24000**	**24000**	**24000**	**23000**	**28000**	**26000**	**26000**	--	--	--	--	--	--
Molybdenum	70	µg/L	--	--	--	--	**0.225**	--	--	--	--	--	--	--	--	--	--	**0.735**	--	--	--
Nickel	100	µg/L	--	--	--	--	**1.2**	--	--	--	--	--	--	--	--	--	--	**1.51**	--	--	--
Selenium	10	µg/L	--	--	--	--	**0.555**	--	--	--	--	--	--	--	--	--	--	**0.092**	--	--	--
Silver	1.2	µg/L	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	--	0.05 U	--	--	--
Sodium	490000	µg/L	**5900**	--	--	--	**100000**	--	**7100**	**7100**	**7000**	**34000**	**7300**	**8100**	**7600**	--	--	**16600**	--	--	--
Thallium	2	µg/L	--	--	--	--	**0.069**	--	--	--	--	--	--	--	--	--	--	0.01 U	--	--	--
Uranium	20	µg/L	--	--	--	--	**0.747**	--	--	--	--	--	--	--	--	--	--	**1.43**	--	--	--
Vanadium	6.2	µg/L	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--
Zinc	890	µg/L	**1200**	--	--	--	**674**	--	**200**	**9.5**	**25**	**12**	**270**	10 U	10 U	--	--	**48.5**	--	--	--
Non-Regulated Metals																					
Aluminum	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	NV	µg/L	--	--	--	--	--	--	1000 U	1000 U	1000 U	1000 U	--	--	--	--	--	--	--	--	--
Cesium (Cs)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoride	NV	µg/L	--	--	--	--	--	--	**210**	**200**	**220**	**260**	--	--	--	--	--	--	--	--	--
Iron	NV	µg/L	20 U	--	--	--	--	--	--	--	--	--	**140**	**650**	**720**	--	--	--	--	--	--
Lithium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/L	10 U	--	--	--	--	--	--	--	--	--	10 U	**20**	**60**	--	--	--	--	--	--
Potassium	NV	µg/L	**4000**	--	--	--	--	--	**7000**	**8600**	**7900**	**7900**	**8000**	**7000**	**7000**	--	--	--	--	--	--
Rubidium (Rb)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silicon	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tellurium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thorium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tungsten	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																					
Chromium, Hexavalent (Cr6+)	25	µg/L	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--
Chloride (Cl)	790000	µg/L	**5700**	--	--	--	**170000**	--	**2400**	**2200**	**3800**	**45000**	**2800**	**5200**	**5800**	--	--	**24100**	--	--	--
Cyanide, Free	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	µg/L	--	--	--	--	0.01 U	--	--	--	--	--	--	--	--	--	--	0.01 U	--	--	--
PAHs																					
1-Methylnaphthalene	NV	µg/L	0.05 U	0.05 U	--	0.05 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.3 U	0.02 U	0.02 U	0.02 U	0.02 U
2-(1-)Methylnaphthalene	3.2	µg/L	--	0.071 U	--	0.071 U	0.028 U	--	--	--	--	--	--	0.071 U	0.071 U	0.071 U	0.3 U	0.028 U	0.028 U	0.028 U	0.028 U
2-Methylnaphthalene	NV	µg/L	0.05 U	0.05 U	--	0.05 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	0.02 U	0.02 U	0.02 U
Acenaphthene	4.1	µg/L	0.05 U	0.05 U	--	0.05 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	0.02 U	0.02 U	0.02 U
Acenaphthylene	1	µg/L	0.05 U	0.05 U	--	0.05 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**0.053**	0.05 U	0.02 U	0.02 U	0.02 U	0.02 U
Anthracene	1	µg/L	0.05 U	0.05 U	--	0.05 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**0.11**	0.05 U	0.02 U	0.02 U	0.02 U	0.02 U
Benzo(a)anthracene	1	µg/L	0.05 U	0.05 U	--	0.05 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**0.055**	0.05 U	0.02 U	0.02 U	0.02 U	0.02 U
Benzo(a)pyrene	0.01	µg/L	0.01 U	0.01 U	--	0.01 U	0.01 U	--	0.01 U	**1**	0.1 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 UJ	**0.034 J**	0.01 U
Benzo(b&j)fluoranthene	0.1	µg/L	0.05 U	0.05 U	--	0.05 U	--	--	3 U	0.05 U	0.5 U	0.05 U	0.25 U	0.05 U	0.05 U	**3.1**	**1.1**	--	--	--	--
Benzo(b)fluoranthene	0.1	µg/L	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	0.02 U	0.02 U	0.02 U	0.02 U
Benzo(g,h,i)perylene	0.2	µg/L	0.05 U	0.05 U	--	0.05 U	0.02 U	--	0.1 U	0.1 U	1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	0.02 U	0.02 U	0.02 U
Benzo(k)fluoranthene	0.1	µg/L	0.05 U	0.05 U	--	0.05 U	0.02 U	--	0.05 U	0.05 U	0.5 U	**0.26**	0.05 U	0.05 U	0.1 U	0.05 U	0.05 U	0.02 U	0.02 U	0.02 U	0.02 U
Chrysene	0.1	µg/L	0.05 U	0.05 U	--	0.05 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.1 U	0.5 U	0.15 U	0.02 U	0.02 U	0.02 U	0.02 U
Dibenzo(a,h)anthracene	0.2	µg/L	0.05 U	0.05 U	--	0.05 U	0.02 U	--	0.1 U	0.1 U	1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	0.02 U	0.02 U	0.02 U
Fluoranthene	0.41	µg/L	0.05 U	0.05 U	--	0.05 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**0.1**	0.05 U	0.02 U	0.02 U	0.02 U	0.02 U

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW24S						OW25												
		Sample ID	OW24(S)	OW24S	OW24(S)	OW24S	OW24S	OW24S	OW25	OW25	OW 25	OW 25	OW25	OW25	OW25	OW25	OW25	OW25	DUP2	OW25	GW-DUP1
		Start Depth (m)	2.60	2.60	2.60	2.60	2.60	2.60	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98
		End Depth (m)	5.34	5.34	5.34	5.34	5.34	5.34	4.72	4.72	4.72	4.72	4.72	4.72	4.72	4.72	4.72	4.72	4.72	4.72	4.72
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	FD
		Sample Date	21 Oct 2014	20 Nov 2015	23 Dec 2015	24 Oct 2016	07 Sep 2017	02 Mar 2020	24 Mar 2010	07 Oct 2010	16 Jun 2011	19 Sep 2011	11 Dec 2012	24 Oct 2013	24 Oct 2014	19 Nov 2015	26 Oct 2016	01 Sep 2017	17 Oct 2018	17 Oct 2018	27 Mar 2019
Analyte	**Table 6 SCS [a]**	**Unit**																			
Fluorene	120	µg/L	0.05 U	0.05 U	--	0.05 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**0.16**	0.05 U	0.02 U	0.02 U	0.02 U	0.02 U
Indeno(1,2,3-Cd)Pyrene	0.2	µg/L	0.05 U	0.05 U	--	0.05 U	0.02 U	--	0.1 U	0.1 U	1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02 U	0.02 U	0.02 U	0.02 U
Naphthalene	7	µg/L	0.05 U	0.05 U	--	**0.05**	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Phenanthrene	1	µg/L	0.03 U	0.03 U	--	0.03 U	0.02 U	--	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	**0.23**	**0.063**	0.02 U	0.02 U	0.02 U	0.02 U
Pyrene	4.1	µg/L	0.05 U	0.05 U	--	0.05 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**0.065**	0.05 U	0.02 U	0.02 U	0.02 U	0.02 U
PCBs																					
Aroclor 1016	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1221	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1232	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1242	NV	µg/L	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	0.02 U	--	--	--
Aroclor 1248	NV	µg/L	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	0.02 U	--	--	--
Aroclor 1254	NV	µg/L	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	0.02 U	--	--	--
Aroclor 1260	NV	µg/L	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	0.02 U	--	--	--
Aroclor 1262	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1268	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	0.2	µg/L	--	--	--	--	0.04 U	--	--	--	--	--	--	--	--	--	--	0.04 U	--	--	--
PHCs																					
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	420	µg/L	--	--	--	--	**84**	--	100 U	100 U	100 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	--	--	--
Petroleum Hydrocarbons F1 (C6-C10)	420	µg/L	--	--	--	--	**84**	--	100 U	100 U	100 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	--	--	--
Petroleum Hydrocarbons F1+F2	NV	µg/L	--	--	--	--	--	--	**190**	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	NV	µg/L	--	--	--	--	100 U	--	--	--	--	--	--	--	--	--	--	100 U	--	--	100 U
Petroleum Hydrocarbons F2 (C10-C16)	150	µg/L	--	--	--	--	100 U	--	**190**	**110**	100 U	100 U	**120**	100 U	**160**	**110**	**920**	100 U	--	--	100 U
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	NV	µg/L	--	--	--	--	250 U	--	--	--	--	--	--	--	--	--	--	250 U	--	--	250 U
Petroleum Hydrocarbons F3 (C16-C34)	500	µg/L	--	--	--	--	250 U	--	**3300**	**4100**	**760**	100 U	**2100**	**400**	**4900**	**5500**	**5200**	250 U	--	--	250 U
Petroleum Hydrocarbons F3+F4	NV	µg/L	--	--	--	--	--	--	**3300**	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3a (C16-C22)	NV	µg/L	--	--	--	--	130 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3b (C22-C34)	NV	µg/L	--	--	--	--	130 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F4 (C34-C50)	500	µg/L	--	--	--	--	250 U	--	100 U	100 U	100 U	100 U	100 U	200 U	200 U	200 U	200 U	250 U	--	--	250 U
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/L	--	--	--	--	370 U	--	--	--	--	--	--	--	--	--	--	370 U	--	--	--
SVOCs																					
2-Hexanone	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(e)pyrene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--
Chloroethane	NV	µg/L	1 U	--	--	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	1 U	--	0.2 U	--	--	--	--	--	--
Chloromethane	NV	µg/L	2.5 U	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	--	--	--	--	--
Perylene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--
VOCs																					
1,1,1,2-Tetrachloroethane	1.1	µg/L	1 U	--	5 U	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.5 U	0.2 U	0.2 U	0.5 U	0.5 U	--	--	--
1,1,1-Trichloroethane	23	µg/L	0.5 U	--	2.5 U	0.2 U	0.5 U	0.5 U	**0.28**	**0.59**	**0.26**	**0.28**	**0.35**	**0.25**	**0.17**	**0.19**	0.2 U	0.5 U	--	--	--
1,1,2,2-Tetrachloroethane	0.5	µg/L	1 U	--	5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.5 U	0.5 U	--	--	--
1,1,2-Trichloroethane	0.5	µg/L	1 U	--	5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.5 U	0.5 U	--	--	--
1,1-Dichloroethane	5	µg/L	0.5 U	--	2.5 U	0.2 U	0.5 U	0.5 U	**0.15**	**0.24**	**0.17**	**0.39**	**0.13**	**0.29**	**0.3**	**0.24**	**0.37**	0.5 U	--	--	--
1,1-Dichloroethene	0.5	µg/L	0.5 U	--	2.5 U	**1**	**0.85**	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.25 U	0.1 U	0.1 U	0.2 U	0.5 U	--	--	--
1,2-Dibromoethane	0.2	µg/L	1 U	--	5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--
1,2-Dichlorobenzene	3	µg/L	1 U	--	5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.5 U	0.5 U	--	--	--
1,2-Dichloroethane	0.5	µg/L	1 U	--	5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.5 U	0.5 U	--	--	--
1,2-Dichloropropane	0.58	µg/L	0.5 U	--	2.5 U	0.2 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.25 U	0.1 U	0.1 U	0.2 U	0.5 U	--	--	--
1,3-Dichlorobenzene	59	µg/L	1 U	--	5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.5 U	0.5 U	--	--	--
1,3-Dichloropropene	0.5	µg/L	--	--	7.1 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	0.71 U	0.28 U	0.28 U	0.5 U	0.5 U	--	--	--
1,4-Dichlorobenzene	0.5	µg/L	1 U	--	5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.5 U	0.5 U	--	--	--
1,4-Dioxane	50	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	1800	µg/L	25 U	--	130 U	10 U	20 U	20 U	5 U	5 U	5 U	5 U	5 U	13 U	5 U	5 U	10 U	20 U	--	--	--
4-Methyl-2-Pentanone	640	µg/L	25 U	--	130 U	5 U	20 U	20 U	5 U	5 U	5 U	5 U	5 U	13 U	5 U	5 U	5 U	20 U	--	--	--
Acetone	2700	µg/L	50 U	--	250 U	10 U	30 U	30 U	10 U	10 U	10 U	10 U	10 U	25 U	10 U	10 U	10 U	30 U	--	--	--
Bromodichloromethane	16	µg/L	0.5 U	--	2.5 U	0.5 U	2 U	2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.25 U	0.1 U	0.1 U	0.5 U	2 U	--	--	--
Bromoform	5	µg/L	1 U	--	5 U	1 U	5 U	5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	1 U	5 U	--	--	--
Bromomethane	0.89	µg/L	2.5 U	--	13 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--
Carbon tetrachloride	0.2	µg/L	0.5 U	--	2.5 U	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.25 U	0.1 U	0.1 U	0.2 U	0.2 U	--	--	--
Chlorobenzene	30	µg/L	0.5 U	--	2.5 U	0.2 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.25 U	0.1 U	0.1 U	0.2 U	0.5 U	--	--	--
Chlorodibromomethane	25	µg/L	1 U	--	5 U	0.5 U	2 U	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.5 U	2 U	--	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location	OW24S						OW25												
		Sample ID	OW24(S)	OW24S	OW24(S)	OW24S	OW24S	OW24S	OW25	OW25	OW 25	OW 25	OW25	OW25	OW25	OW25	OW25	OW25	DUP2	OW25	GW-DUP1
		Start Depth (m)	2.60	2.60	2.60	2.60	2.60	2.60	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98
		End Depth (m)	5.34	5.34	5.34	5.34	5.34	5.34	4.72	4.72	4.72	4.72	4.72	4.72	4.72	4.72	4.72	4.72	4.72	4.72	4.72
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	FD
		Sample Date	21 Oct 2014	20 Nov 2015	23 Dec 2015	24 Oct 2016	07 Sep 2017	02 Mar 2020	24 Mar 2010	07 Oct 2010	16 Jun 2011	19 Sep 2011	11 Dec 2012	24 Oct 2013	24 Oct 2014	19 Nov 2015	26 Oct 2016	01 Sep 2017	17 Oct 2018	17 Oct 2018	27 Mar 2019
Analyte	**Table 6 SCS [a]**	**Unit**																			
Chloroform	2	µg/L	0.5 U	--	2.5 U	0.2 U	1 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.25 U	0.1 U	0.1 U	0.2 U	1 U	--	--	--
cis-1,2-Dichloroethene	1.6	µg/L	**7.1**	--	2.5 U	**48**	**45.1**	**13**	**0.38**	**0.73**	**0.75**	**2.1**	**0.54**	**1.6**	**1.6**	**1.5**	**3**	**2.43**	--	--	--
cis-1,3-Dichloropropene	NV	µg/L	1 U	--	5 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.3 U	0.3 U	--	--	--
Dichlorodifluoromethane	590	µg/L	--	--	13 U	1 U	2 U	2 U	0.5 U	--	0.5 U	0.5 U	--	1.3 U	--	0.5 U	1 U	2 U	--	--	--
Dichloromethane	26	µg/L	2.5 U	--	13 U	2 U	5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	2 U	5 U	--	--	--
Methyl tert-butyl ether (MTBE)	15	µg/L	1 U	--	5 U	0.5 U	2 U	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.5 U	2 U	--	--	--
n-Hexane	5	µg/L	--	--	13 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--	1.3 U	--	0.5 U	1 U	0.5 U	--	--	--
Styrene	5.4	µg/L	1 U	--	5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.5 U	0.5 U	--	--	--
Tetrachloroethene	0.5	µg/L	0.5 U	--	2.5 U	**0.32**	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.25 U	0.1 U	0.1 U	0.2 U	0.5 U	--	--	--
trans-1,2-Dichloroethene	1.6	µg/L	0.5 U	--	2.5 U	**2.5**	**2.47**	0.5 U	**0.12**	**0.17**	**0.14**	**0.47**	0.1 U	**0.29**	**0.38**	**0.22**	0.5 U	0.5 U	--	--	--
trans-1,3-Dichloropropene	NV	µg/L	1 U	--	5 U	0.4 U	0.3 U	0.3 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.4 U	0.3 U	--	--	--
Trichloroethylene	0.5	µg/L	**53**	--	2.5 U	**400**	**325**	**144**	**2.2**	**3.1**	**1.8**	**2.3**	**2.9**	**2.1**	**1.6**	**2.1**	**0.88**	**2.57**	--	--	--
Trichlorofluoromethane	150	µg/L	1 U	--	5 U	0.5 U	5 U	5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.5 U	5 U	--	--	--
Vinyl Chloride	0.5	µg/L	1 U	--	5 U	**0.21**	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	**0.83**	0.2 U	**0.77**	**0.85**	**0.39**	**1**	**0.67**	--	--	--

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act.* Ministry of the Environment. April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/L = microgram(s) per litre

ABNs = acid, base and neutral compounds

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mS/cm = milliSiemen(s) per centimetre

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location				OW26D										OW26S					
		Sample ID	OW25	OW25	OW25	OW26D	OW 26(D)	OW 26(D)	OW26(D)	OW26(D)	OW26(D)	OW26D	OW26D	OW26D	OW26D	OW26S	OW 26(S)	OW 26(S)	OW26(S)	OW26(S)	OW26(S)
		Start Depth (m)	1.98	1.98	1.98	10.28	10.28	10.28	10.28	10.28	10.28	10.28	10.28	10.28	10.28	3.08	3.08	3.08	3.08	3.08	3.08
		End Depth (m)	4.72	4.72	4.72	11.80	11.80	11.80	11.80	11.80	11.80	11.80	11.80	11.80	11.80	4.60	4.60	4.60	4.60	4.60	4.60
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	27 Mar 2019	17 Apr 2019	27 Feb 2020	24 Mar 2010	16 Jun 2011	19 Sep 2011	11 Dec 2012	24 Oct 2013	24 Oct 2014	18 Nov 2015	26 Oct 2016	31 Aug 2017	26 Feb 2020	24 Mar 2010	16 Jun 2011	19 Sep 2011	11 Dec 2012	24 Oct 2013	24 Oct 2014
Analyte	**Table 6 SCS [a]**	**Unit**																			
ABNs																					
1,1'-Biphenyl	0.5	µg/L	--	--	--	--	0.05 U	--	0.05 U	--	0.05 U	--	--	--	--	--	0.05 U	--	0.05 U	--	0.05 U
1,2,4-Trichlorobenzene	3	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,2'-oxybis(1-chloropropane)	120	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	59	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	890	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BTEX																					
Benzene	0.5	µg/L	--	--	0.5 U	**0.1**	**0.11**	**0.17**	0.1 U	0.25 U	0.1 U	0.1 U	0.2 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Ethylbenzene	2.4	µg/L	--	--	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.25 U	0.1 U	0.1 U	0.2 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Toluene	24	µg/L	--	--	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Xylene, o	NV	µg/L	--	--	0.3 U	0.1 U	0.1 U	0.1 U	0.1 U	0.25 U	0.1 U	0.1 U	0.2 U	0.3 U	0.3 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Xylenes, m & p	NV	µg/L	--	--	0.4 U	0.1 U	0.1 U	0.1 U	0.1 U	0.25 U	0.1 U	0.1 U	0.2 U	0.4 U	0.4 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Xylenes, Total	72	µg/L	--	--	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.25 U	0.1 U	0.1 U	0.2 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Chlorophenyls																					
2,4,5-Trichlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	20	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	30	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemistry																					
Alkalinity, Bicarbonate (as CaCO3)	NV	µg/L	--	--	--	--	--	--	**300000**	**300000**	**300000**	--	--	--	--	--	--	--	**330000**	**310000**	**310000**
Alkalinity, Carbonate (as CaCO3)	NV	µg/L	--	--	--	--	--	--	**1800**	**2200**	**1100**	--	--	--	--	--	--	--	**1800**	**1300**	**1100**
Alkalinity, Hydroxide (as CaCO3)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, Total (as CaCO3)	NV	µg/L	--	--	--	**310000**	**290000**	**290000**	**300000**	**300000**	**300000**	--	--	--	--	**300000**	**280000**	**290000**	**330000**	**320000**	**310000**
Ammonia	NV	µg/L	--	--	--	--	--	--	**430**	**320**	**400**	--	--	--	--	--	--	--	**250**	**100**	**190**
Carbon, dissolved organic (DOC)	NV	µg/L	--	--	--	--	--	--	**9200**	**10000**	**10000**	--	--	--	--	--	--	--	**6900**	**7500**	**7600**
Cation - Anion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Color	NV	CU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity % Difference	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Conductivity	NV	mS/cm	--	--	--	**1**	**1.3**	**1.3**	**1.3**	**1.1**	**1.6**	--	--	**1.13**	--	**0.76**	**0.87**	**1**	**0.93**	**0.82**	**0.93**
Hardness (as CaCO3)	NV	µg/L	--	--	--	--	--	--	**400000**	**360000**	**420000**	--	--	--	--	--	--	--	**370000**	**340000**	**330000**
Ion Balance	NV	%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate, as NO3	NV	µg/L	--	--	--	100 U	100 U	100 U	100 U	100 U	100 U	--	--	--	--	**560**	**200**	100 U	100 U	100 U	100 U
Nitrate-Nitrite, as N, Total	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite, as NO2	NV	µg/L	--	--	--	10 U	10 U	10 U	10 U	10 U	10 U	--	--	--	--	10 U	10 U	10 U	10 U	10 U	10 U
pH	NV	pH UNITS	--	--	--	**7.51**	**7.6**	**7.66**	**7.81**	**7.89**	**7.59**	--	--	**7.43 J**	--	**7.54**	**7.6**	**7.65**	**7.75**	**7.63**	**7.58**
pH (Laboratory)	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphorus, Total Orthophosphate (As P)	NV	µg/L	--	--	--	10 U	10 U	10 U	10 U	10 U	10 U	--	--	--	--	10 U	10 U	10 U	10 U	10 U	10 U
Saturation pH	NV	pH UNITS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (as SIO2)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	NV	µg/L	--	--	--	**59000**	**67000**	**67000**	**69000**	**56000**	**52000**	--	--	--	--	**34000**	**44000**	**44000**	**46000**	**34000**	**31000**
Sulfur	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total dissolved solids	NV	µg/L	--	--	--	--	--	--	**650000**	**610000**	**810000**	--	--	--	--	--	--	--	**530000**	**470000**	**510000**
Turbidity	NV	NTU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals and Hydride Forming Metals																					
Antimony	6	µg/L	--	--	--	--	--	--	--	--	--	--	--	**0.12**	--	--	--	--	--	--	--
Arsenic	25	µg/L	--	--	--	**6.8**	**6.8**	**6.7**	--	--	--	--	--	**8.32**	--	1 U	1 U	1 U	--	--	--
Barium	1000	µg/L	--	--	--	--	--	--	--	--	--	--	--	**80**	--	--	--	--	--	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location				OW26D										OW26S					
		Sample ID	OW25	OW25	OW25	OW26D	OW 26(D)	OW 26(D)	OW26(D)	OW26(D)	OW26(D)	OW26D	OW26D	OW26D	OW26D	OW26S	OW 26(S)	OW 26(S)	OW26(S)	OW26(S)	OW26(S)
		Start Depth (m)	1.98	1.98	1.98	10.28	10.28	10.28	10.28	10.28	10.28	10.28	10.28	10.28	10.28	3.08	3.08	3.08	3.08	3.08	3.08
		End Depth (m)	4.72	4.72	4.72	11.80	11.80	11.80	11.80	11.80	11.80	11.80	11.80	11.80	11.80	4.60	4.60	4.60	4.60	4.60	4.60
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	27 Mar 2019	17 Apr 2019	27 Feb 2020	24 Mar 2010	16 Jun 2011	19 Sep 2011	11 Dec 2012	24 Oct 2013	24 Oct 2014	18 Nov 2015	26 Oct 2016	31 Aug 2017	26 Feb 2020	24 Mar 2010	16 Jun 2011	19 Sep 2011	11 Dec 2012	24 Oct 2013	24 Oct 2014
Analyte	**Table 6 SCS [a]**	**Unit**																			
Beryllium	4	µg/L	--	--	--	--	--	--	--	--	--	--	--	0.1 U	--	--	--	--	--	--	--
Boron	5000	µg/L	--	--	--	--	--	--	--	--	--	--	--	**67**	--	--	--	--	--	--	--
Cadmium	2.1	µg/L	--	--	--	--	--	--	--	--	--	--	--	0.01 U	--	--	--	--	--	--	--
Calcium	NV	µg/L	--	--	--	**120000**	**130000**	**120000**	**120000**	**110000**	**120000**	--	--	--	--	**98000**	**100000**	**99000**	**110000**	**110000**	**100000**
Chromium	50	µg/L	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--	--
Cobalt	3.8	µg/L	--	--	--	--	--	--	--	--	--	--	--	0.1 U	--	--	--	--	--	--	--
Copper	69	µg/L	--	--	--	--	--	--	20 U	20 U	20 U	--	--	0.2 U	--	--	--	--	20 U	20 U	20 U
Lead	10	µg/L	--	--	--	0.5 U	0.5 U	0.5 U	--	--	--	--	--	**0.12**	--	0.5 U	**0.63**	0.5 U	--	--	--
Magnesium	NV	µg/L	--	--	--	**26000**	**28000**	**26000**	**25000**	**23000**	**27000**	--	--	--	--	**21000**	**20000**	**18000**	**21000**	**19000**	**18000**
Molybdenum	70	µg/L	--	--	--	--	--	--	--	--	--	--	--	**5.05**	--	--	--	--	--	--	--
Nickel	100	µg/L	--	--	--	--	--	--	--	--	--	--	--	**1.22**	--	--	--	--	--	--	--
Selenium	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	**0.173**	--	--	--	--	--	--	--
Silver	1.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--
Sodium	490000	µg/L	--	--	--	**66000**	**110000**	**110000**	**110000**	**91000**	**140000**	--	--	**99200**	--	**27000**	**52000**	**69000**	**54000**	**42000**	**60000**
Thallium	2	µg/L	--	--	--	--	--	--	--	--	--	--	--	0.01 U	--	--	--	--	--	--	--
Uranium	20	µg/L	--	--	--	--	--	--	--	--	--	--	--	**3.76**	--	--	--	--	--	--	--
Vanadium	6.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--	--
Zinc	890	µg/L	--	--	--	**300**	**330**	**330**	**310**	**300**	**330**	--	--	**239**	--	**690**	**760**	**790**	**900**	**800**	**820**
Non-Regulated Metals																					
Aluminum	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bismuth	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	NV	µg/L	--	--	--	1000 U	1000 U	1000 U	--	--	--	--	--	--	--	1000 U	1000 U	1000 U	--	--	--
Cesium (Cs)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoride	NV	µg/L	--	--	--	**350**	**370**	**390**	--	--	--	--	--	--	--	**240**	**290**	**290**	--	--	--
Iron	NV	µg/L	--	--	--	--	--	--	**1500**	**1400**	**1500**	--	--	--	--	--	--	--	**150**	**230**	**280**
Lithium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NV	µg/L	--	--	--	--	--	--	**50**	**50**	**60**	--	--	--	--	--	--	--	**340**	**250**	**220**
Potassium	NV	µg/L	--	--	--	**4400**	**5000**	**4600**	**4000**	**4000**	**5000**	--	--	--	--	**5400**	**4200**	**4500**	**5000**	**5000**	**5000**
Rubidium (Rb)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silicon	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tellurium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thorium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Titanium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tungsten	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zirconium	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORPs																					
Chromium, Hexavalent (Cr6+)	25	µg/L	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--
Chloride (Cl)	790000	µg/L	--	--	--	**120000**	**240000**	**210000**	**140000**	**140000**	**270000**	--	--	**162000**	--	**45000**	**87000**	**120000**	**77000**	**60000**	**98000**
Cyanide, Free	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	52	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	µg/L	--	--	--	--	--	--	--	--	--	--	--	0.01 U	--	--	--	--	--	--	--
PAHs																					
1-Methylnaphthalene	NV	µg/L	0.02 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2-(1-)Methylnaphthalene	3.2	µg/L	0.028 U	0.028 U	--	--	--	--	--	0.071 U	0.071 U	0.071 U	0.071 U	--	--	--	--	--	--	0.071 U	0.071 U
2-Methylnaphthalene	NV	µg/L	0.02 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Acenaphthene	4.1	µg/L	0.02 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Acenaphthylene	1	µg/L	0.02 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Anthracene	1	µg/L	0.02 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Benzo(a)anthracene	1	µg/L	0.02 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Benzo(a)pyrene	0.01	µg/L	0.01 U	0.01 U	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Benzo(b&j)fluoranthene	0.1	µg/L	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Benzo(b)fluoranthene	0.1	µg/L	0.02 U	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	0.2	µg/L	0.02 U	0.02 U	--	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
Benzo(k)fluoranthene	0.1	µg/L	0.02 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Chrysene	0.1	µg/L	0.02 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dibenzo(a,h)anthracene	0.2	µg/L	0.02 U	0.02 U	--	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
Fluoranthene	0.41	µg/L	0.02 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location				OW26D										OW26S					
		Sample ID	OW25	OW25	OW25	OW26D	OW 26(D)	OW 26(D)	OW26(D)	OW26(D)	OW26(D)	OW26D	OW26D	OW26D	OW26D	OW26S	OW 26(S)	OW 26(S)	OW26(S)	OW26(S)	OW26(S)
		Start Depth (m)	1.98	1.98	1.98	10.28	10.28	10.28	10.28	10.28	10.28	10.28	10.28	10.28	10.28	3.08	3.08	3.08	3.08	3.08	3.08
		End Depth (m)	4.72	4.72	4.72	11.80	11.80	11.80	11.80	11.80	11.80	11.80	11.80	11.80	11.80	4.60	4.60	4.60	4.60	4.60	4.60
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	27 Mar 2019	17 Apr 2019	27 Feb 2020	24 Mar 2010	16 Jun 2011	19 Sep 2011	11 Dec 2012	24 Oct 2013	24 Oct 2014	18 Nov 2015	26 Oct 2016	31 Aug 2017	26 Feb 2020	24 Mar 2010	16 Jun 2011	19 Sep 2011	11 Dec 2012	24 Oct 2013	24 Oct 2014
Analyte	**Table 6 SCS [a]**	**Unit**																			
Fluorene	120	µg/L	0.02 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Indeno(1,2,3-Cd)Pyrene	0.2	µg/L	0.02 U	0.02 U	--	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
Naphthalene	7	µg/L	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Phenanthrene	1	µg/L	0.02 U	0.02 U	--	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	--	--	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Pyrene	4.1	µg/L	0.02 U	0.02 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
PCBs																					
Aroclor 1016	NV	µg/L	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--
Aroclor 1221	NV	µg/L	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--
Aroclor 1232	NV	µg/L	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--
Aroclor 1242	NV	µg/L	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--
Aroclor 1248	NV	µg/L	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--
Aroclor 1254	NV	µg/L	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--	**0.66**	0.05 U	--	--	--	--
Aroclor 1260	NV	µg/L	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--	**0.61**	0.05 U	--	--	--	--
Aroclor 1262	NV	µg/L	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--
Aroclor 1268	NV	µg/L	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--
PCB, Total	0.2	µg/L	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--	**1.27**	0.05 U	--	--	--	--
PHCs																					
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	420	µg/L	--	--	--	100 U	100 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	--	100 U	100 U	25 U	25 U	25 U	25 U
Petroleum Hydrocarbons F1 (C6-C10)	420	µg/L	--	--	--	100 U	100 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	--	100 U	100 U	25 U	25 U	25 U	25 U
Petroleum Hydrocarbons F1+F2	NV	µg/L	--	--	--	100 U	--	--	--	--	--	--	--	--	--	100 U	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	NV	µg/L	100 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16)	150	µg/L	100 U	--	--	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	--	100 U	100 U	100 U	100 U	100 U	100 U
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	NV	µg/L	250 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34)	500	µg/L	250 U	--	--	100 U	100 U	100 U	100 U	200 U	200 U	200 U	200 U	250 U	--	100 U	100 U	100 U	100 U	200 U	200 U
Petroleum Hydrocarbons F3+F4	NV	µg/L	--	--	--	100 U	--	--	--	--	--	--	--	--	--	100 U	--	--	--	--	--
Petroleum Hydrocarbons F3a (C16-C22)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3b (C22-C34)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F4 (C34-C50)	500	µg/L	250 U	--	--	100 U	100 U	100 U	100 U	200 U	200 U	200 U	200 U	250 U	--	100 U	100 U	100 U	100 U	200 U	200 U
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	370 U	--	--	--	--	--	--	--
SVOCs																					
2-Hexanone	NV	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(e)pyrene	NV	µg/L	--	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	0.05 U	--
Chloroethane	NV	µg/L	--	--	--	0.2 U	0.2 U	0.2 U	1 U	--	0.2 U	--	--	--	--	0.2 U	0.2 U	0.2 U	1 U	--	0.2 U
Chloromethane	NV	µg/L	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U
Perylene	NV	µg/L	--	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	--	--	--	0.05 U	--
VOCs																					
1,1,1,2-Tetrachloroethane	1.1	µg/L	--	--	0.5 U	0.1 U	0.1 U	0.1 U	0.2 U	0.5 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.2 U	0.2 U	0.2 U
1,1,1-Trichloroethane	23	µg/L	--	--	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.25 U	0.1 U	0.1 U	0.2 U	0.5 U	0.5 U	**2.6**	**2.4**	**3.1**	**2.6**	**3**	**2.8**
1,1,2,2-Tetrachloroethane	0.5	µg/L	--	--	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2-Trichloroethane	0.5	µg/L	--	--	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethane	5	µg/L	--	--	0.5 U	**3.3**	**2**	**2.6**	**1.5**	**1.7**	**1.5**	**1.3**	**1**	**1.35**	**0.61**	**4.3**	**3.8**	**5.1**	**4**	**4.5**	**4.7**
1,1-Dichloroethene	0.5	µg/L	--	--	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.25 U	0.1 U	0.1 U	0.2 U	0.5 U	0.5 U	0.1 U	**0.11**	**0.13**	**0.12**	**0.14**	**0.16**
1,2-Dibromoethane	0.2	µg/L	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichlorobenzene	3	µg/L	--	--	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloroethane	0.5	µg/L	--	--	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloropropane	0.58	µg/L	--	--	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.25 U	0.1 U	0.1 U	0.2 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,3-Dichlorobenzene	59	µg/L	--	--	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-Dichloropropene	0.5	µg/L	--	--	0.5 U	--	--	--	--	0.71 U	0.28 U	0.28 U	0.5 U	0.5 U	0.5 U	--	--	--	--	0.28 U	0.28 U
1,4-Dichlorobenzene	0.5	µg/L	--	--	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,4-Dioxane	50	µg/L	--	--	--	--	--	--	--	--	--	--	--	20 U	--	--	--	--	--	--	--
2-Butanone	1800	µg/L	--	--	20 U	5 U	5 U	5 U	5 U	13 U	5 U	5 U	10 U	20 U	20 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-Pentanone	640	µg/L	--	--	20 U	5 U	5 U	5 U	5 U	13 U	5 U	5 U	5 U	20 U	20 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	2700	µg/L	--	--	30 U	10 U	10 U	10 U	10 U	25 U	10 U	10 U	10 U	30 U	30 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	16	µg/L	--	--	2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.25 U	0.1 U	0.1 U	0.5 U	2 U	2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Bromoform	5	µg/L	--	--	5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	1 U	5 U	5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromomethane	0.89	µg/L	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride	0.2	µg/L	--	--	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.25 U	0.1 U	0.1 U	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Chlorobenzene	30	µg/L	--	--	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.25 U	0.1 U	0.1 U	0.2 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Chlorodibromomethane	25	µg/L	--	--	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.5 U	2 U	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location				OW26D										OW26S					
		Sample ID	OW25	OW25	OW25	OW26D	OW 26(D)	OW 26(D)	OW26(D)	OW26(D)	OW26(D)	OW26D	OW26D	OW26D	OW26D	OW26S	OW 26(S)	OW 26(S)	OW26(S)	OW26(S)	OW26(S)
		Start Depth (m)	1.98	1.98	1.98	10.28	10.28	10.28	10.28	10.28	10.28	10.28	10.28	10.28	10.28	3.08	3.08	3.08	3.08	3.08	3.08
		End Depth (m)	4.72	4.72	4.72	11.80	11.80	11.80	11.80	11.80	11.80	11.80	11.80	11.80	11.80	4.60	4.60	4.60	4.60	4.60	4.60
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Sample Date	27 Mar 2019	17 Apr 2019	27 Feb 2020	24 Mar 2010	16 Jun 2011	19 Sep 2011	11 Dec 2012	24 Oct 2013	24 Oct 2014	18 Nov 2015	26 Oct 2016	31 Aug 2017	26 Feb 2020	24 Mar 2010	16 Jun 2011	19 Sep 2011	11 Dec 2012	24 Oct 2013	24 Oct 2014
Analyte	**Table 6 SCS [a]**	**Unit**																			
Chloroform	2	µg/L	--	--	1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.25 U	0.1 U	0.1 U	0.2 U	1 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
cis-1,2-Dichloroethene	1.6	µg/L	--	--	**0.63**	**2.1**	**2.3**	**2.5**	**2.2**	**2.3**	**2.4**	**2.4**	**2.1**	**2.39**	**1.16**	**0.19**	**0.59**	**0.64**	**0.67**	**0.75**	**0.79**
cis-1,3-Dichloropropene	NV	µg/L	--	--	0.3 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Dichlorodifluoromethane	590	µg/L	--	--	2 U	0.5 U	0.5 U	0.5 U	--	1.3 U	--	0.5 U	1 U	2 U	2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--
Dichloromethane	26	µg/L	--	--	5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	2 U	5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl tert-butyl ether (MTBE)	15	µg/L	--	--	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.5 U	2 U	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
n-Hexane	5	µg/L	--	--	0.5 U	0.5 U	0.5 U	0.5 U	--	1.3 U	--	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--
Styrene	5.4	µg/L	--	--	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Tetrachloroethene	0.5	µg/L	--	--	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.25 U	0.1 U	0.1 U	0.2 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
trans-1,2-Dichloroethene	1.6	µg/L	--	--	0.5 U	**0.1**	0.1 U	**0.13**	0.1 U	0.25 U	0.1 U	0.1 U	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	**0.12**	0.1 U
trans-1,3-Dichloropropene	NV	µg/L	--	--	0.3 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.4 U	0.3 U	0.3 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trichloroethylene	0.5	µg/L	--	--	**1.4**	**0.33**	**0.27**	**0.26**	**0.2**	0.25 U	**0.16**	**0.11**	0.2 U	0.5 U	0.5 U	**0.11**	**0.24**	**0.35**	**0.34**	**0.4**	**0.41**
Trichlorofluoromethane	150	µg/L	--	--	5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.5 U	5 U	5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Vinyl Chloride	0.5	µg/L	--	--	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act.* Ministry of the Environment. April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/L = microgram(s) per litre

ABNs = acid, base and neutral compounds

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mS/cm = milliSiemen(s) per centimetre

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location					OW31				
		Sample ID	OW26S	OW26S	OW26S	OW26S	OW31	OW31	DUP	OW31-E	OW31
		Start Depth (m)	3.08	3.08	3.08	3.08	28.90	28.90	28.90	28.90	28.90
		End Depth (m)	4.60	4.60	4.60	4.60	33.32	33.32	33.32	33.32	33.32
		Sample Type	N	N	N	N	N	N	FD	N	N
		Sample Date	18 Nov 2015	26 Oct 2016	31 Aug 2017	26 Feb 2020	19 Sep 2016	08 Sep 2017	08 Sep 2017	17 Oct 2018	02 Mar 2020
Analyte	**Table 6 SCS [a]**	**Unit**									
ABNs											
1,1'-Biphenyl	0.5	µg/L	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	3	µg/L	--	--	--	--	--	--	--	--	--
2,2'-oxybis(1-chloropropane)	120	µg/L	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	5	µg/L	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	59	µg/L	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	10	µg/L	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	µg/L	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	0.5	µg/L	--	--	--	--	--	--	--	--	--
4-Chloroaniline	10	µg/L	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	5	µg/L	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	10	µg/L	--	--	--	--	--	--	--	--	--
Diethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--
Dimethylphthalate	30	µg/L	--	--	--	--	--	--	--	--	--
Phenol	890	µg/L	--	--	--	--	--	--	--	--	--
BTEX											
Benzene	0.5	µg/L	0.1 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	2.4	µg/L	0.1 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	24	µg/L	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**0.79**	**1.1**
Xylene, o	NV	µg/L	0.1 U	0.2 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Xylenes, m & p	NV	µg/L	0.1 U	0.2 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Xylenes, Total	72	µg/L	0.1 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorophenyls											
2,4,5-Trichlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2	µg/L	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	20	µg/L	--	--	--	--	--	--	--	--	--
2-Chlorophenol	8.9	µg/L	--	--	--	--	--	--	--	--	--
Pentachlorophenol	30	µg/L	--	--	--	--	--	--	--	--	--
Chemistry											
Alkalinity, Bicarbonate (as CaCO3)	NV	µg/L	--	--	--	--	**128000**	--	--	--	--
Alkalinity, Carbonate (as CaCO3)	NV	µg/L	--	--	--	--	10000 U	--	--	--	--
Alkalinity, Hydroxide (as CaCO3)	NV	µg/L	--	--	--	--	10000 U	--	--	--	--
Alkalinity, Total (as CaCO3)	NV	µg/L	--	--	--	--	**128000**	--	--	--	--
Ammonia	NV	µg/L	--	--	--	--	**1750**	--	--	--	--
Carbon, dissolved organic (DOC)	NV	µg/L	--	--	--	--	**2900**	--	--	--	--
Cation - Anion Balance	NV	%	--	--	--	--	0 U	--	--	--	--
Color	NV	CU	--	--	--	--	**72.1**	--	--	--	--
Conductivity % Difference	NV	%	--	--	--	--	0 U	--	--	--	--
Electrical Conductivity	NV	mS/cm	--	--	**0.891**	--	**1.09**	--	--	--	--
Hardness (as CaCO3)	NV	µg/L	--	--	--	--	0 U	--	--	--	--
Ion Balance	NV	%	--	--	--	--	0 U	--	--	--	--
Nitrate, as NO3	NV	µg/L	--	--	--	--	20 U	--	--	--	--
Nitrate-Nitrite, as N, Total	NV	µg/L	--	--	--	--	22 U	--	--	--	--
Nitrite, as NO2	NV	µg/L	--	--	--	--	10 U	--	--	--	--
pH	NV	pH UNITS	--	--	**7.38**	--	**8.08**	--	--	--	--
pH (Laboratory)	NV	pH UNITS	--	--	--	--	--	--	--	--	--
Phosphorus	NV	µg/L	--	--	--	--	50 U	--	--	--	--
Phosphorus, Total Orthophosphate (As P)	NV	µg/L	--	--	--	--	3 U	--	--	--	--
Saturation pH	NV	pH UNITS	--	--	--	--	0 U	--	--	--	--
Silica (as SIO2)	NV	µg/L	--	--	--	--	**2070000**	--	--	--	--
Sulfate	NV	µg/L	--	--	--	--	**117000**	--	--	--	--
Sulfur	NV	µg/L	--	--	--	--	**50600**	--	--	--	--
Total dissolved solids	NV	µg/L	--	--	--	--	**609000 U**	--	--	--	--
Turbidity	NV	NTU	--	--	--	--	**49.6**	--	--	--	--
Metals and Hydride Forming Metals											
Antimony	6	µg/L	--	--	**0.39**	--	**3.3**	--	--	--	--
Arsenic	25	µg/L	--	--	**0.49**	--	**0.17**	--	--	--	--
Barium	1000	µg/L	--	--	**64.1**	--	**4.44**	--	--	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location					OW31				
		Sample ID	OW26S	OW26S	OW26S	OW26S	OW31	OW31	DUP	OW31-E	OW31
		Start Depth (m)	3.08	3.08	3.08	3.08	28.90	28.90	28.90	28.90	28.90
		End Depth (m)	4.60	4.60	4.60	4.60	33.32	33.32	33.32	33.32	33.32
		Sample Type	N	N	N	N	N	N	FD	N	N
		Sample Date	18 Nov 2015	26 Oct 2016	31 Aug 2017	26 Feb 2020	19 Sep 2016	08 Sep 2017	08 Sep 2017	17 Oct 2018	02 Mar 2020
Analyte	**Table 6 SCS [a]**	**Unit**									
Beryllium	4	µg/L	--	--	0.1 U	--	0.1 U	--	--	--	--
Boron	5000	µg/L	--	--	**76**	--	**93**	--	--	--	--
Cadmium	2.1	µg/L	--	--	**0.783**	--	0.01 U	--	--	--	--
Calcium	NV	µg/L	--	--	--	--	**35600**	--	--	--	--
Chromium	50	µg/L	--	--	**0.55**	--	0.5 U	--	--	--	--
Cobalt	3.8	µg/L	--	--	**0.83**	--	0.1 U	--	--	--	--
Copper	69	µg/L	--	--	**9.68**	--	0.2 U	--	--	--	--
Lead	10	µg/L	--	--	**0.204**	--	0.05 U	--	--	--	--
Magnesium	NV	µg/L	--	--	--	--	**42300**	--	--	--	--
Molybdenum	70	µg/L	--	--	**2.64**	--	**18.8**	--	--	--	--
Nickel	100	µg/L	--	--	**5.39**	--	**0.65**	--	--	--	--
Selenium	10	µg/L	--	--	**0.264**	--	0.05 U	--	--	--	--
Silver	1.2	µg/L	--	--	0.05 U	--	0.05 U	--	--	--	--
Sodium	490000	µg/L	--	--	**48300**	--	**97800**	--	--	--	--
Thallium	2	µg/L	--	--	**0.128**	--	0.01 U	--	--	--	--
Uranium	20	µg/L	--	--	**3.53**	--	**0.015**	--	--	--	--
Vanadium	6.2	µg/L	--	--	0.5 U	--	0.5 U	--	--	--	--
Zinc	890	µg/L	--	--	**722**	--	1 U	--	--	--	--
Non-Regulated Metals											
Aluminum	NV	µg/L	--	--	--	--	5 U	--	--	--	--
Bismuth	NV	µg/L	--	--	--	--	0.05 U	--	--	--	--
Bromide	NV	µg/L	--	--	--	--	100 U	--	--	--	--
Cesium (Cs)	NV	µg/L	--	--	--	--	**1.58**	--	--	--	--
Fluoride	NV	µg/L	--	--	--	--	**105**	--	--	--	--
Iron	NV	µg/L	--	--	--	--	10 U	--	--	--	--
Lithium	NV	µg/L	--	--	--	--	**68.9**	--	--	--	--
Manganese	NV	µg/L	--	--	--	--	**269**	--	--	--	--
Potassium	NV	µg/L	--	--	--	--	**30600**	--	--	--	--
Rubidium (Rb)	NV	µg/L	--	--	--	--	**99.1**	--	--	--	--
Silicon	NV	µg/L	--	--	--	--	**968**	--	--	--	--
Strontium	NV	µg/L	--	--	--	--	**1050**	--	--	--	--
Tellurium	NV	µg/L	--	--	--	--	0.2 U	--	--	--	--
Thorium	NV	µg/L	--	--	--	--	0.1 U	--	--	--	--
Tin	NV	µg/L	--	--	--	--	**0.88**	--	--	--	--
Titanium	NV	µg/L	--	--	--	--	0.3 U	--	--	--	--
Tungsten	NV	µg/L	--	--	--	--	0.1 U	--	--	--	--
Zirconium	NV	µg/L	--	--	--	--	0.3 U	--	--	--	--
ORPs											
Chromium, Hexavalent (Cr6+)	25	µg/L	--	--	1 U	--	1 U	--	--	--	--
Chloride (Cl)	790000	µg/L	--	--	**80600**	--	**182000**	--	--	--	--
Cyanide, Free	52	µg/L	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	52	µg/L	--	--	--	--	--	--	--	--	--
Mercury	0.1	µg/L	--	--	0.01 U	--	0.01 U	--	--	--	--
PAHs											
1-Methylnaphthalene	NV	µg/L	0.05 U	0.05 U	--	--	0.02 U	--	--	--	--
2-(1-)Methylnaphthalene	3.2	µg/L	0.071 U	0.071 U	--	--	0.0283 U	--	--	--	--
2-Methylnaphthalene	NV	µg/L	0.05 U	0.05 U	--	--	0.02 U	--	--	--	--
Acenaphthene	4.1	µg/L	0.05 U	0.05 U	--	--	0.02 U	--	--	--	--
Acenaphthylene	1	µg/L	0.05 U	0.05 U	--	--	0.02 U	--	--	--	--
Anthracene	1	µg/L	0.05 U	0.05 U	--	--	0.02 U	--	--	--	--
Benzo(a)anthracene	1	µg/L	0.05 U	0.05 U	--	--	0.02 U	--	--	--	--
Benzo(a)pyrene	0.01	µg/L	0.01 U	0.01 U	--	--	0.01 U	--	--	--	--
Benzo(b&j)fluoranthene	0.1	µg/L	0.05 U	0.05 U	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.1	µg/L	--	--	--	--	0.02 U	--	--	--	--
Benzo(g,h,i)perylene	0.2	µg/L	0.05 U	0.05 U	--	--	0.02 U	--	--	--	--
Benzo(k)fluoranthene	0.1	µg/L	0.05 U	0.05 U	--	--	0.02 U	--	--	--	--
Chrysene	0.1	µg/L	0.05 U	0.05 U	--	--	0.02 U	--	--	--	--
Dibenzo(a,h)anthracene	0.2	µg/L	0.05 U	0.05 U	--	--	0.02 U	--	--	--	--
Fluoranthene	0.41	µg/L	0.05 U	0.05 U	--	--	0.02 U	--	--	--	--

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location					OW31				
		Sample ID	OW26S	OW26S	OW26S	OW26S	OW31	OW31	DUP	OW31-E	OW31
		Start Depth (m)	3.08	3.08	3.08	3.08	28.90	28.90	28.90	28.90	28.90
		End Depth (m)	4.60	4.60	4.60	4.60	33.32	33.32	33.32	33.32	33.32
		Sample Type	N	N	N	N	N	N	FD	N	N
		Sample Date	18 Nov 2015	26 Oct 2016	31 Aug 2017	26 Feb 2020	19 Sep 2016	08 Sep 2017	08 Sep 2017	17 Oct 2018	02 Mar 2020
Analyte	**Table 6 SCS [a]**	**Unit**									
Fluorene	120	µg/L	0.05 U	0.05 U	--	--	0.02 U	--	--	--	--
Indeno(1,2,3-Cd)Pyrene	0.2	µg/L	0.05 U	0.05 U	--	--	0.02 U	--	--	--	--
Naphthalene	7	µg/L	0.05 U	0.05 U	--	--	0.05 U	--	--	--	--
Phenanthrene	1	µg/L	0.03 U	0.03 U	--	--	0.02 U	--	--	--	--
Pyrene	4.1	µg/L	0.05 U	0.05 U	--	--	0.02 U	--	--	--	--
PCBs											
Aroclor 1016	NV	µg/L	--	--	--	--	--	--	--	--	--
Aroclor 1221	NV	µg/L	--	--	--	--	--	--	--	--	--
Aroclor 1232	NV	µg/L	--	--	--	--	--	--	--	--	--
Aroclor 1242	NV	µg/L	--	--	0.02 U	--	0.02 U	--	--	--	--
Aroclor 1248	NV	µg/L	--	--	0.02 U	--	0.02 U	--	--	--	--
Aroclor 1254	NV	µg/L	--	--	0.02 U	--	0.02 U	--	--	--	--
Aroclor 1260	NV	µg/L	--	--	0.02 U	--	0.02 U	--	--	--	--
Aroclor 1262	NV	µg/L	--	--	--	--	--	--	--	--	--
Aroclor 1268	NV	µg/L	--	--	--	--	--	--	--	--	--
PCB, Total	0.2	µg/L	--	--	0.04 U	--	0.04 U	--	--	--	--
PHCs											
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	420	µg/L	25 U	25 U	25 U	--	--	25 U	25 U	--	--
Petroleum Hydrocarbons F1 (C6-C10)	420	µg/L	25 U	25 U	25 U	--	25 U	25 U	25 U	--	--
Petroleum Hydrocarbons F1+F2	NV	µg/L	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	NV	µg/L	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16)	150	µg/L	100 U	100 U	100 U	--	100 U	100 U	100 U	--	--
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	NV	µg/L	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34)	500	µg/L	200 U	200 U	250 U	--	250 U	250 U	250 U	--	--
Petroleum Hydrocarbons F3+F4	NV	µg/L	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3a (C16-C22)	NV	µg/L	--	--	--	--	--	130 U	130 U	--	--
Petroleum Hydrocarbons F3b (C22-C34)	NV	µg/L	--	--	--	--	--	130 U	130 U	--	--
Petroleum Hydrocarbons F4 (C34-C50)	500	µg/L	200 U	200 U	250 U	--	250 U	250 U	250 U	--	--
Total Petroleum Hydrocarbons (C6 to C50)	NV	µg/L	--	--	370 U	--	--	--	--	--	--
SVOCs											
2-Hexanone	NV	µg/L	--	--	--	--	--	--	--	--	--
Benzo(e)pyrene	NV	µg/L	--	--	--	--	--	--	--	--	--
Chloroethane	NV	µg/L	--	--	--	--	--	--	--	--	--
Chloromethane	NV	µg/L	--	--	--	--	--	--	--	--	--
Perylene	NV	µg/L	--	--	--	--	--	--	--	--	--
VOCs											
1,1,1,2-Tetrachloroethane	1.1	µg/L	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane	23	µg/L	**2.1**	**1.9**	**1.44**	**1.75**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	0.5	µg/L	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	0.5	µg/L	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	5	µg/L	**3.9**	**3.4**	**3.37**	**3.92**	0.5 U	**0.64**	**0.67**	**0.58**	0.5 U
1,1-Dichloroethene	0.5	µg/L	**0.12**	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	0.2	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichlorobenzene	3	µg/L	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	0.5	µg/L	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	0.58	µg/L	0.1 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	59	µg/L	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropene	0.5	µg/L	0.28 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dichlorobenzene	0.5	µg/L	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dioxane	50	µg/L	--	--	20 U	--	--	20 U	--	--	--
2-Butanone	1800	µg/L	5 U	10 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4-Methyl-2-Pentanone	640	µg/L	5 U	5 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Acetone	2700	µg/L	10 U	10 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U
Bromodichloromethane	16	µg/L	0.1 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromoform	5	µg/L	0.2 U	1 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromomethane	0.89	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride	0.2	µg/L	0.1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chlorobenzene	30	µg/L	0.1 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorodibromomethane	25	µg/L	0.2 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U

Table 6-8. Summary of Sampling Results in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

		Location					OW31				
		Sample ID	OW26S	OW26S	OW26S	OW26S	OW31	OW31	DUP	OW31-E	OW31
		Start Depth (m)	3.08	3.08	3.08	3.08	28.90	28.90	28.90	28.90	28.90
		End Depth (m)	4.60	4.60	4.60	4.60	33.32	33.32	33.32	33.32	33.32
		Sample Type	N	N	N	N	N	N	FD	N	N
		Sample Date	18 Nov 2015	26 Oct 2016	31 Aug 2017	26 Feb 2020	19 Sep 2016	08 Sep 2017	08 Sep 2017	17 Oct 2018	02 Mar 2020
Analyte	**Table 6 SCS [a]**	**Unit**									
Chloroform	2	µg/L	0.1 U	**0.57**	**1.4**	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	1.6	µg/L	**0.64**	**0.5**	**0.52 J**	**0.65**	**1.88**	**1.98**	**2.01**	**2.01**	**1.39**
cis-1,3-Dichloropropene	NV	µg/L	0.2 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Dichlorodifluoromethane	590	µg/L	0.5 U	1 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Dichloromethane	26	µg/L	0.5 U	2 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl tert-butyl ether (MTBE)	15	µg/L	0.2 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
n-Hexane	5	µg/L	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	5.4	µg/L	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	0.5	µg/L	0.1 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	1.6	µg/L	0.1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	NV	µg/L	0.2 U	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Trichloroethylene	0.5	µg/L	**0.32**	**0.29**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichlorofluoromethane	150	µg/L	0.2 U	0.5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Vinyl Chloride	0.5	µg/L	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

[a] MECP (2011) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

Source: Ontario Ministry of the Environment, Parks and Conservation (MECP). 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act.* Ministry of the Environment. April 15.

Notes:

Bold values indicate concentrations detected above the method detection limit

Shaded values indicate the result is greater than the Table 6 SCS.

% = percent

-- = not analyzed

µg/L = microgram(s) per litre

ABNs = acid, base and neutral compounds

BTEX - benzene, toluene, ethylbenzene, and xylene

CPs = chlorophenols

FD = field duplicate

J = associated value is estimated

m = metre(s)

MECP = Ministry of the Environment, Conservation and Parks

mS/cm = milliSiemen(s) per centimetre

N = normal sample

NV = no value

OCPs = organochlorine pesticides

ORPs = other regulated parameters

PCBs = polychlorinated biphenyls

PHCs = petroleum hydrocarbons

SAR = sodium adsorption ratio

SVOCs = semi-volatile organic compounds

U = parameter was not detected above the associated value

VOCs = volatile organic compounds

Table 6-9. Maximum Detected Concentrations in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Analyte Group	Analyte Name	Unit	Maximum Detected Concentration	Location	Sample Name	Sample Type	Sample Date	Start Depth	End Depth	SDG
BTEX	Benzene	µg/l	66.8	MW17-105S	MW17-105S	N	10/31/2017	3.2	4.72	L2017929
BTEX	Ethylbenzene	µg/l	8.46	MW17-109S	MW17-109S	N	3/2/2020	2.79	4.32	L2423564
BTEX	Toluene	µg/l	1.74	MW18-112G	MW-112 G	N	11/22/2018	19.35	20.88	L2200634
BTEX	Xylene, o	µg/l	3.1	OW22S	OW22S	N	10/25/2016	1.36	4.1	B6N2170
BTEX	Xylenes, m & p	µg/l	37.4	MW17-105S	MW17-105S	N	10/31/2017	3.2	4.72	L2017929
BTEX	Xylenes, Total	µg/l	38.6	MW17-105S	MW17-105S	N	10/31/2017	3.2	4.72	L2017929
Metals	Barium	µg/l	283	OW13-39D	OW13-39D	N	9/7/2017	10.68	12.2	L1988005
Metals	Boron	µg/l	251	OW13-39D	OW13-39D	N	9/7/2017	10.68	12.2	L1988005
Metals	Cadmium	µg/l	1.33	OW12	OW12	N	9/5/2017	1.76	4.81	L1986110
Metals	Chromium	µg/l	13.3	MW18-114D	MW18-114D	N	12/10/2018	19.2	20.73	L2209758
Metals	Cobalt	µg/l	5.79	OW11-II	DUP3	FD	9/1/2017	6.28	7.8	L1985429
Metals	Copper	µg/l	14.4	OW07-37	OW07-37	N	9/6/2017	3.1	6.15	L1988005
Metals	Lead	µg/l	17	OW09-II	OW9-II	N	12/12/2012	6.33	7.85	B2J7139
Metals	Molybdenum	µg/l	52.4	MW18-114D	MW18-114D	N	12/10/2018	19.2	20.73	L2209758
Metals	Nickel	µg/l	16.2	OW22S	OW22S	N	9/6/2017	1.36	4.1	L1988005
Metals	Selenium	µg/l	6.26	MW17-101S	MW17-101S	N	11/1/2017	1.22	4.27	L2017929
Metals	Thallium	µg/l	0.984	OW07-32	OW07-32	N	9/6/2017	3.17	6.22	L1988005
Metals	Uranium	µg/l	25.9	OW22S	OW22S	N	9/6/2017	1.36	4.1	L1988005
Metals	Vanadium	µg/l	1.66	OW07-31	OW07-31	N	9/5/2017	1.5	6.22	L1986110
Metals	Zinc	µg/l	4500	OW19	OW19	N	3/23/2010	1.77	4.82	B035447
Metals, Ca & Mg	Calcium	µg/l	440000	OW22S	OW 22(S)	N	9/20/2011	1.36	4.1	B1E6126
Metals, Ca & Mg	Magnesium	µg/l	46000	OW14	OW 14	N	9/20/2011	6.29	7.81	B1E6126
Metals, HF	Antimony	µg/l	6.2	MW18-114D	MW18-114D	N	12/10/2018	19.2	20.73	L2209758
Metals, HF	Arsenic	µg/l	45.7	OW07-31	OW07-31	N	9/5/2017	1.5	6.22	L1986110
Metals, Na	Sodium	µg/l	183000	MW18-120D	MW18-120D	N	7/30/2018	18.59	20.11	L2139225
Metals, Other	Bromide	µg/l	1000	OW16	OW16	N	10/7/2010	1.82	4.87	B0E3110
Metals, Other	Cesium (Cs)	µg/l	1.58	OW31	OW31	N	9/19/2016	28.9	33.32	L1830739
Metals, Other	Fluoride	µg/l	3900	OW14	OW14	N	10/7/2010	6.29	7.81	B0E3110
Metals, Other	Iron	µg/l	8900	OW23S	OW23(S)	N	12/12/2012	2.52	5.26	B2J7139
Metals, Other	Lithium	µg/l	68.9	OW31	OW31	N	9/19/2016	28.9	33.32	L1830739
Metals, Other	Manganese	µg/l	1200	OW23S	OW23(S)	N	12/12/2012	2.52	5.26	B2J7139
Metals, Other	Potassium	µg/l	30600	OW31	OW31	N	9/19/2016	28.9	33.32	L1830739
Metals, Other	Rubidium (Rb)	µg/l	99.1	OW31	OW31	N	9/19/2016	28.9	33.32	L1830739
Metals, Other	Silicon	µg/l	968	OW31	OW31	N	9/19/2016	28.9	33.32	L1830739
Metals, Other	Strontium	µg/l	1050	OW31	OW31	N	9/19/2016	28.9	33.32	L1830739
Metals, Other	Tin	µg/l	0.88	OW31	OW31	N	9/19/2016	28.9	33.32	L1830739
ORPs	Chloride (Cl)	µg/l	327000	OW07-31	OW07-31	N	9/5/2017	1.5	6.22	L1986110
ORPs	Electrical Conductivity	mS/cm	2	OW22S	OW 22(S)	N	9/20/2011	1.36	4.1	B1E6126
ORPs	pH	pH UNITS	8.08	OW31	OW31	N	9/19/2016	28.9	33.32	L1830739
PAH	2-(1-)Methylnaphthalene	µg/l	280	OW22S	OW22S	N	10/25/2016	1.36	4.1	B6N2170
PAH	Acenaphthene	µg/l	40	OW22S	OW22S	N	10/25/2016	1.36	4.1	B6N2170
PAH	Acenaphthylene	µg/l	0.553	MW17-109S	MW17-109S	N	11/2/2017	2.79	4.32	L2017929
PAH	Anthracene	µg/l	31	OW22S	OW22S	N	10/25/2016	1.36	4.1	B6N2170
PAH	Benzo(a)anthracene	µg/l	21	OW23S	OW23S	N	11/20/2015	2.52	5.26	B5N9633
PAH	Benzo(a)pyrene	µg/l	2.4	OW23S	OW23S	N	10/25/2016	2.52	5.26	B6N2170
PAH	Benzo(b&j)fluoranthene	µg/l	6.1	OW23S	OW23S	N	10/25/2016	2.52	5.26	B6N2170
PAH	Benzo(b)fluoranthene	µg/l	0.248	OW22S	OW22S	N	9/6/2017	1.36	4.1	L1988005
PAH	Benzo(g,h,i)perylene	µg/l	0.1	OW07-31	OW07- 31	N	3/29/2007	1.5	6.22	07T217626
PAH	Benzo(k)fluoranthene	µg/l	0.26	OW25	OW 25	N	9/19/2011	1.98	4.72	B1E6126

Table 6-9. Maximum Detected Concentrations in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Analyte Group	Analyte Name	Unit	Maximum Detected Concentration	Location	Sample Name	Sample Type	Sample Date	Start Depth	End Depth	SDG
PAH	Chrysene	µg/l	38	OW23S	OW23S	N	10/25/2016	2.52	5.26	B6N2170
PAH	Dibenzo(a,h)anthracene	µg/l	0.1	OW07-31	OW07- 31	N	3/29/2007	1.5	6.22	07T217626
PAH	Fluoranthene	µg/l	24	OW23S	OW23S	N	10/25/2016	2.52	5.26	B6N2170
PAH	Fluorene	µg/l	83	OW22S	OW22S	N	10/25/2016	1.36	4.1	B6N2170
PAH	Indeno(1,2,3-Cd)Pyrene	µg/l	0.1	OW07-31	OW07- 31	N	3/29/2007	1.5	6.22	07T217626
PAH	Naphthalene	µg/l	27	OW22S	OW22S	N	10/25/2016	1.36	4.1	B6N2170
PAH	Phenanthrene	µg/l	110	OW23S	OW23S	N	11/20/2015	2.52	5.26	B5N9633
PAH	Pyrene	µg/l	59	OW23S	OW23S	N	10/25/2016	2.52	5.26	B6N2170
PCB	Aroclor 1242	µg/l	0.037	MW18-125S	MW18-125S	N	8/2/2018	4.26	5.79	L2141576
PCB	Aroclor 1254	µg/l	0.66	OW26S	OW26S	N	3/24/2010	3.08	4.6	B036036
PCB	Aroclor 1260	µg/l	0.61	OW26S	OW26S	N	3/24/2010	3.08	4.6	B036036
PCB	PCB, Total	µg/l	1.27	OW26S	OW26S	N	3/24/2010	3.08	4.6	B036036
PHC	Petroleum Hydrocarbons F1 (C6-C10)	µg/l	1100	OW24D	OW 24(D)	N	9/20/2011	6.55	7.77	B1E6126
PHC	Petroleum Hydrocarbons F2 (C10-C16)	µg/l	210000	OW22S	OW22S	N	10/25/2016	1.36	4.1	B6N2170
PHC	Petroleum Hydrocarbons F3 (C16-C34)	µg/l	850000	OW22S	OW22S	N	10/25/2016	1.36	4.1	B6N2170
PHC	Petroleum Hydrocarbons F4 (C34-C50)	µg/l	37000	OW22S	OW22S	N	10/25/2016	1.36	4.1	B6N2170
SVOC	Benzo(e)pyrene	µg/l	0.065	OW22S	OW22(S)	N	10/25/2013	1.36	4.1	B3I4530
VOC	1,1,1-Trichloroethane	µg/l	37.1	OW11-II	OW11-II	N	9/1/2017	6.28	7.8	L1985429
VOC	1,1-Dichloroethane	µg/l	29.5	OW11-II	OW11-II	N	9/1/2017	6.28	7.8	L1985429
VOC	1,1-Dichloroethene	µg/l	64	OW24D	OW24D	N	11/20/2015	6.55	7.77	B5N9633
VOC	Acetone	µg/l	14	OW23S	OW23S	N	10/25/2016	2.52	5.26	B6N2170
VOC	Bromodichloromethane	µg/l	7.3	MW18-112G	MW-112 G	N	11/22/2018	19.35	20.88	L2200634
VOC	Chlorodibromomethane	µg/l	7.4	MW18-112G	MW-112 G	N	11/22/2018	19.35	20.88	L2200634
VOC	Chloroform	µg/l	5.8	MW18-112G	MW-112 G	N	11/22/2018	19.35	20.88	L2200634
VOC	cis-1,2-Dichloroethene	µg/l	960	OW24D	OW24D	N	11/20/2015	6.55	7.77	B5N9633
VOC	n-Hexane	µg/l	7.46	MW17-105S	MW17-105S	N	10/31/2017	3.2	4.72	L2017929
VOC	Tetrachloroethene	µg/l	1.14	OW19	OW19	N	3/21/2018	1.77	4.82	L2070926
VOC	trans-1,2-Dichloroethene	µg/l	81	OW24D	OW24D	N	11/20/2015	6.55	7.77	B5N9633
VOC	Trichloroethylene	µg/l	7900	OW24D	OW24D	N	11/20/2015	6.55	7.77	B5N9633
VOC	Vinyl Chloride	µg/l	86	OW24D	OW 24(D)	N	9/20/2011	6.55	7.77	B1E6126

Notes:

µg/l = microgram(s) per litre
ABN - acid, base, and neutral compounds
BTEX = benzene, toluene, ethylbenzene, and xylenes
Ca & Mg = calcium and magnesium
F = fraction
FD = field duplicate
HF = hydride-forming
J = noted result was estimated
mbgs = metre(s) below ground surface
mS/cm = milliSiemen(s) per centimetre
N = normal sample
Na = sodium
ORP = other regulated parameters
PAH = polycyclic aromatic hydrocarbons
PCB = polychlorinated biphenyls
pg/g = picogram(s) per gram
PHC = petroleum hydrocarbons
SAR = sodium adsorption ratio
SDG = sample delivery group
VOC = volatile organic compounds

Table 6-10a. Preliminary COC Screening in Groundwater

Phase Two Environmental Site Assesment, 200 Beverley Street, Guelph, Ontario

Contaminant [a]	Parameter Group	No. of Stations	No. of Samples	Other Criteria [b]	Max Detected Concentration	Max Nondetect Concentration	Maximum Measured Concentration [c]	Units	Minimum Detection Limit	Applicable SCS [d]	No. of Detects Exceeding Table 6 SCS	No. of Nondetects Exceeding Table 6 SCS	No. of Detected with no Table 6 SCS	No. of Nondetects with no Table 6 SCS	Retained as a Contaminant for Phase Two ESA? (Rationale)
Benzene	BTEX	94	378	--	66.8	50	66.8	µg/L	0.02	0.5	68	17	--	--	**Yes, included (Max > Table 6 SCS)**
Ethylbenzene	BTEX	94	378	--	8.46	50	50	µg/L	0.01	2.4	4	14	--	--	**Yes, included (Max > Table 6 SCS)**
Arsenic	INO	72	181	--	45.7	1	45.7	µg/L	0.1	25	5	--	--	--	**Yes, included (Max > Table 6 SCS)**
Lead	INO	70	177	--	17	0.5	17	µg/L	0.05	10	6	--	--	--	**Yes, included (Max > Table 6 SCS)**
Zinc	INO	70	244	--	4500	10	4500	µg/L	1	890	56	--	--	--	**Yes, included (Max > Table 6 SCS)**
2-(1-)Methylnaphthalene	PAH	55	197	--	280	14	280	µg/L	0.0283	3.2	5	2	--	--	**Yes, included (Max > Table 6 SCS)**
Acenaphthene	PAH	55	197	--	40	10	40	µg/L	0.003	4.1	3	2	--	--	**Yes, included (Max > Table 6 SCS)**
Anthracene	PAH	55	197	--	31	20	31	µg/L	0.003	1	5	2	--	--	**Yes, included (Max > Table 6 SCS)**
Benzo(a)anthracene	PAH	55	197	--	21	5	21	µg/L	0.003	1	5	1	--	--	**Yes, included (Max > Table 6 SCS)**
Benzo(a)pyrene	PAH	55	201	--	2.4	2	2.4	µg/L	0.003	0.01	15	7	--	--	**Yes, included (Max > Table 6 SCS)**
Benzo(b&j)fluoranthene	PAH	55	197	--	6.1	10	10	µg/L	0.003	0.1	7	7	--	--	**Yes, included (Max > Table 6 SCS)**
Benzo(k)fluoranthene	PAH	55	197	--	0.26	10	10	µg/L	0.003	0.1	1	9	--	--	**Yes, included (Max > Table 6 SCS)**
Chrysene	PAH	55	197	--	38	10	38	µg/L	0.003	0.1	9	6	--	--	**Yes, included (Max > Table 6 SCS)**
Fluoranthene	PAH	55	197	--	24	20	24	µg/L	0.003	0.41	7	2	--	--	**Yes, included (Max > Table 6 SCS)**
Naphthalene	PAH	55	197	--	27	15	27	µg/L	0.003	7	1	2	--	--	**Yes, included (Max > Table 6 SCS)**
Phenanthrene	PAH	55	197	--	110	1.4	110	µg/L	0.003	1	9	1	--	--	**Yes, included (Max > Table 6 SCS)**
Pyrene	PAH	55	197	--	59	0.05	59	µg/L	0.003	4.1	6	--	--	--	**Yes, included (Max > Table 6 SCS)**
Petroleum Hydrocarbons F1 (C6-C10)	PHC	64	209	--	1100	100	1100	µg/L	20	420	4	--	--	--	**Yes, included (Max > Table 6 SCS)**
Petroleum Hydrocarbons F2 (C10-C16)	PHC	64	211	--	210000	100	210000	µg/L	50	150	16	--	--	--	**Yes, included (Max > Table 6 SCS)**
Petroleum Hydrocarbons F3 (C16-C34)	PHc	64	211	--	850000	500	850000	µg/L	35	500	19	--	--	--	**Yes, included (Max > Table 6 SCS)**
Petroleum Hydrocarbons F4 (C34-C50)	PHC	64	211	--	37000	500	37000	µg/L	25	500	8	--	--	--	**Yes, included (Max > Table 6 SCS)**
1,1,1-Trichloroethane	VOC	94	365	--	37.1	50	50	µg/L	0.05	23	4	3	--	--	**Yes, included (Max > Table 6 SCS)**
1,1-Dichloroethane	VOC	94	365	--	29.5	50	50	µg/L	0.05	5	12	6	--	--	**Yes, included (Max > Table 6 SCS)**
1,1-Dichloroethene	VOC	94	365	--	64	25	64	µg/L	0.05	0.5	42	11	--	--	**Yes, included (Max > Table 6 SCS)**
cis-1,2-Dichloroethene	VOC	94	365	--	960	5	960	µg/L	0.05	1.6	139	6	--	--	**Yes, included (Max > Table 6 SCS)**
n-Hexane	VOC	94	321	--	7.46	250	250	µg/L	0.1	5	1	8	--	--	**Yes, included (Max > Table 6 SCS)**
Tetrachloroethene	VOC	94	365	--	1.14	50	50	µg/L	0.05	0.5	6	20	--	--	**Yes, included (Max > Table 6 SCS)**
trans-1,2-Dichloroethene	VOC	94	365	--	81	5	81	µg/L	0.05	1.6	38	6	--	--	**Yes, included (Max > Table 6 SCS)**
Trichloroethylene	VOC	94	365	--	7900	5	7900	µg/L	0.05	0.5	119	10	--	--	**Yes, included (Max > Table 6 SCS)**
Vinyl Chloride	VOC	94	365	--	86	100	100	µg/L	0.0002	0.5	98	17	--	--	**Yes, included (Max > Table 6 SCS)**
1,1'-Biphenyl	ABN	25	47	--	--	2.5	2.5	µg/L	0.003	0.5	--	1	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10b. Rationale for the Removal of Groundwater COCs
1,2,4-Trichlorobenzene	ABN	14	20	--	--	0.4	0.4	µg/L	0.3	3	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
2,4 & 2,6-Dinitrotoluene	ABN	10	13	--	--	0.57	0.57	µg/L	0.566	5	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
2,4-Dimethylphenol	ABN	10	13	--	--	0.5	0.5	µg/L	0.5	59	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
2,4-Dinitrophenol	ABN	10	13	--	--	1	1	µg/L	1	10	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
3,3'-Dichlorobenzidine	ABN	10	13	--	--	0.4	0.4	µg/L	0.4	0.5	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
4-Chloroaniline	ABN	10	13	--	--	0.4	0.4	µg/L	0.4	10	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Bis (2-chloroethyl) ether	ABN	10	13	--	--	0.4	0.4	µg/L	0.4	5	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
bis (2-Chloroisopropyl) ether	ABN	10	13	--	--	0.4	0.4	µg/L	0.4	120	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Bis (2-ethylhexyl) phthalate	ABN	10	13	--	--	2	2	µg/L	2	10	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Diethylphthalate	ABN	10	13	--	--	0.2	0.2	µg/L	0.2	30	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Dimethylphthalate	ABN	10	13	--	--	0.2	0.2	µg/L	0.2	30	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Phenol	ABN	10	13	--	--	0.5	0.5	µg/L	0.5	890	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Toluene	BTEX	94	378	--	1.74	100	100	µg/L	0.01	24	--	6	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10b. Rationale for the Removal of Groundwater COCs
Xylenes, Total	BTEX	94	377	--	38.6	50	50	µg/L	0.01	72	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
2,4,5-Trichlorophenol	CP	10	13	--	--	0.2	0.2	µg/L	0.2	8.9	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
2,4,6-Trichlorophenol	CP	10	13	--	--	0.2	0.2	µg/L	0.2	2	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
2,4-Dichlorophenol	CP	10	13	--	--	0.3	0.3	µg/L	0.3	20	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
2-Chlorophenol	CP	10	13	--	--	0.3	0.3	µg/L	0.3	8.9	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Pentachlorophenol	CP	10	13	--	--	0.5	0.5	µg/L	0.5	30	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Ammonia	GC	22	57	NA	1750	50	1750	µg/L	8	--	--	--	41	16	No, excluded (no standard available; detected concentrations); see Table 6-10b Rationale for the Removal of Groundwater COCs

Table 6-10a. Preliminary COC Screening in Groundwater

Phase Two Environmental Site Assesment, 200 Beverley Street, Guelph, Ontario

Contaminant [a]	Parameter Group	No. of Stations	No. of Samples	Other Criteria [b]	Max Detected Concentration	Max Nondetect Concentration	Maximum Measured Concentration [c]	Units	Minimum Detection Limit	Applicable SCS [d]	No. of Detects Exceeding Table 6 SCS	No. of Nondetects Exceeding Table 6 SCS	No. of Detected with no Table 6 SCS	No. of Nondetects with no Table 6 SCS	Retained as a Contaminant for Phase Two ESA? (Rationale)
Nitrate, as NO3	GC	34	141	10000	1370	1000	1370	µg/L	10	--	--	--	29	112	No, excluded (Max < or = PGMIS value)
Nitrite, as NO2	GC	34	141	1000	36	100	100	µg/L	2	--	--	--	7	134	No, excluded (Max < or = PGMIS value)
Phosphorus	GC	1	1	7970	--	50	50	µg/L	50	--	--	--	--	1	No, excluded (Max < or = PGMIS value)
Silica (as SIO2)	GC	1	1	NA	2070000	--	2070000	µg/L	110000	--	--	--	1	--	No, excluded (no standard available; detected concentrations); see Table 6-10b Rationale for the Removal of Groundwater COCs
Sulfate	GC	28	134	1070000	910000	--	910000	µg/L	100	--	--	--	134	--	No, excluded (Max < or = PGMIS value)
Sulfur	GC	1	1	NA	50600	--	50600	µg/L	500	--	--	--	1	--	No, excluded (no standard available; detected concentrations); see Table 6-10b Rationale for the Removal of Groundwater COCs
Aluminum	INO	1	1	86.9	--	5	5	µg/L	5	--	--	--	--	1	No, excluded (Max < or = PGMIS value)
Antimony	INO	72	105	--	6.2	1	6.2	µg/L	0.1	6	1	--	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10c. Rationale for the Removal of Groundwater COCs Based on Subsequent Sampling Events
Barium	INO	70	99	--	283	--	283	µg/L	0.1	1000	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Beryllium	INO	70	99	--	--	1	1	µg/L	0.1	4	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Bismuth	INO	1	1	NA	--	0.05	0.05	µg/L	0.05	--	--	--	--	1	No, excluded (no standard available; all results nondetect)
Boron	INO	70	99	--	251	100	251	µg/L	10	5000	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Bromide	INO	23	77	NA	1000	2000	2000	µg/L	100	--	--	--	1	76	No, excluded (no standard available; detected concentrations); see Table 6-10b Rationale for the Removal of Groundwater COCs
Cadmium	INO	70	99	--	1.33	0.5	1.33	µg/L	0.01	2.1	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Calcium	INO	28	134	431000	440000	--	440000	µg/L	50	--	--	--	134	--	No, excluded (Max > PGMIS value); see Table 6-10b. Rationale for the Removal of Groundwater COCs
Cesium (Cs)	INO	1	1	NA	1.58	--	1.58	µg/L	0.01	--	--	--	1	--	No, excluded (no standard available; detected concentrations); see Table 6-10b Rationale for the Removal of Groundwater COCs
Chloride (Cl)	INO	50	190	--	327000	2500	327000	µg/L	300	790000	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Chromium	INO	70	99	--	13.3	5	13.3	µg/L	0.5	50	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Chromium, Hexavalent (Cr6+)	INO	50	64	--	--	5	5	µg/L	0.01	25	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Cobalt	INO	70	99	--	5.79	1	5.79	µg/L	0.1	3.8	2	--	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10c. Rationale for the Removal of Groundwater COCs Based on Subsequent Sampling Events
Copper	INO	70	156	--	14.4	20	20	µg/L	0.2	69	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Cyanide	INO	49	56	--	--	20	20	µg/L	2	52	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Cyanide, Free	INO	7	7	--	--	2	2	µg/L	0.002	52	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Fluoride	INO	23	77	2090	3900	--	3900	µg/L	2	--	--	--	77	--	No, excluded (Max > PGMIS value); see Table 6-10b. Rationale for the Removal of Groundwater COCs
Iron	INO	22	58	4090	8900	20	8900	µg/L	10	--	--	--	47	11	No, excluded (Max > PGMIS value); see Table 6-10b. Rationale for the Removal of Groundwater COCs
Lithium	INO	1	1	NA	68.9	--	68.9	µg/L	1	--	--	--	1	--	No, excluded (no standard available; detected concentrations); see Table 6-10b Rationale for the Removal of Groundwater COCs
Magnesium	INO	28	134	134000	46000	--	46000	µg/L	50	--	--	--	134	--	No, excluded (Max < or = PGMIS value)
Manganese	INO	22	58	717	1200	10	1200	µg/L	0.5	--	--	--	50	8	No, excluded (Max > PGMIS value); see Table 6-10b. Rationale for the Removal of Groundwater COCs
Mercury	INO	50	64	--	--	0.02	0.02	µg/L	0.01	0.1	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Molybdenum	INO	70	99	--	52.4	0.5	52.4	µg/L	0.05	70	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Nickel	INO	70	99	--	16.2	5	16.2	µg/L	0.5	100	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Potassium	INO	28	134	20700	30600	1000	30600	µg/L	50	--	--	--	133	1	No, excluded (Max > PGMIS value); see Table 6-10b. Rationale for the Removal of Groundwater COCs
Rubidium (Rb)	INO	1	1	NA	99.1	--	99.1	µg/L	0.2	--	--	--	1	--	No, excluded (no standard available; detected concentrations); see Table 6-10b Rationale for the Removal of Groundwater COCs
Selenium	INO	72	105	--	6.26	0.8	6.26	µg/L	0.05	10	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Silicon	INO	1	1	NA	968	--	968	µg/L	50	--	--	--	1	--	No, excluded (no standard available; detected concentrations); see Table 6-10b Rationale for the Removal of Groundwater COCs
Silver	INO	70	99	--	--	0.5	0.5	µg/L	0.05	1.2	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Sodium	INO	65	219	--	183000	5000	183000	µg/L	100	490000	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Strontium	INO	1	1	20200	1050	--	1050	µg/L	1	--	--	--	1	--	No, excluded (Max < or = PGMIS value)
Tellurium	INO	1	1	NA	--	0.2	0.2	µg/L	0.2	--	--	--	--	1	No, excluded (no standard available; all results nondetect)
Thallium	INO	70	99	--	0.984	0.3	0.984	µg/L	0.01	2	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Thorium	INO	1	1	NA	--	0.1	0.1	µg/L	0.1	--	--	--	--	1	No, excluded (no standard available; all results nondetect)

Table 6-10a. Preliminary COC Screening in Groundwater

Phase Two Environmental Site Assesment, 200 Beverley Street, Guelph, Ontario

Contaminant [a]	Parameter Group	No. of Stations	No. of Samples	Other Criteria [b]	Max Detected Concentration	Max Nondetect Concentration	Maximum Measured Concentration [c]	Units	Minimum Detection Limit	Applicable SCS [d]	No. of Detects Exceeding Table 6 SCS	No. of Nondetects Exceeding Table 6 SCS	No. of Detected with no Table 6 SCS	No. of Nondetects with no Table 6 SCS	Retained as a Contaminant for Phase Two ESA? (Rationale)
Tin	INO	1	1	NA	0.88	--	0.88	µg/L	0.1	--	--	--	1	--	No, excluded (no standard available; detected concentrations); see Table 6-10b Rationale for the Removal of Groundwater COCs
Titanium	INO	1	1	4.8	--	0.3	0.3	µg/L	0.3	--	--	--	--	1	No, excluded (Max < or = PGMIS value)
Tungsten	INO	1	1	NA	--	0.1	0.1	µg/L	0.1	--	--	--	--	1	No, excluded (no standard available; all results nondetect)
Uranium	INO	70	92	--	25.9	--	25.9	µg/L	0.01	20	1	--	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10c. Rationale for the Removal of Groundwater COCs Based on Subsequent Sampling Events
Vanadium	INO	70	99	--	1.66	5	5	µg/L	0.4	6.2	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Zirconium	INO	1	1	NA	--	0.3	0.3	µg/L	0.3	--	--	--	--	1	No, excluded (no standard available; all results nondetect)
Acenaphthylene	PAH	55	197	--	0.553	10	10	µg/L	0.003	1	--	6	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10b. Rationale for the Removal of Groundwater COCs
Benzo(g,h,i)perylene	PAH	55	197	--	0.1	10	10	µg/L	0.003	0.2	--	8	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10b. Rationale for the Removal of Groundwater COCs
Dibenzo(a,h)anthracene	PAH	55	197	--	0.1	10	10	µg/L	0.003	0.2	--	8	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10b. Rationale for the Removal of Groundwater COCs
Fluorene	PAH	55	197	--	83	50	83	µg/L	0.003	120	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Indeno(1,2,3-Cd)Pyrene	PAH	55	197	--	0.1	10	10	µg/L	0.003	0.2	--	8	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10b. Rationale for the Removal of Groundwater COCs
PCB, Total	PCB	17	27	--	1.27	0.2	1.27	µg/L	0.01	0.2	1	--	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10c. Rationale for the Removal of Groundwater COCs Based on Subsequent Sampling Events
2-Hexanone	SVOC	7	7	NA	--	0.3	0.3	µg/L	0.3	--	--	--	--	7	No, excluded (no standard available; all results nondetect)
Benzo(e)pyrene	SVOC	15	15	NA	0.065	5	5	µg/L	0.003	--	--	--	1	14	No, excluded (no standard available; detected concentrations); see Table 6-10b Rationale for the Removal of Groundwater COCs
Chloroethane	SVOC	29	104	NA	--	50	50	µg/L	0.1	--	--	--	--	104	No, excluded (no standard available; all results nondetect)
Chloromethane	SVOC	29	104	NA	--	130	130	µg/L	0.05	--	--	--	--	104	No, excluded (no standard available; all results nondetect)
Perylene	SVOC	15	15	NA	--	5	5	µg/L	0.003	--	--	--	--	15	No, excluded (no standard available; all results nondetect)
1,1,1,2-Tetrachloroethane	VOC	94	365	--	--	100	100	µg/L	0.025	1.1	--	19	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10b. Rationale for the Removal of Groundwater COCs
1,1,2,2-Tetrachloroethane	VOC	94	364	--	--	100	100	µg/L	0.05	0.5	--	41	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10b. Rationale for the Removal of Groundwater COCs
1,1,2-Trichloroethane	VOC	94	357	--	--	100	100	µg/L	0.05	0.5	--	40	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10b. Rationale for the Removal of Groundwater COCs
1,2-Dibromoethane	VOC	94	359	--	--	100	100	µg/L	0.05	0.2	--	55	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10b. Rationale for the Removal of Groundwater COCs
1,2-Dichlorobenzene	VOC	94	365	--	--	100	100	µg/L	0.05	3	--	14	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10b. Rationale for the Removal of Groundwater COCs
1,2-Dichloroethane	VOC	94	364	--	--	100	100	µg/L	0.02	0.5	--	39	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10b. Rationale for the Removal of Groundwater COCs
1,2-Dichloropropane	VOC	94	365	--	--	50	50	µg/L	0.05	0.58	--	20	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10b. Rationale for the Removal of Groundwater COCs
1,3-Dichlorobenzene	VOC	94	365	--	--	100	100	µg/L	0.05	59	--	1	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10b. Rationale for the Removal of Groundwater COCs
1,3-Dichloropropene	VOC	94	270	--	--	140	140	µg/L	0.28	0.5	--	20	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10b. Rationale for the Removal of Groundwater COCs
1,4-Dichlorobenzene	VOC	94	364	--	--	100	100	µg/L	0.05	0.5	--	39	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10b. Rationale for the Removal of Groundwater COCs
1,4-Dioxane	VOC	13	16	--	--	20	20	µg/L	20	50	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Acetone	VOC	94	365	--	14	5000	5000	µg/L	0.5	2700	--	1	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10b. Rationale for the Removal of Groundwater COCs
Bromodichloromethane	VOC	94	365	--	7.3	50	50	µg/L	0.05	16	--	6	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10b. Rationale for the Removal of Groundwater COCs
Bromoform	VOC	94	365	--	--	100	100	µg/L	0.1	5	--	10	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10b. Rationale for the Removal of Groundwater COCs
Bromomethane	VOC	94	359	--	--	250	250	µg/L	0.1	0.89	--	54	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10b. Rationale for the Removal of Groundwater COCs
Carbon tetrachloride	VOC	94	363	--	--	50	50	µg/L	0.05	0.2	--	48	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10b. Rationale for the Removal of Groundwater COCs
Chlorobenzene	VOC	94	365	--	--	50	50	µg/L	0.01	30	--	1	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10b. Rationale for the Removal of Groundwater COCs

Table 6-10a. Preliminary COC Screening in Groundwater

Phase Two Environmental Site Assesment, 200 Beverley Street, Guelph, Ontario

Contaminant [a]	Parameter Group	No. of Stations	No. of Samples	Other Criteria [b]	Max Detected Concentration	Max Nondetect Concentration	Maximum Measured Concentration [c]	Units	Minimum Detection Limit	Applicable SCS [d]	No. of Detects Exceeding Table 6 SCS	No. of Nondetects Exceeding Table 6 SCS	No. of Detected with no Table 6 SCS	No. of Nondetects with no Table 6 SCS	Retained as a Contaminant for Phase Two ESA? (Rationale)
Chlorodibromomethane	VOC	94	358	--	7.4	100	100	µg/L	0.05	25	--	6	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10b. Rationale for the Removal of Groundwater COCs
Chloroform	VOC	94	365	--	5.8	50	50	µg/L	0.05	2	1	14	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10b. and Table 6.10c
Dichlorodifluoromethane	VOC	94	321	--	--	250	250	µg/L	0.05	590	--	--	--	--	No, excluded (Max < or = Table 6 SCS)
Dichloromethane	VOC	94	365	--	--	250	250	µg/L	0.1	26	--	6	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10b. Rationale for the Removal of Groundwater COCs
Methyl Ethyl Ketone	VOC	94	365	--	--	2500	2500	µg/L	0.3	1800	--	1	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10b. Rationale for the Removal of Groundwater COCs
Methyl isobutyl ketone	VOC	94	358	--	--	2500	2500	µg/L	0.1	640	--	6	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10b. Rationale for the Removal of Groundwater COCs
Methyl tert-butyl ether (MTBE)	VOC	94	365	--	--	100	100	µg/L	0.05	15	--	6	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10b. Rationale for the Removal of Groundwater COCs
Styrene	VOC	94	365	--	--	100	100	µg/L	0.05	5.4	--	10	--	--	No, excluded (Max > Table 6 SCS); see Table 6-10b. Rationale for the Removal of Groundwater COCs
Trichlorofluoromethane	VOC	94	365	--	--	100	100	µg/L	0.1	150	--	--	--	--	No, excluded (Max < or = Table 6 SCS)

[a] The representative maximum concentration (the maximum concentration of similar analytes or total concentration of multiple isomers) is used for comparison.

[b] For aluminun, calcium, iron, magnesium, manganese, phosphorus, potasium, strontium, nitrate, nitrite, sulfate, and fluoride, the Provincial Groundwater Monitoring Information System (PGMIS) is applied. (MECP 2011)

[c] Column lists the greater of the maximum detected concentration or the maximum nondetect concentration.

[d] Ontario Regulation 153/04, Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition for residential/parkland/institutional use and Coarse Textured Soils (MECP 2011).

Notes:

Bold parameters are identified as COCs

Grey-shaded parameters have been reviewed further because they are nondetect with maximum MDL concentrations, parameters with no SCS with detected concentrations, or detected concentrations greater than the PGMIS or other applicable alternative standard that may not be reflective of actual conditions at the Phase Two Property. Refer to Table 6-10b.

Blue-shaded parameters have been reviewed further because the exceedances occurred in at least one sampling event, with concentrations meeting the SCS in at least two subsequent sampling events. Refer to Table 6-10c.

-- = no value or not applicable
> = greater than
< = less than
µg/L = microgram(s) per litre
ABN = acid base neutral compounds
BTEX = benzene, toluene, ethylbenzene, and xylenes
COC = contaminant of concern
CP = chlorophenol
F = fraction
GC = general chemistry
MECP = Ontario Ministry of the Environment, Conservation and Parks
No. = number
OCP = organochlorine pesticide
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PHC = petroleum hydrocarbon
SCS = Site Condition Standard
VOC = volatile organic compound
INO = inorganic
SVOC = semi-volatile organic compound

Table 6-10b. Rationale for the Removal of Groundwater COCs

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Parameter Group	Parameter	Category	Sample(s)	Comment/Rationale
ABN	1,1'-Biphenyl	Parameters with existing SCS but RL exceedances only	OW23S RL exceedance in 2014 (Lab report B4J8984 from Maxxam)	1,1-Biphenyl was run as part of a historical PAH laboratory scan and was not a targeted as a COC for the area. No detected concentrations of 1,1'-biphenyl have been reported at the Site. The raised RL is likely due to LNAPL interference, as there has been consistent measurement of free product in this well. The remaining 44 locations where 1,1-biphenyl was analyzed did not report detected concentrations, and RLs met the SCS. Based on the available information, this parameter was determined to likely not be present at concentrations exceeding the SCS; therefore, at the discretion of the QPESA, it was not considered to be a COC for the Phase Two Property.
BTEX	Benzene Ethylbenzene	Parameters with existing SCS and both RL and detected exceedances	OW24D RL exceedances in 2010, 2011, 2012, 2014, and 2015.	The VOC parameters noted had RLs exceeding the SCS at OW24D from samples collected between 2010 and 2015. Laboratory reports indicated that detection limits were adjusted, as the sample required dilution because of high concentrations of other target analytes (review indicated PHC F1 and chlorinated VOCs were up to 5,400 µg/L). Samples collected in 2017 and 2020 from OW24D had nondetect concentrations reported with RLs meeting the SCS. Based on the available information, these parameters were determined to likely not be present at OW24D at concentrations exceeding the SCS; therefore, at the discretion of the QPESA, they were not carried through for the dataset for the Risk Assessment. The parameters were retained as a COCs for the Phase Two Property based on other locations exceeding the SCS.
BTEX	Toluene Xylenes	Parameters with existing SCS but RL exceedances only	OW24D RL exceedances in 2010, 2011, 2012, 2014, and 2015.	Groundwater samples from OW24D had raised RLs for six events between 2010 and 2015. Toluene RLs exceeded the SCS. The raised xylene RLs met the SCS. Laboratory reports indicated that detection limits were adjusted, as the sample required dilution because of high concentrations of other target analytes (review indicated PHC F1 and chlorinated VOCs were up to 5,400 µg/L). Samples from this location taken in 2017 and 2020 did not have raised RLs, which met the SCS. Toluene and xylenes met the SCS at the other locations on the Phase Two Property. Based on the available information these parameters were determined to likely not be present at OW24D at concentrations exceeding the SCS; therefore, at the discretion of the QPESA, these parameters were not considered to be COCs for the Phase Two Property.
CHEMISTRY	Alkalinity, Bicarbonate (as CaCO3), Alkalinity, Total (as CaCO3), Calcium, Fluoride, Iron, Manganese, Potassium	Parameters with no Table 6 SCS but exceeds the PGMIS value	All samples analyzed (range from 2012 to 2016)	Chemistry parameters (pH, conductivity, alkalinity, specific conductance) and major ions (fluoride, chloride, nitrate, nitrite, bromide, phosphate, sulfate, calcium, potassium, manganese, sodium) were introduced into the annual groundwater monitoring program in 2010 and analyzed for until 2016. Iron was included in analytical suites in 2012 to 2014 and 2016. Alkalinity (both bicarbonate and total) exceeded the PGMIS value of 55,000 µg/L in each of the 134 samples and ranged from 250,000 to 550,000 µg/L. Calcium exceeded the PGMIS value of 431,000 µg/L in one of 134 samples, with a concentration of 440,000 µg/L. Fluoride exceeded the PGMIS value of 2,090 µg/L in 11 of 77 samples with concentrations up to 3,900 µg/L. Iron exceeded the PGMIS value of 4,090 µg/L in 7 of 58 samples, with concentrations up to 8,900 µg/L. Manganese exceeded the PGMIS value of 717 µg/L in 4 of 58 samples, with concentrations up to 1,200 µg/L. Potassium exceeded the PGMIS value of 20,700 µg/L in one of 134 samples, with a concentration of 30,600 µg/L. Rationale was not provided for the analyses of these parameters, as they were not required under the MOE Provincial Order that the annual groundwater monitoring was conducted under. Parameters analyzed were those typically collected for monitoring geochemical conditions in groundwater for potential remediation options or the occurrence of degradation or attenuation of contaminants. As these parameters were not identified as COPCs on the Site or associated with an APEC on the Site, at the discretion of the QPESA, they were not considered to be COCs.
CHEMISTRY	Ammonia, Electrical Conductivity, Specific conductance, Bromide	Parameters with no Table 6 SCS or PGMIS value, but have detected concentrations	All samples analyzed (range from 2012 to 2016)	Chemistry parameters (pH, conductivity, alkalinity, specific conductance) and major ions (fluoride, chloride, nitrate, nitrite, bromide, phosphate, sulfate, calcium, potassium, manganese, sodium) were introduced into the annual groundwater monitoring program in 2010 and analyzed for until 2016. Ammonia was included in the analytical suites from 2012 to 2014. Ammonia had detected concentrations in 41 of 57 samples collected, with concentrations up to 1,750 µg/L. Bromide had detected concentrations in one of 77 samples collected, with a concentration of 1,000 µg/L (at the detection limit). Electrical conductivity ranged from 0.5 to 2.0 mS/cm. Specific conductance ranged from 500 to 1,800 µmhos/cm. Rationale was not provided for the analyses of these parameters, as they were not required under the MOE Provincial Order that the annual groundwater monitoring was conducted under. Parameters analyzed were those typically collected for monitoring geochemical conditions in groundwater for potential remediation options or the occurrence of degradation or attenuation of contaminants. As these parameters were not identified as COPCs on the Site or associated with an APEC on the Site, at the discretion of the QPESA, they were not considered to be COCs.

Table 6-10b. Rationale for the Removal of Groundwater COCs

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Parameter Group	Parameter	Category	Sample(s)	Comment/Rationale
CHEMISTRY/ METALS	Silica (as SIO2), Sulfur, Cesium (Cs), Lithium, Rubidium (Rd), Silicon, Tin	Parameters with no Table 6 SCS or PGMIS value, but have detected concentrations	One sample from OW31 from September 2016 (Lab report L1830739)	A full metals suite was run for the groundwater sampling completed in 2016 at OW31. A number of parameters did not have SCS values or PGMIS values to compare concentrations. Detected concentrations can occur naturally; however, background concentrations for these parameters in groundwater have not been documented in Ontario. As these parameters were not identified as COPCs on the Site or associated with an APEC on the Site, at the discretion of the QPESA, they were not considered to be COCs.
PAH	Acenaphthylene	Parameters with existing SCS but RL exceedances only	OW23S and OW22S with RL exceedances from 2012 to 2016.	Groundwater samples from OW23S (5 samples) and OW22S (1 sample) had raised RLs for up to five events between 2012 and 2016. Laboratory reports noted that detection limits were adjusted as the sample required dilution due to the nature of the sample matrix. The raised RL at OW23S is likely due to LNAPL interference, as there has been consistent measurement of free product in this well. Samples taken at OW23S (parent and duplicate) in 2018 reported detected concentrations less than the SCS. The other samples collected at OW22S met the SCS (2012 to 2015, and 2017). The remaining 184 samples collected from other locations on the Site had concentrations less than the SCS (7 samples) or nondetected concentrations, with RLs meeting the SCS of 1 µg/L. Based on the available information, this parameter was determined to likely not be present at concentrations exceeding the SCS; therefore, at the discretion of the QPESA, it was not considered to be COCs for the Phase Two Property.
PAH	Benzo(g,h,i)perylene Dibenzo(a,h)anthracene Indeno(1,2,3-Cd)Pyrene	Parameters with existing SCS but RL exceedances only	8 samples from 3 locations (OW22S, OW23S, OW25) with RL exceedances of the SCS from between 2011 to 2016.	Groundwater samples from OW23S (5 samples), OW22S (2 samples) and OW25 (1 sample) had raised RLs for up to five events between 2011 and 2016. Some of the laboratory reports noted that detection limits were adjusted, as the sample required dilution because of the nature of the sample matrix, and it is likely that all eight samples required dilution, causing the detection limits to be adjusted accordingly. The raised RL at OW23S is likely due to LNAPL interference, as there has been consistent measurement of free product in this well. Samples taken at OW23S in 2018 reported detected concentrations less than the SCS. The other samples collected at OW22S (2013 to 2015, and 2017) and OW25 (2010 to 2019) met the SCS. The remaining 169 samples collected from other locations on the Site had concentrations less than the SCS (7 samples) or nondetect concentrations, with RLs meeting the SCS of 0.2 µg/L. Based on the available information, these parameters were determined to likely not be present at concentrations exceeding the SCS; therefore, at the discretion of the QPESA, they were not considered to be COCs for the Phase Two Property.
SVOC	Benzo(e)pyrene	Parameters with no Table 6 SCS or PGMIS value, but have detected concentrations	1 sample from OW22S with a detected concentration in 2013	One of 15 samples (only analyzed in 2013) had a detected concentration of 0.065 µg/L of benzo(e)pyrene. Benzo(e)pyrene was run as part of a historical PAH laboratory scan and was not a targeted as a COC for the area. The remaining 14 locations where benzo(e)pyrene was analyzed did not report detected concentrations. As this parameter was not identified as COPCs on the Site or associated with an APEC on the Site, at the discretion of the QPESA, it was not considered to be COCs for the Phase Two Property.
VOC	1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane 1,2-Dichloropropane 1,3-Dichloropropene 1,4-Dichlorobenzene Bromoform Bromomethane Carbon tetrachloride Styrene	Parameters with existing SCS but RL exceedances only	All samples with RL exceedances between 2010 and 2015	VOC parameters noted had RL exceedances in a number of samples between 2010 and 2015. These locations were resampled in 2017 and 2018 and had reported nondetect concentrations, with RLs meeting the SCS. No other locations reported exceedances of the SCS for these parameters. Based on the available information, these parameters were determined to likely not be present at concentrations exceeding the SCS; therefore, at the discretion of the QPESA, they were not considered to be COCs for the Phase Two Property.
VOC	1,3-Dichlorobenzene 2-Butanone Acetone Chlorobenzene	Parameters with existing SCS but RL exceedances only	OW24D RL exceedances in 2015	One sample collected at OW24D had RL exceedances for each of the noted VOCs in 2015. The other samples collected from this location between 2010 and 2018 (seven events) reported nondetect concentrations with RLs meeting the SCS. Samples collected on the Phase Two Property had nondetected concentrations of the noted VOCs, with the exception of two samples that had detected concentrations of acetone less than the SCS. Laboratory reports indicated that detection limits were adjusted, as the sample required dilution because of high concentrations of other target analytes. Based on the available information, these parameters were determined to likely not be present at concentrations exceeding the SCS; therefore, at the discretion of the QPESA, they were not considered to be COCs for the Phase Two Property.

Table 6-10b. Rationale for the Removal of Groundwater COCs

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Parameter Group	Parameter	Category	Sample(s)	Comment/Rationale
VOC	4-Methyl-2-Pentanone Chlorodibromomethane Bromodichloromethane Dichloromethane Methyl tert-butyl ether (MTBE)	Parameters with existing SCS but RL exceedances only	OW24D RL exceedances of the SCS in 2010, 2011, 2012, 2014, and 2015.	Six samples collected from OW24D had RL exceedances for each of the noted VOCs between 2010 and 2015. Samples from 2016 and 2017 reported nondetect concentrations with RLs meeting the SCS. The remaining samples on the Phase Two Property also had nondetected concentrations of the noted VOCs less than the SCS. Laboratory reports indicated that detection limits were adjusted, as the sample required dilution because of high concentrations of other target analytes. Based on the available information, these parameters were determined to likely not be present at concentrations exceeding the SCS; therefore, at the discretion of the QPESA, they were not considered to be COCs for the Phase Two Property.
VOC	1,1,1-Trichloroethane 1,1-Dichloroethane	Parameters with existing SCS and both RL and detected exceedances	Samples from OW24D with RL exceedances between 2010 and 2015	VOC parameters noted had RLs exceeding the SCS at OW24D from samples collected between 2010 and 2015. Detected exceedances were noted elsewhere on the property: 1,1,1-trichloroethane exceeded the SCS at OW12; 1,1-dichloroethane exceeded the SCS at OW26S; both more than 200 metres away (downgradient) on the western portion of the property. Samples collected in 2017 and 2018 from OW24D had nondetect concentrations reported with RLs meeting the SCS. Based on the available information, these parameters were determined to likely not be present at OW24D at concentrations exceeding the SCS; therefore, at the discretion of the QPESA, the elevated RLs were not carried through for the dataset for the Risk Assessment. The parameters were retained as a COCs for the Phase Two Property based on other locations exceeding the SCS.
VOC	n-Hexane Tetrachloroethene	Parameters with existing SCS and both RL and detected exceedances	Samples with RL exceedances between 2010 and 2015	N-hexane had noted RLs exceeding the SCS from several samples collected between 2010 and 2015. Detected exceedances were only noted at MW17-105S for n-hexane and OW19 and MW17-107S for tetrachloroethene. Locations with RLs only exceeding the SCS had samples meeting the SCS in two or more other sampling events. Based on the available information, these parameters were determined to likely not be present at concentrations exceeding the SCS at the locations with the elevated RLs; therefore, at the discretion of the QPESA, the elevated RLs were not carried through for the dataset for the Risk Assessment. These parameters were retained as a COC for the Phase Two Property based on other locations exceeding the SCS.
VOC	1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,2-Dibromoethane	Parameters with existing SCS but RL exceedances only	Two samples from OW22S has RL exceedances of the SCS in 2017 and 2018.	These VOCs had elevated RLs in two samples collected in 2017 and 2018. Both the laboratory reports noted that the detection limits were adjusted because of "to interference from volatile hydrocarbons on VOC method. Chromatographic elution of interfering peaks in the same region as test analytes prevents a determination of whether VOC analyte is present or absent (above/below regular detection limits)." The RLs for these VOCs met the SCS in three prior sampling events at this location. Based on the available information, these parameters were determined to likely not be present at OW22S at concentrations exceeding the SCS; therefore, at the discretion of the QPESA, they were not considered to be COCs for the Phase Two Property.
VOC	Chloroform	Parameters with existing SCS but RL exceedances and detected exceedances	14 samples from 5 locations had RL exceedances of the SCS from 2010 to 2015.	Fourteen of 365 samples analyzed for chloroform had RL exceedances of the SCS. Of the remaining samples, 340 had nondetected concentrations below the SCS, and 9 had detected concentrations below the SCS. Some of the laboratory reports noted that detection limits were adjusted, as the sample required dilution because of high concentrations of other target analytes. Because of the presence of high concentrations of VOCs on the Site, it is likely that the samples required dilution, causing the detection limits to be adjusted accordingly. Based on the available information, this parameter was determined to likely not be present at concentrations exceeding the SCS; however, one location (MW18-112D) reported a detected concentration above the SCS in 2018. See Table 6-10c for further discussion of chloroform as a COC for the Phase Two Property.

Notes:

The rationale for exclusion of COCs listed in this table is based on the data collected as part of the ESA and only applies to this ESA.

µg/L = micrograms per gram
ABN = acid, base, and neutral compound
APEC = area of potential environmental concern
COC = contaminant of concern
COPC = contaminant of potential concern
CP = chlorophenol
ESA = Environmental Site Assessment
mbgs = metre(s) below ground surface
RL = laboratory reporting limit
MECP = Ontario Ministry of the Environment, Conservation and Parks
No. = number
OCP = organochlorine pesticide
PAH = polycyclic aromatic hydrocarbon
PCA = potentially contaminating activity
PCB = polychlorinated biphenyl
PHC = petroleum hydrocarbon
QPESA = MECP Qualified Person for Environmental Site Assessment
RSC = Record of Site Condition
SCS = Site Condition Standards
µmhos/cm = micromho(s) per centimetre
VOC = volatile organic compound

Table 6-10c. Rationale for the Removal of Groundwater COCs with Subsequent Sampling Events

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Parameter Group	Parameter	Category	Sample(s)	Comment/Rationale
BTEX	Benzene Ethylbenzene	Parameters with existing SCS, one exceedance and subsequent samples meeting SCS	OW22S exceedance in 2016, subsequent two events in 2017 and 2018 meet SCS	Benzene was measured at 1.1 µg/L and ethylbenzene at 7.1 µg/L in 2016 at OW22S. Historical analyses from seven sampling events and two sampling events in 2017 and 2018 at this location met the SCS of 0.5 and 2.4 µg/L, respectively. Based on the available information, these parameters were determined to likely not be present at OW22S at concentrations exceeding the SCS; therefore, at the discretion of the QPESA, they were not carried through for the dataset for the Risk Assessment. The parameters were retained as a COCs for the Phase Two Property based on other locations exceeding the SCS.
METALS	Antimony	Parameters with existing SCS, one exceedance and subsequent samples meeting SCS	MW18-114D exceedance in December 2018, subsequent two events in 2018 and 2019 meet SCS	Antimony was measured at a concentration of 6.2 µg/L in December 2018 at the newly installed MW18-114D. Antimony was not detected at concentrations greater than the SCS in the shallower MW18-114S nested with MW18-114D. Two subsequent sampling events in December 2018 and March 2019 had concentrations less than the SCS at 1.54 µg/L and 0.12 µg/L, respectively. The other samples in groundwater (101 samples) on the Phase Two Property met the SCS. Based on the available information, this parameter was determined to likely not be present at concentrations exceeding the SCS; therefore, at the discretion of the QPESA, it was not considered to be a COC for the Phase Two Property.
METALS	Arsenic	Parameters with existing SCS, one exceedance and subsequent samples meeting SCS	MW17-101D exceedance in 2017, subsequent two events in 2018 meet SCS	Arsenic was measured at 44.8 µg/L in 2017 at MW17-101D. Subsequent two sampling events in 2018 are significantly below the SCS of 25 µg/L, at 6.87 and 6.19 µg/L. Based on the available information, this parameter was determined to likely not be present at concentrations exceeding the SCS at this location; however, it was carried through as a COC because of detected concentrations exceeding the SCS at another location on the Phase Two Property.
METALS	Cobalt	Parameters with existing SCS, one exceedance and subsequent samples meeting SCS	OW11-II exceedance in 2017, subsequent two events in 2018 meet SCS	Cobalt was measured at 5.79/5.74 µg/L in 2017 at OW11-II. No historical samples at this location were analyzed for cobalt. Subsequent two sampling events in 2018 are less than the SCS of 3.8 µg/L, at 1.36 and < 0.10 µg/L. The other samples in groundwater (90 samples) on the Phase Two Property met the SCS. Based on the available information, this parameter was determined to likely not be present at concentrations exceeding the SCS; therefore, at the discretion of the QPESA, it was not considered to be a COC for the Phase Two Property.
METALS	Lead	Parameters with existing SCS, one exceedance and subsequent samples meeting SCS	OW07-33 exceedance in 2017, subsequent two events in 2018 meet SCS	Lead was measured at 15/15.6 µg/L in 2017 at OW07-33. A sample collected in 2007 met the SCS of 10 µg/L, with a concentration of 4.07 µg/L along with two subsequent sampling events in 2018, at 8.9 and 7.37/7.68 µg/L. Based on the available information, this parameter was determined to likely not be present at concentrations exceeding the SCS at this location; however, was carried through as a COC because of detected concentrations exceeding the SCS at another location on the Phase Two Property.
METALS	Uranium	Parameters with existing SCS, one exceedance and subsequent samples meeting SCS	OW22S exceedance in 2017, subsequent two events in 2018 meet SCS	Uranium was measured at 25.9 µg/L in 2017 at OW22S. No historical samples at this location were analyzed for uranium. Subsequent two sampling events in 2018 were less than the SCS of 20 µg/L, at 7.24 and 6.05 µg/L. The other samples in groundwater (84 samples) on the Phase Two Property met the SCS. Based on the available information, this parameter was determined to likely not be present at concentrations exceeding the SCS; therefore, at the discretion of the QPESA, it was not considered to be a COC for the Phase Two Property.
METALS	Zinc	Parameters with existing SCS, one exceedance and subsequent samples meeting SCS	OW26S exceedance in 2012, subsequent three events meet SCS; OW12 exceedance in 2010, subsequent three events meet SCS.	Zinc was measured at concentrations of 900 µg/L and 910 µg/L at OW26S and OW12, respectively. Historical analyses at these locations had zinc concentrations less than the SCS. Three subsequent sampling events at each location (in 2013, 2014, and 2017 for OW26S; and in 2011 [two samples] and 2017 for OW12) had concentrations of zinc less than the SCS. Based on the available information, this parameter was determined to likely not be present at concentrations exceeding the SCS at these locations; however, it was carried through as a COC because of detected concentrations exceeding the SCS at another location on the Phase Two Property.
METALS	Zinc	Parameters with existing SCS, one exceedance and subsequent samples meeting SCS	OW07-37 exceedance in 2007, subsequent two events in 2017 and 2019 meet SCS.	Zinc was measured at a concentration of 1,630 µg/L in 2007 at OW07-37 greater than the SCS of 890 µg/L. Two subsequent sampling events conducted in 2017 and 2019 had concentrations less than the SCS of 681 µg/L and 744 µg/L, respectively. Based on the available information, this parameter was determined to likely not be present at concentrations exceeding the SCS at this location; however, it was carried through as a COC because of detected concentrations exceeding the SCS at another location on the Phase Two Property.

Table 6-10c. Rationale for the Removal of Groundwater COCs with Subsequent Sampling Events

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

Parameter Group	Parameter	Category	Sample(s)	Comment/Rationale
PAH	Benzo(a)pyrene	Parameters with existing SCS, previous exceedances and current samples meeting SCS	OW03-I exceedance in various years, subsequent two events in 2017 and 2019 meet SCS	Benzo(a)pyrene has been measured at concentration ranging from 0.0011 to 0.02 µg/L in OW03-I, greater than the SCS of 0.01 µg/L. Concentrations have been nondetect and less than the SCS in two previous sampling events (2012 and 2013) and two subsequent sampling events completed in 2017 and 2019. Based on the available information, this parameter was determined to likely not be present at concentrations exceeding the SCS at this location; however, it was carried through as a COC because of detected concentrations exceeding the SCS at another location on the Phase Two Property.
PAH	Benzo(a)pyrene Benzo(k)fluoranthene Benzo(b&j)fluoranthene	Parameters with existing SCS, previous exceedances and current samples meeting SCS	OW25 exceedance in various years, subsequent two events in 2019 meet SCS	Benzo(a)pyrene has been measured at concentrations ranging from 0.034 to 1 µg/L in OW25, greater than the SCS of 0.01 µg/L in October 2010 and October 2018. Concentrations have been nondetect in 2010 (March), 2011 (two sampling events), 2012, 2013, 2014, 2015, 2016, 2017, and 2019 (two sampling events). Benzo(k)fluoranthene has been measured at a concentration of 0.26 µg/L, greater than the SCS of 0.1 µg/L in September 2011. Concentrations have been nondetect in three previous sampling events and nine subsequent sampling events. Benzo(b&j)fluoranthene has been measured at concentrations ranging from 1.1 to 3.1 µg/L, greater than the SCS of 0.1 µg/L in November 2015 and October 2016. Concentrations have been nondetect in seven previous sampling events and four subsequent sampling events. Based on the available information, these parameters were determined to likely not be present at concentrations exceeding the SCS at this location; however, they were carried through as a COCs because of detected concentrations exceeding the SCS at another location on the Phase Two Property.
PCB	PCBs, Total	Parameters with existing SCS, one exceedance and subsequent samples meeting SCS	OW26S exceedance in 2010, subsequent two events in 2011 and 2017 meet SCS	PCBs were measured at 1.27 µg/L in 2010 at OW26S. Subsequent sampling events in 2011 and 2017 were reported with nondetect concentrations and RLs less than the SCS of 0.20 µg/L. The other samples in groundwater (24 samples) on the Phase Two Property met the SCS. Based on the available information, this parameter was determined to likely not be present at concentrations exceeding the SCS; therefore, at the discretion of the QPESA, it was not considered to be a COC for the Phase Two Property.
PHCs	PHC F2	Parameters with existing SCS, one exceedance and subsequent samples meeting SCS	OW18-II exceedance in 2015, subsequent two events meet SCS	PHC F2 was measured at 210 µg/L in 2015 at OW18-II in November 2015. Six previous sampling events (2010, 2011 [two samples], 2012, 2013, and 2014) and two subsequent sampling events (2016 and 2017) reported concentrations less than the SCS. Based on the available information, this parameter was determined to likely not be present at concentrations exceeding the SCS at this location; however, it was carried through as a COC because of detected concentrations exceeding the SCS at another location on the Phase Two Property.
VOC	Chloroform	Parameter with "introduced" exceedance	1 sample from MW18-112G had a detected exceedance of the SCS from December 2018.	The initial groundwater sample collected on November 22, 2018, from MW18-112D after drilling/bedrock coring, purging, and well development had a concentration of 5.8 µg/L greater than the SCS of 2 µg/L. The source of the chloroform exceedance was believed to be related to the municipal water that was used during the bedrock coring process. Two samples, one from the water truck and one from the water truck hose that was used during the coring activities, were analyzed for VOCs. VOCs were nondetect in these samples apart from bromodichloromethane (12.5 to 12.9 µg/L), dibromochloromethane (11.5 to 11.8 µg/L), and chloroform (9.8 to 10.1 µg/L). These analytes are trihalomethanes that are typically present in municipally treated water. Two subsequent groundwater samples were collected on November 29 and December 3, 2019, with nondetect concentrations of chloroform less than the SCS. The wells across the site were sampled for VOCs in 2020, and each sample reported nondetect concentrations of chloroform less than the SCS. Based on the available information, this parameter was determined to likely not be present at concentrations exceeding the SCS; therefore, at the discretion of the QPESA, it was not considered to be a COC for the Phase Two Property.

Notes:

The rationale for the exclusion of anomalous data listed in this table is based on the data collected as part of the ESA and only applies to this ESA.

µg/L = micrograms per gram
ABN = acid, base, and neutral compound
APEC = area of potential environmental concern
COC = contaminant of concern
COPC = contaminant of potential concern
CP = chlorophenol
ESA = Environmental Site Assessment
mbgs = metre(s) below ground surface
RL = laboratory reporting limit
MECP = Ontario Ministry of the Environment, Conservation and Parks
No. = number
OCP = organochlorine pesticide
PAH = polycyclic aromatic hydrocarbon
PCA = potentially contaminating activity
PCB = polychlorinated biphenyl
PHC = petroleum hydrocarbon
QPESA = MECP Qualified Person for Environmental Site Assessment
RSC = Record of Site Condition
SCS = Site Condition Standards
VOC = volatile organic compound

Table 6-10d. Contaminants of Concern Identified in Groundwater

Phase Two Environmental Site Assessment, 200 Beverley Street, Guelph, Ontario

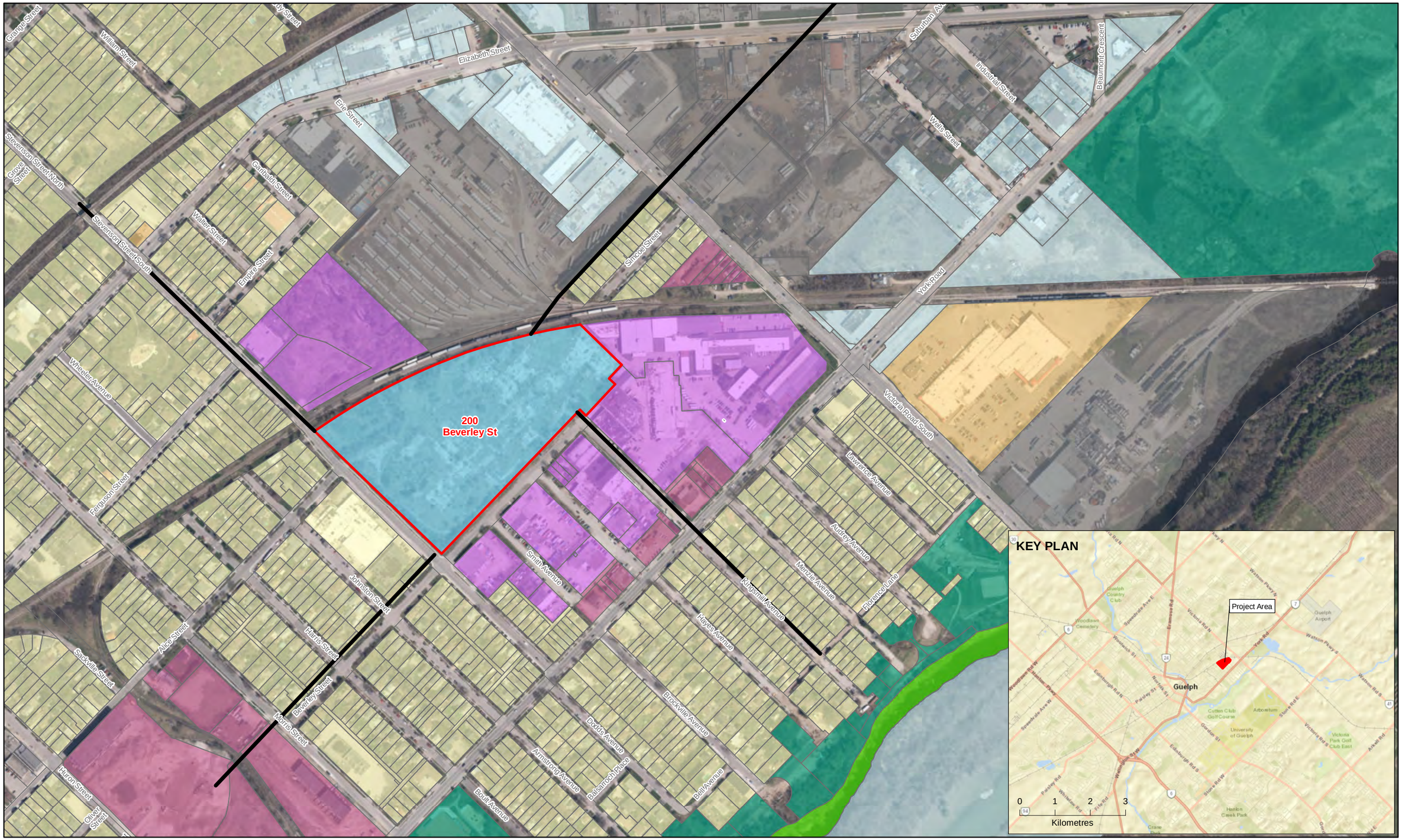
Groundwater COCs	
1,1,1-Trichloroethane	F1 (C6-C10)
1,1-Dichloroethane	F2 (C10-C16)
1,1-Dichloroethene	F3 (C16-C34)
2-(1-)Methylnaphthalene	F4 (C34-C50)
Acenaphthene	Fluoranthene
Anthracene	Lead
Arsenic	Naphthalene
Benzene	n-Hexane
Benzo(a)anthracene	Phenanthrene
Benzo(a)pyrene	Pyrene
Benzo(b&j)fluoranthene	Tetrachloroethene
Benzo(k)fluoranthene	trans-1,2-Dichloroethene
Chrysene	Trichloroethylene
cis-1,2-Dichloroethene	Vinyl Chloride
Ethylbenzene	Zinc

Notes:

COC = contaminant of concern

F = fraction

Figures



N

0 50 100 150
Metres

Reporting Cardinal Directions
Former IMICO Property Boundary
Property Parcel

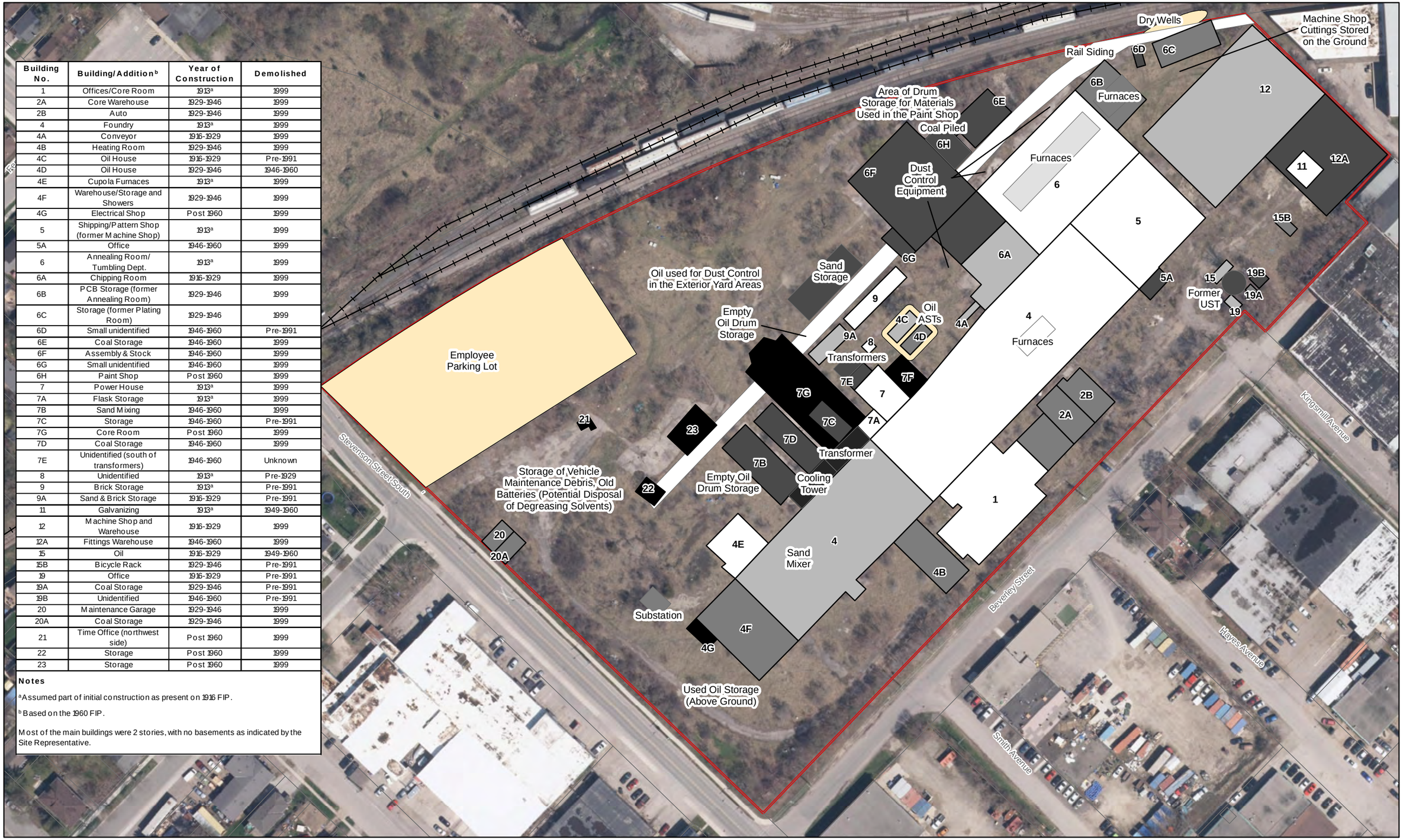
Land Use
Industrial
Low Density Residential
Mixed Business
Mixed Office Commerical
Neighbourhood Commercial Centre
Open Space and Park
Service Commericial
Significant Natural Area
Special Study Area

Notes:
1. Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
2. Property boundaries, roads obtained from http://open.guelph.ca/.
3. Source of Land use: City of Guelph Official Plan, Schedule 2.

Figure 2-1
Site Location
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

\\DC1VS01\GISPROJ\G\GUELPHCITYOF\IMICO\MAPFILES\IMICO\PHASETWO\DRAFTII\SITELOCATION.MXD KA077569 5/5/2020 8:22:13 AM



Building No.	Building/Addition[b]	Year of Construction	Demolished
1	Offices/Core Room	1913[a]	1999
2A	Core Warehouse	1929-1946	1999
2B	Auto	1929-1946	1999
4	Foundry	1913[a]	1999
4A	Conveyor	1916-1929	1999
4B	Heating Room	1929-1946	1999
4C	Oil House	1916-1929	Pre-1991
4D	Oil House	1929-1946	1946-1960
4E	Cupola Furnaces	1913[a]	1999
4F	Warehouse/Storage and Showers	1929-1946	1999
4G	Electrical Shop	Post 1960	1999
5	Shipping/Pattern Shop (former Machine Shop)	1913[a]	1999
5A	Office	1946-1960	1999
6	Annealing Room/ Tumbling Dept.	1913[a]	1999
6A	Chipping Room	1916-1929	1999
6B	PCB Storage (former Annealing Room)	1929-1946	1999
6C	Storage (former Plating Room)	1929-1946	1999
6D	Small unidentified	1946-1960	Pre-1991
6E	Coal Storage	1946-1960	1999
6F	Assembly & Stock	1946-1960	1999
6G	Small unidentified	1946-1960	1999
6H	Paint Shop	Post 1960	1999
7	Power House	1913[a]	1999
7A	Flask Storage	1913[a]	1999
7B	Sand Mixing	1946-1960	1999
7C	Storage	1946-1960	Pre-1991
7G	Core Room	Post 1960	1999
7D	Coal Storage	1946-1960	1999
7E	Unidentified (south of transformers)	1946-1960	Unknown
8	Unidentified	1913[a]	Pre-1929
9	Brick Storage	1913[a]	Pre-1991
9A	Sand & Brick Storage	1916-1929	Pre-1991
11	Galvanizing	1913[a]	1949-1960
12	Machine Shop and Warehouse	1916-1929	1999
12A	Fittings Warehouse	1946-1960	1999
15	Oil	1916-1929	1949-1960
15B	Bicycle Rack	1929-1946	Pre-1991
19	Office	1916-1929	Pre-1991
19A	Coal Storage	1929-1946	Pre-1991
19B	Unidentified	1946-1960	Pre-1991
20	Maintenance Garage	1929-1946	1999
20A	Coal Storage	1929-1946	1999
21	Time Office (northwest side)	Post 1960	1999
22	Storage	Post 1960	1999
23	Storage	Post 1960	1999

Notes

[a] Assumed part of initial construction as present on 1916 FIP.

[b] Based on the 1960 FIP.

Most of the main buildings were 2 stories, with no basements as indicated by the Site Representative.

N

0 10 20 30
Metres

Railway
Former IMICO Property Boundary
Reference to Date Building Built
Fire Insurance Plan, 1916
Fire Insurance Plan, Maar. 1922, Reprinted Oct 1929
Fire Insurance Plan, Mar. 1922, Reprinted 1946
Fire Insurance Plan, June 1960
From Procter & Redfern Draft Report, June 10, 1991
Post 1960
Unknown Date
Unknown Date, Extent

Notes:
1. Source of Imagery: Esri, City of Guelph Ortho 2012
2. Property boundaries, roads obtained from http://open.guelph.ca/.
3. All samples, including those within excavation areas that have been removed (i.e. prior to 1999) have been shown for screening purposes.

Figure 2-2
Site Plan and Historical Buildings
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

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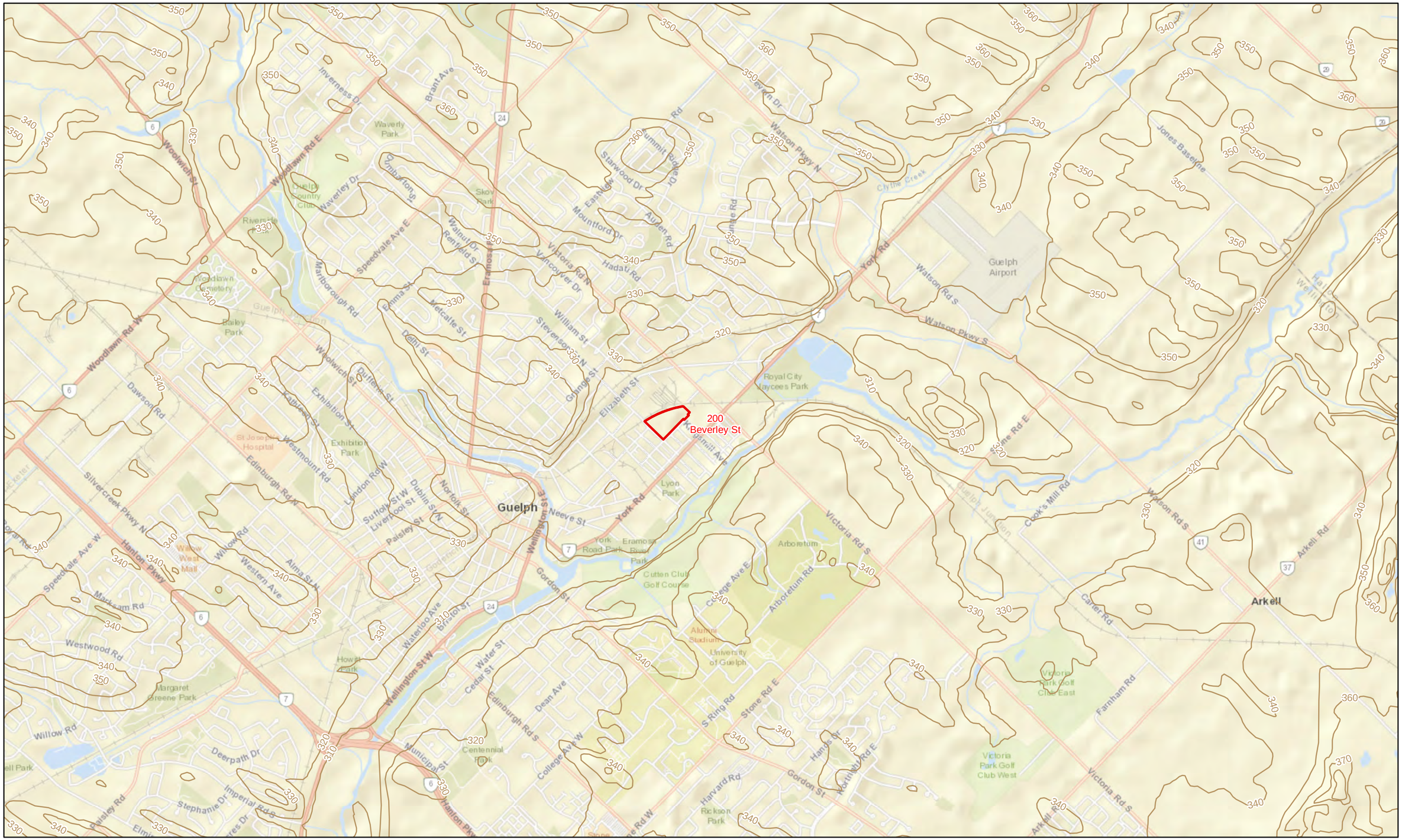

N

0 250 500 750 1,000
Metres

Former IMICO Property Boundary
Elevation Contour (10-m Interval)

Notes:
1. Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
2. Topography Contours obtained from Canvec.

Figure 3-1
Regional Topography
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

\\DC1VS01\GISPROJ\G\GUELPHCITYOF\IMICO\MAPFILES\IMICO\PHASETWO\DRAFTII\REGIONALTOPOGRAPHY.MXD KA077569 4/22/2020 12:20:37 PM

N

0 10 20 30
Metres

Railway
Former IMICO Property Boundary
Property Parcel

Area of Potential Concern
Annealing Room
Auto
Chipping/Grinding
Coal Storage
Drum Storage
Former Electrical Shop
Former PCB Storage
Former Rail Line
Former SubStation
Former UST
Former Waste Oil Storage
Foundry
Galvanizing
Garage
Machine Shop
Oil House
PCB Capacitors
Paint Shop
Plating
Sand Mixing/Storage
Sand Storage
Transformers
Unknown Fill Quality

Notes:
1. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
2. Property boundaries, roads obtained from http://open.guelph.ca/. http://open.guelph.ca/.

Figure 4-1a
Potentially Contaminating Activities - Onsite
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

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Notes:
1. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
2. Property boundaries, roads obtained from http://open.guelph.ca/. http://open.guelph.ca/.

Figure 4-1b
Potentially Contaminating Activities - Offsite
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

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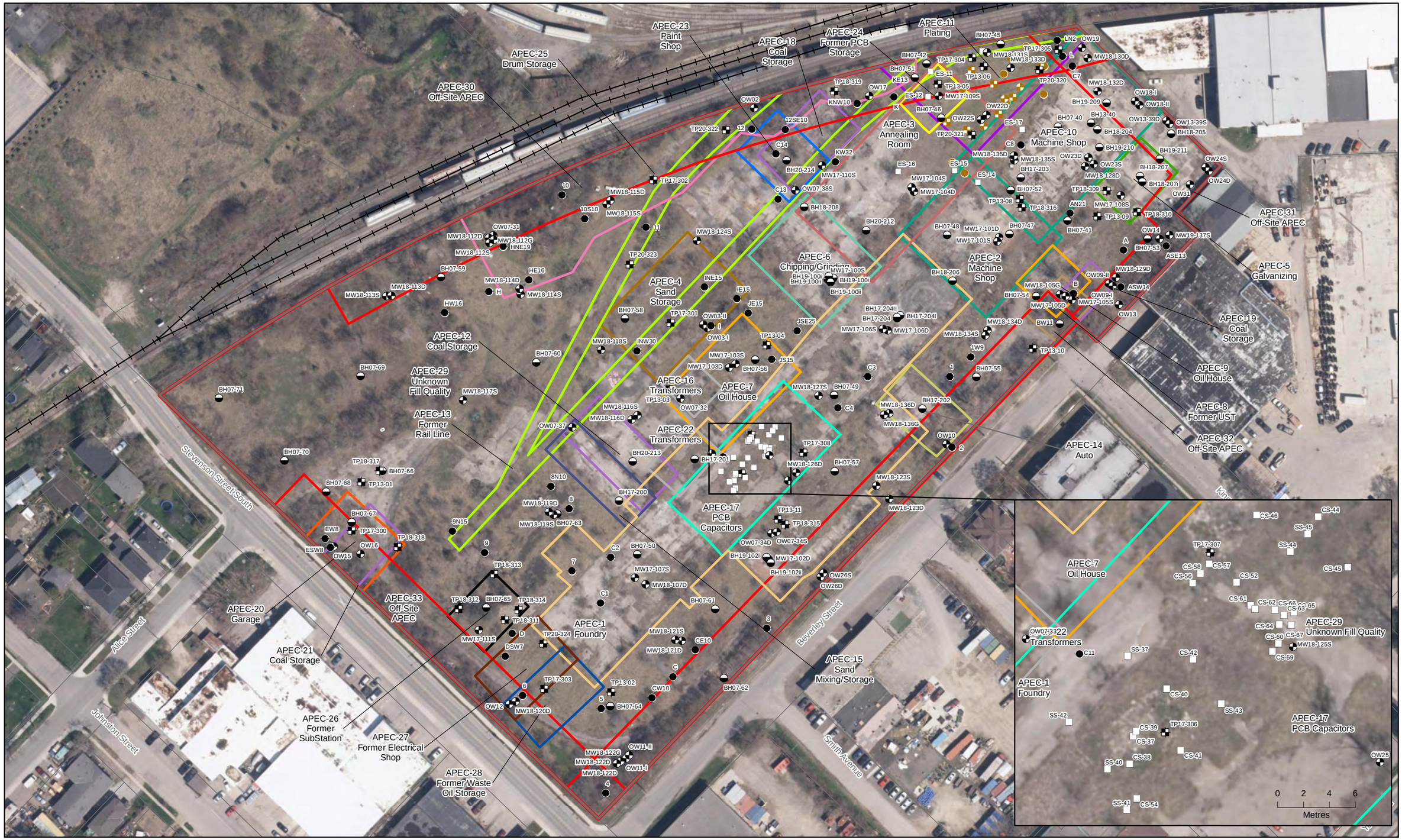

N

0 10 20 30
Metres

Sample Locations
- Borehole
- Confirmatory
- Monitoring Well
- Other
- Test Pit

Excavated Locations
- Confirmatory
- Monitoring Well
- Other
- Test Pit

- Railway
- Former IMICO Property Boundary
- Property Parcel

Area of Potential Concern
- Annealing Room
- Auto
- Chipping/Grinding
- Coal Storage
- Drum Storage
- Former Electrical Shop
- Former PCB Storage
- Former Rail Line
- Former SubStation
- Former UST
- Former Waste Oil Storage
- Foundry
- Galvanizing
- Garage
- Machine Shop
- Off-Site APEC
- Oil House
- PCB Capacitors
- Paint Shop
- Plating
- Sand Mixing/Storage
- Sand Storage
- Transformers
- Unknown Fill Quality

Notes:
1. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
2. Property boundaries, roads obtained from http://open.guelph.ca/. http://open.guelph.ca/.
3. All samples, including those within excavation areas that have been removed (i.e. prior to 1999) have been shown for screening purposes.

Figure 4-2
APECs Sampling Locations
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

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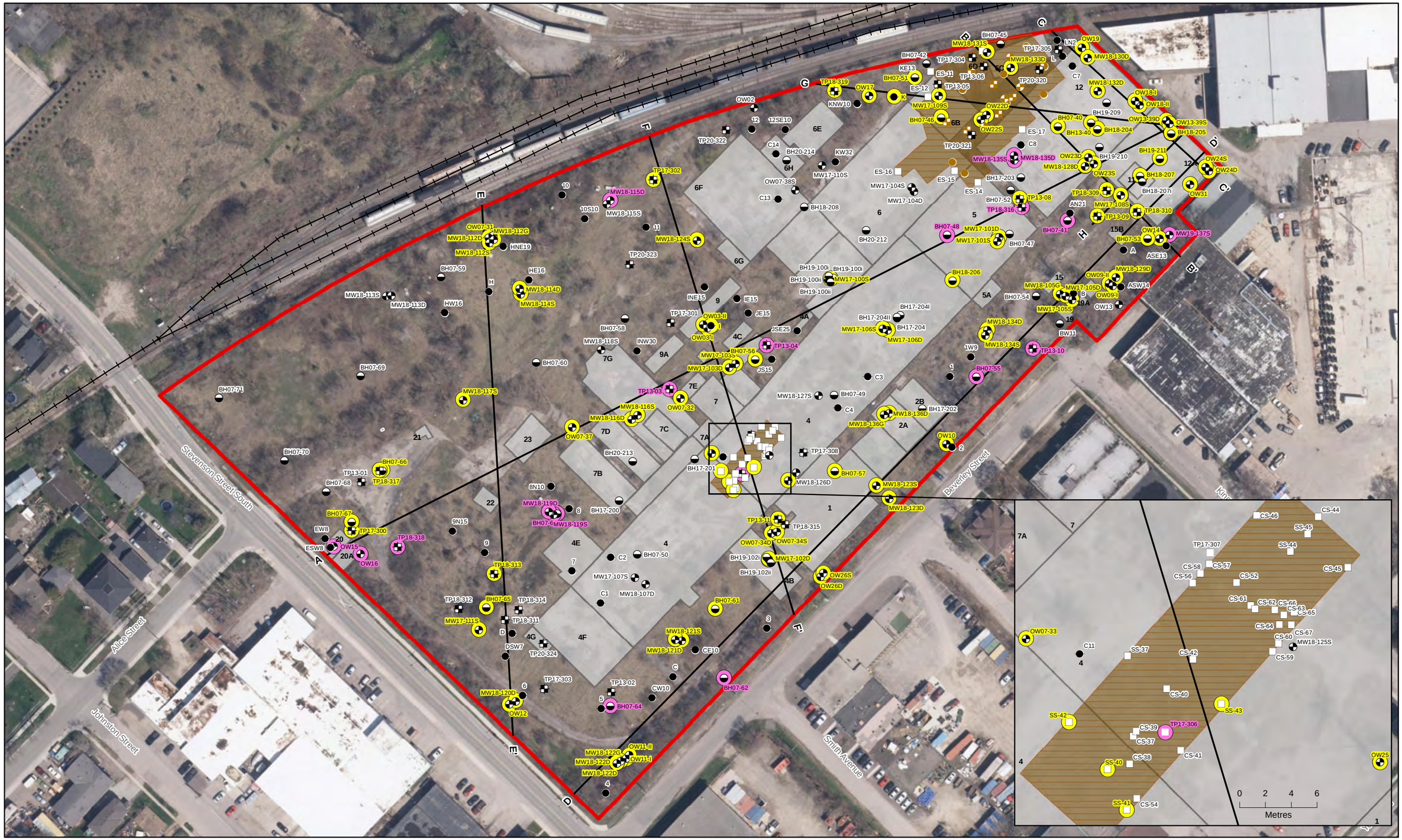

N

0 10 20 30
Metres

Sample Locations
- Borehole
- Confirmatory
- Monitoring Well
- Other
- Test Pit

Excavated Locations
- Confirmatory
- Monitoring Well
- Other
- Test Pit

- Location Included in Cross-section
- Location Included in Parameter Specific Cross-section
- Cross-section Location
- Railway

- Former IMICO Property Boundary
- Excavated Area
- Historical Excavation area, EarthTech, 1999
- Historical Building Location (Approximate)

Notes:
1. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
2. Property boundaries, roads obtained from http://open.guelph.ca/.
3. All samples, including those within excavation areas that have been removed (i.e. prior to 1999) have been shown for screening purposes.

Figure 6-1
Geological Cross-Section Locations
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

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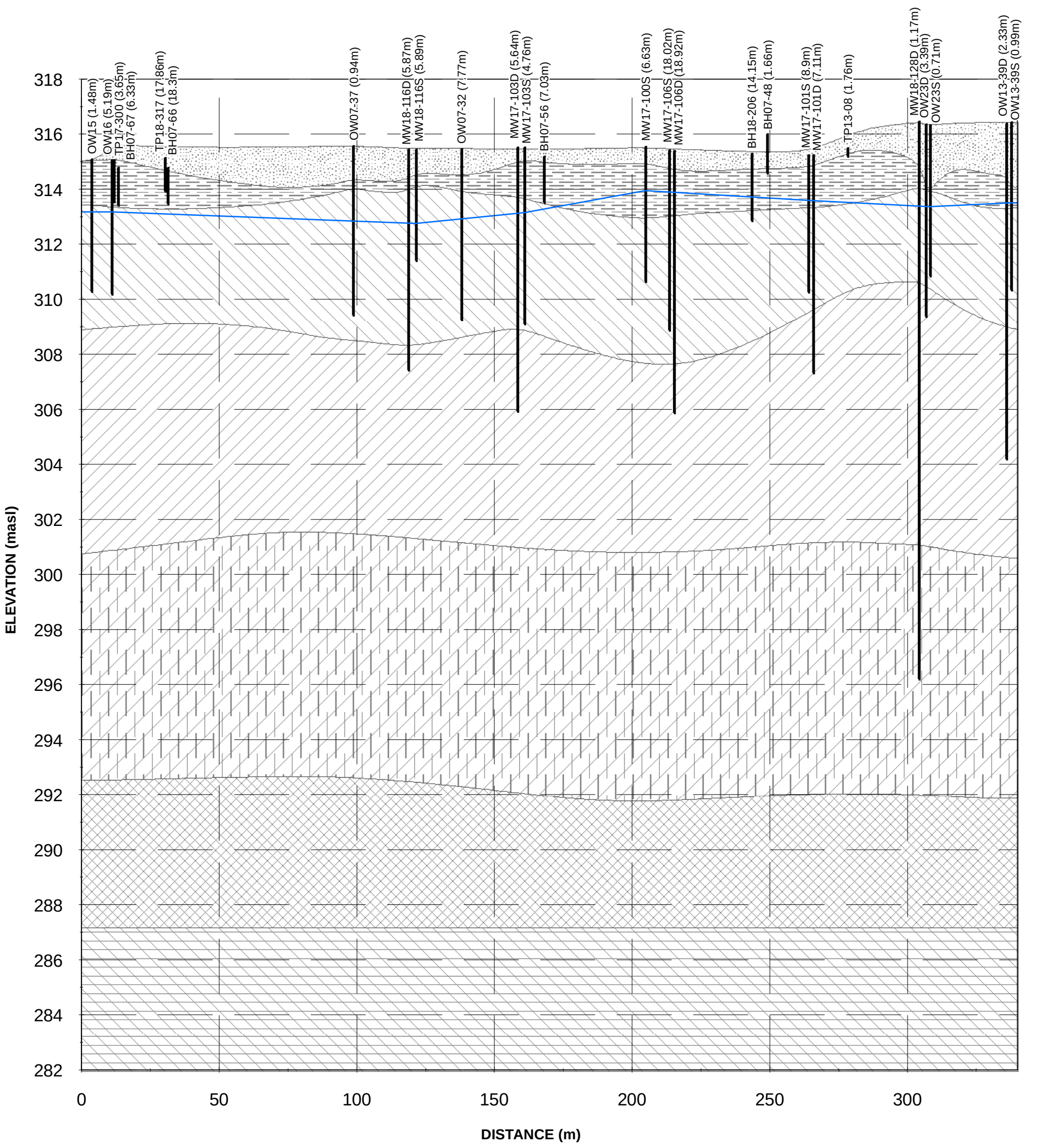
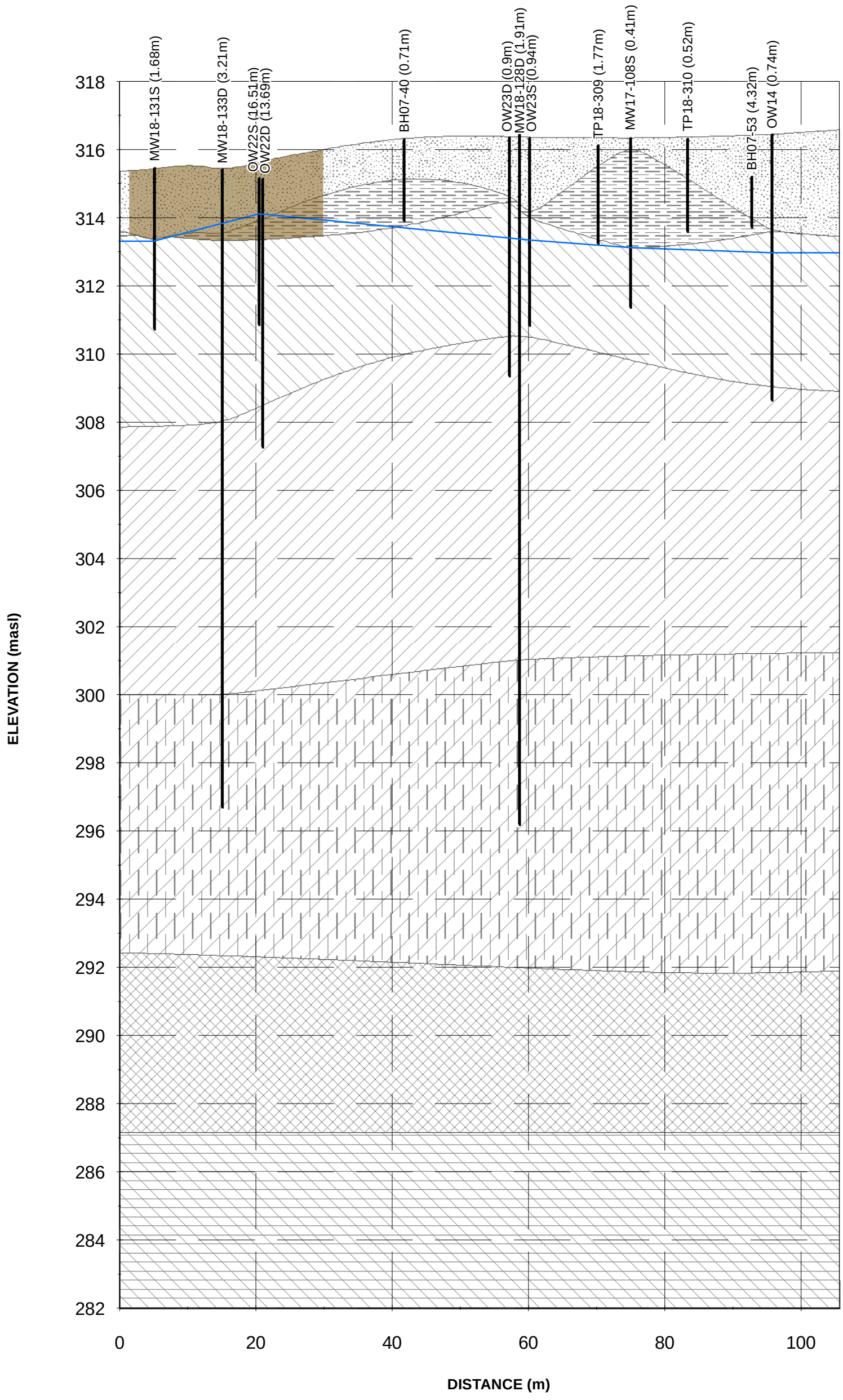


- Approximate Groundwater Elevation
- Fill
- Silty Fine Sand
- Stone Road Member (Eramosa Formation)
- Reformatory Quarry Member (Eramosa Formation)
- Vinemount Member (Eramosa Formation)
- Ancaster Member (Goat Island Formation)
- Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. Groundwater elevation shown is based on the March 2019 water level measurements from wells screened in the overburden and bedrock contact zone.

Figure 6-1a
Section A-A'
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

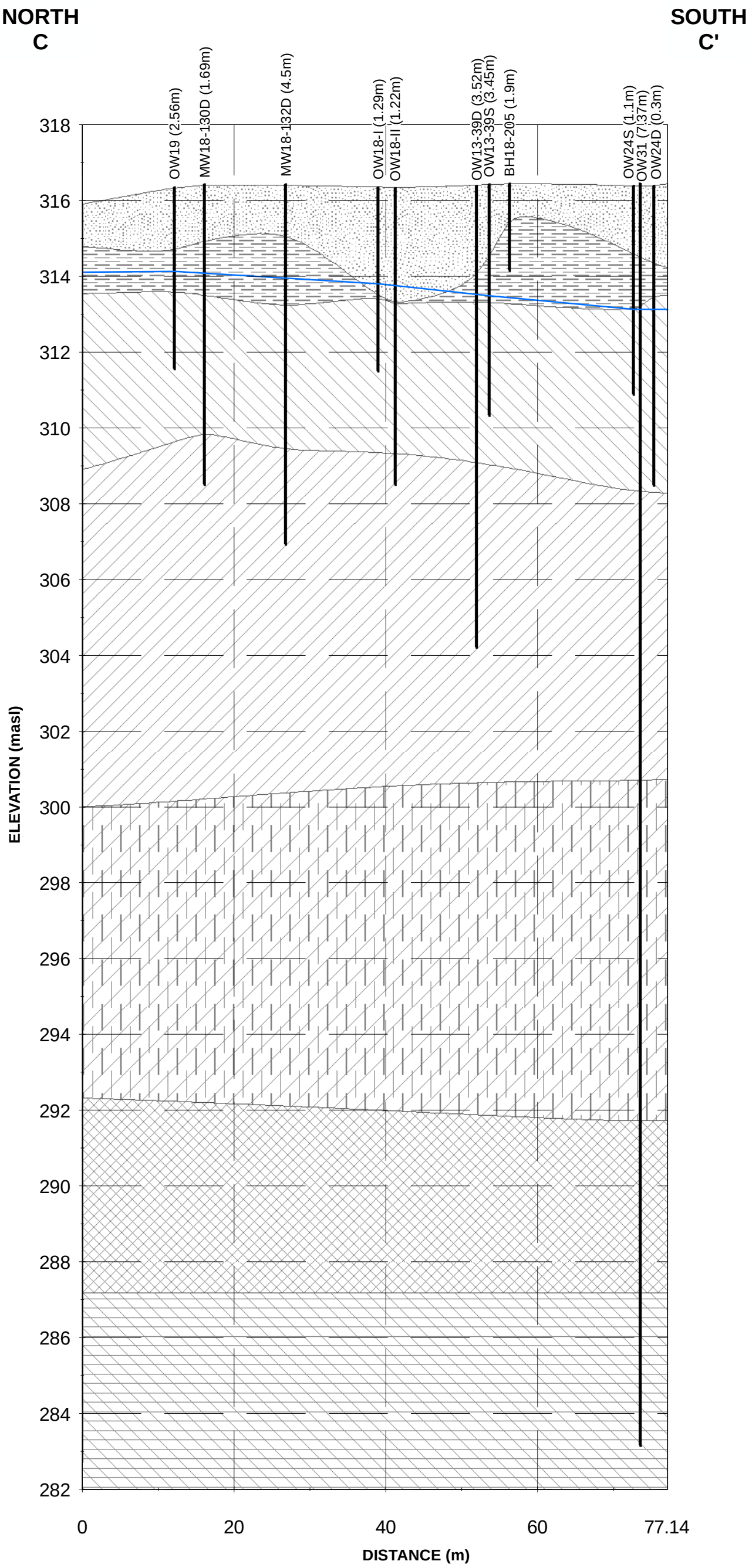
Jacobs



- Approximate Groundwater Elevation
- Excavation Area
- Fill
- Silty Fine Sand
- Stone Road Member (Eramosa Formation)
- Reformatory Quarry Member (Eramosa Formation)
- Vinemount Member (Eramosa Formation)
- Ancaster Member (Goat Island Formation)
- Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. Groundwater elevation shown is based on the March 2019 water level measurements from wells screened in the overburden and bedrock contact zone.

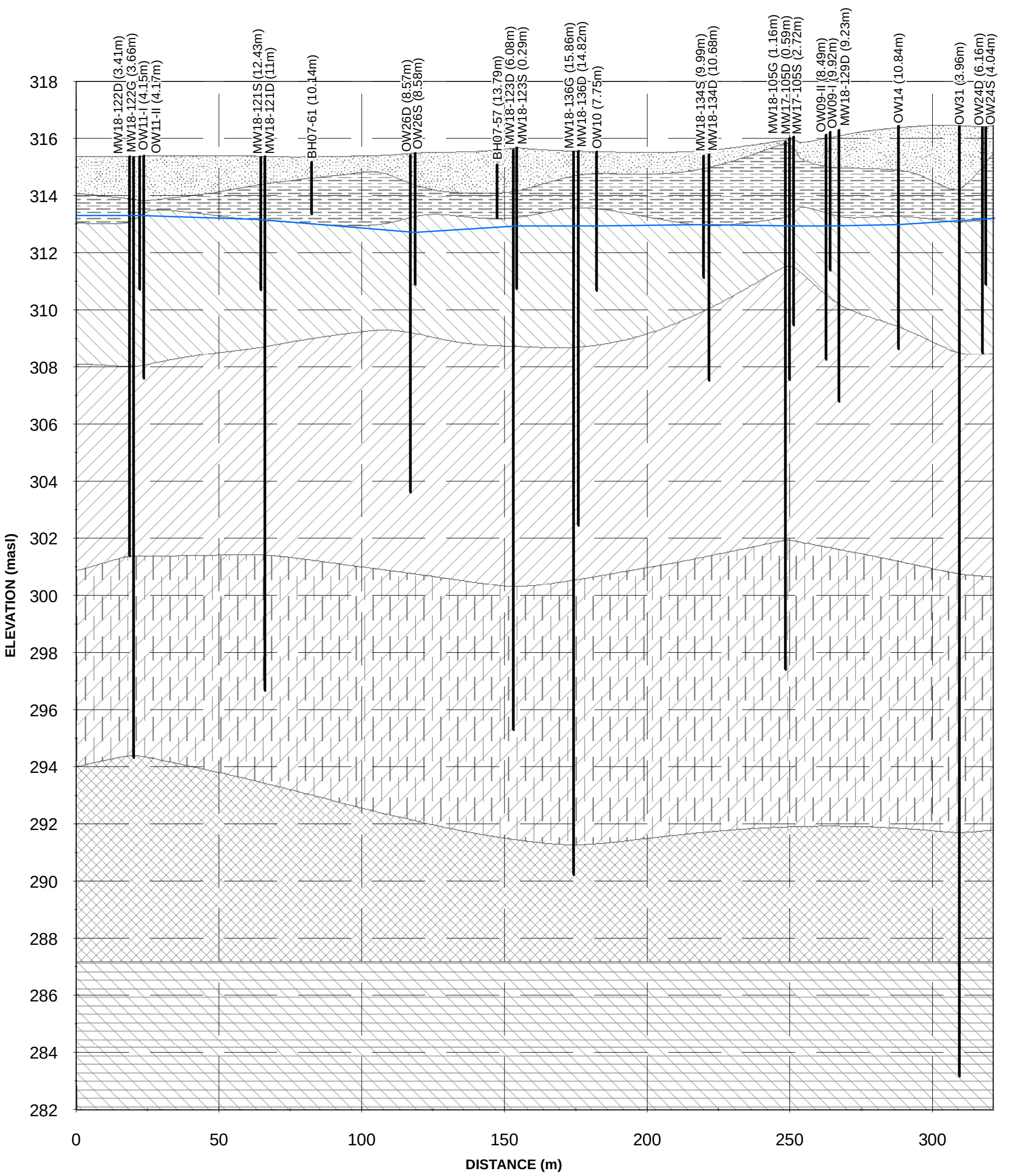
Figure 6-1b
Section B-B'
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario



Approximate Groundwater Elevation
Fill
Silty Fine Sand
Stone Road Member (Eramosa Formation)
Reformatory Quarry Member (Eramosa Formation)
Vinemount Member (Eramosa Formation)
Ancaster Member (Goat Island Formation)
Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. Groundwater elevation shown is based on the March 2019 water level measurements from wells screened in the overburden and bedrock contact zone.

Figure 6-1c
Section C-C'
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

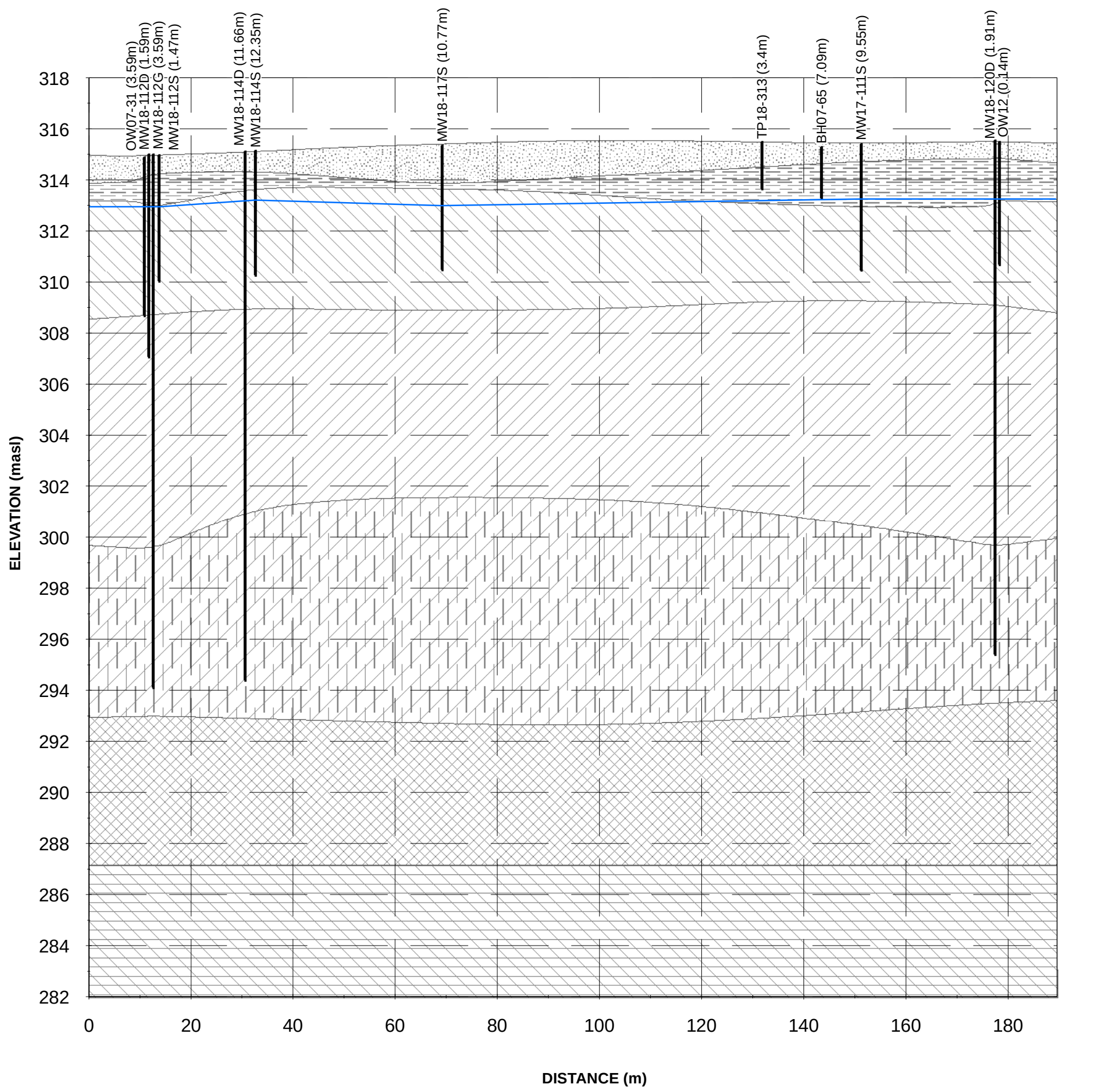


Approximate Groundwater Elevation
Fill
Silty Fine Sand
Stone Road Member (Eramosa Formation)
Reformatory Quarry Member (Eramosa Formation)
Vinemount Member (Eramosa Formation)
Ancaster Member (Goat Island Formation)
Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. Groundwater elevation shown is based on the March 2019 water level measurements from wells screened in the overburden and bedrock contact zone.

Figure 6-1d
Section D-D'
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

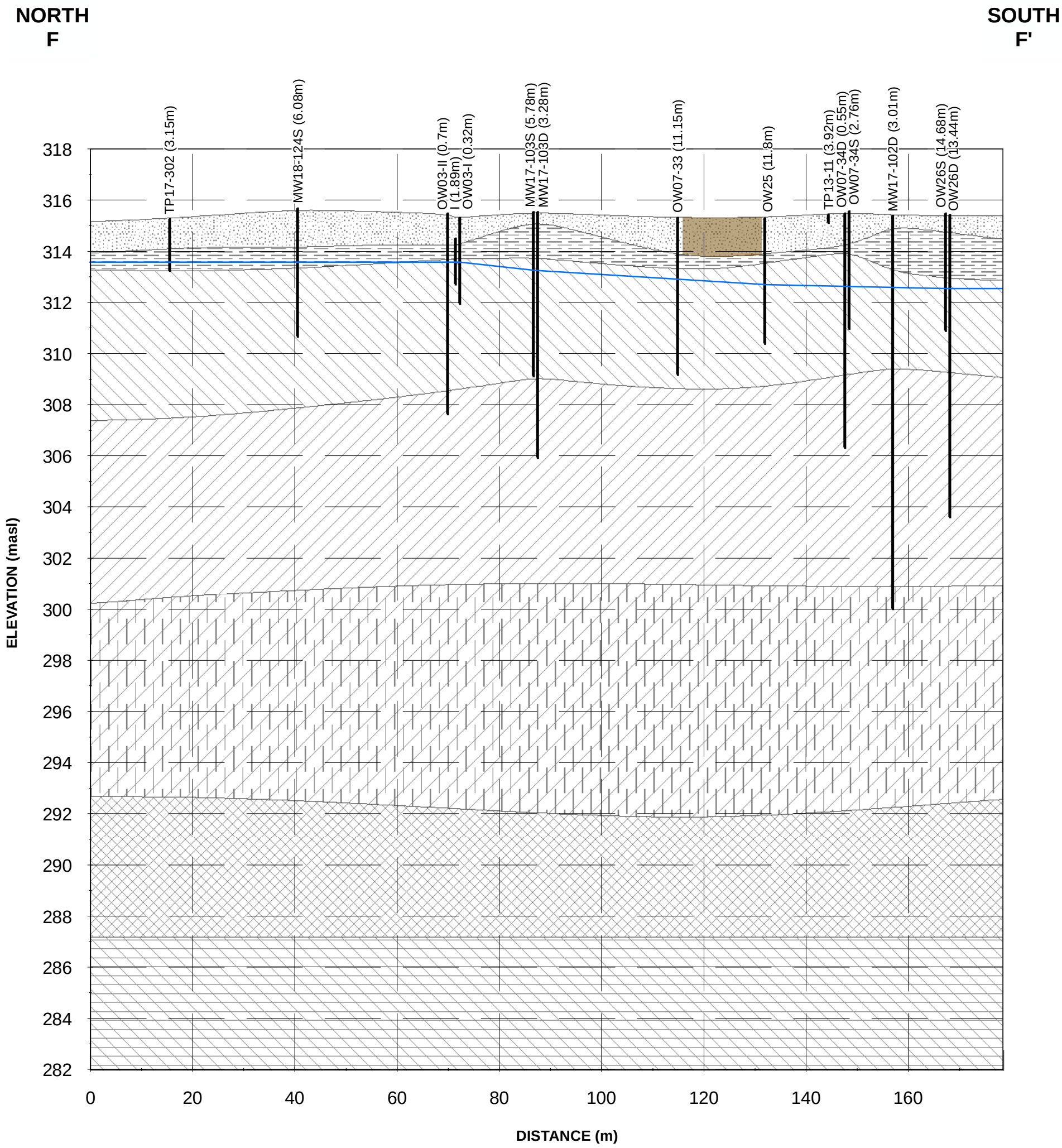
Jacobs



Approximate Groundwater Elevation
Fill
Silty Fine Sand
Stone Road Member (Eramosa Formation)
Reformatory Quarry Member (Eramosa Formation)
Vinemount Member (Eramosa Formation)
Ancaster Member (Goat Island Formation)
Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. Groundwater elevation shown is based on the March 2019 water level measurements from wells screened in the overburden and bedrock contact zone.

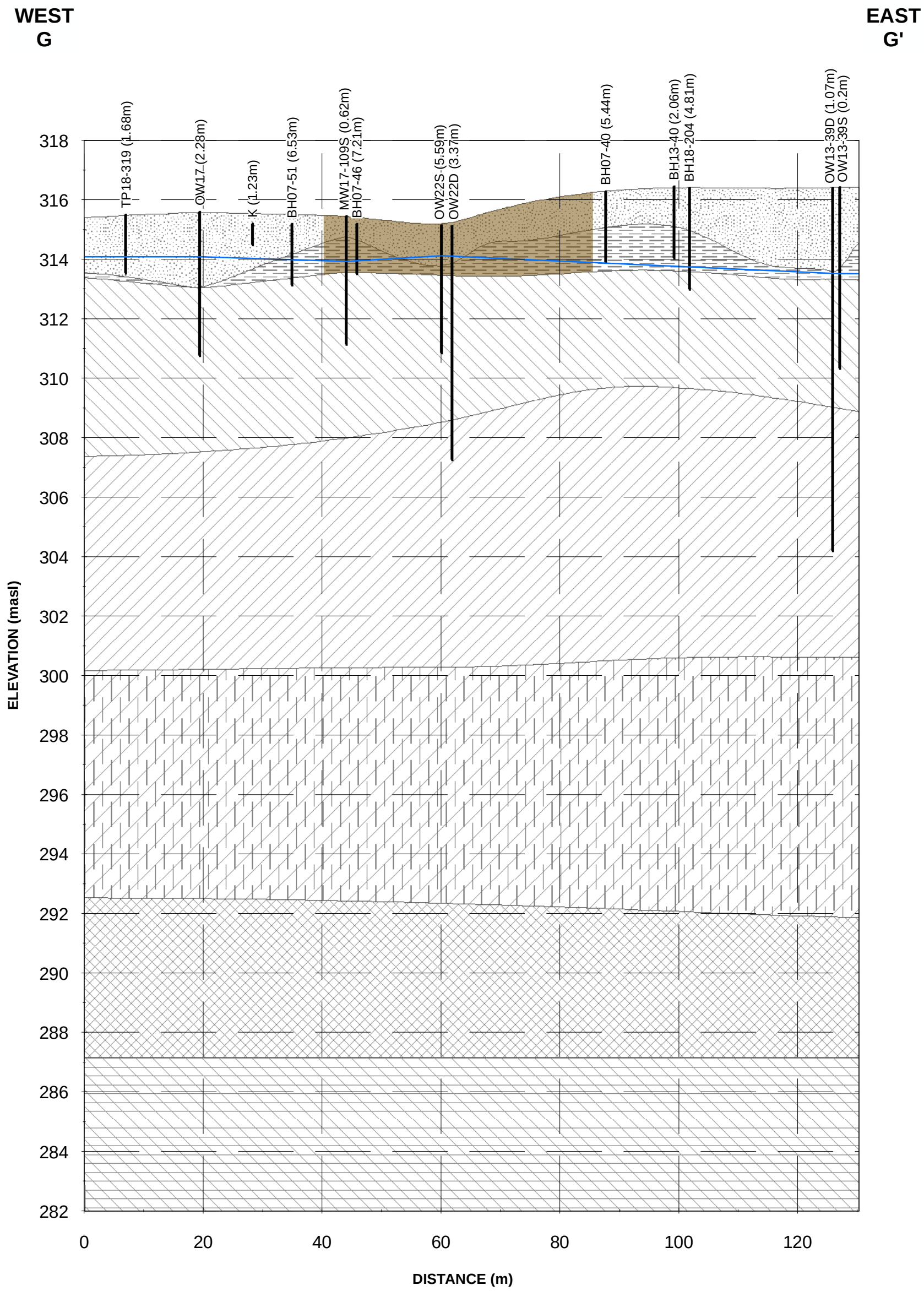
Figure 6-1e
Section E-E'
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario



Approximate Groundwater Elevation
Excavation Area
Fill
Silty Fine Sand
Stone Road Member (Eramosa Formation)
Reformatory Quarry Member (Eramosa Formation)
Vinemount Member (Eramosa Formation)
Ancaster Member (Goat Island Formation)
Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. Groundwater elevation shown is based on the March 2019 water level measurements from wells screened in the overburden and bedrock contact zone.

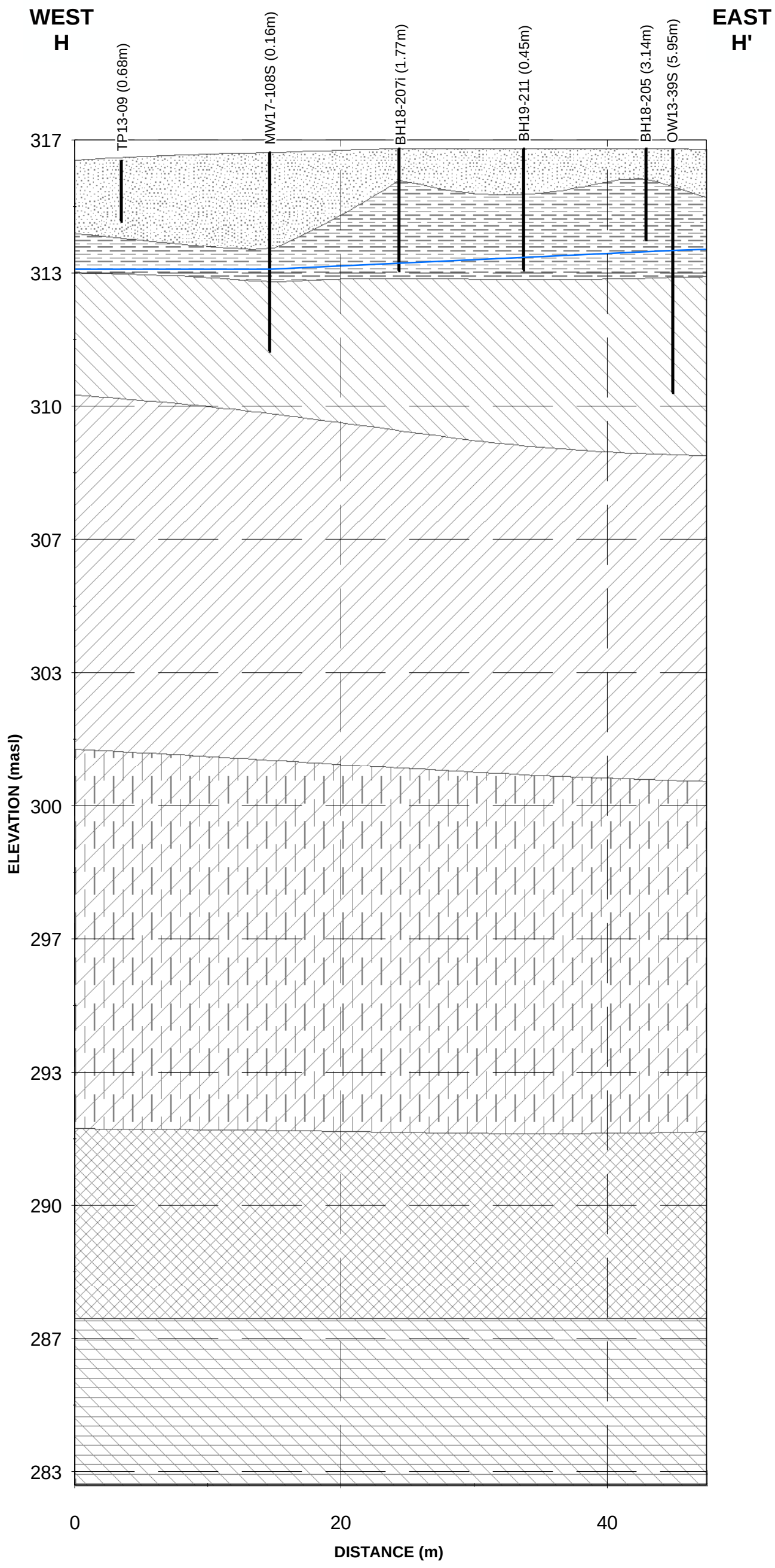
Figure 6-1f
Section F-F'
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario



- Approximate Groundwater Elevation
- Excavation Area
- Fill
- Silty Fine Sand
- Stone Road Member (Eramosa Formation)
- Reformatory Quarry Member (Eramosa Formation)
- Vinemount Member (Eramosa Formation)
- Ancaster Member (Goat Island Formation)
- Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. Groundwater elevation shown is based on the March 2019 water level measurements from wells screened in the overburden and bedrock contact zone.

Figure 6-1g
Section G-G'
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario



Approximate Groundwater Elevation
Fill
Silty Fine Sand
Stone Road Member (Eramosa Formation)
Reformatory Quarry Member (Eramosa Formation)
Vinemount Member (Eramosa Formation)
Ancaster Member (Goat Island Formation)
Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. Groundwater elevation shown is based on the March 2019 water level measurements from wells screened in the overburden and bedrock contact zone.

Figure 6-1h
Section H-H'
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

N

0 10 20 30
Metres

Monitoring Well With Groundater Elevation (masl)
Groundwater Elevation Contour (masl)
Interpreted Groundwater Flow Direction
Former IMICO Property Boundary
Property Parcel

Notes:
1. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
2. Property boundaries, roads obtained from http://open.guelph.ca/.

Figure 6-2a
Water Table (Contact Zone); August 2018
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

\\DC1VS01\GISPROJ\G\GUELPHCITYOF\IMICO\MAPFILES\IMICO\PHASETWO\DRAFTII\GW_ELEVATIONS_AUG2018.MXD MJOZWIAK 5/19/2020 9:17:14 AM

N

0 10 20 30
Metres

Monitoring Well With Groundater Elevation (masl)
Groundwater Elevation Contour (masl)
Interpreted Groundwater Flow Direction
Former IMICO Property Boundary
Property Parcel

Notes:
1. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
2. Property boundaries, roads obtained from http://open.guelph.ca/.

Figure 6-2b
Water Table (Contact Zone); March 2019
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

\\DC1VS01\GISPROJ\G\GUELPHCITYOF\IMICO\MAPFILES\IMICO\PHASETWO\DRAFTII\GW_ELEVATIONS_MARCH2019.MXD MJOZWIAK 5/19/2020 9:07:20 AM

N

0 10 20 30
Metres

Monitoring Well With Groundater Elevation (masl)
Groundwater Elevation Contour (masl)
Interpreted Groundwater Flow Direction
Former IMICO Property Boundary
Property Parcel

Notes:
1. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
2. Property boundaries, roads obtained from http://open.guelph.ca/.

Figure 6-2c
Water Table (Contact Zone); February 2020
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

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N

0 10 20 30
Metres

Monitoring Well With Groundater Elevation (masl)
Groundwater Elevation Contour (masl)
Interpreted Groundwater Flow Direction
Former IMICO Property Boundary
Property Parcel

Notes:
1. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
2. Property boundaries, roads obtained from http://open.guelph.ca/.

Figure 6-2d
Potentiometric Surface – Vinemount; August 2018
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

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N

0 10 20 30
Metres

Monitoring Well With Groundater Elevation (masl)
Groundwater Elevation Contour (masl)
Interpreted Groundwater Flow Direction
Former IMICO Property Boundary
Property Parcel

Notes:
1. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
2. Property boundaries, roads obtained from http://open.guelph.ca/.

Figure 6-2e
Potentiometric Surface – Vinemount; March 2019
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

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N

0 10 20 30
Metres

Monitoring Well With Groundater Elevation (masl)
Groundwater Elevation Contour (masl)
Interpreted Groundwater Flow Direction
Former IMICO Property Boundary
Property Parcel

Notes:
1. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
2. Property boundaries, roads obtained from http://open.guelph.ca/.

Figure 6-2f
Potentiometric Surface – Vinemount; February 2020
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

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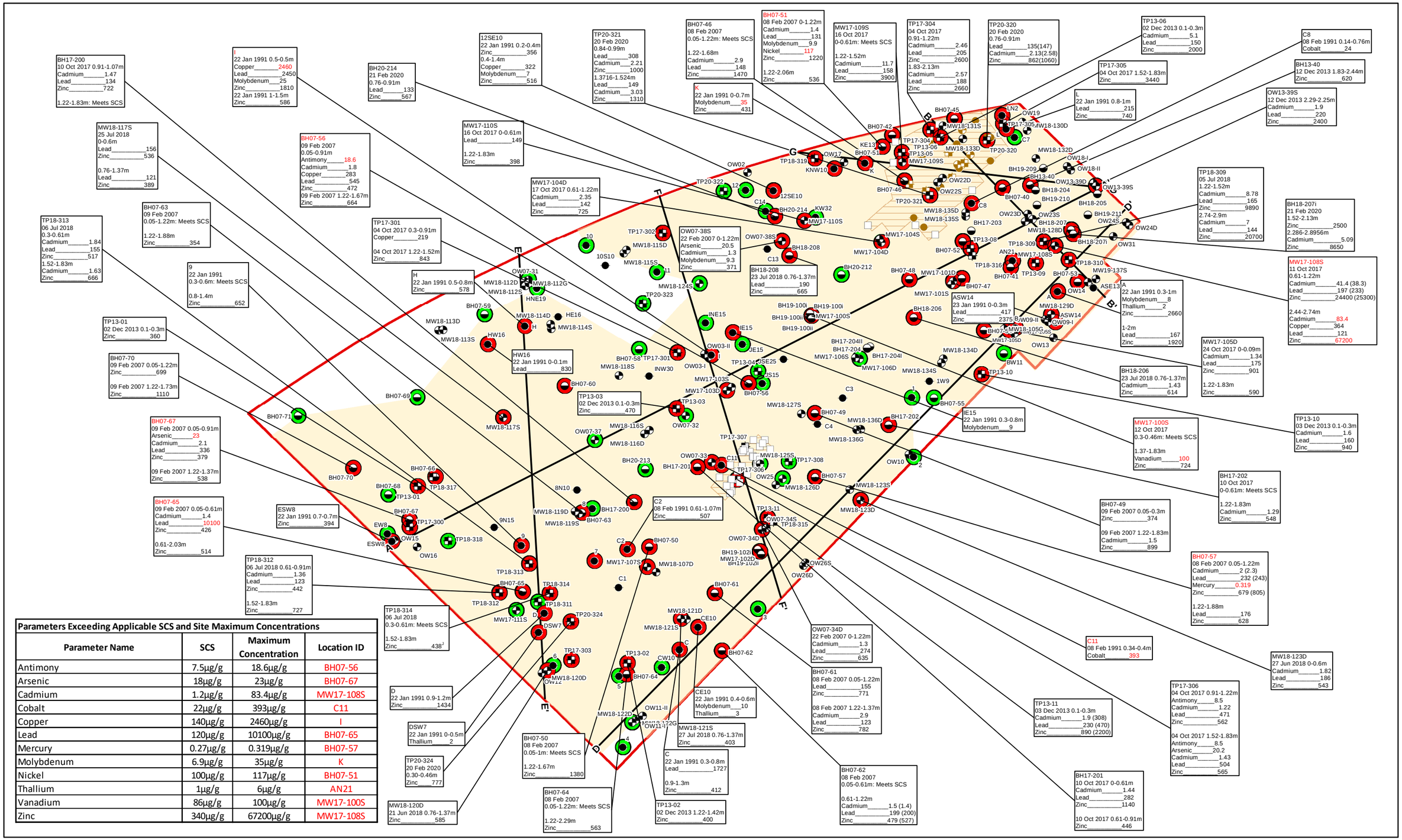


Parameters Exceeding Applicable SCS and Site Maximum Concentrations			
Parameter Name	SCS	Maximum Concentration	Location ID
Antimony	7.5µg/g	18.6µg/g	BH07-56
Arsenic	18µg/g	23µg/g	BH07-67
Cadmium	1.2µg/g	83.4µg/g	MW17-108S
Cobalt	22µg/g	393µg/g	C11
Copper	140µg/g	2460µg/g	I
Lead	120µg/g	10100µg/g	BH07-65
Mercury	0.27µg/g	0.319µg/g	BH07-57
Molybdenum	6.9µg/g	35µg/g	K
Nickel	100µg/g	117µg/g	BH07-51
Thallium	1µg/g	6µg/g	AN21
Vanadium	86µg/g	100µg/g	MW17-100S
Zinc	340µg/g	67200µg/g	MW17-108S

N

0 10 20 30
Metres

- Borehole
- Confirmatory
- Monitoring Well
- Other
- Test Pit

- No Exceedance; <Null>
- Exceedance

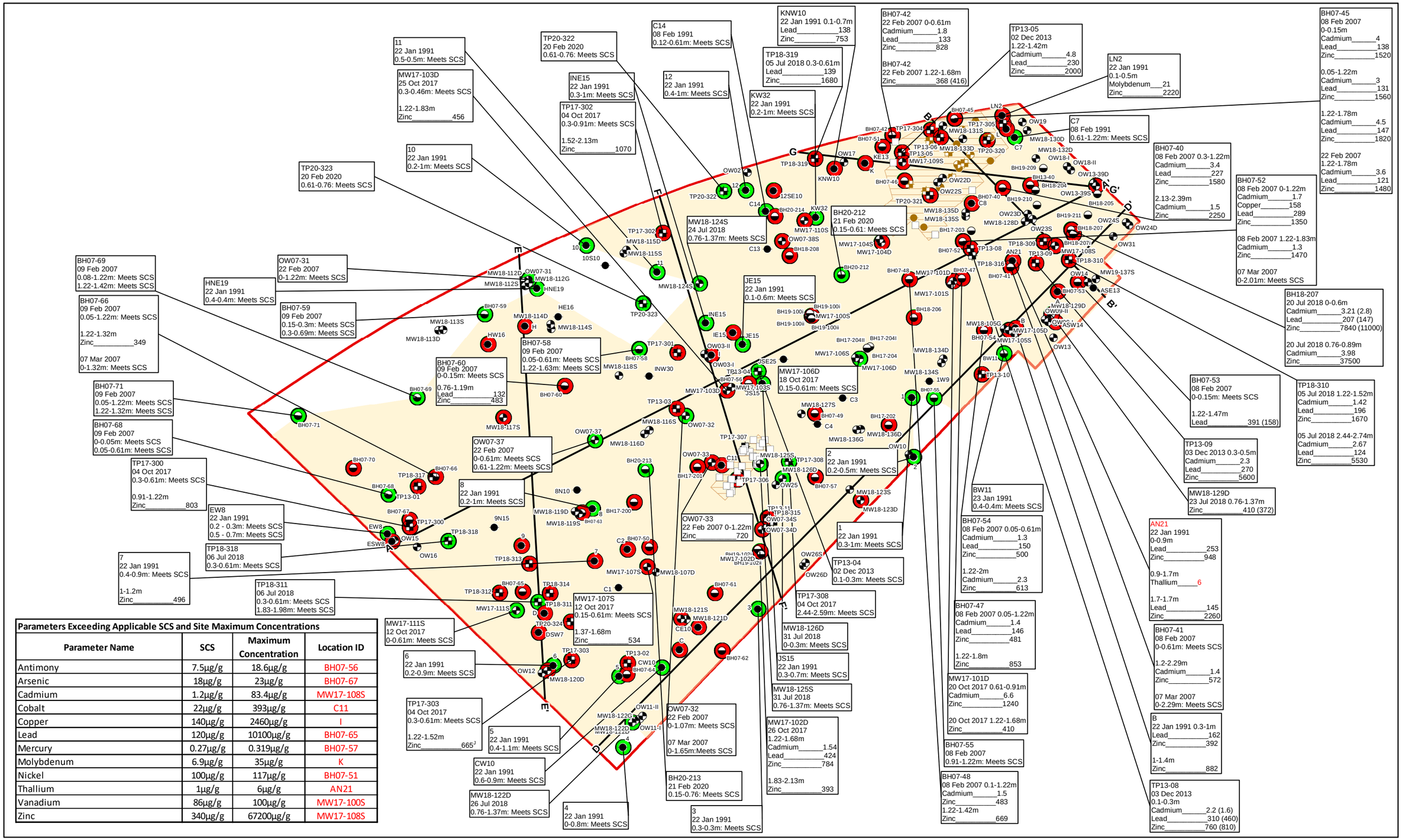
Excavated Locations
- Confirmatory
- Monitoring Well
- Other
- Test Pit

- Cross Section Location
- Former IMICO Property Boundary
- Historical Excavation area, EarthTech, 1999
- Horizontal Delineation

Notes:
1. Historical locations are approximate. All samples, including those within excavation areas that have been removed (i.e. prior to 1999) have been shown for screening purposes.
2. Results in ( ) indicate field duplicates.
3. "J" indicates associated value is estimated.
4. Red text indicates the location of the Site maximum concentration of the analyte.
5. The estimated extent of impacts was inferred to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.

Figure 6-3 (Part 1)
Soil Exceedances - Metals, Hydride-Forming Metals, Mercury and Chromium VI
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs



Parameters Exceeding Applicable SCS and Site Maximum Concentrations

Parameter Name	SCS	Maximum Concentration	Location ID
Antimony	7.5µg/g	18.6µg/g	BH07-56
Arsenic	18µg/g	23µg/g	BH07-67
Cadmium	1.2µg/g	83.4µg/g	MW17-108S
Cobalt	22µg/g	393µg/g	C11
Copper	140µg/g	2460µg/g	I
Lead	120µg/g	10100µg/g	BH07-65
Mercury	0.27µg/g	0.319µg/g	BH07-57
Molybdenum	6.9µg/g	35µg/g	K
Nickel	100µg/g	117µg/g	BH07-51
Thallium	1µg/g	6µg/g	AN21
Vanadium	86µg/g	100µg/g	MW17-100S
Zinc	340µg/g	67200µg/g	MW17-108S

N

0 10 20 30
Metres

Sample Locations
- Borehole
- Confirmatory
- Monitoring Well
- Other
- Test Pit

Excavated Locations
- Confirmatory
- Monitoring Well
- Other
- Test Pit

- No Exceedance
- Exceedance
- Cross Section Location
- Former IMICO Property Boundary
- Historical Excavation area, EarthTech, 1999
- Horizontal Delineation

Notes:
1. Historical locations are approximate. All samples, including those within excavation areas that have been removed (i.e. prior to 1999) have been shown for screening purposes.
2. Results in ( ) indicate field duplicates.
3. "J" indicates associated value is estimated.
4. Red text indicates the location of the Site maximum concentration of the analyte.
5. The estimated extent of impacts was inferred to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.

Figure 6-3 (Part 2)
Soil Exceedances - Metals, Hydride-Forming Metals, Mercury and Chromium VI
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

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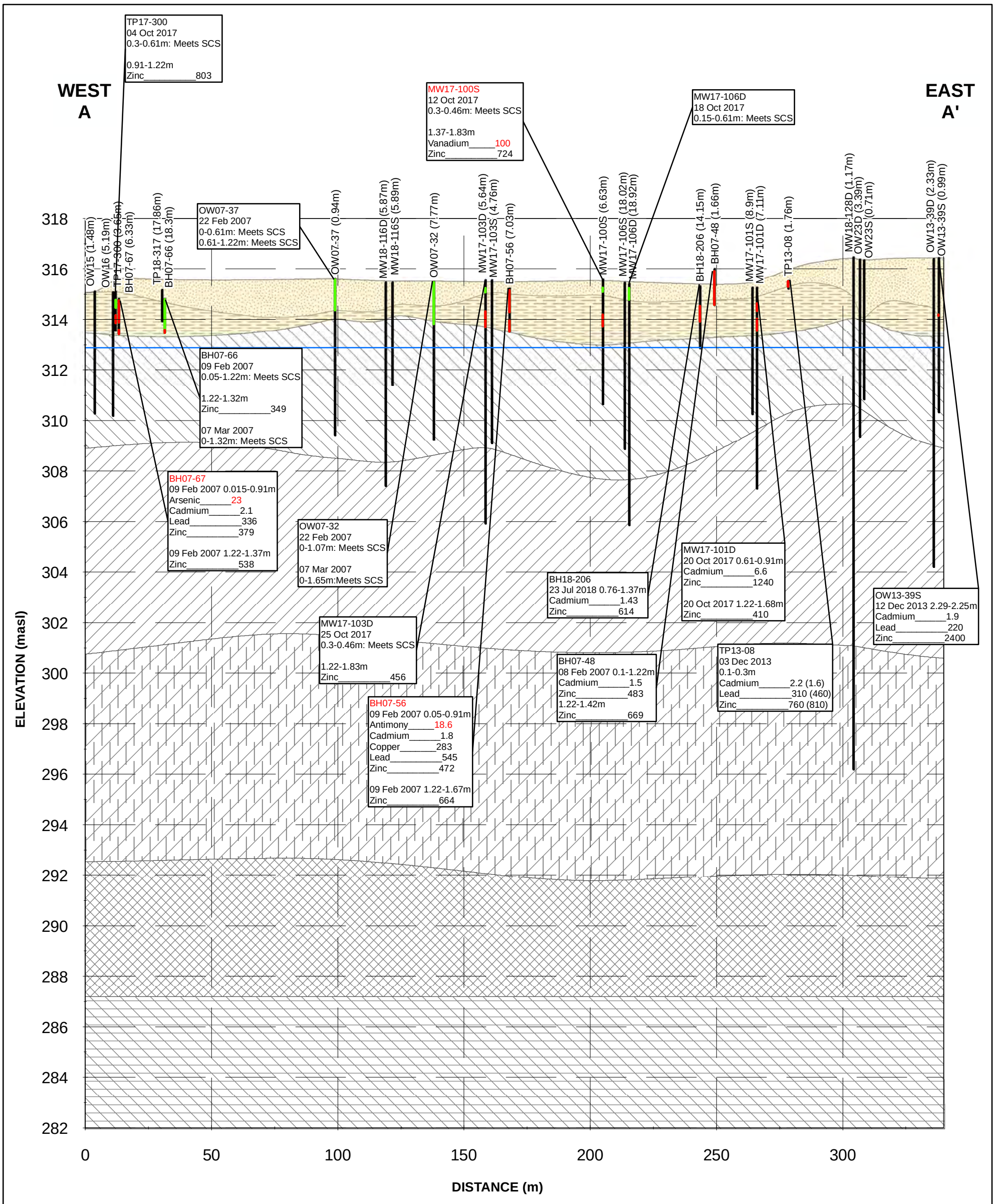
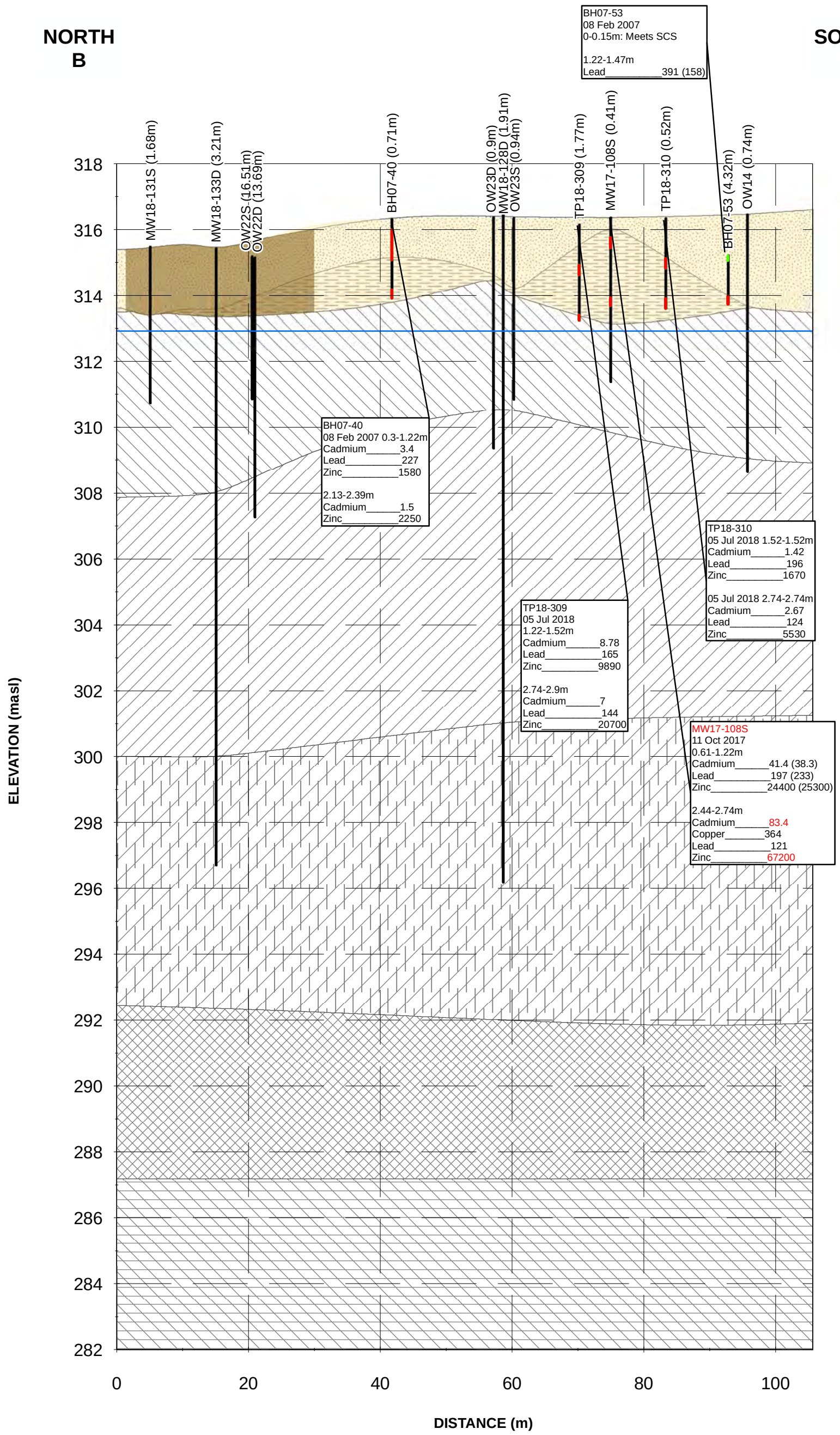


Approximate Groundwater Elevation
Exceedance
No Exceedance
Vertical Delineation
Fill
Silty Fine Sand
Stone Road Member (Eramosa Formation)
Reformatory Quarry Member (Eramosa Formation)
Vinemount Member (Eramosa Formation)
Ancaster Member (Goat Island Formation)
Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

Figure 6-3a
Section A-A' - Soil Exceedances - Metals
Hydride-Forming Metals, Mercury and Chromium VI
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs



- Approximate Groundwater Elevation
- Exceedance
- No Exceedance
- Vertical Delineation
- Excavation Area
- Fill
- Silty Fine Sand
- Stone Road Member (Eramosa Formation)
- Reformatory Quarry Member (Eramosa Formation)
- Vinemount Member (Eramosa Formation)
- Ancaster Member (Goat Island Formation)
- Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

Figure 6-3b
Section B-B' - Soil Exceedances - Metals
Hydride-Forming Metals, Mercury and Chromium VI
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

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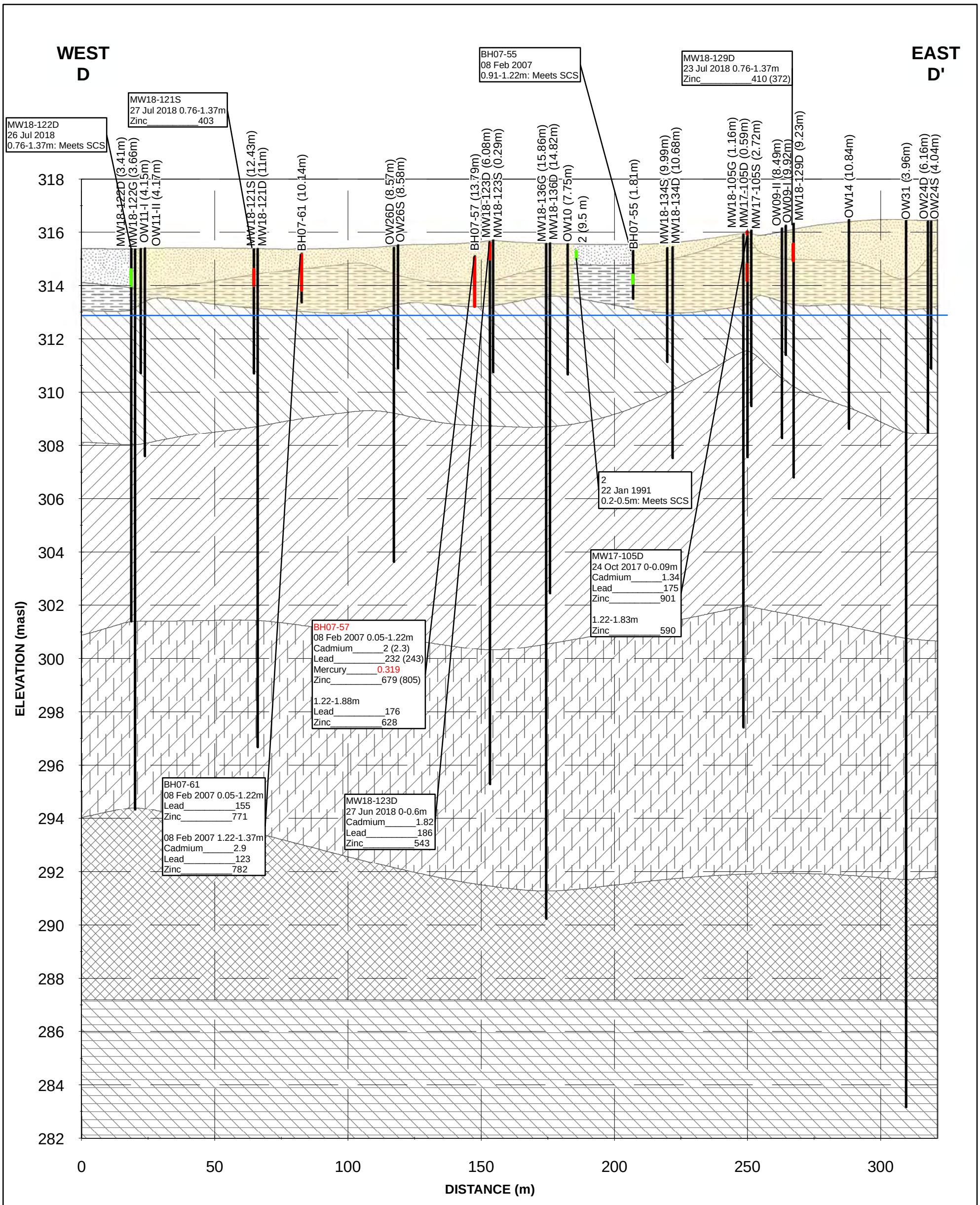
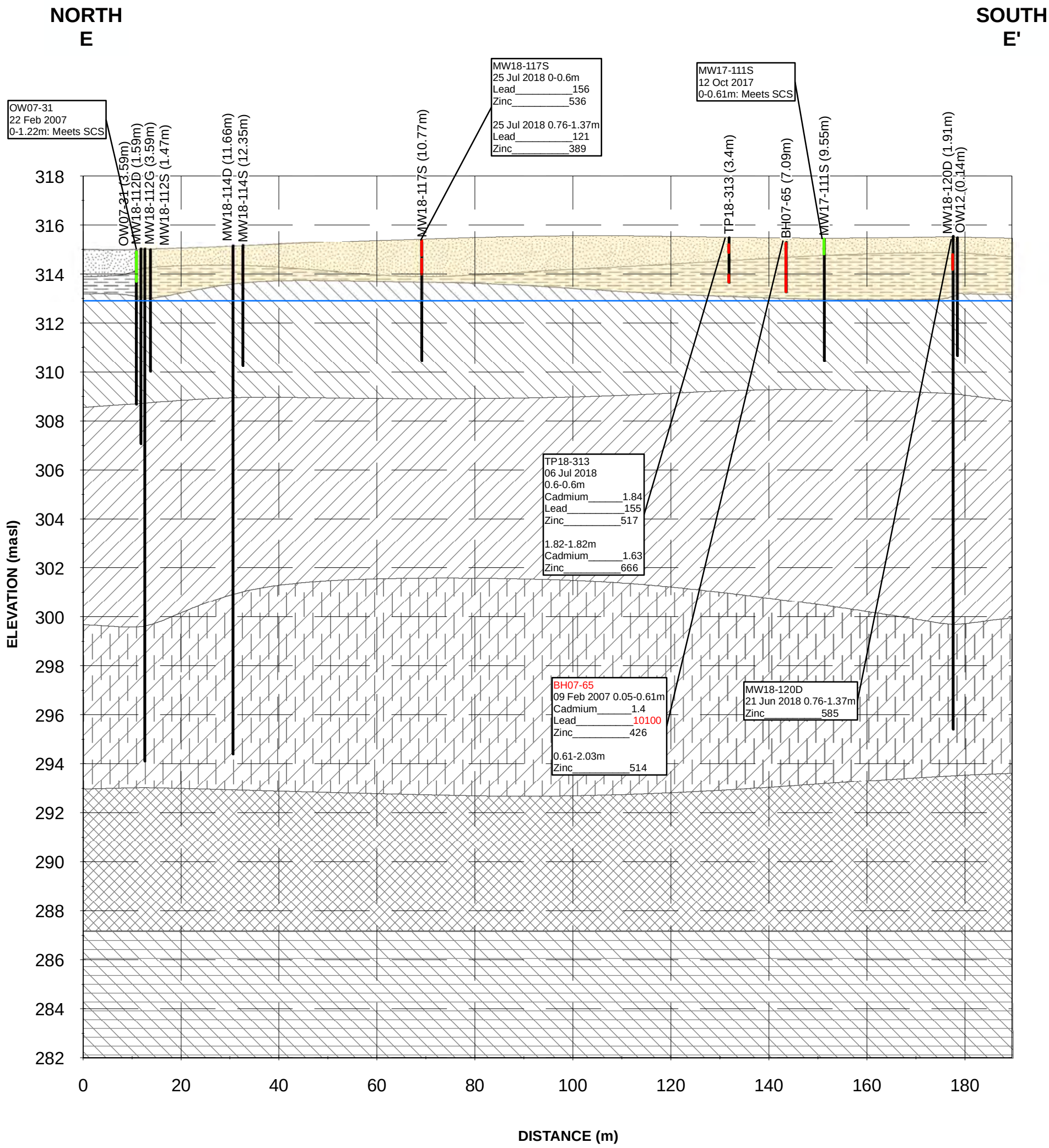


- Approximate Groundwater Elevation
- Exceedance
- No Exceedance
- Vertical Delineation
- Fill
- Silty Fine Sand
- Stone Road Member (Eramosa Formation)
- Reformatory Quarry Member (Eramosa Formation)
- Vinemount Member (Eramosa Formation)
- Ancaster Member (Goat Island Formation)
- Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

Figure 6-3c
Section D-D' - Soil Exceedances - Metals, Hydride-Forming Metals, Mercury and Chromium VI
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs



- Approximate Groundwater Elevation
- Exceedance
- No Exceedance
- Vertical Delineation
- Fill
- Silty Fine Sand
- Stone Road Member (Eramosa Formation)
- Reformatory Quarry Member (Eramosa Formation)
- Vinemount Member (Eramosa Formation)
- Ancaster Member (Goat Island Formation)
- Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

Figure 6-3d
Section E-E' - Soil Exceedances - Metals
Hydride-Forming Metals, Mercury and Chromium VI
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

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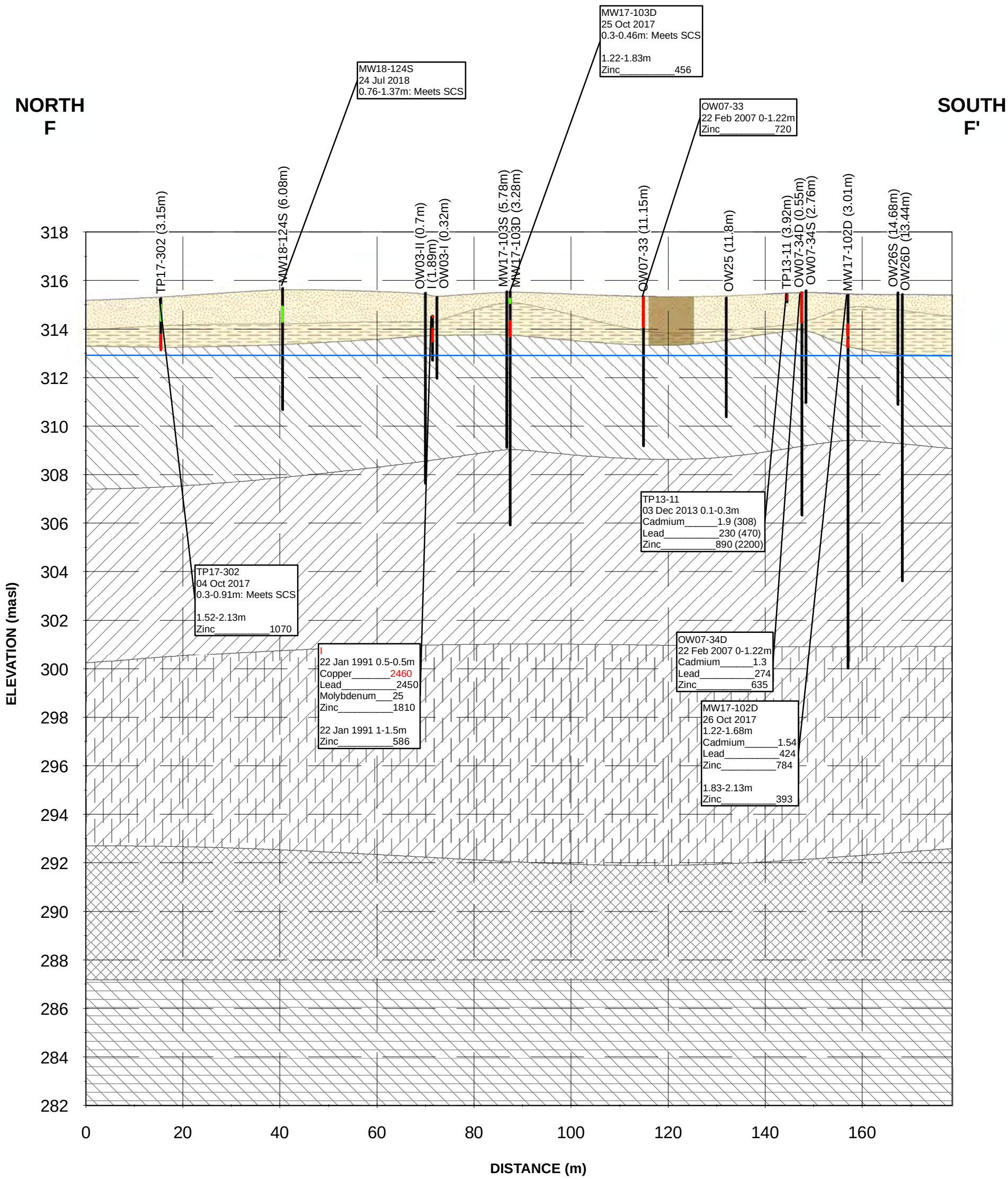

Approximate Groundwater Elevation
Exceedance
No Exceedance
Vertical Delineation
Excavation Area
Fill
Silty Fine Sand
Stone Road Member (Eramosa Formation)
Reformatory Quarry Member (Eramosa Formation)
Vinemount Member (Eramosa Formation)
Ancaster Member (Goat Island Formation)
Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

Figure 6-3e
Section F-F' - Soil Exceedances - Metals
Hydride-Forming Metals, Mercury and Chromium VI
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

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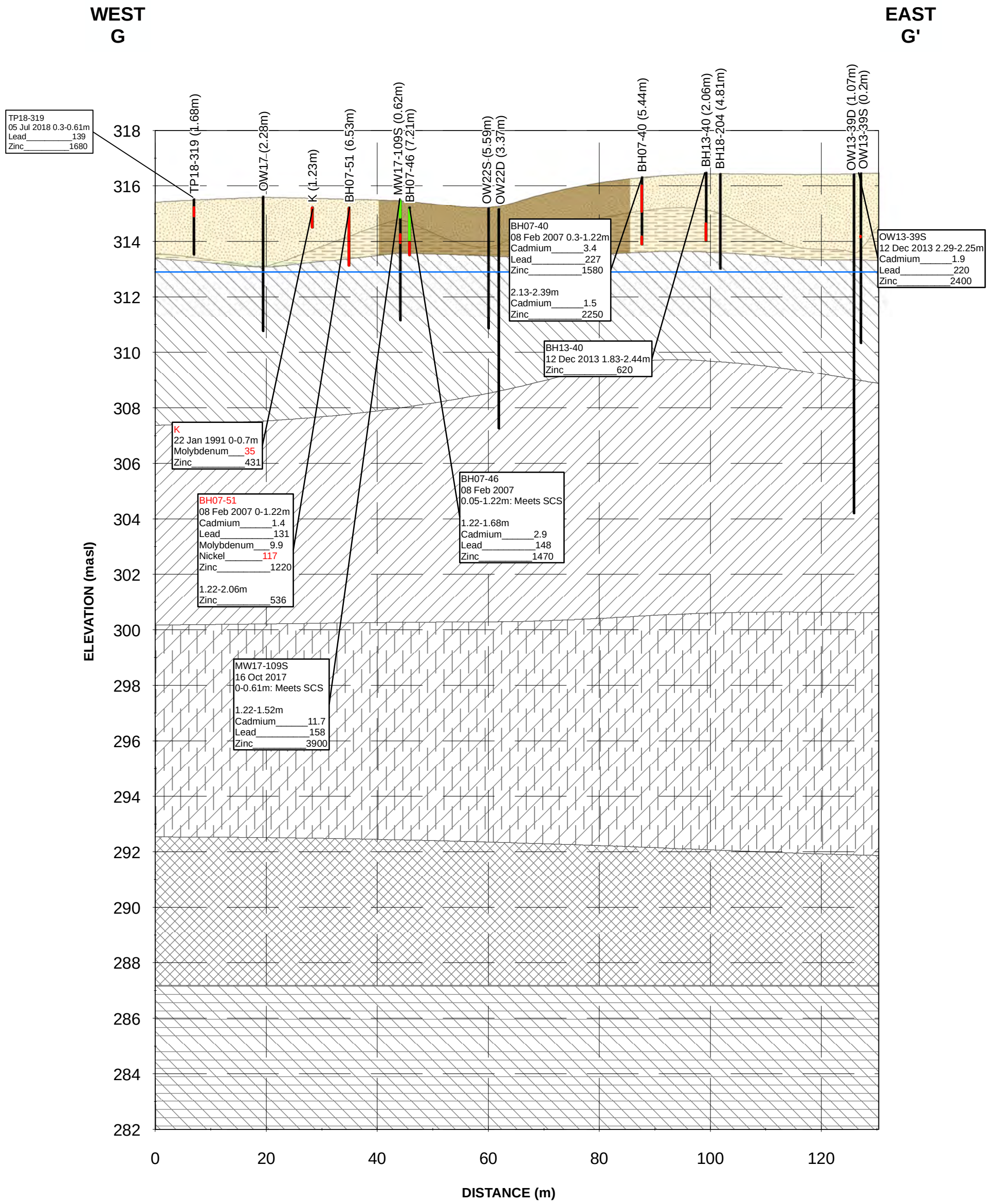
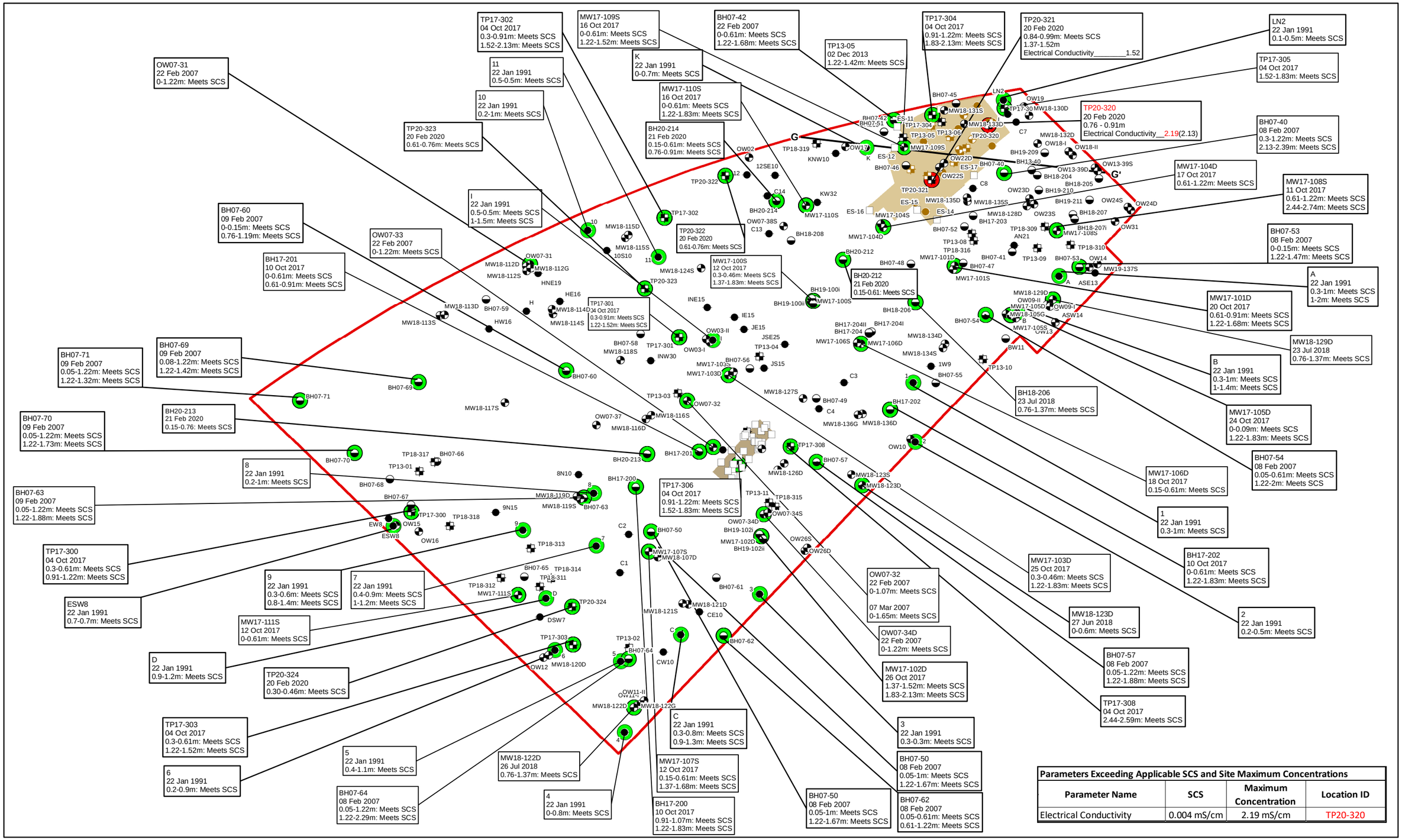


Approximate Groundwater Elevation
Exceedance
No Exceedance
Vertical Delineation
Excavation Area
Fill
Silty Fine Sand
Stone Road Member (Eramosa Formation)
Reformatory Quarry Member (Eramosa Formation)
Vinemount Member (Eramosa Formation)
Ancaster Member (Goat Island Formation)
Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

Figure 6-3f
Section G-G' - Soil Exceedances - Metals
Hydride-Forming Metals, Mercury and Chromium VI
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs



Parameters Exceeding Applicable SCS and Site Maximum Concentrations			
Parameter Name	SCS	Maximum Concentration	Location ID
Electrical Conductivity	0.004 mS/cm	2.19 mS/cm	TP20-320

N

0 10 20 30
Metres

Sample Locations
- Borehole
- Confirmatory
- Monitoring Well
- Other
- Test Pit

Excavated Locations
- Confirmatory
- Monitoring Well
- Other
- Test Pit

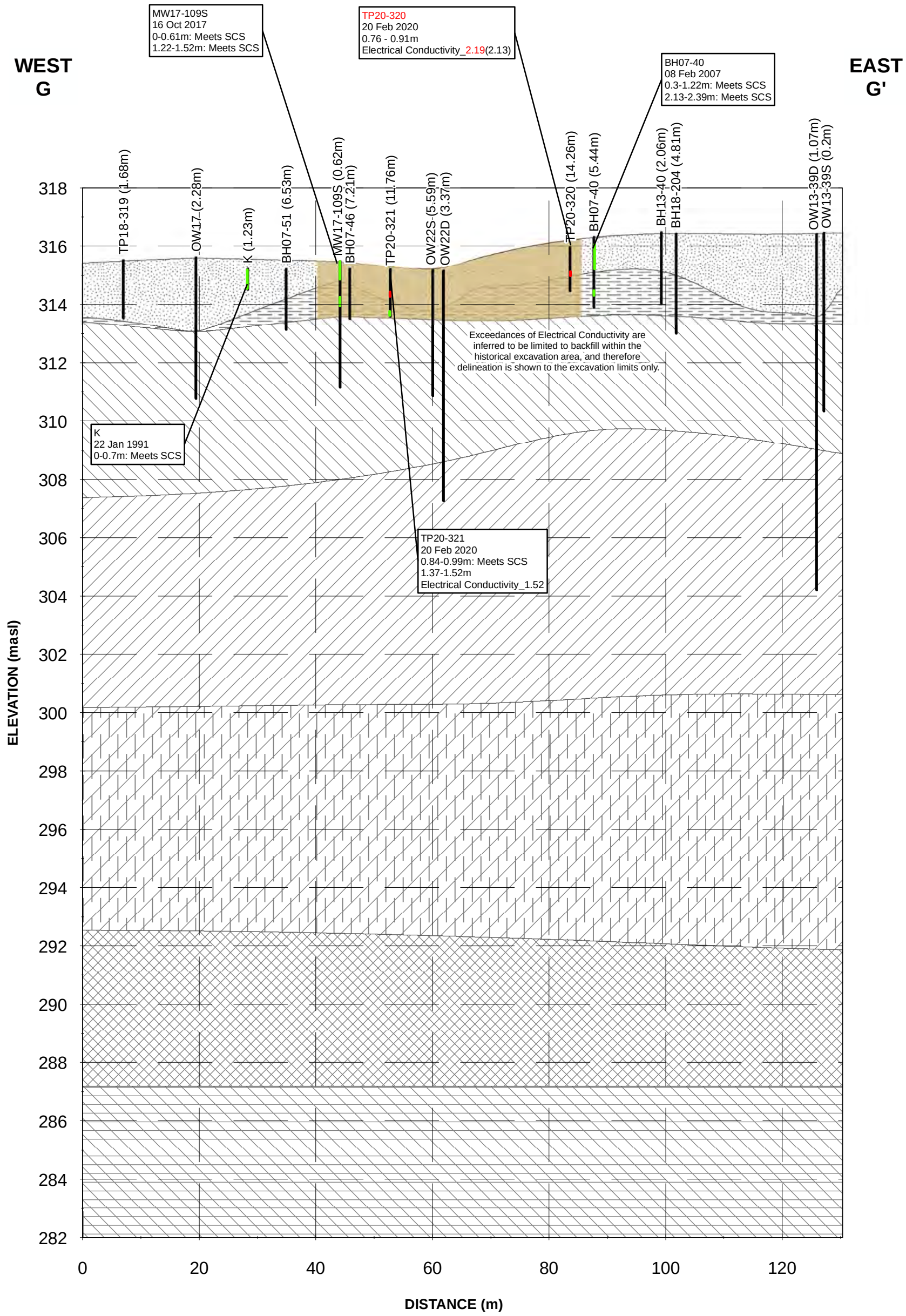
- Exceedance
- No Exceedance
- Cross Section Location

- Former IMICO Property Boundary
- Horizontal Delineation
- Excavated Area

Notes:
1. Historical locations are approximate. All samples, including those within excavation areas that have been removed (i.e. prior to 1999) have been shown for screening purposes.
2. Results in ( ) indicate field duplicates.
3. "J" indicates associated value is estimated.
4. Red text indicates the location of the Site maximum concentration of the analyte.
5. Exceedances of Electrical Conductivity are inferred to be limited to backfill within the historical excavation area, and therefore delineation is shown to the excavation limits only.

Figure 6-4
Soil Exceedances - Other Regulated Parameters (B-HWS, CN-, EC and SAR)
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs



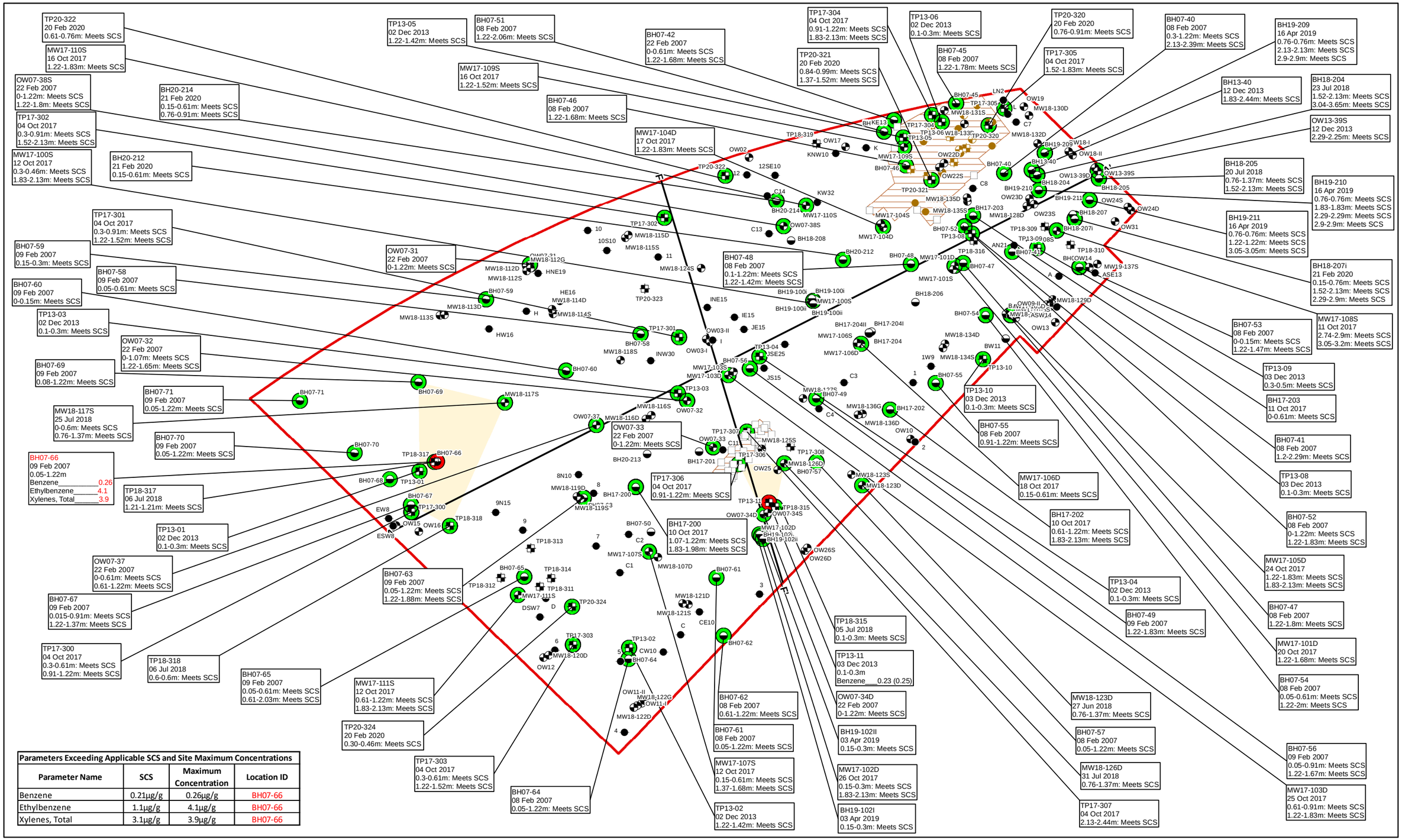
- Approximate Groundwater Elevation
- Non Exceedance
- Exceedance
- Vertical Delineation
- Excavation Area
- Fill
- Silty Fine Sand
- Stone Road Member (Eramosa Formation)
- Reformatory Quarry Member (Eramosa Formation)
- Vinemount Member (Eramosa Formation)
- Ancaster Member (Goat Island Formation)
- Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

Figure 6-4a
Section G-G' Soil Exceedances - Other Regulated Parameters (B-HWS, CN-, EC and SAR)
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

\\DC1VS01\GISPROJ\G\GUELPHCITYOF\IMICO\MAPFILES\IMICO\PHASETWO\DRAFTIII\CROSSSECTIONG_SO_INORGANICS.MXD KA077569 5/11/2020 8:43:19 AM



Parameters Exceeding Applicable SCS and Site Maximum Concentrations			
Parameter Name	SCS	Maximum Concentration	Location ID
Benzene	0.21µg/g	0.26µg/g	BH07-66
Ethylbenzene	1.1µg/g	4.1µg/g	BH07-66
Xylenes, Total	3.1µg/g	3.9µg/g	BH07-66

N

0 10 20 30
Metres

Sample Locations
- Borehole
- Confirmatory
- Monitoring Well
- Other
- Test Pit

Excavated Locations
- Confirmatory
- Monitoring Well
- Other
- Test Pit

- No Exceedance
- Exceedance
- Cross Section Location

- Former IMICO Property Boundary
- Historical Excavation area, EarthTech, 1999
- Horizontal Delineation

Notes:
1. Historical locations are approximate. All samples, including those within excavation areas that have been removed (i.e. prior to 1999) have been shown for screening purposes.
2. Results in ( ) indicate field duplicates.
3. "J" indicates associated value is estimated.
4. Red text indicates the location of the Site maximum concentration of the analyte.
5. The estimated extent of impacts was inferred to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.

Figure 6-5
Soil Exceedances - BTEX
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

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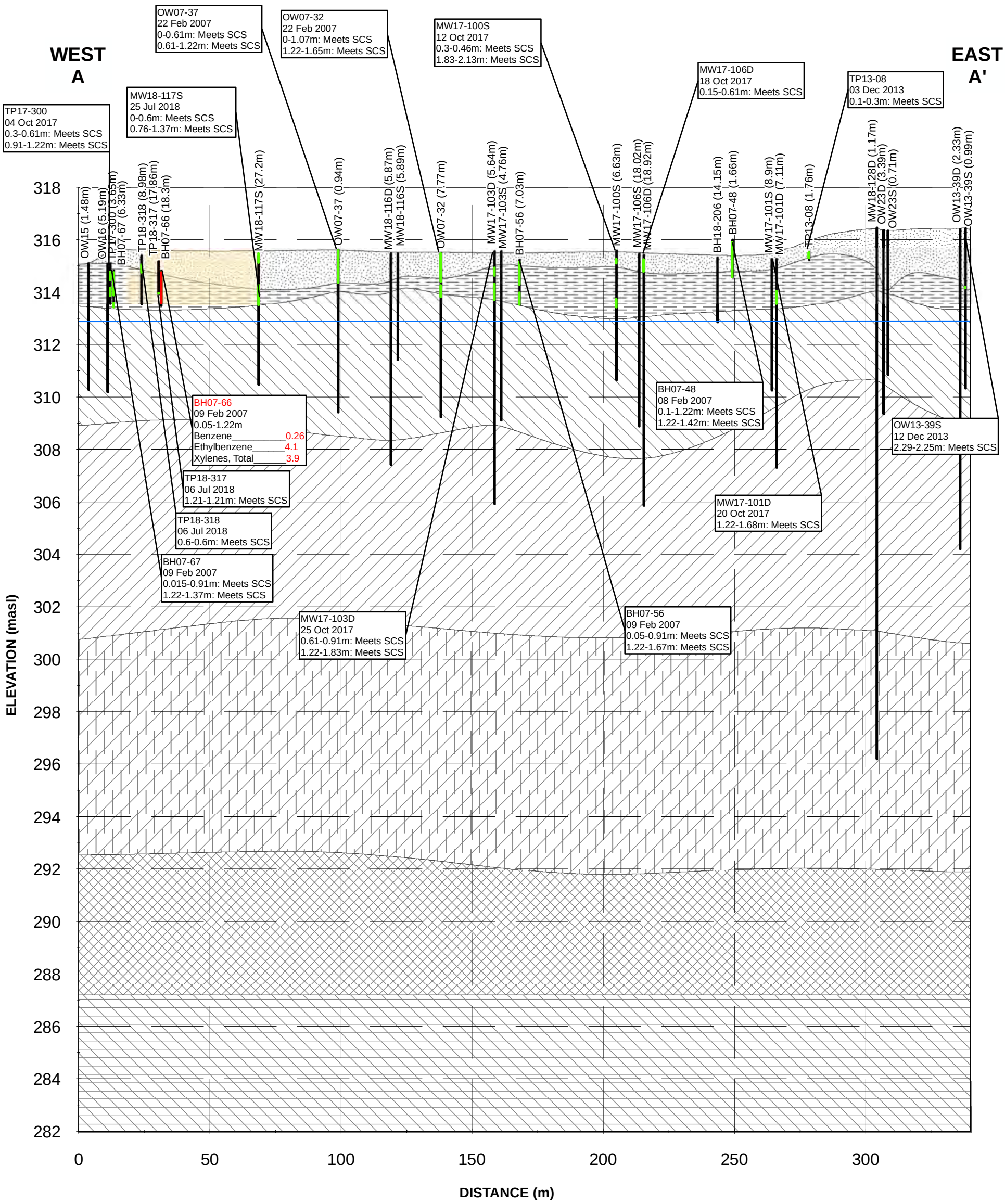
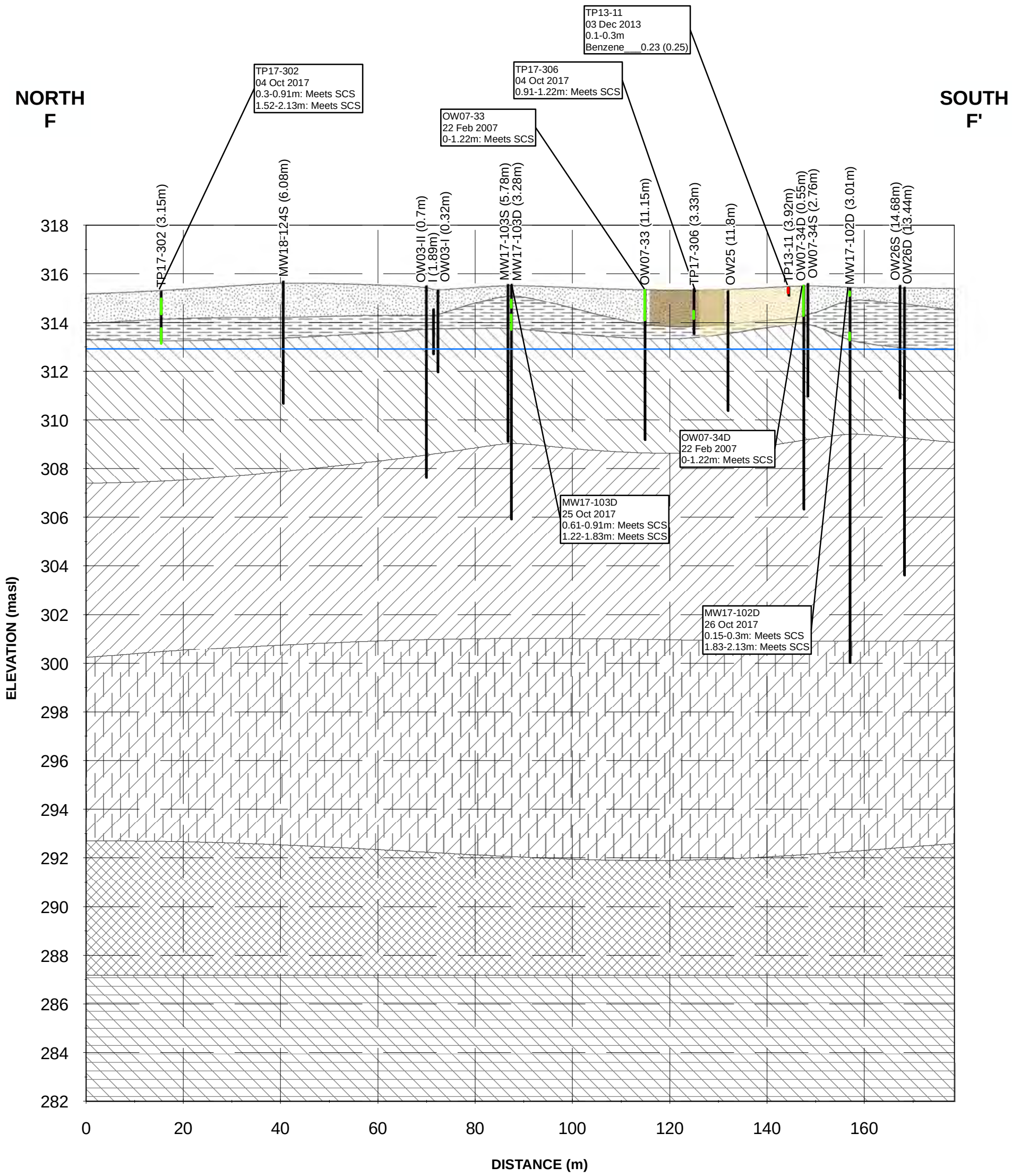


- Approximate Groundwater Elevation
- Exceedance
- No Exceedance
- Vertical Delineation
- Fill
- Silty Fine Sand
- Stone Road Member (Eramosa Formation)
- Reformatory Quarry Member (Eramosa Formation)
- Vinemount Member (Eramosa Formation)
- Ancaster Member (Goat Island Formation)
- Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

Figure 6-5a
Section A-A' - Soil Exceedances - BTEX
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

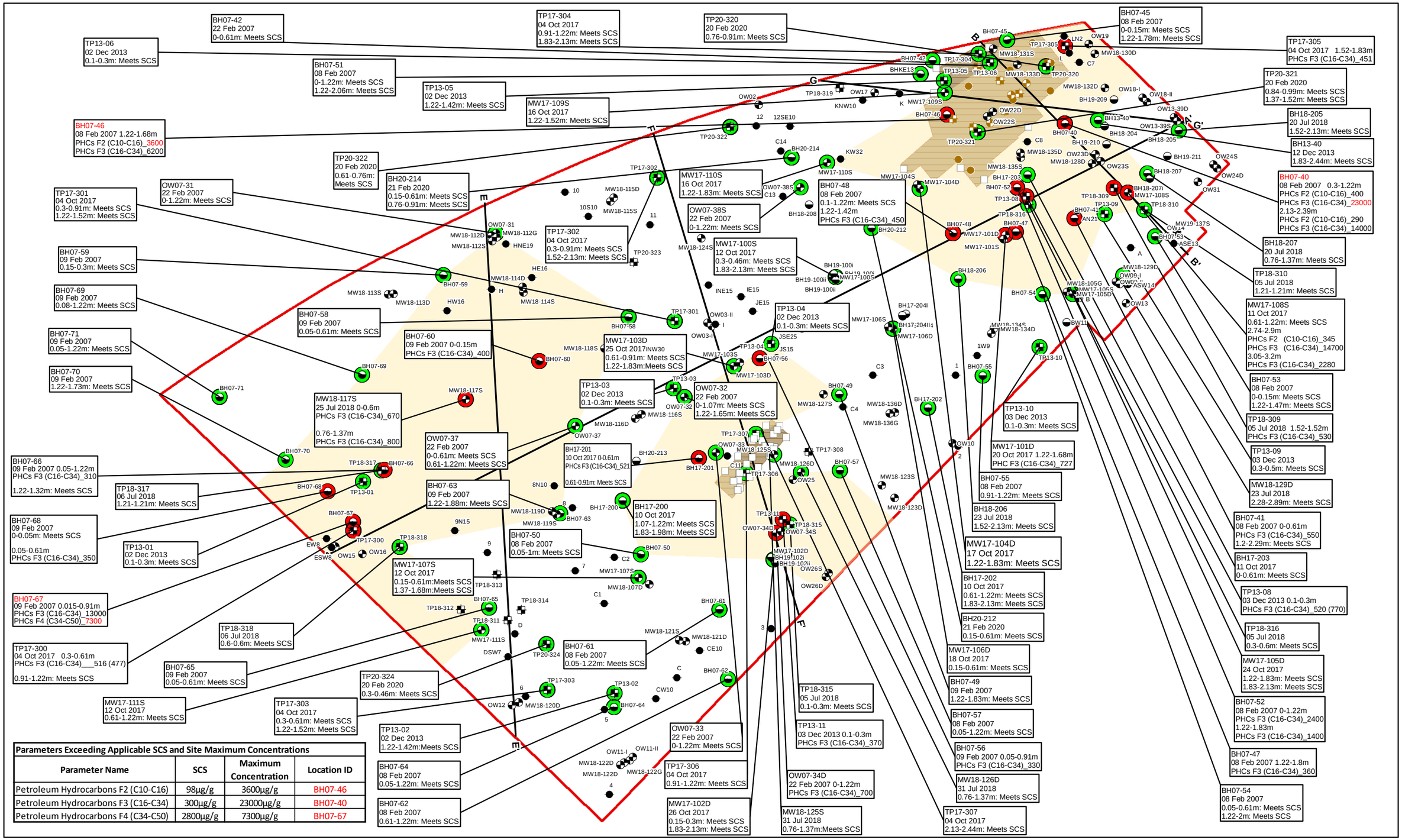
Jacobs



Approximate Groundwater Elevation
Exceedance
No Exceedance
Vertical Delineation
Approximate Excavation Area
Fill
Silty Fine Sand
Stone Road Member (Eramosa Formation)
Reformatory Quarry Member (Eramosa Formation)
Vinemount Member (Eramosa Formation)
Ancaster Member (Goat Island Formation)
Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

Figure 6-5b
Section F-F' - Soil Exceedances - BTEX
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario



Parameters Exceeding Applicable SCS and Site Maximum Concentrations			
Parameter Name	SCS	Maximum Concentration	Location ID
Petroleum Hydrocarbons F2 (C10-C16)	98µg/g	3600µg/g	BH07-46
Petroleum Hydrocarbons F3 (C16-C34)	300µg/g	23000µg/g	BH07-40
Petroleum Hydrocarbons F4 (C34-C50)	2800µg/g	7300µg/g	BH07-67

N

0 10 20 30
Metres

Sample Locations
- Borehole
- Confirmatory
- Monitoring Well
- Other
- Test Pit

Excavated Locations
- Confirmatory
- Monitoring Well
- Other
- Test Pit

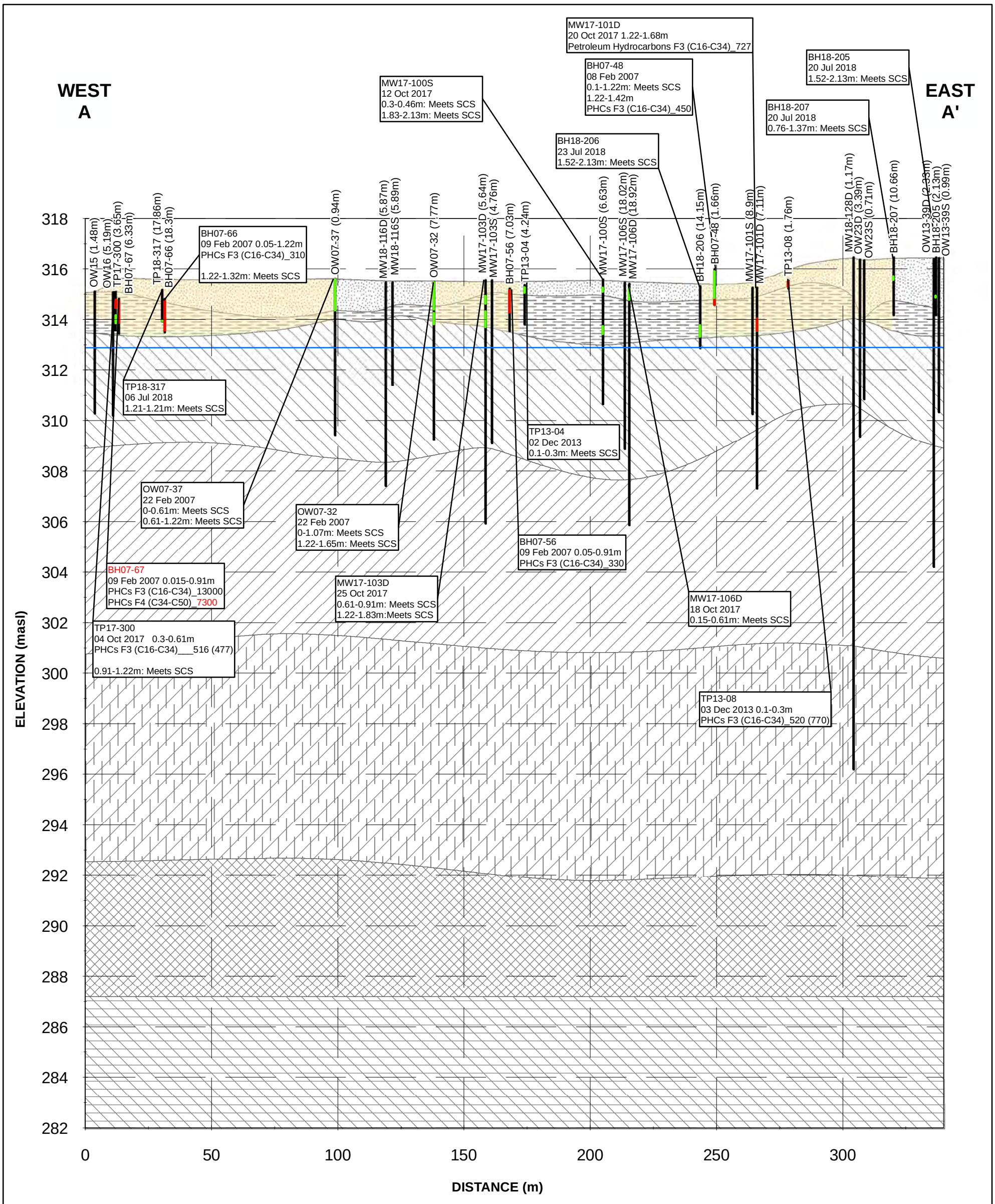
- No Exceedance
- Exceedance
- Cross Section Location

- Former IMICO Property Boundary
- Historical Excavation area, EarthTech, 1999
- Horizontal Delineation

Notes:
1. Historical locations are approximate. All samples, including those within excavation areas that have been removed (i.e. prior to 1999) have been shown for screening purposes.
2. Results in ( ) indicate field duplicates.
3. "J" indicates associated value is estimated.
4. Red text indicates the location of the Site maximum concentration of the analyte.
5. The estimated extent of impacts was inferred to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.

Figure 6-6
Soil Exceedances - PHC
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

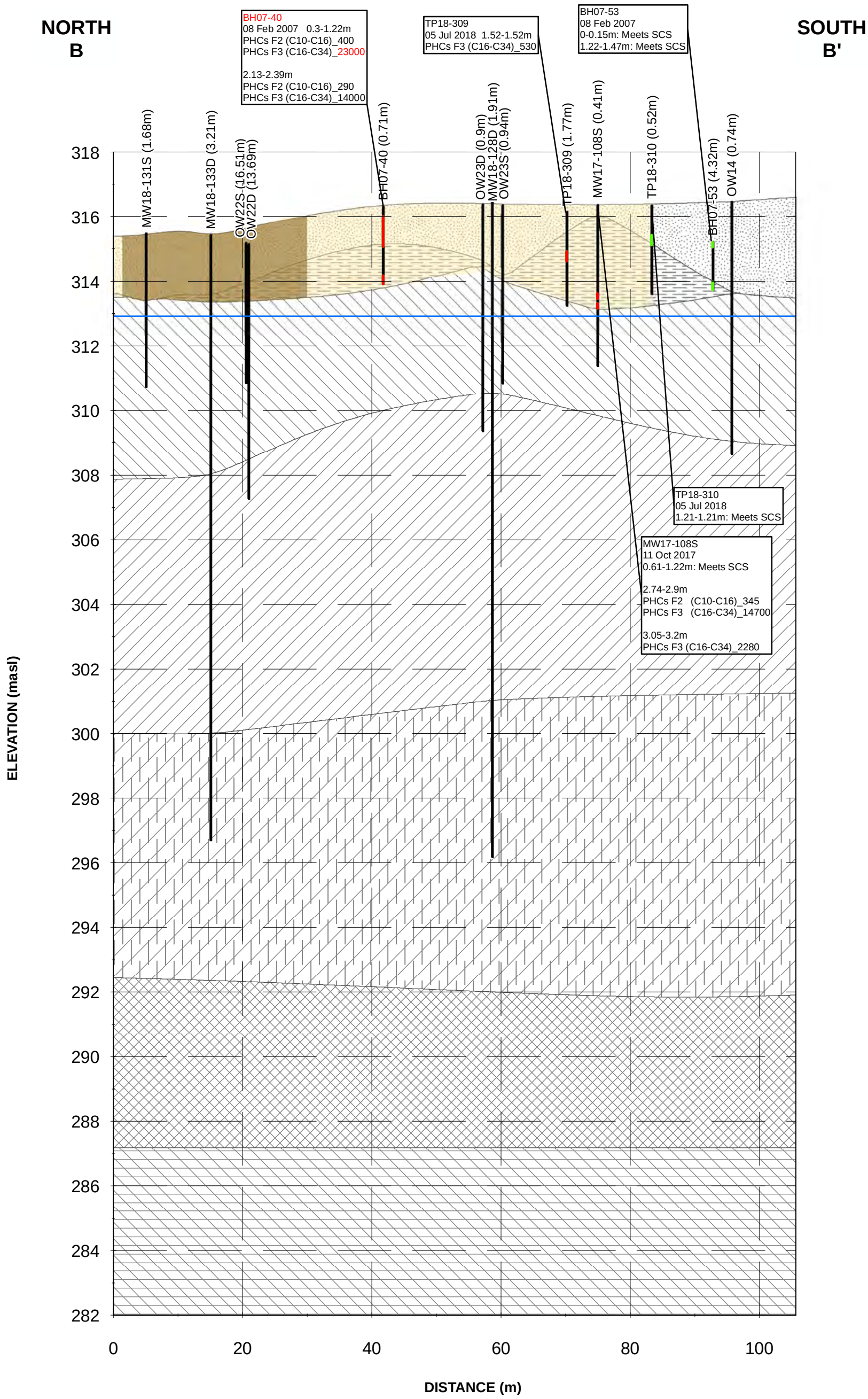


- Approximate Groundwater Elevation
- Exceedance
- No Exceedance
- Vertical Delineation
- Fill
- Silty Fine Sand
- Stone Road Member (Eramosa Formation)
- Reformatory Quarry Member (Eramosa Formation)
- Vinemount Member (Eramosa Formation)
- Ancaster Member (Goat Island Formation)
- Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

Figure 6-6a
Section A-A' - Soil Exceedances - PHCs
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

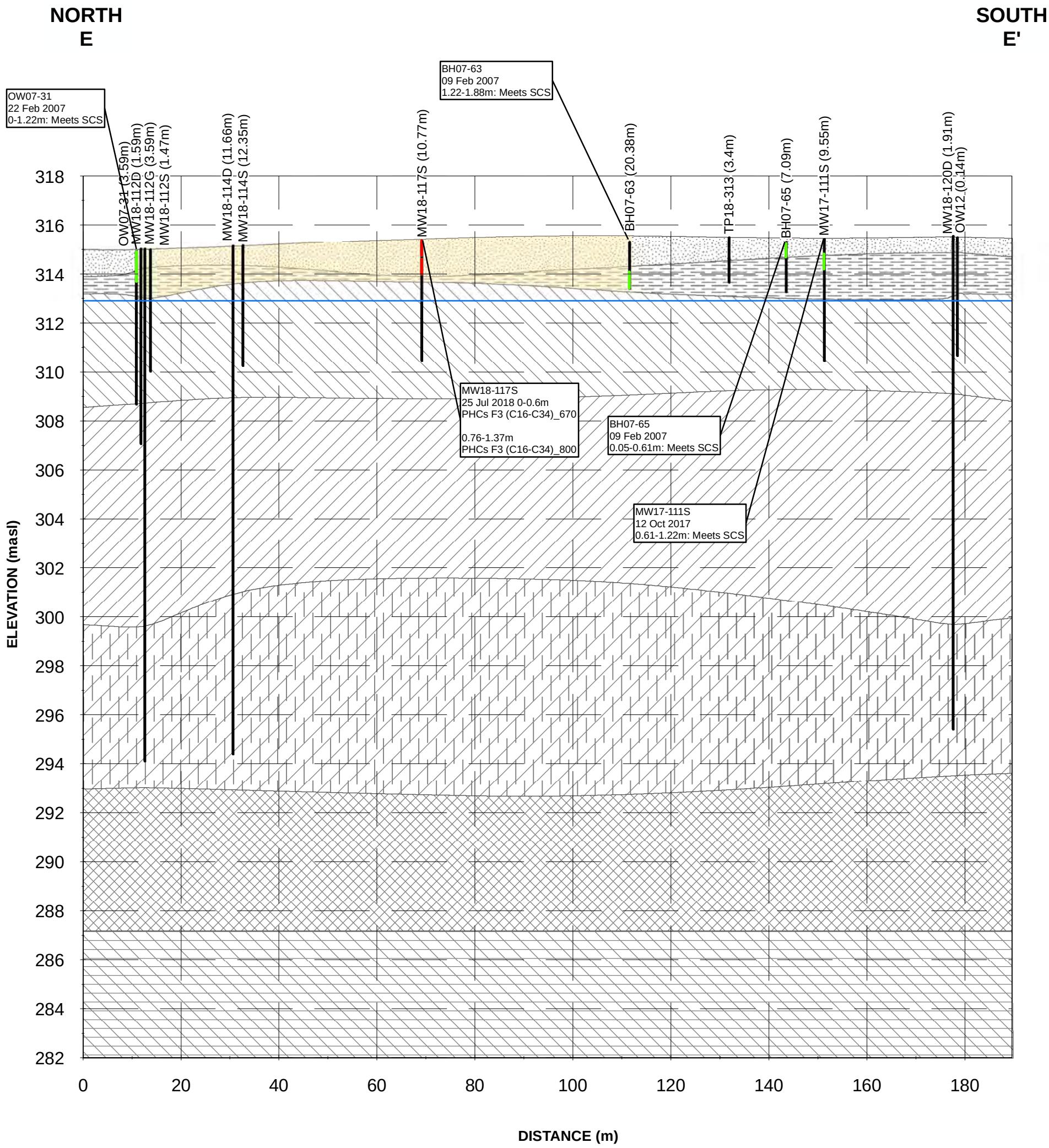
Jacobs



- Approximate Groundwater Elevation
- Exceedance
- No Exceedance
- Vertical Delineation
- Excavation Area
- Fill
- Silty Fine Sand
- Stone Road Member (Eramosa Formation)
- Reformatory Quarry Member (Eramosa Formation)
- Vinemount Member (Eramosa Formation)
- Ancaster Member (Goat Island Formation)
- Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

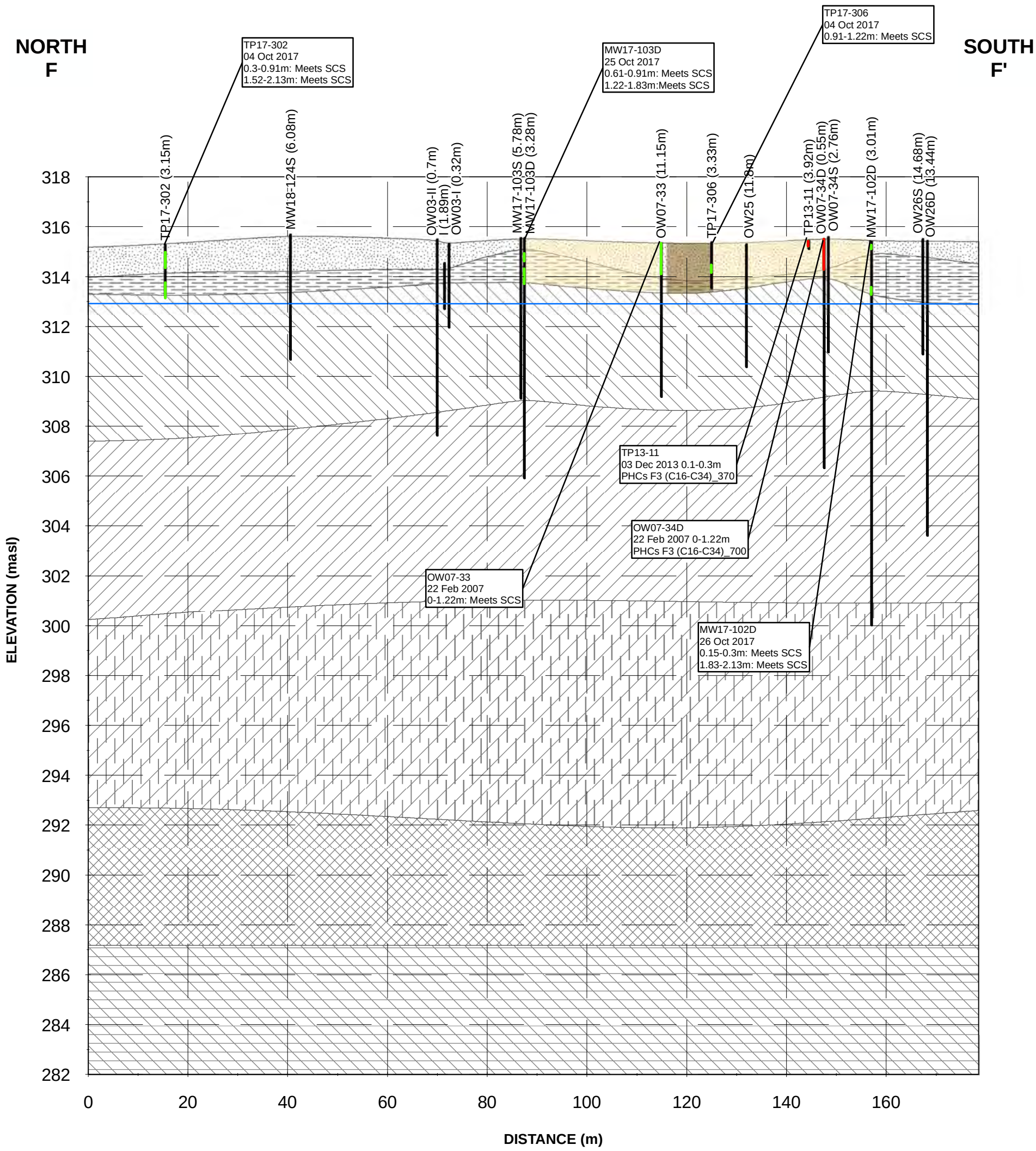
Figure 6-6b
Section B-B' - Soil Exceedances - PHCs
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario



Approximate Groundwater Elevation
Exceedance
No Exceedance
Vertical Delineation
Fill
Silty Fine Sand
Stone Road Member (Eramosa Formation)
Reformatory Quarry Member (Eramosa Formation)
Vinemount Member (Eramosa Formation)
Ancaster Member (Goat Island Formation)
Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

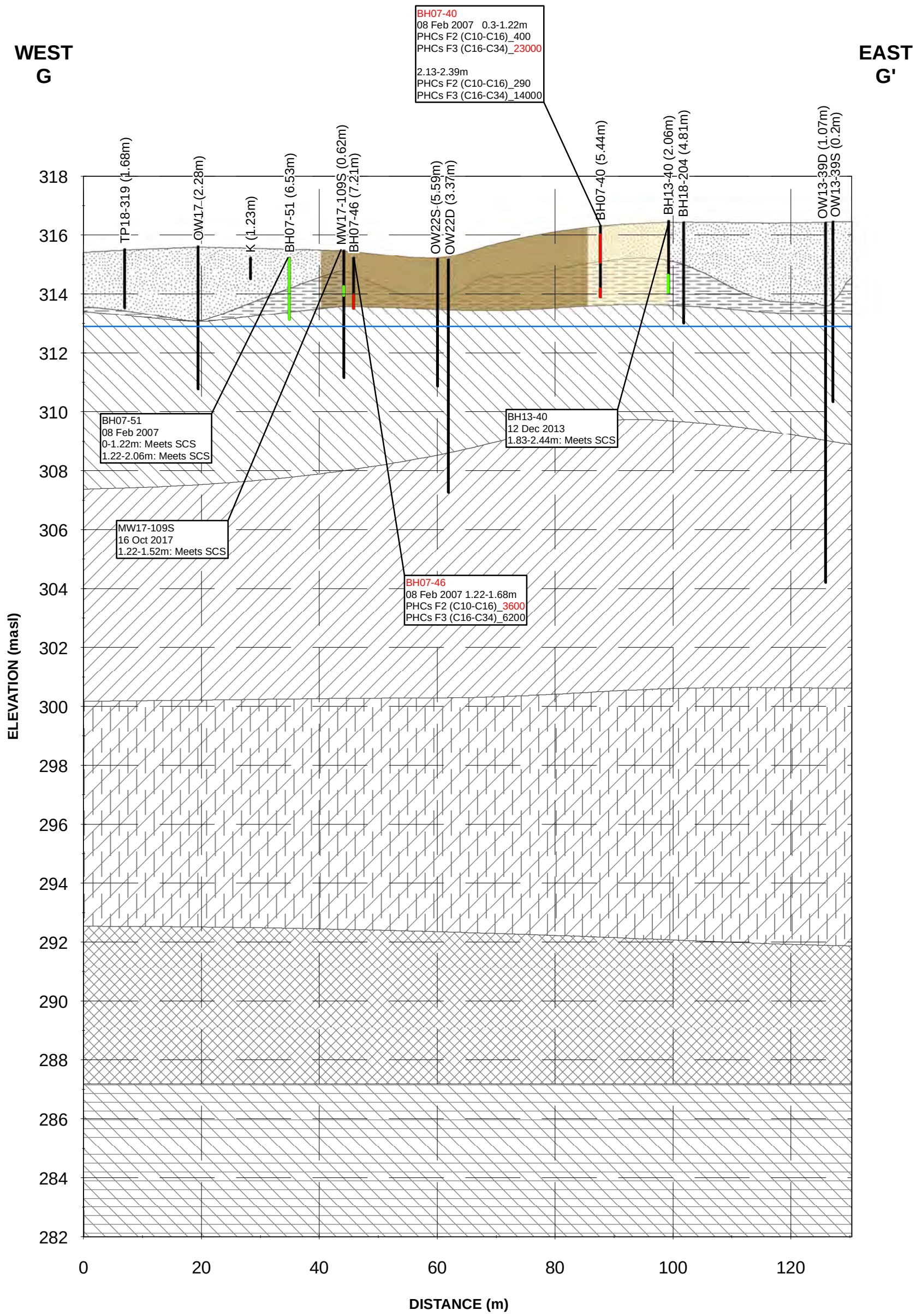
Figure 6-6c
Section E-E' - Soil Exceedances - PHC
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario



- Approximate Groundwater Elevation
- Exceedance
- No Exceedance
- Vertical Delineation
- Excavation Area
- Fill
- Silty Fine Sand
- Stone Road Member (Eramosa Formation)
- Reformatory Quarry Member (Eramosa Formation)
- Vinemount Member (Eramosa Formation)
- Ancaster Member (Goat Island Formation)
- Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

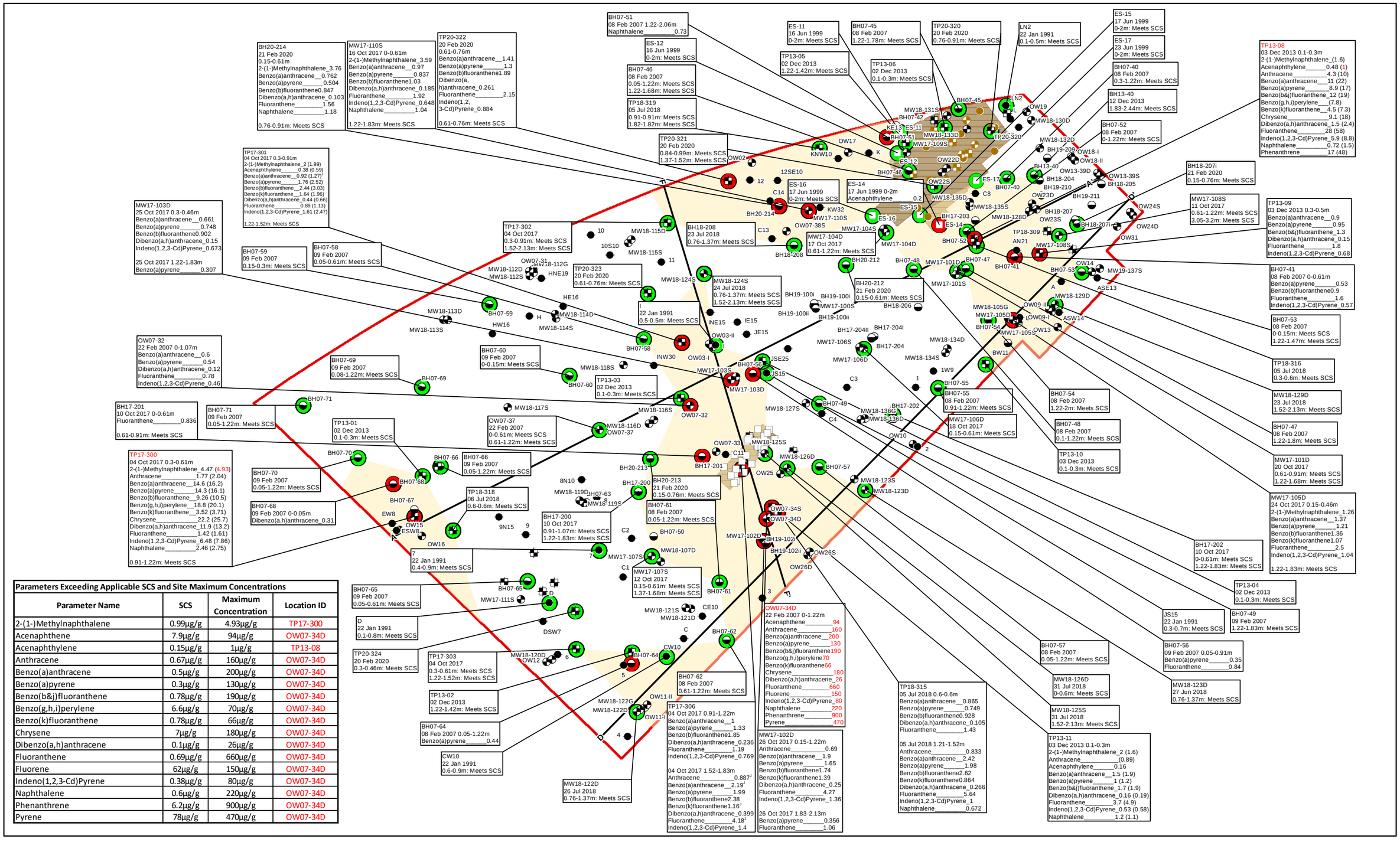
Figure 6-6d
Section F-F' - Soil Exceedances - PHCs
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario



Approximate Groundwater Elevation
Exceedance
No Exceedance
Vertical Delineation
Excavation Area
Fill
Silty Fine Sand
Stone Road Member (Eramosa Formation)
Reformatory Quarry Member (Eramosa Formation)
Vinemount Member (Eramosa Formation)
Ancaster Member (Goat Island Formation)
Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

Figure 6-6e
Section G-G' - Soil Exceedances - PHCs
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario



Parameters Exceeding Applicable SCS and Site Maximum Concentrations			
Parameter Name	SCS	Maximum Concentration	Location ID
2-(1-)Methylnaphthalene	0.99µg/g	4.93µg/g	TP17-300
Acenaphthene	7.9µg/g	94µg/g	OW07-34D
Acenaphthylene	0.15µg/g	1µg/g	TP13-08
Anthracene	0.67µg/g	160µg/g	OW07-34D
Benzo(a)anthracene	0.5µg/g	200µg/g	OW07-34D
Benzo(a)pyrene	0.3µg/g	130µg/g	OW07-34D
Benzo(b&j)fluoranthene	0.78µg/g	190µg/g	OW07-34D
Benzo(g,h,i)perylene	6.6µg/g	70µg/g	OW07-34D
Benzo(k)fluoranthene	0.78µg/g	66µg/g	OW07-34D
Chrysene	7µg/g	180µg/g	OW07-34D
Dibenzo(a,h)anthracene	0.1µg/g	26µg/g	OW07-34D
Fluoranthene	0.69µg/g	660µg/g	OW07-34D
Fluorene	62µg/g	150µg/g	OW07-34D
Indeno(1,2,3-Cd)Pyrene	0.38µg/g	80µg/g	OW07-34D
Naphthalene	0.6µg/g	220µg/g	OW07-34D
Phenanthrene	6.2µg/g	900µg/g	OW07-34D
Pyrene	78µg/g	470µg/g	OW07-34D

N

0 10 20 30
Metres

Sample Locations
- Borehole
- Confirmatory
- Monitoring Well
- Other
- Test Pit

Excavated Locations
- Confirmatory
- Monitoring Well
- Other
- Test Pit

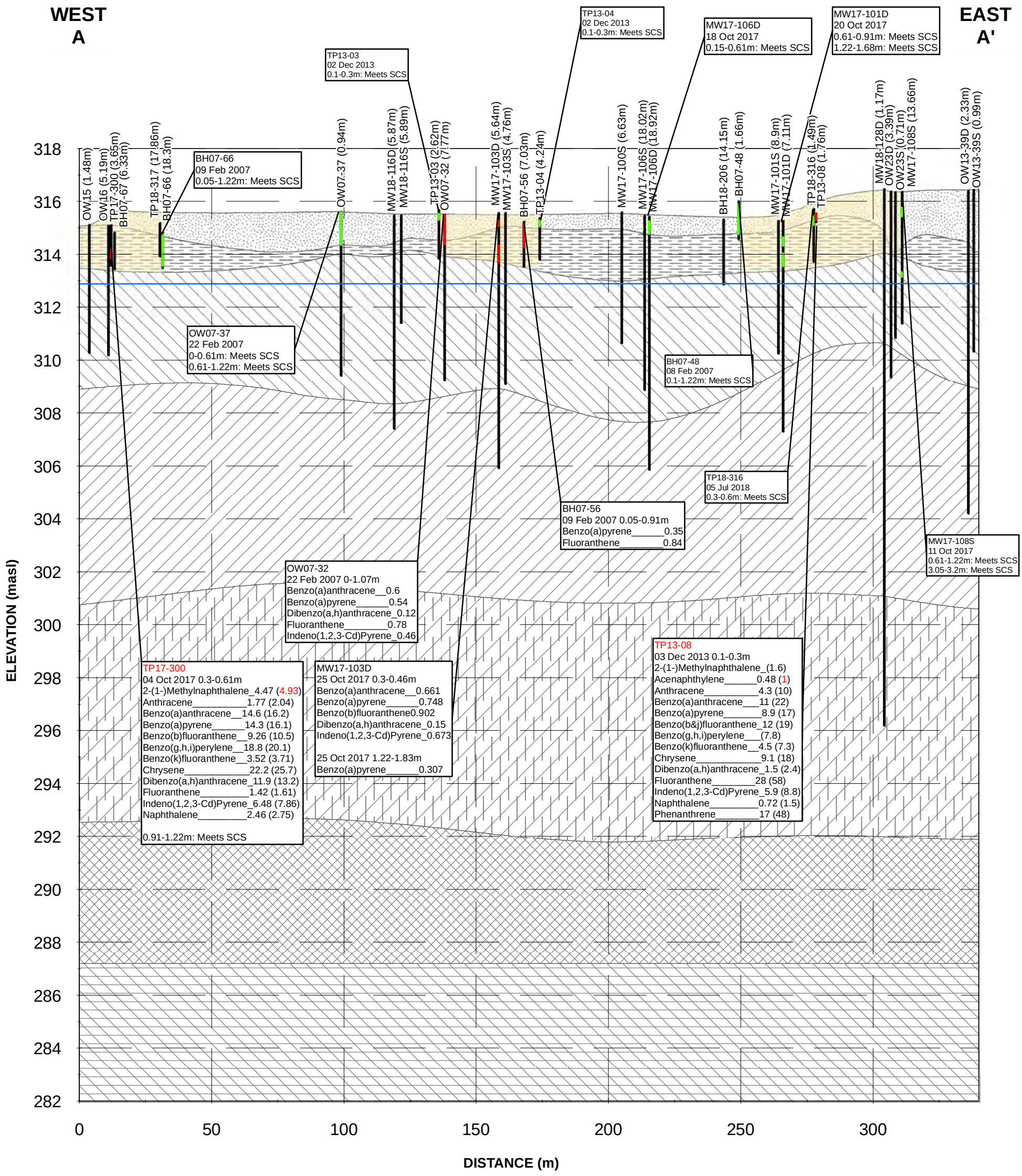
- No Exceedance
- Exceedance
- Cross Section Location

- Former IMICO Property Boundary
- Historical Excavation area, EarthTech, 1999
- Horizontal Delineation

Notes:
1. Historical locations are approximate. All samples, including those within excavation areas that have been removed (i.e. prior to 1999) have been shown for screening purposes.
2. Results in ( ) indicate field duplicates.
3. "J" indicates associated value is estimated.
4. Red text indicates the location of the Site maximum concentration of the analyte.
5. The estimated extent of impacts was inferred to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.

Figure 6-7
Soil Exceedances - PAH
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

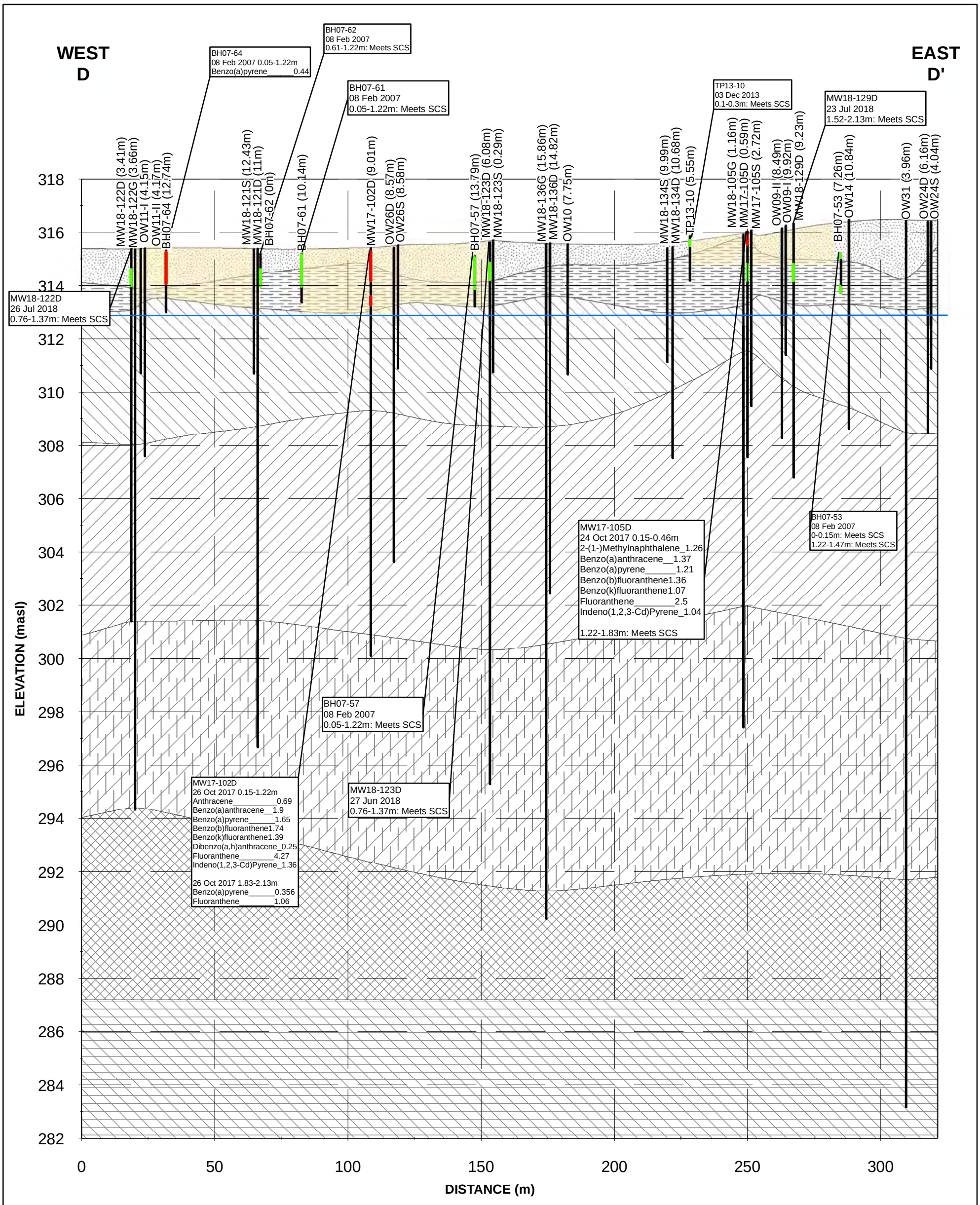


- Approximate Groundwater Elevation
- Exceedance
- No Exceedance
- Vertical Delineation
- Fill
- Silty Fine Sand
- Stone Road Member (Eramosa Formation)
- Reformatory Quarry Member (Eramosa Formation)
- Vinemount Member (Eramosa Formation)
- Ancaster Member (Goat Island Formation)
- Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

Figure 6-7a
Section A-A' - Soil Exceedances - PAHs
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

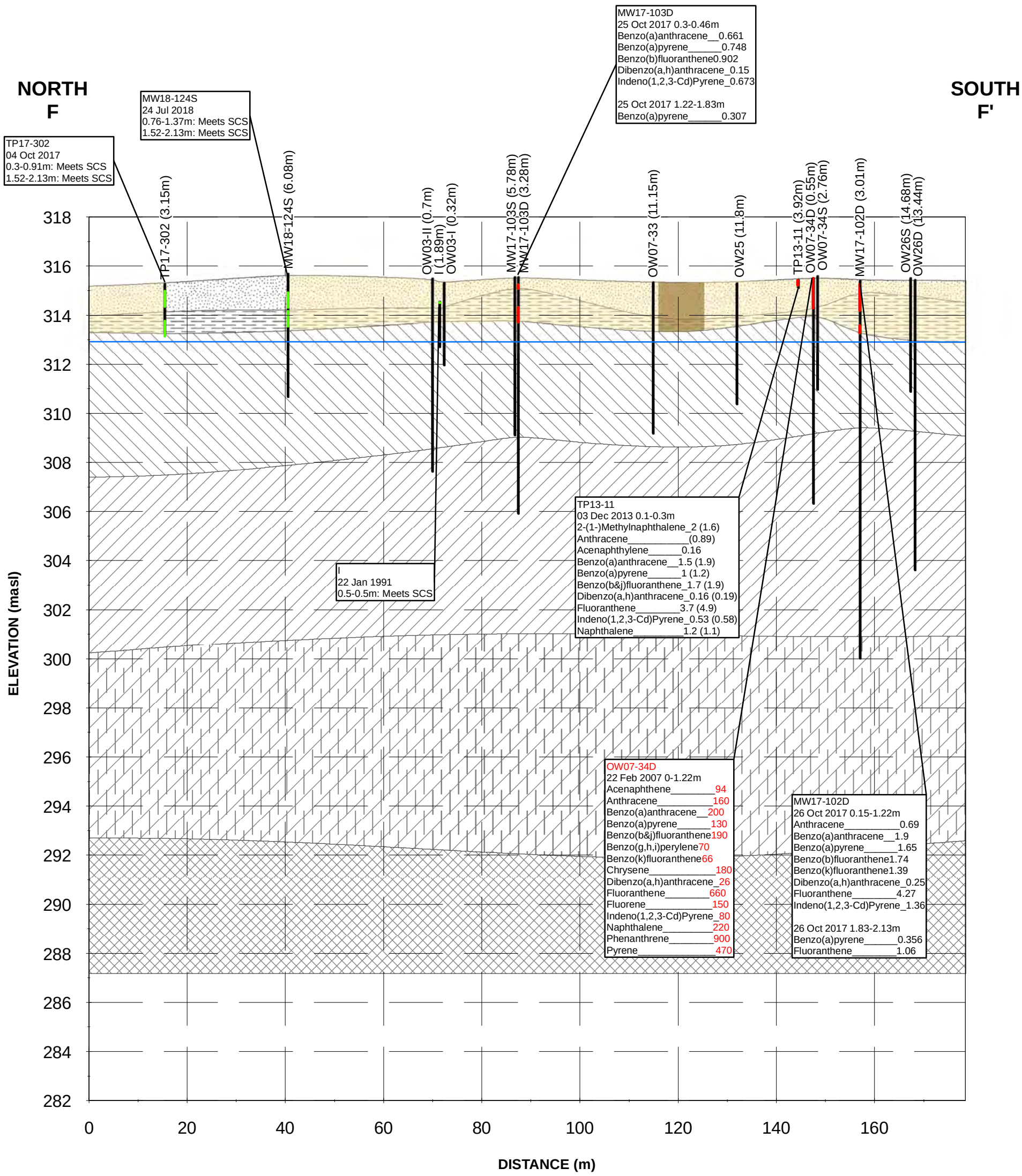


- Approximate Groundwater Elevation
- Exceedance
- No Exceedance
- Vertical Delineation
- Fill
- Silty Fine Sand
- Stone Road Member (Eramosa Formation)
- Reformatory Quarry Member (Eramosa Formation)
- Vinemount Member (Eramosa Formation)
- Ancaster Member (Goat Island Formation)
- Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

Figure 6-7b
Section D-D' - Soil Exceedances - PAHs
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

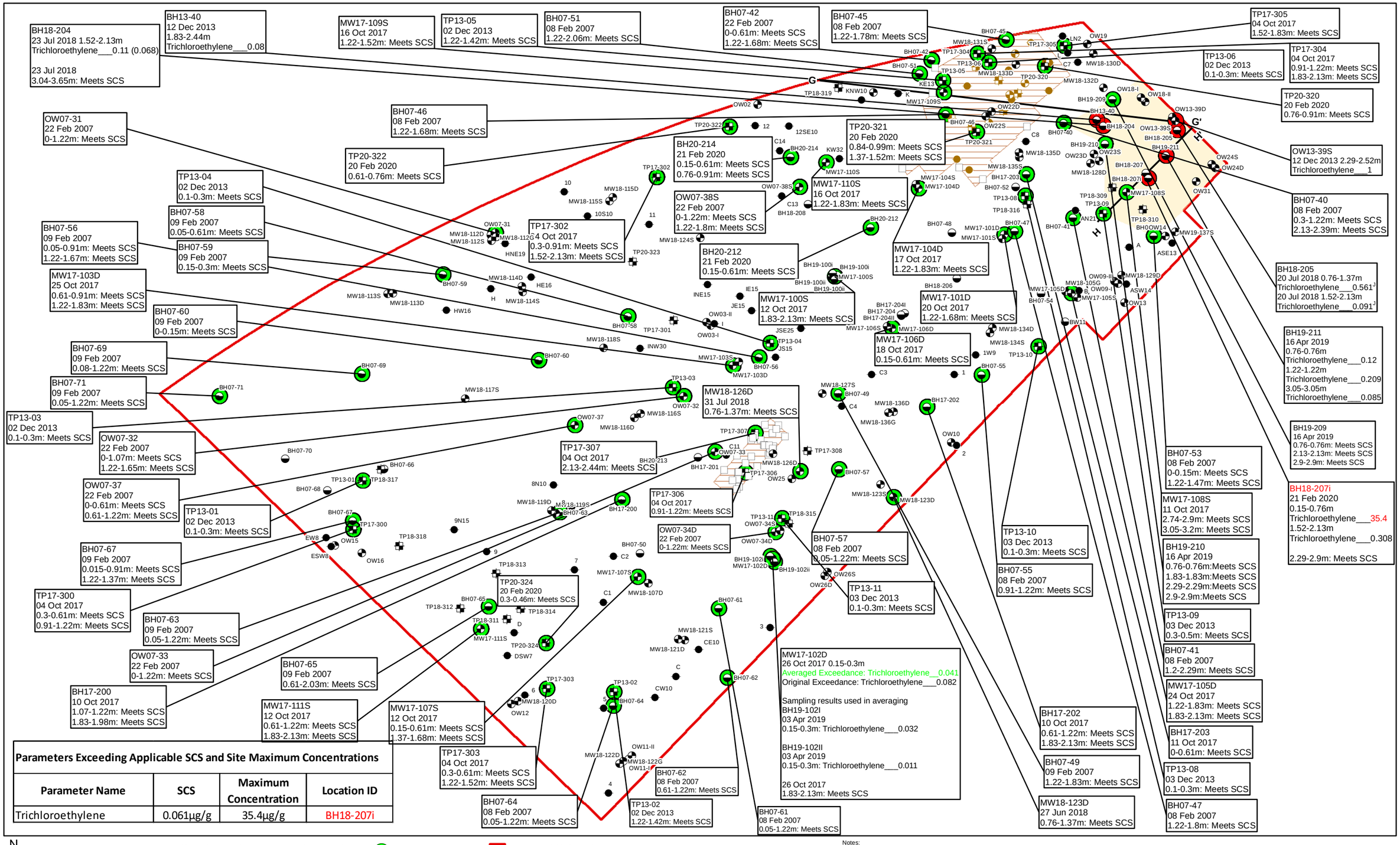
Jacobs



Approximate Groundwater Elevation
Exceedance
No Exceedance
Vertical Delineation
Excavation Area
Fill
Silty Fine Sand
Stone Road Member (Eramosa Formation)
Reformatory Quarry Member (Eramosa Formation)
Vinemount Member (Eramosa Formation)
Ancaster Member (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

Figure 6-7c
Section F-F' - Soil Exceedances - PAHs
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario



Parameters Exceeding Applicable SCS and Site Maximum Concentrations

Parameter Name	SCS	Maximum Concentration	Location ID
Trichloroethylene	0.061µg/g	35.4µg/g	BH18-207i

N

0 10 20 30
Metres

Sample Locations
- Borehole
- Confirmatory
- Monitoring Well
- Other
- Test Pit

Excavated Locations
- Confirmatory
- Monitoring Well
- Other
- Test Pit

- No Exceedance
- Exceedance
- Cross Section Location

- Former IMICO Property Boundary
- Historical Excavation area, EarthTech, 1999
- Horizontal Delineation

Notes:
1. Historical locations are approximate. All samples, including those within excavation areas that have been removed (i.e. prior to 1999) have been shown for screening purposes.
2. Results in ( ) indicate field duplicates.
3. "J" indicates associated value is estimated.
4. Red text indicates the location of the Site maximum concentration of the analyte.
5. The estimated extent of impacts was inferred to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.

Figure 6-8
Soil Exceedances - VOC
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

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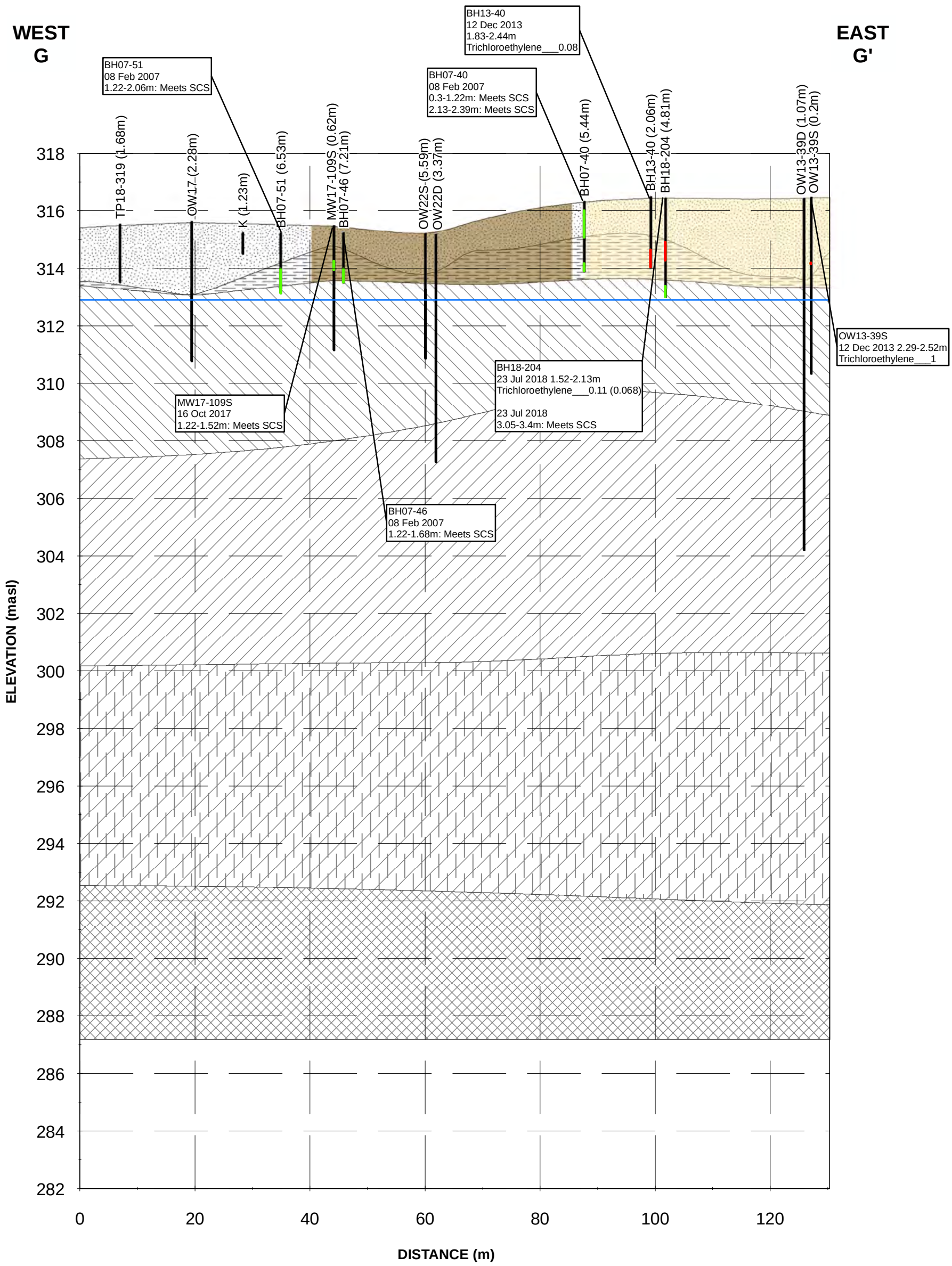
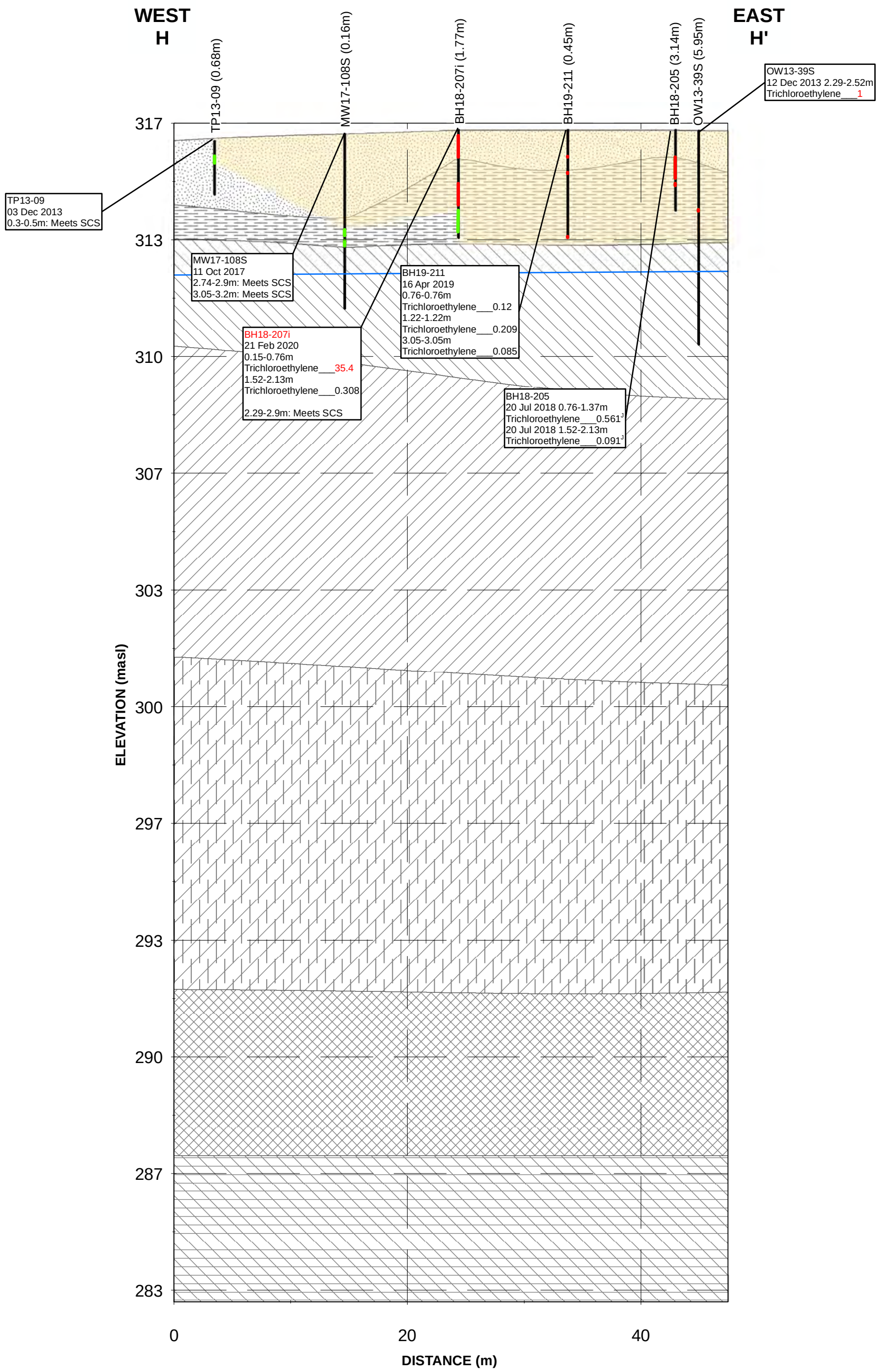


- Approximate Groundwater Elevation
- Exceedance
- No Exceedance
- Vertical Delineation
- Excavation Area
- Fill
- Silty Fine Sand
- Stone Road Member (Eramosa Formation)
- Reformatory Quarry Member (Eramosa Formation)
- Vinemount Member (Eramosa Formation)
- Ancaster Member (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

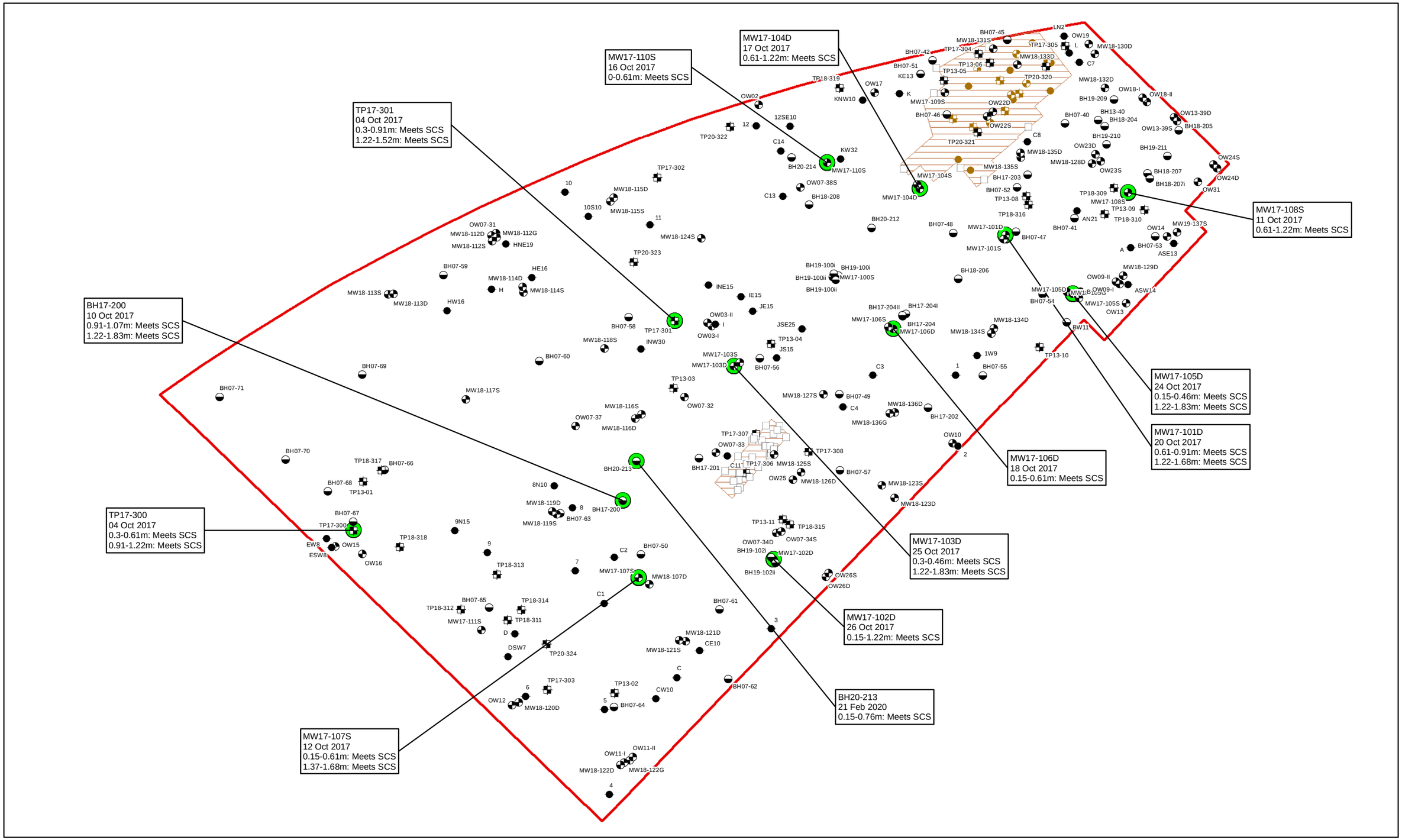
Figure 6-8a
Section G-G' - Soil Exceedances - VOCs
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario



- Approximate Groundwater Elevation
- Exceedance
- No Exceedance
- Vertical Delineation
- Fill
- Silty Fine Sand
- Stone Road Member (Eramosa Formation)
- Reformatory Quarry Member (Eramosa Formation)
- Vinemount Member (Eramosa Formation)
- Ancaster Member (Goat Island Formation)
- Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.
6. "J" indicates associated value is estimated.

Figure 6-8b
Section H-H' - Soil Exceedances - VOCs
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario



N

0 10 20 30
Metres

Sample Locations
- Borehole
- Confirmatory
- Monitoring Well
- Other
- Test Pit

Excavated Locations
- Confirmatory
- Monitoring Well
- Other
- Test Pit

No Exceedance

Former IMICO Property Boundary
Historical Excavation area, EarthTech, 1999

Notes:
1. Historical locations are approximate. All samples, including those within excavation areas that have been removed (i.e. prior to 1999) have been shown for screening purposes.
2. Results in ( ) indicate field duplicates.
3. "J" indicates associated value is estimated.
4. Red text indicates the location of the Site maximum concentration of the analyte.

Figure 6-9
Soil Exceedances - CP
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

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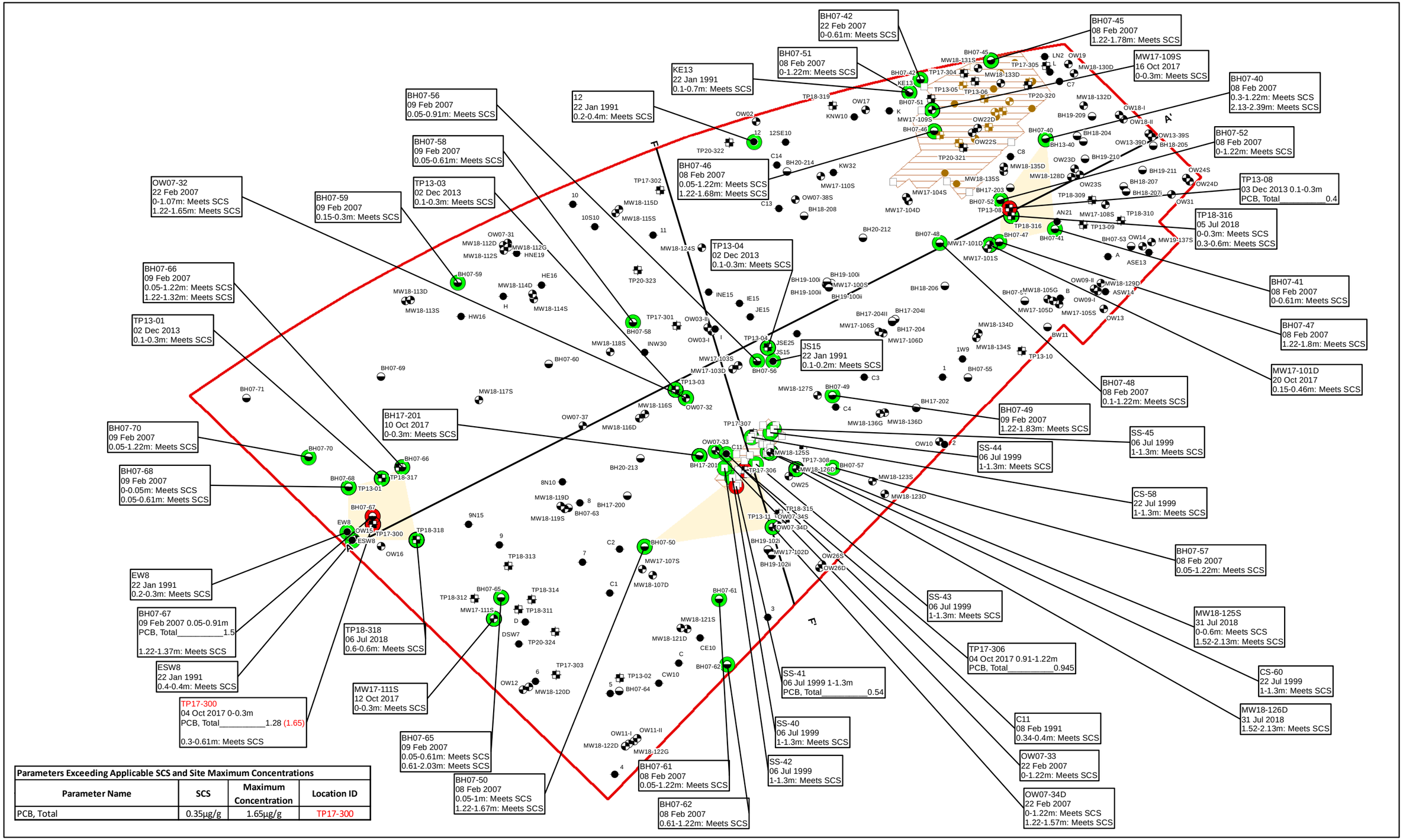


Parameters Exceeding Applicable SCS and Site Maximum Concentrations

Parameter Name	SCS	Maximum Concentration	Location ID
PCB, Total	0.35µg/g	1.65µg/g	TP17-300

N

0 10 20 30
Metres

Sample Locations
- Borehole
- Confirmatory
- Monitoring Well
- Other
- Test Pit

Excavated Locations
- Confirmatory
- Monitoring Well
- Other
- Test Pit

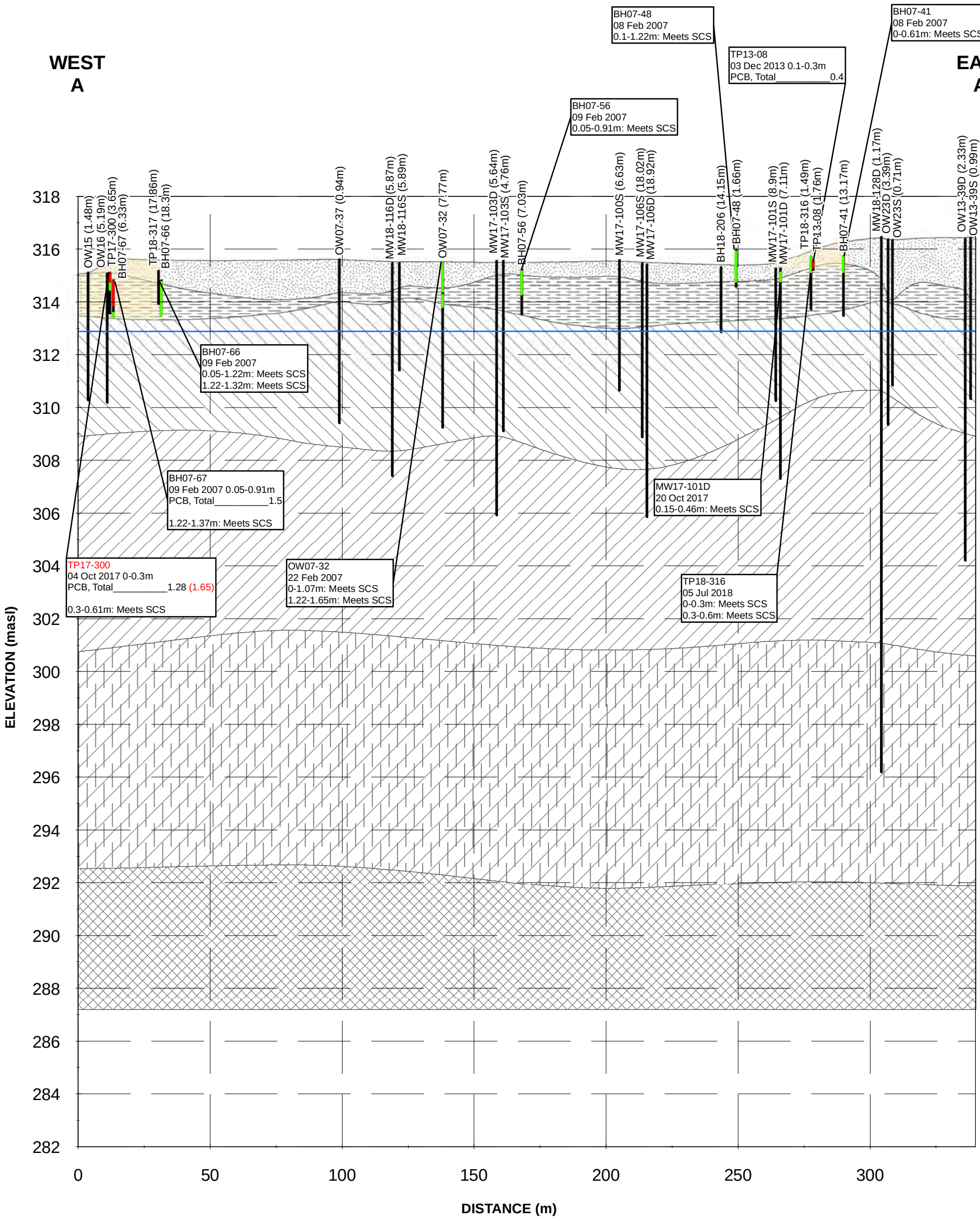
- No Exceedance
- Exceedance
- Cross Section Location

- Former IMICO Property Boundary
- Historical Excavation area, EarthTech, 1999
- Horizontal Delineation

Notes:
1. Historical locations are approximate. All samples, including those within excavation areas that have been removed (i.e. prior to 1999) have been shown for screening purposes.
2. Results in ( ) indicate field duplicates.
3. "J" indicates associated value is estimated.
4. Red text indicates the location of the Site maximum concentration of the analyte.
5. The estimated extent of impacts was inferred to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.

Figure 6-10
Soil Exceedances - PCB
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs



Approximate Groundwater Elevation
Exceedance
No Exceedance
Vertical Delineation
Fill
Silty Fine Sand
Stone Road Member (Eramosa Formation)
Reformatory Quarry Member (Eramosa Formation)
Vinemount Member (Eramosa Formation)
Ancaster Member (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

Figure 6-10a
Section A-A' - Soil Exceedances - PCBs
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

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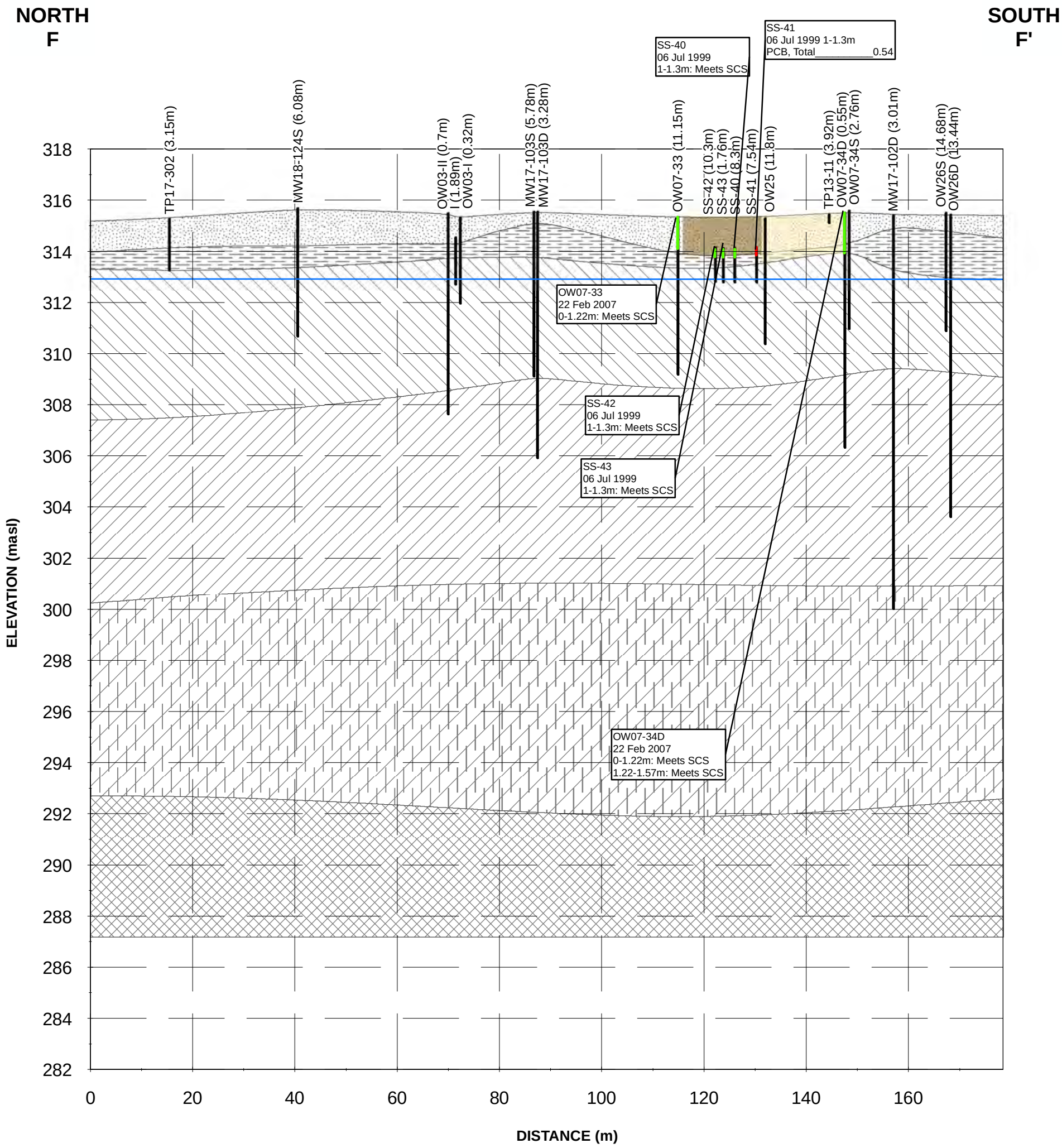
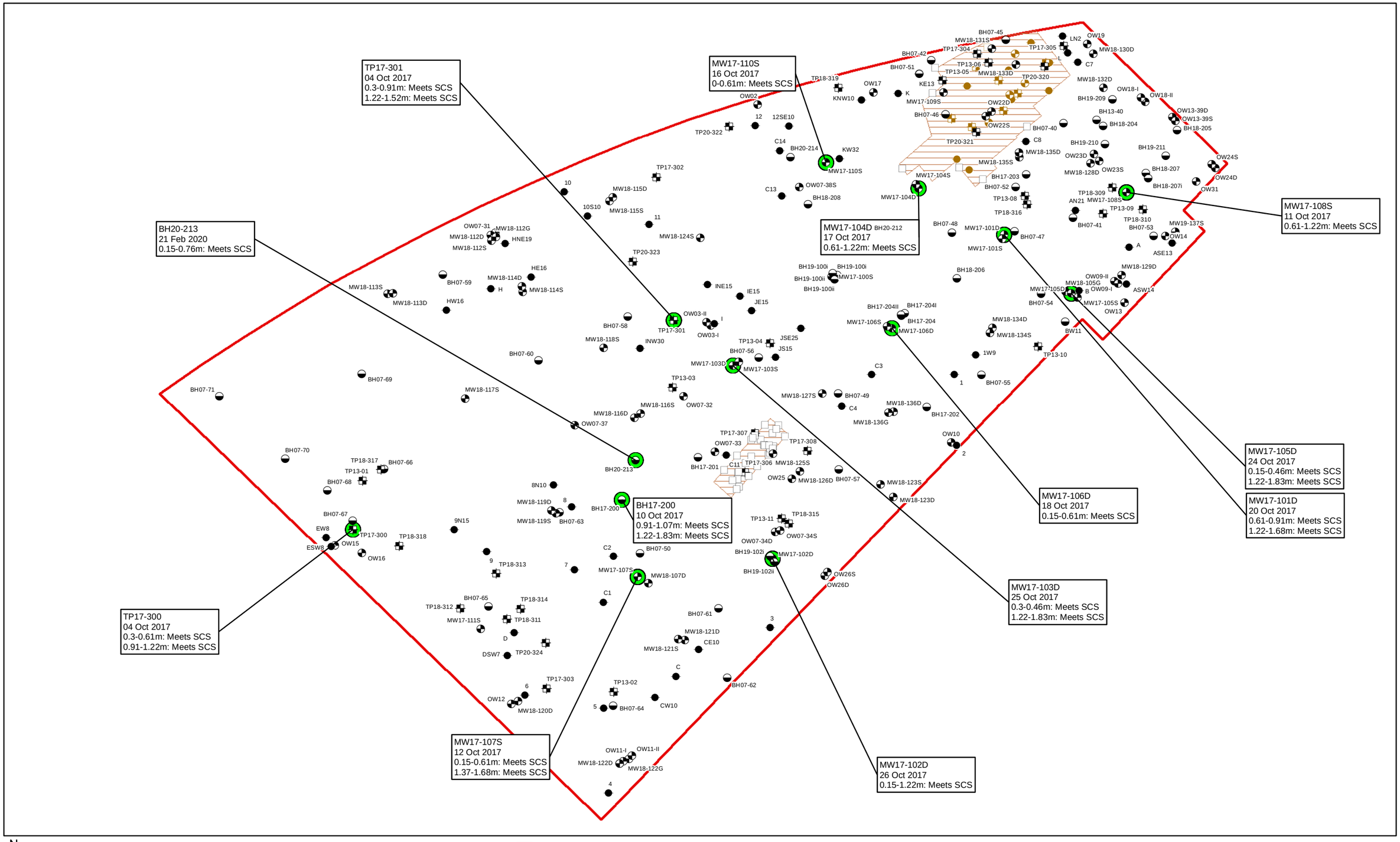


Approximate Groundwater Elevation
Exceedance
No Exceedance
Vertical Delineation
Excavation Area
Fill
Silty Fine Sand
Stone Road Member (Eramosa Formation)
Reformatory Quarry Member (Eramosa Formation)
Vinemount Member (Eramosa Formation)
Ancaster Member (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

Figure 6-10b
Section F-F' - Soil Exceedances - PCBs
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario



N

0 10 20 30
Metres

Sample Locations
- Borehole
- Confirmatory
- Monitoring Well
- Other
- Test Pit

Excavated Locations
- Confirmatory
- Monitoring Well
- Other
- Test Pit

No Exceedance

Former IMICO Property Boundary
Historical Excavation area, EarthTech, 1999

Notes:
1. Historical locations are approximate. All samples, including those within excavation areas that have been removed (i.e. prior to 1999) have been shown for screening purposes.
2. Results in ( ) indicate field duplicates.
3. "J" indicates associated value is estimated.
4. Red text indicates the location of the Site maximum concentration of the analyte.

Figure 6-11
Soil Exceedances - ABN
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

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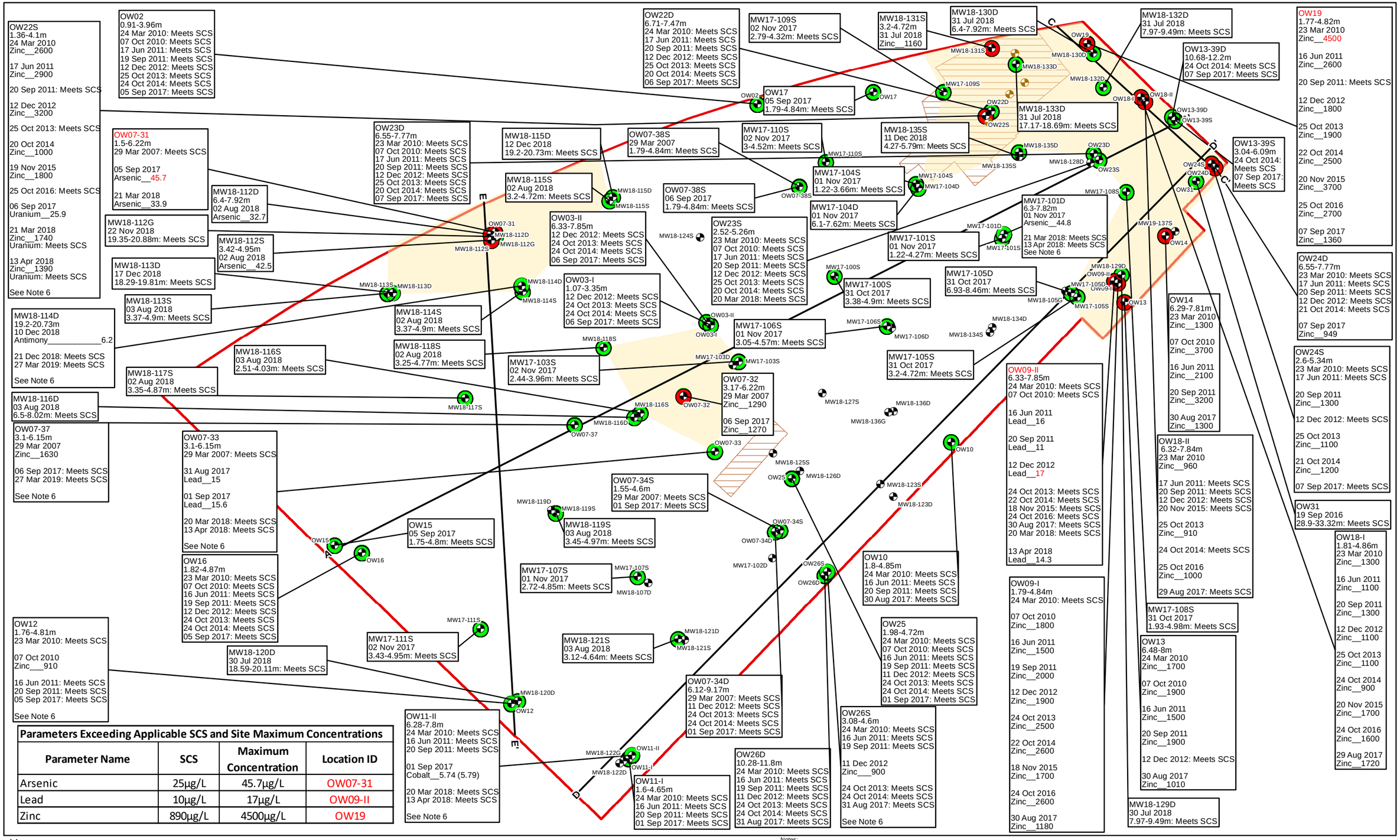

Parameters Exceeding Applicable SCS and Site Maximum Concentrations

Parameter Name	SCS	Maximum Concentration	Location ID
Arsenic	25µg/L	45.7µg/L	OW07-31
Lead	10µg/L	17µg/L	OW09-II
Zinc	890µg/L	4500µg/L	OW19

N

0 10 20 30
Metres

Sample Locations
Monitoring Well
Excavated Locations
Monitoring Well

No Exceedance
Exceedance
Cross Section Location

Former IMICO Property Boundary
Historical Excavation area, EarthTech, 1999
Horizontal Delineation

Notes:
1. Historical locations are approximate. All samples, including those within excavation areas that have been removed (i.e. prior to 1999) have been shown for screening purposes.
2. Results in ( ) indicate field duplicates.
3. "J" indicates associated value is estimated.
4. Red text indicates the location of the Site maximum concentration of the analyte.
5. The estimated extent of impacts was inferred to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
6. Parameter(s) previously exceeding are considered to meet the SCS based on two clean subsequent samples. See Table 6-10c for additional details.

Figure 6-12
Groundwater Exceedances - Metals, Hydride-Forming Metals, Mercury and Chromium VI
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

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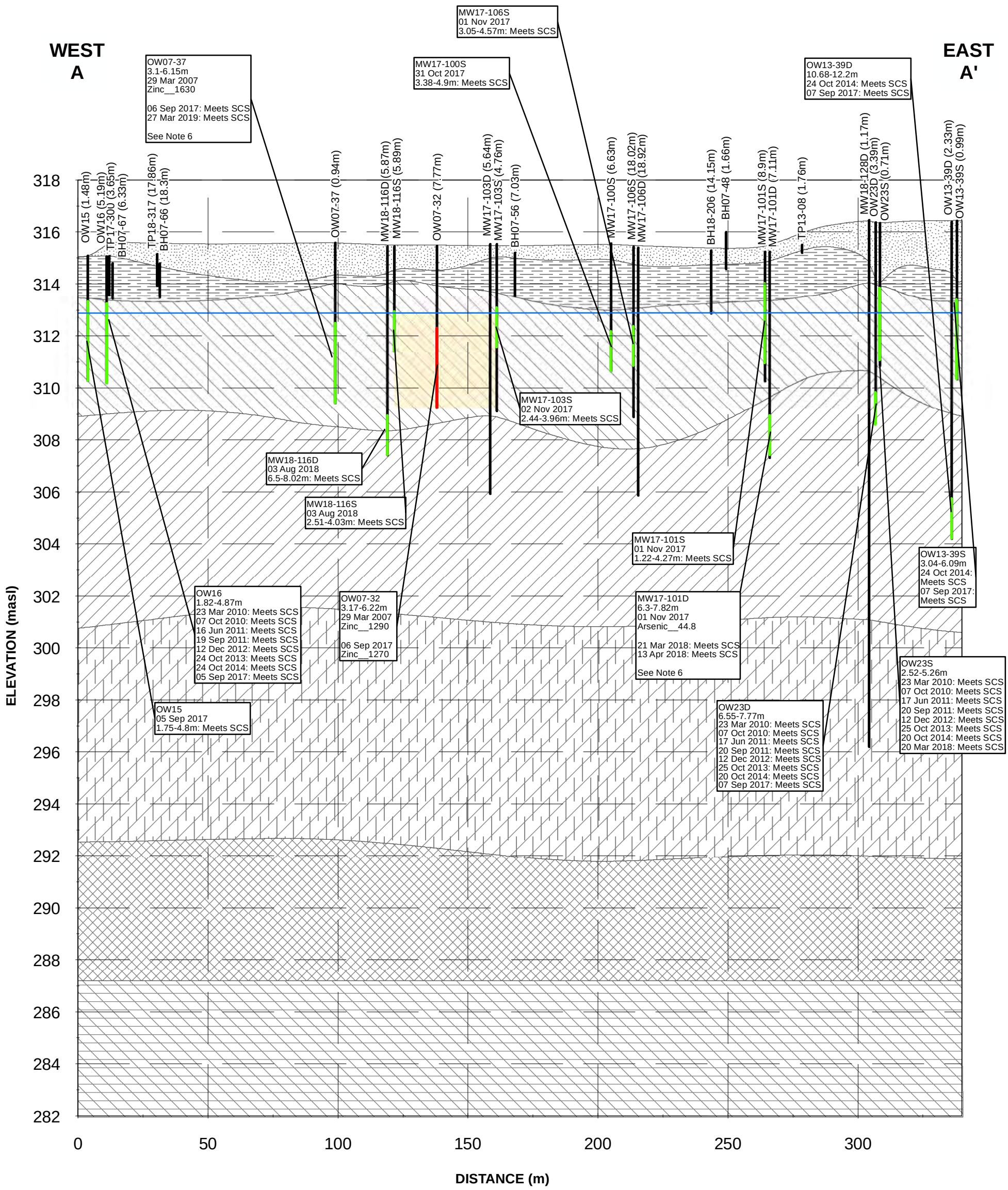

- Approximate Groundwater Elevation
- Exceedance
- No Exceedance
- Vertical Delineation
- Fill
- Silty Fine Sand
- Stone Road Member (Eramosa Formation)
- Reformatory Quarry Member (Eramosa Formation)
- Vinemount Member (Eramosa Formation)
- Ancaster Member (Goat Island Formation)
- Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.
6. Parameter(s) previously exceeding are considered to meet the SCS based on two clean subsequent samples. See Table 6-10c for additional details.

Figure 6-12a
Section A-A' - Groundwater Exceedances - Metals, Hydride-Forming Metals, Mercury and Chromium VI
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

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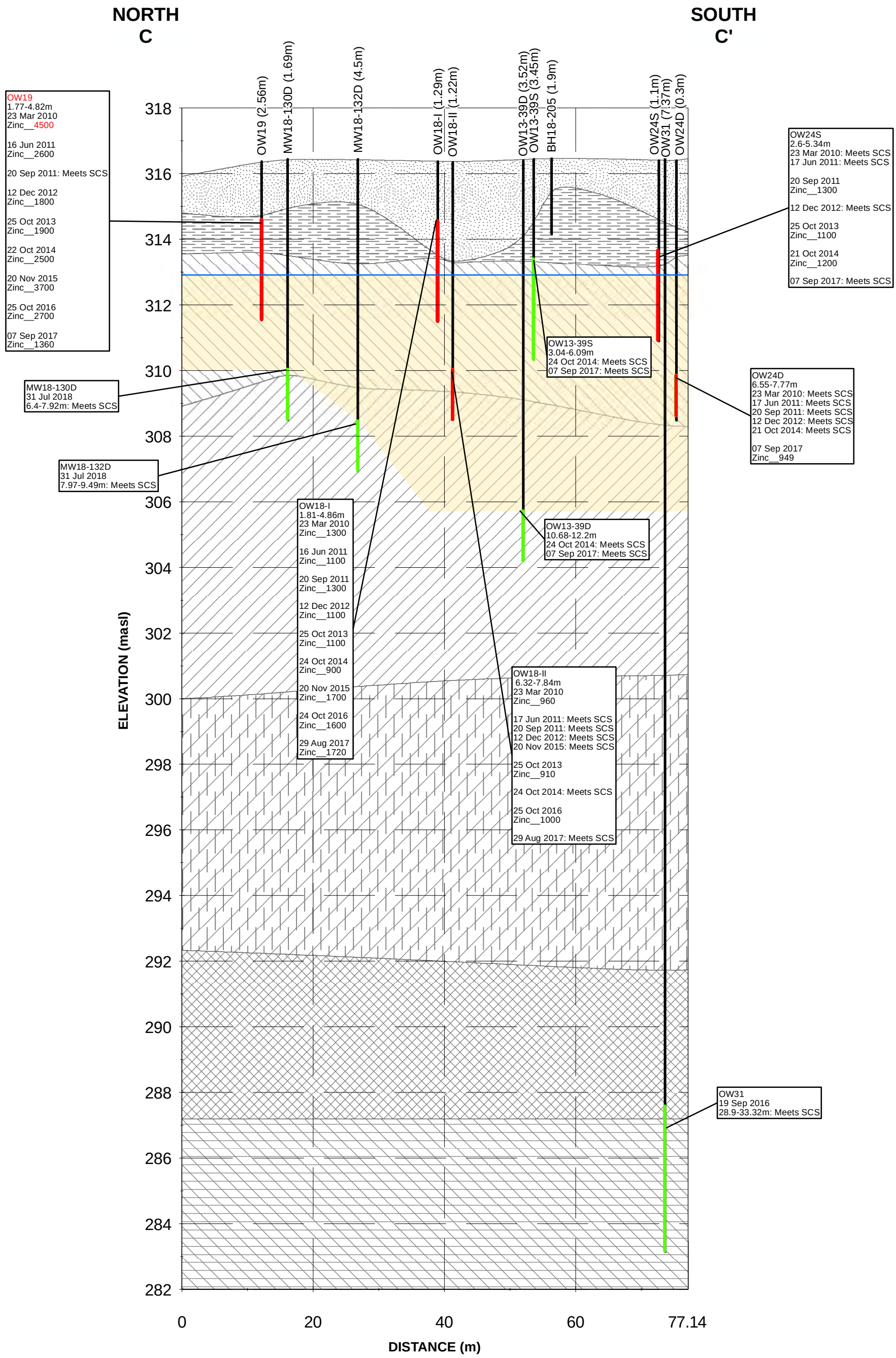

- Approximate Groundwater Elevation
- Exceedance
- No Exceedance
- Vertical Delineation
- Fill
- Silty Fine Sand
- Stone Road Member (Eramosa Formation)
- Reformatory Quarry Member (Eramosa Formation)
- Vinemount Member (Eramosa Formation)
- Ancaster Member (Goat Island Formation)
- Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

Figure 6-12b
Section C-C' - Groundwater Exceedances - Metals, Hydride-Forming Metals, Mercury and Chromium VI
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

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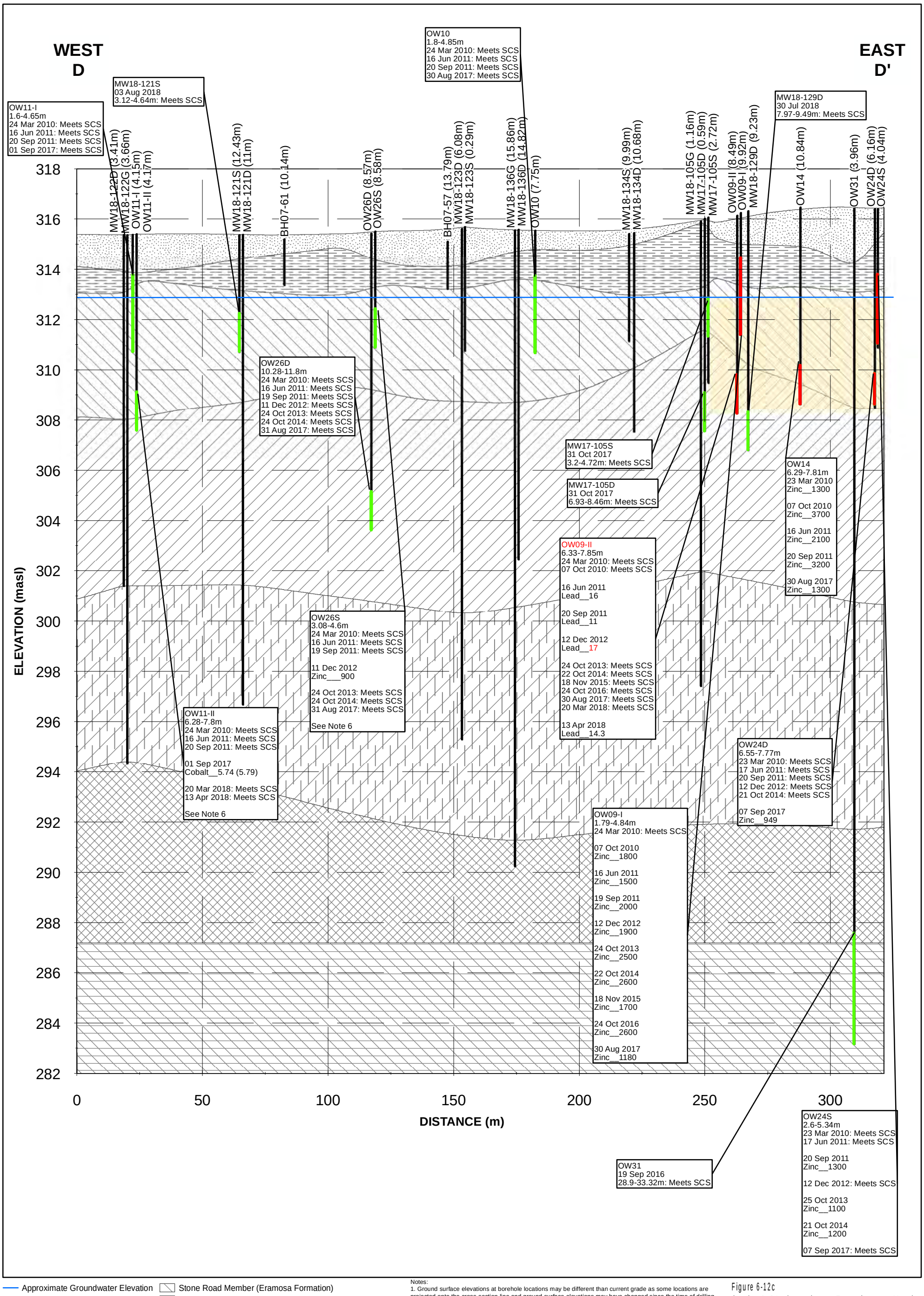
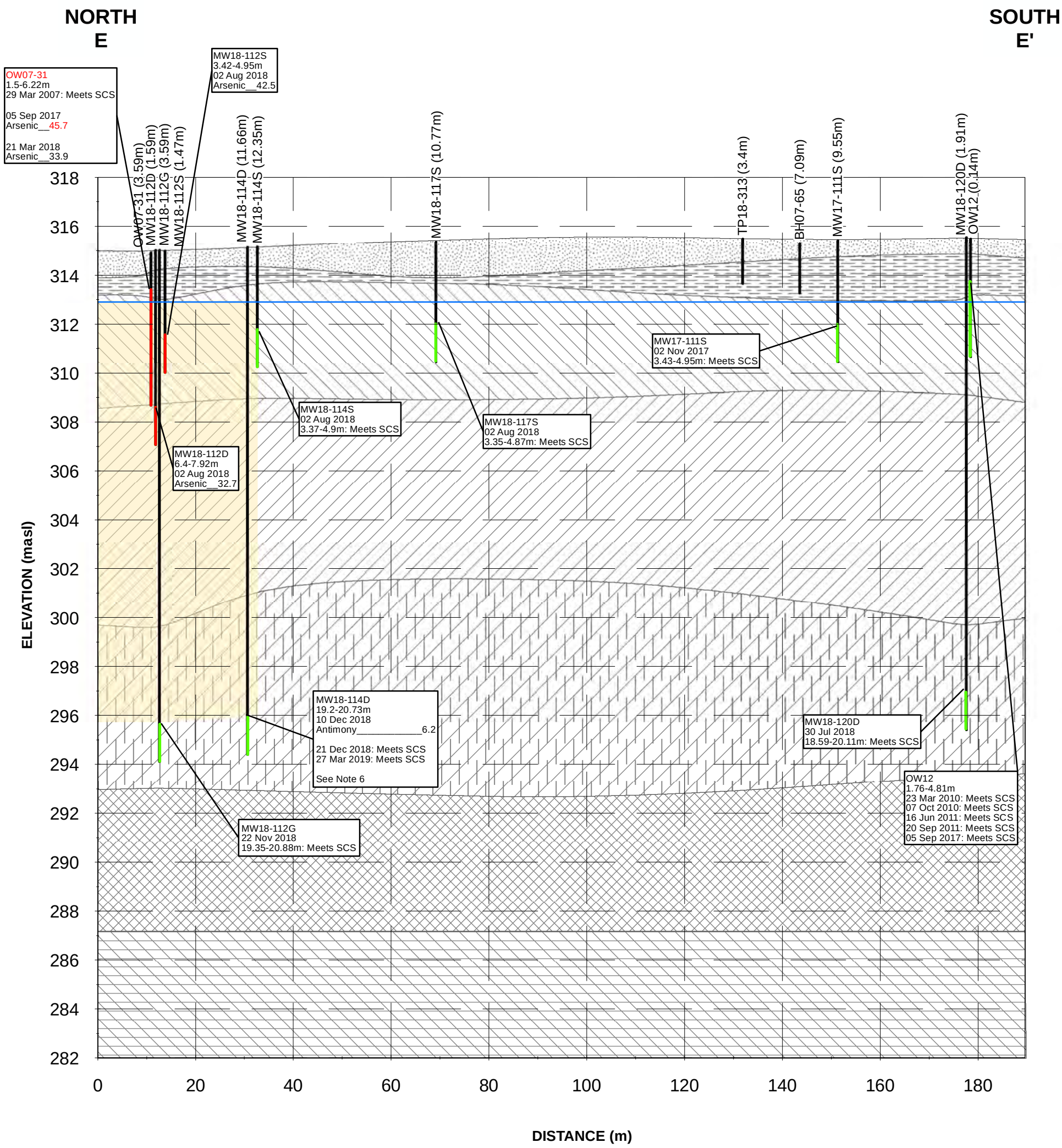


- Approximate Groundwater Elevation
- Exceedance
- No Exceedance
- Vertical Delineation
- Fill
- Silty Fine Sand
- Stone Road Member (Eramosa Formation)
- Reformatory Quarry Member (Eramosa Formation)
- Vinemount Member (Eramosa Formation)
- Ancaster Member (Goat Island Formation)
- Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.
6. Parameter(s) previously exceeding are considered to meet the SCS based on two clean subsequent samples. See Table 6-10c for additional details.

Figure 6-12c
Section D-D' - Groundwater Exceedances - Metals, Hydride-Forming Metals, Mercury and Chromium VI
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs



- Approximate Groundwater Elevation
- Exceedance
- No Exceedance
- Vertical Delineation
- Fill
- Silty Fine Sand
- Stone Road Member (Eramosa Formation)
- Reformatory Quarry Member (Eramosa Formation)
- Vinemount Member (Eramosa Formation)
- Ancaster Member (Goat Island Formation)
- Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.
6. Parameter(s) previously exceeding are considered to meet the SCS based on two clean subsequent samples. See Table 6-10c for additional details.

Figure 6-12d
Section E-E' - Groundwater Exceedances - Metals, Hydride-Forming Metals, Mercury and Chromium VI
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

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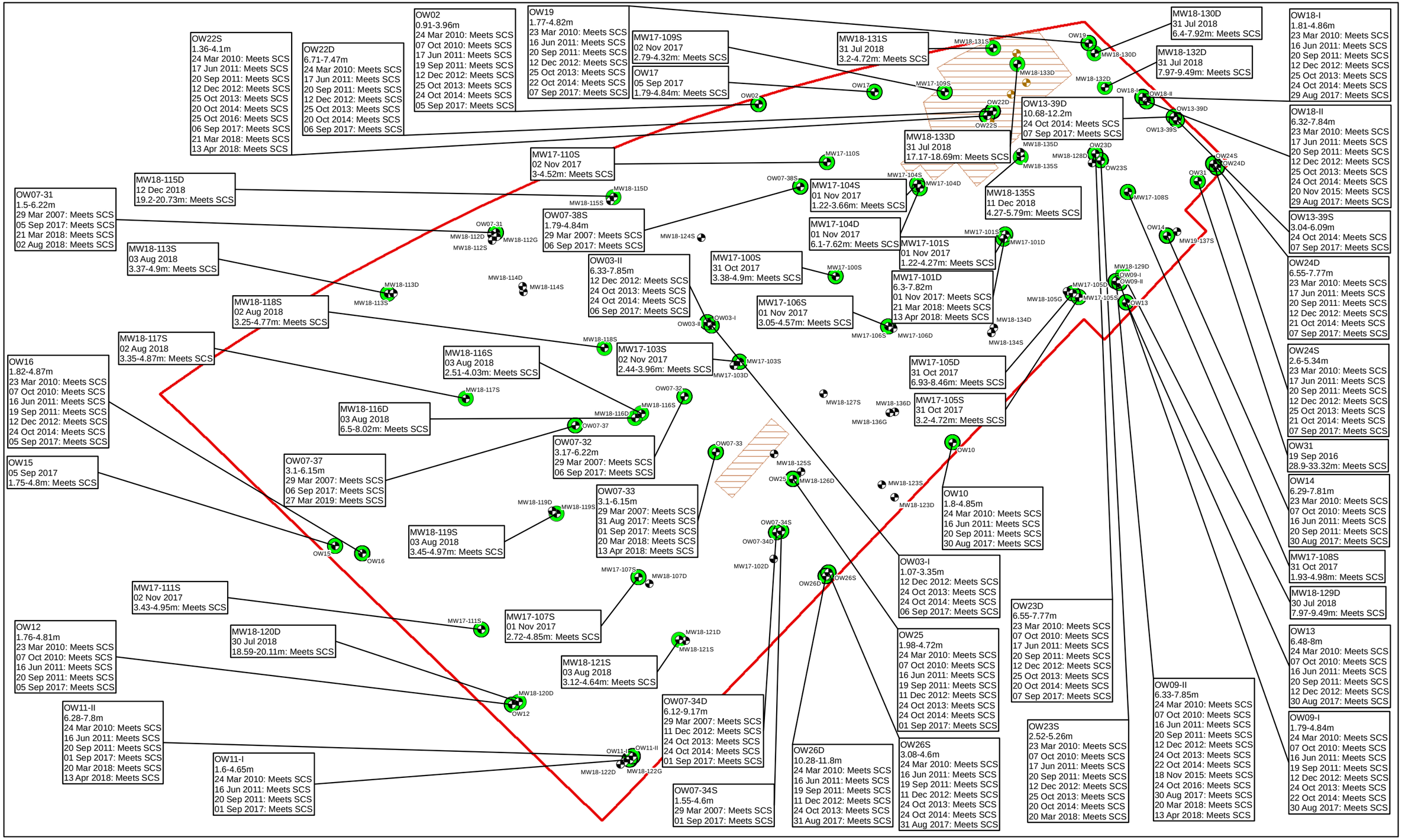

N

0 10 20 30
Metres

Sample Locations
Monitoring Well
Excavated Locations
Monitoring Well

No Exceedance

Former IMICO Property Boundary
Historical Excavation area, EarthTech, 1999

Notes:
1. Historical locations are approximate. All samples, including those within excavation areas that have been removed (i.e. prior to 1999) have been shown for screening purposes.
2. Results in ( ) indicate field duplicates.
3. "J" indicates associated value is estimated.
4. Red text indicates the location of the Site maximum concentration of the analyte.

Figure 6-13
Groundwater Exceedances - Sodium, Chloride and CN
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

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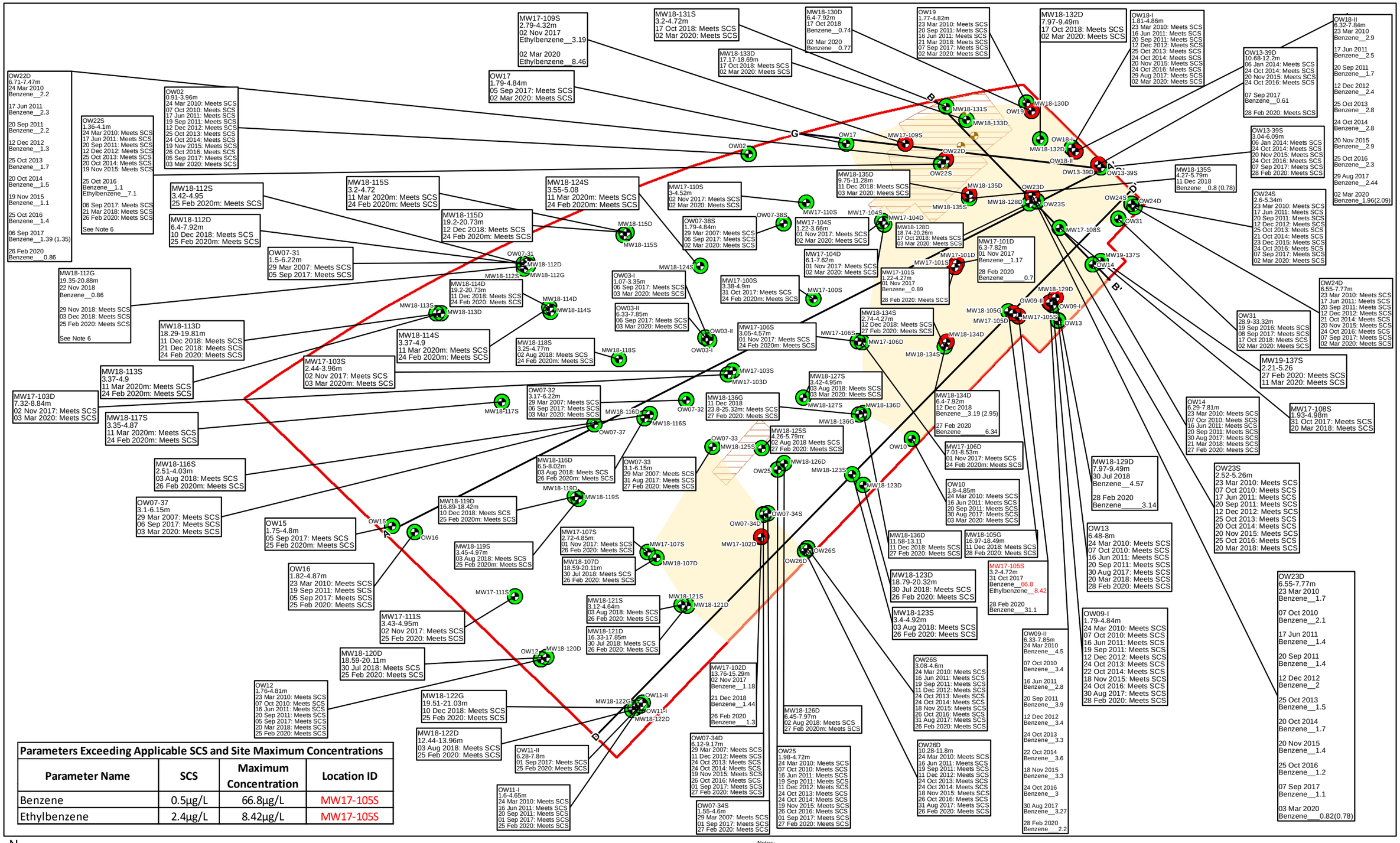

Parameters Exceeding Applicable SCS and Site Maximum Concentrations

Parameter Name	SCS	Maximum Concentration	Location ID
Benzene	0.5µg/L	66.8µg/L	MW17-105S
Ethylbenzene	2.4µg/L	8.42µg/L	MW17-105S

N

0 10 20 30
Metres

Sample Locations
Monitoring Well
Excavated Locations
Monitoring Well

No Exceedance
Exceedance
Cross Section Location

Former IMICO Property Boundary
Historical Excavation area, EarthTech, 1999
Horizontal Delineation

Notes:
1. Historical locations are approximate. All samples, including those within excavation areas that have been removed (i.e. prior to 1999) have been shown for screening purposes.
2. Results in ( ) indicate field duplicates.
3. "J" indicates associated value is estimated.
4. Red text indicates the location of the Site maximum concentration of the analyte.
5. The estimated extent of impacts was inferred to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
6. Parameter(s) previously exceeding are considered to meet the SCS based on two clean subsequent samples. See Table 6-10c for additional details.

Figure 6-14
Groundwater Exceedances - BTEX
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

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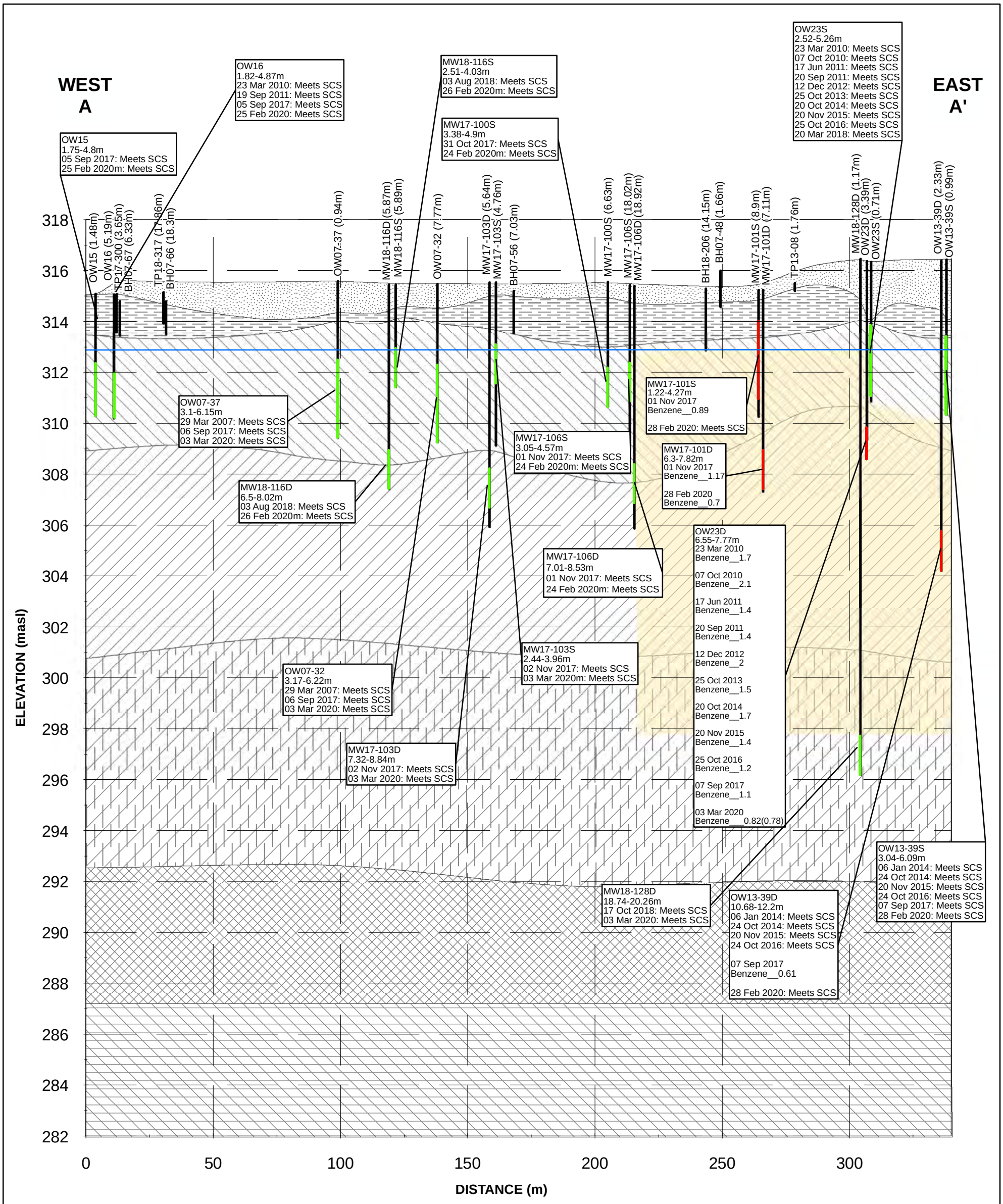

- Approximate Groundwater Elevation
- Exceedance
- No Exceedance
- Vertical Delineation
- Fill
- Silty Fine Sand
- Stone Road Member (Eramosa Formation)
- Reformatory Quarry Member (Eramosa Formation)
- Vinemount Member (Eramosa Formation)
- Ancaster Member (Goat Island Formation)
- Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

Figure 6-14a
Section A-A' - Groundwater Exceedances - BTEX
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

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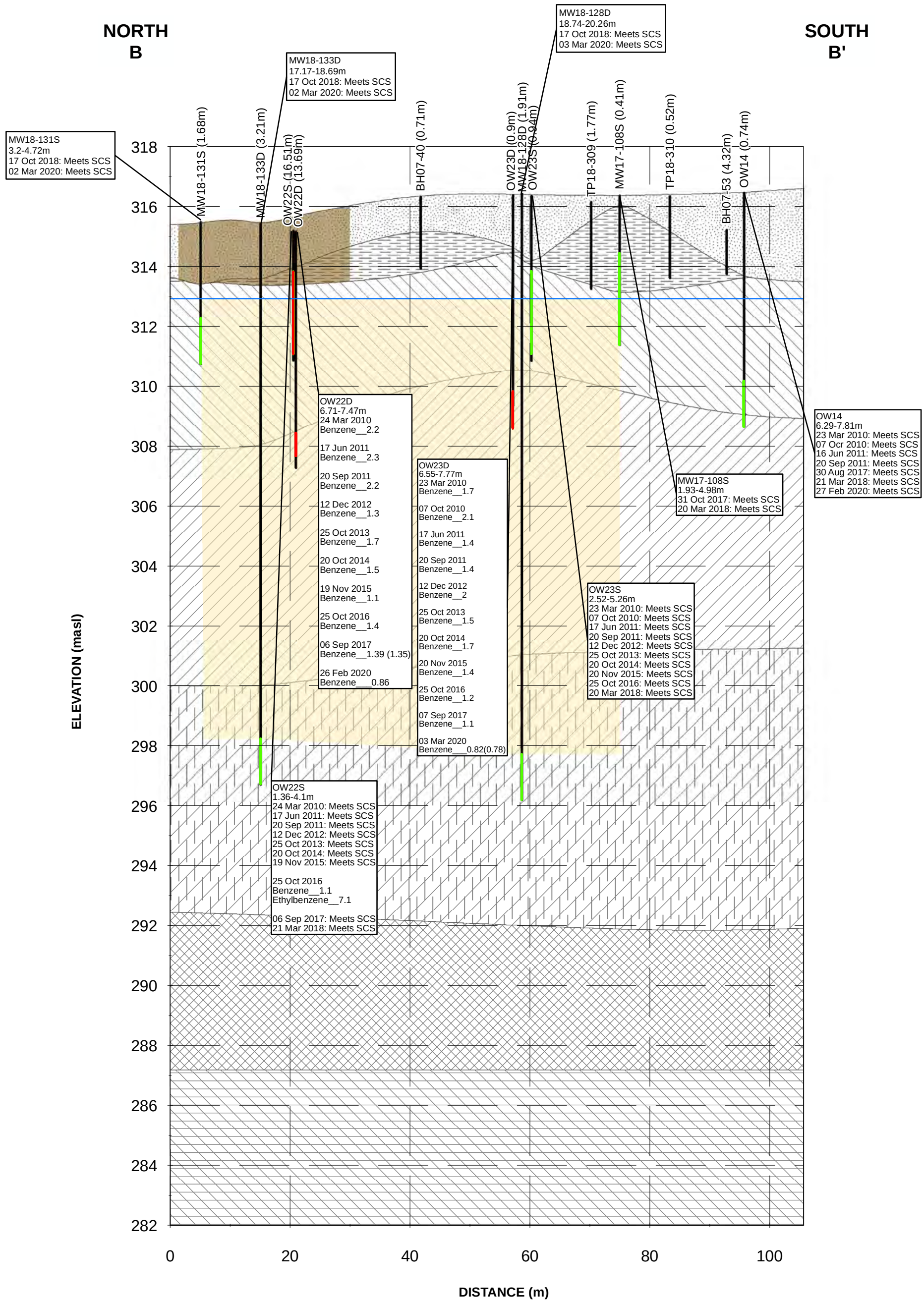
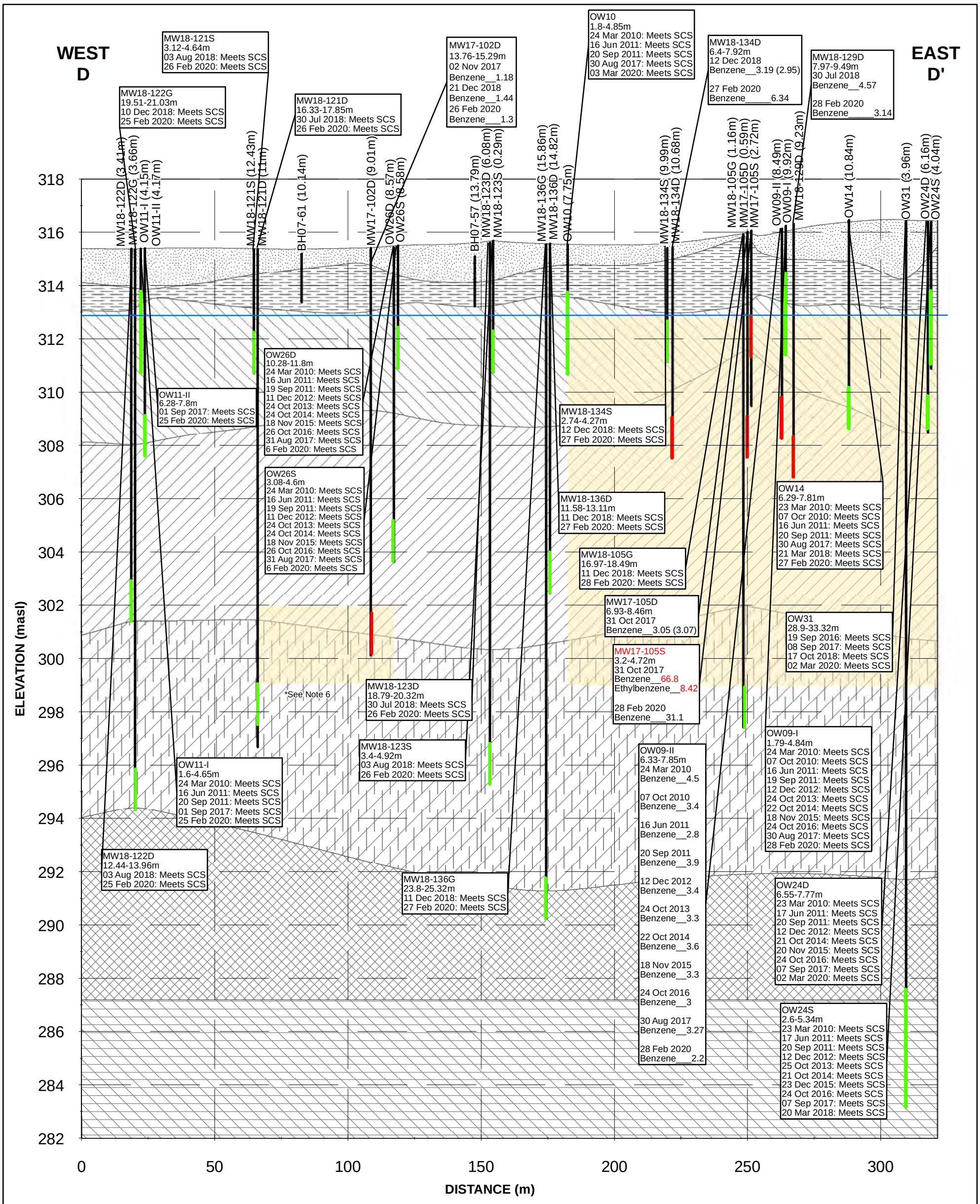


- Approximate Groundwater Elevation
- Exceedance
- No Exceedance
- Vertical Delineation
- Excavation Area
- Fill
- Silty Fine Sand
- Stone Road Member (Eramosa Formation)
- Reformatory Quarry Member (Eramosa Formation)
- Vinemount Member (Eramosa Formation)
- Ancaster Member (Goat Island Formation)
- Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

Figure 6-14b
Section B-B' - Groundwater Exceedances - BTEX
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario



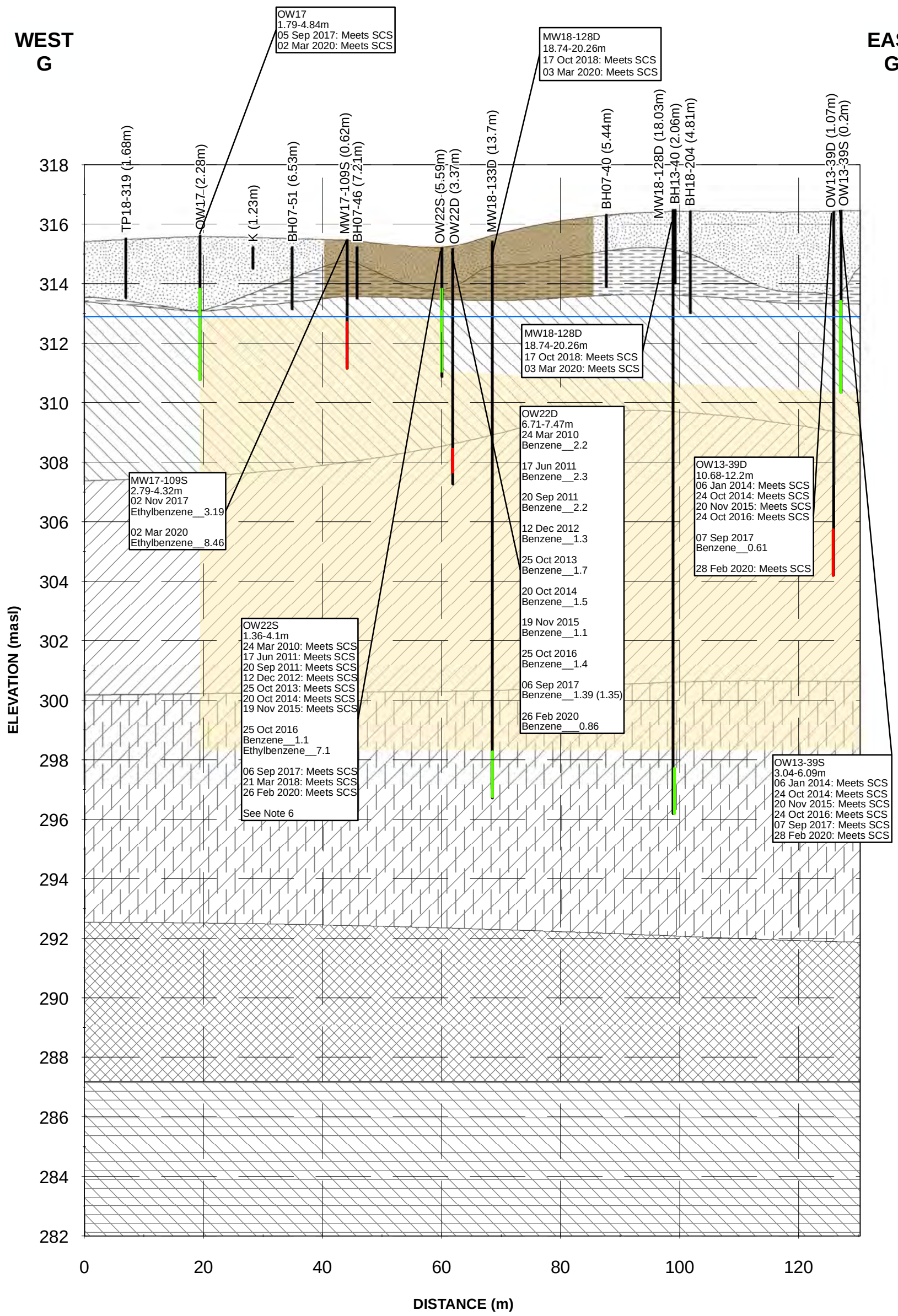
Approximate Groundwater Elevation
Exceedance
No Exceedance
Vertical Delineation
Fill
Silty Fine Sand
Stone Road Member (Eramosa Formation)
Reformatory Quarry Member (Eramosa Formation)
Vinemount Member (Eramosa Formation)
Ancaster Member (Goat Island Formation)
Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.
6.The exceedance at MW17-102D is considered anomalous as benzene is not present in the soil or shallow groundwater in this area of the Site. See further discussions in the CSM.

Figure 6-14c
Section D-D' - Groundwater Exceedances - BTEX
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

\\DC1VS01\GISPROJ\G\GUELPHCITYOF\IMICO\MAPFILES\IMICO\PHASETWO\DRAFTII\CROSSSECTIOND_GW_BTEX.MXD KA077569 5/5/2020 10:23:59 AM



Approximate Groundwater Elevation
Exceedance
No Exceedance
Vertical Delineation
Excavation Area
Fill
Silty Fine Sand
Stone Road Member (Eramosa Formation)
Reformatory Quarry Member (Eramosa Formation)
Vinemount Member (Eramosa Formation)
Ancaster Member (Goat Island Formation)
Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.
6. Parameter(s) previously exceeding are considered to meet the SCS based on two clean subsequent samples. See Table 6-10c for additional details.

Figure 6-14d
Section G-G' - Groundwater Exceedances - BTEX
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

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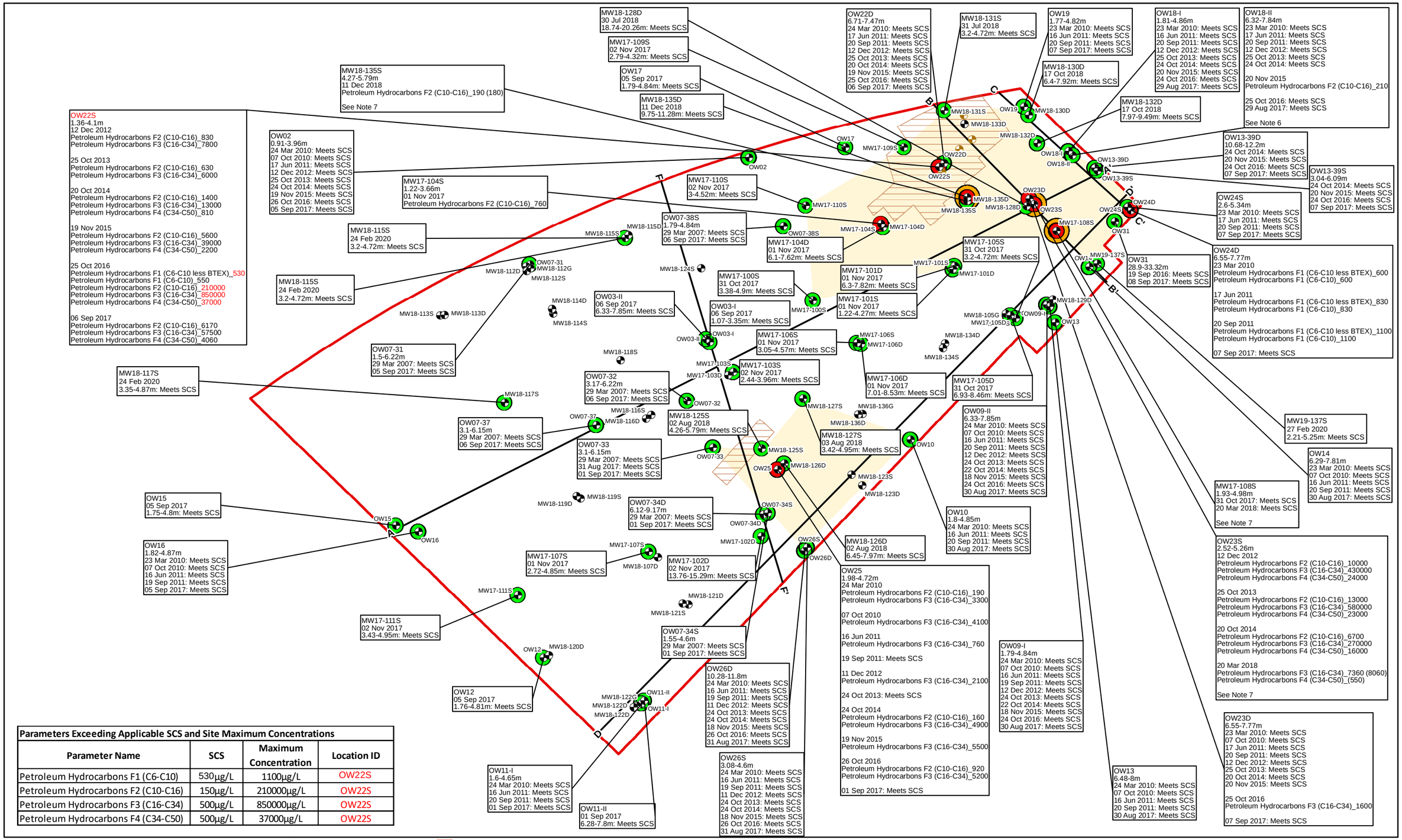

Parameters Exceeding Applicable SCS and Site Maximum Concentrations

Parameter Name	SCS	Maximum Concentration	Location ID
Petroleum Hydrocarbons F1 (C6-C10)	530µg/L	1100µg/L	OW22S
Petroleum Hydrocarbons F2 (C10-C16)	150µg/L	210000µg/L	OW22S
Petroleum Hydrocarbons F3 (C16-C34)	500µg/L	850000µg/L	OW22S
Petroleum Hydrocarbons F4 (C34-C50)	500µg/L	37000µg/L	OW22S

N

0 10 20 30
Metres

Sample Locations
Monitoring Well
Excavated Locations
Monitoring Well

Exceedance
No Exceedance
Location with measurable NAPL
Cross Section Location

Former IMICO Property Boundary
Historical Excavation area, EarthTech, 1999
Horizontal Delineation

Notes:
1.Historical locations are approximate. All samples, including those within excavation areas that have been removed (i.e. prior to 1999) have been shown for screening purposes.
2. Results in ( ) indicate field duplicates.
3. "J" indicates associated value is estimated.
4. Red text indicates the location of the Site maximum concentration of the analyte.
5. The estimated extent of impacts was inferred to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
6. Parameter(s) previously exceeding are considered to meet the SCS based on two clean subsequent samples. See Table 6-10c for additional details.
7. 2017 and 2018 results shown at the noted locations are from groundwater samples collected at a depth below the measured NAPL, within the screened interval. Results were collected for vertical delineation purposes to show dissolved concentrations immediately below the NAPL; the monitoring well location is not considered to meet the SCS.

Figure 6-15
Groundwater Exceedances - PHCs
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

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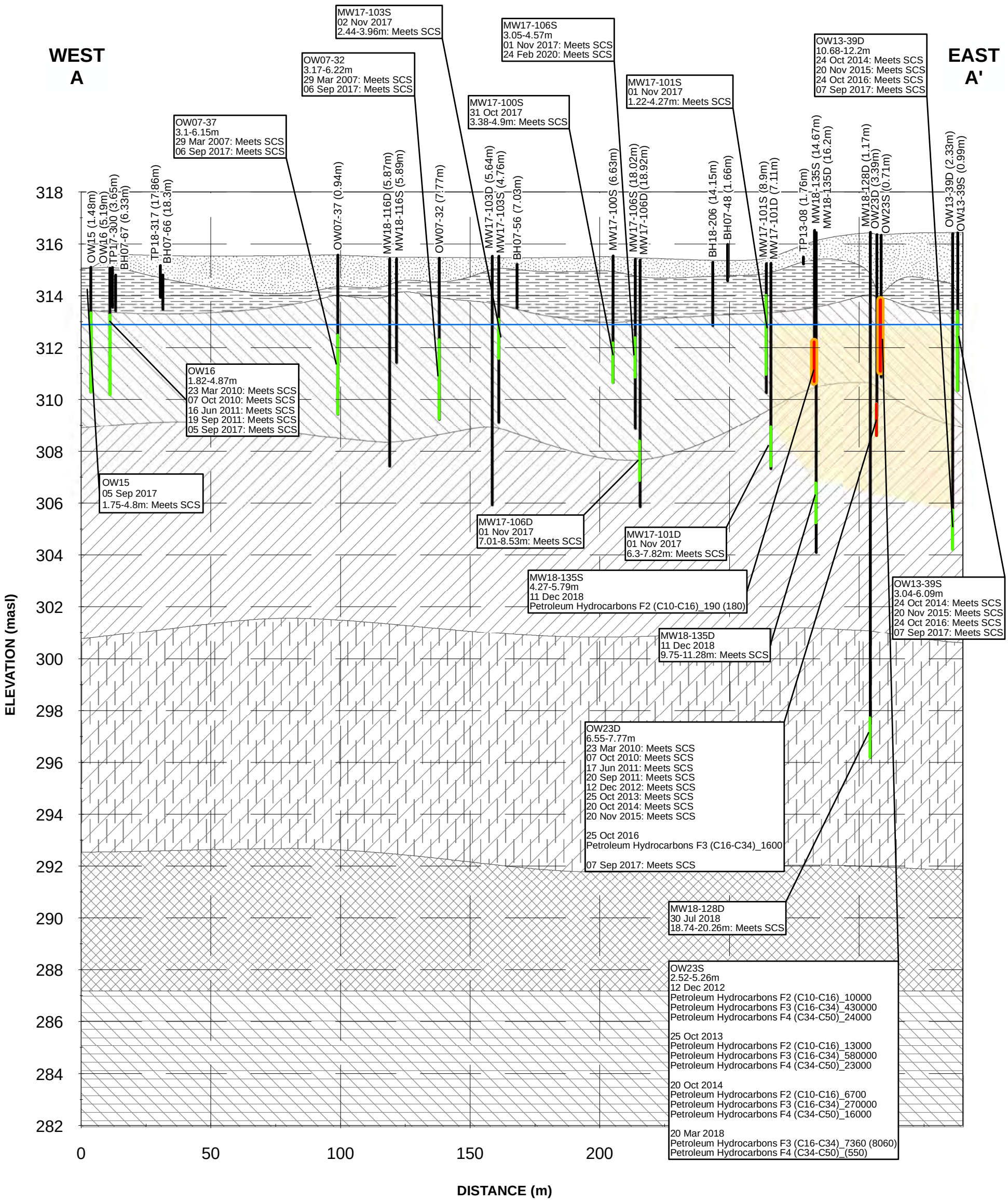
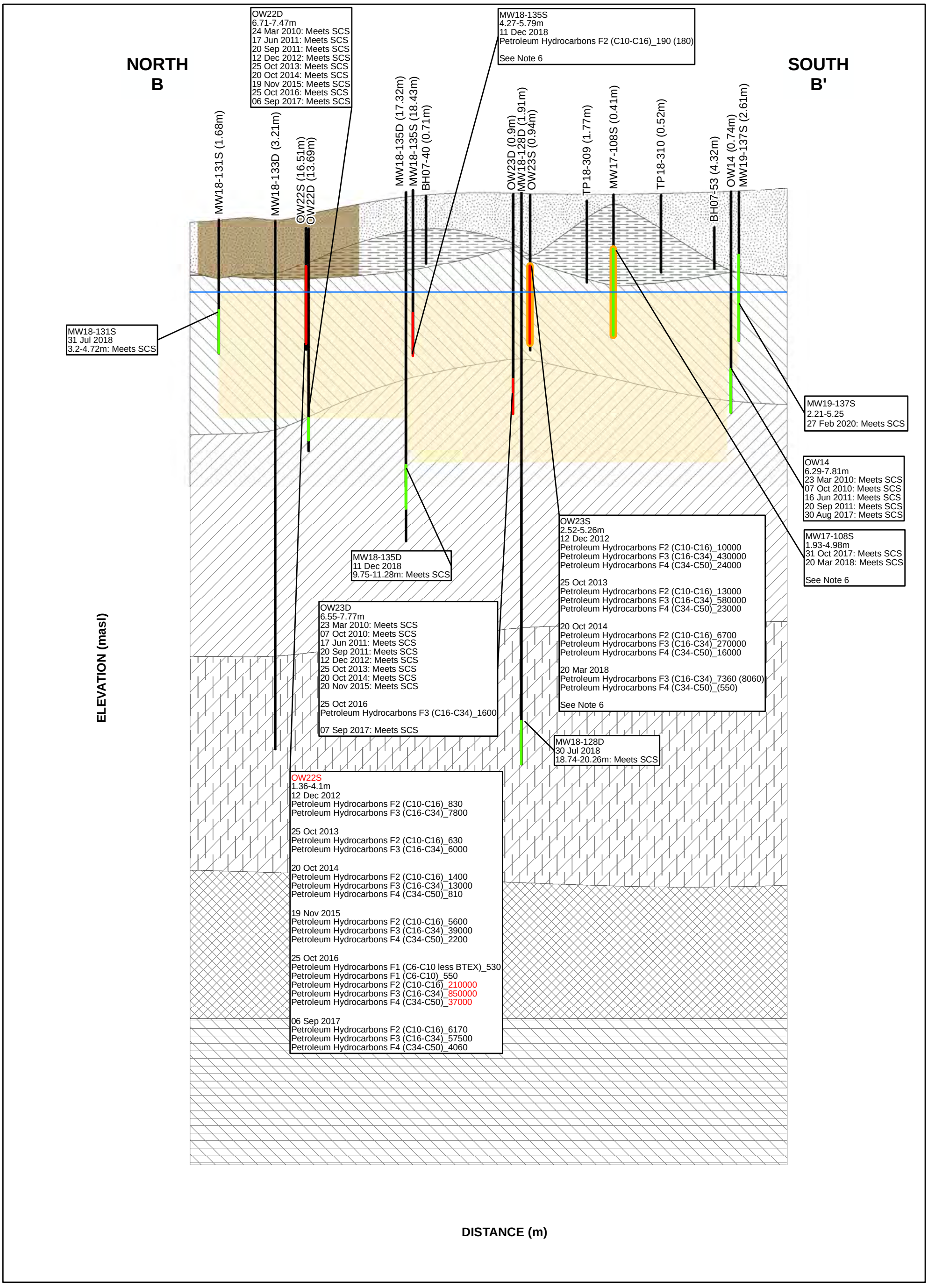


- Approximate Groundwater Elevation
- Exceedance
- No Exceedance
- Location with measurable non-aqueous phase liquid
- Vertical Delineation
- Fill
- Silty Fine Sand
- Stone Road Member (Eramosa Formation)
- Reformatory Quarry Member (Eramosa Formation)
- Vinemount Member (Eramosa Formation)
- Ancaster Member (Goat Island Formation)
- Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.
6. 2017 and 2018 results shown at the noted locations are from groundwater samples collected at a depth below the measured NAPL, within the screened interval. Results were collected for vertical delineation purposes to show dissolved concentrations immediately below the NAPL; the monitoring well location is not considered to meet the SCS.

Figure 6-15a
Section A-A' - Groundwater Exceedances - PHC
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

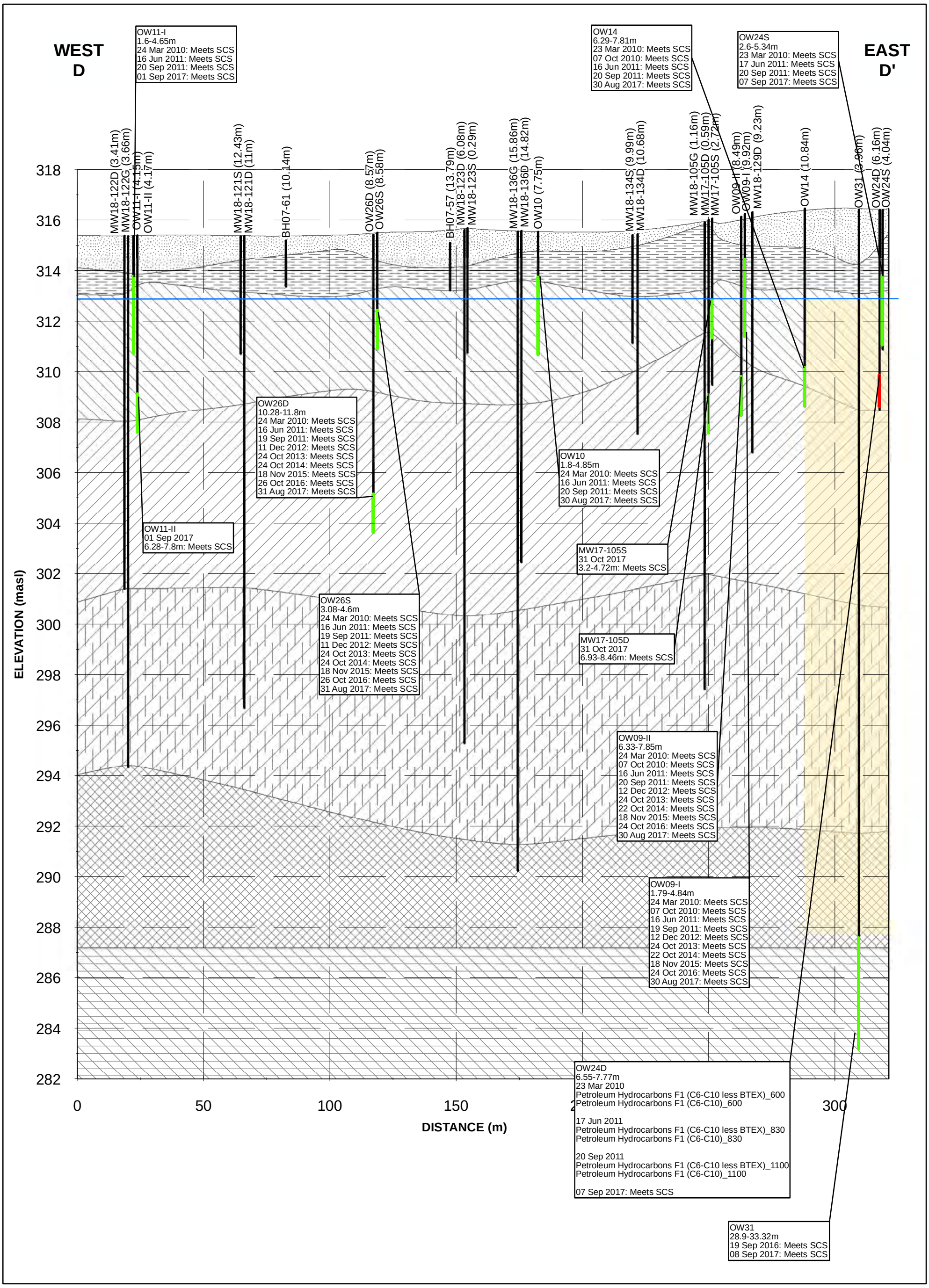
Jacobs



- Approximate Groundwater Elevation
- Exceedance
- No Exceedance
- Location with measurable non-aqueous phase liquid
- Vertical Delineation
- Excavation Area
- Fill
- Silty Fine Sand
- Stone Road Member (Eramosa Formation)
- Reformatory Quarry Member (Eramosa Formation)
- Vinemount Member (Eramosa Formation)
- Ancaster Member (Goat Island Formation)
- Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.
6. 2017 and 2018 results shown at the noted locations are from groundwater samples collected at a depth below the measured NAPL, within the screened interval. Results were collected for vertical delineation purposes to show dissolved concentrations immediately below the NAPL; the monitoring well location is not

Figure 6-15b
Section B-B' - Groundwater Exceedances - PHCs
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

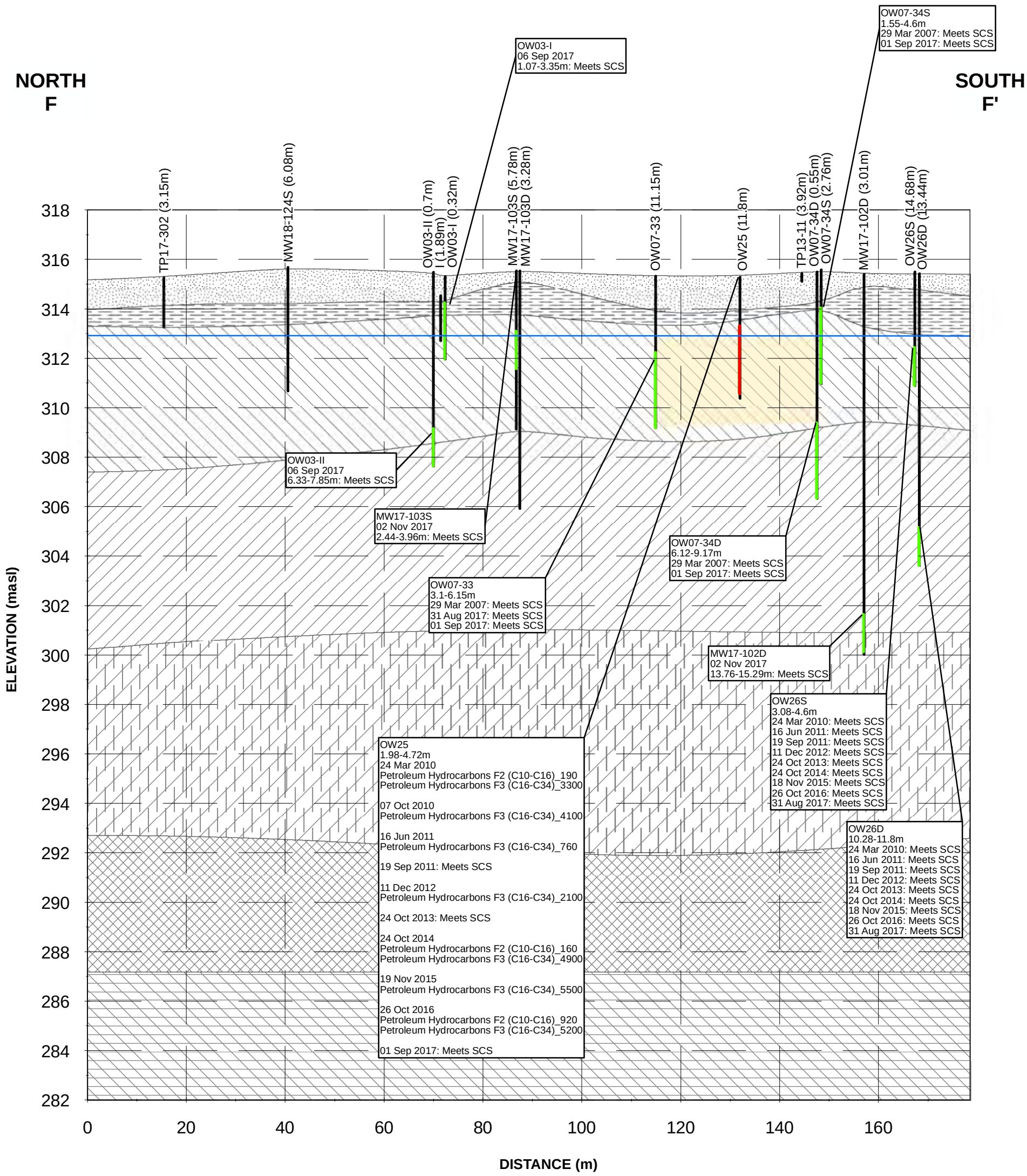


- Approximate Groundwater Elevation
- Exceedance
- No Exceedance
- Vertical Delineation
- Fill
- Silt (Native)
- Stone Road Member (Eramosa Formation)
- Reformatory Quarry Member (Eramosa Formation)
- Vinemount Member (Eramosa Formation)
- Ancaster Member (Goat Island Formation)
- Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offsite distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

Figure 6-15c
Section D-D' - Groundwater Exceedances - PHCs
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

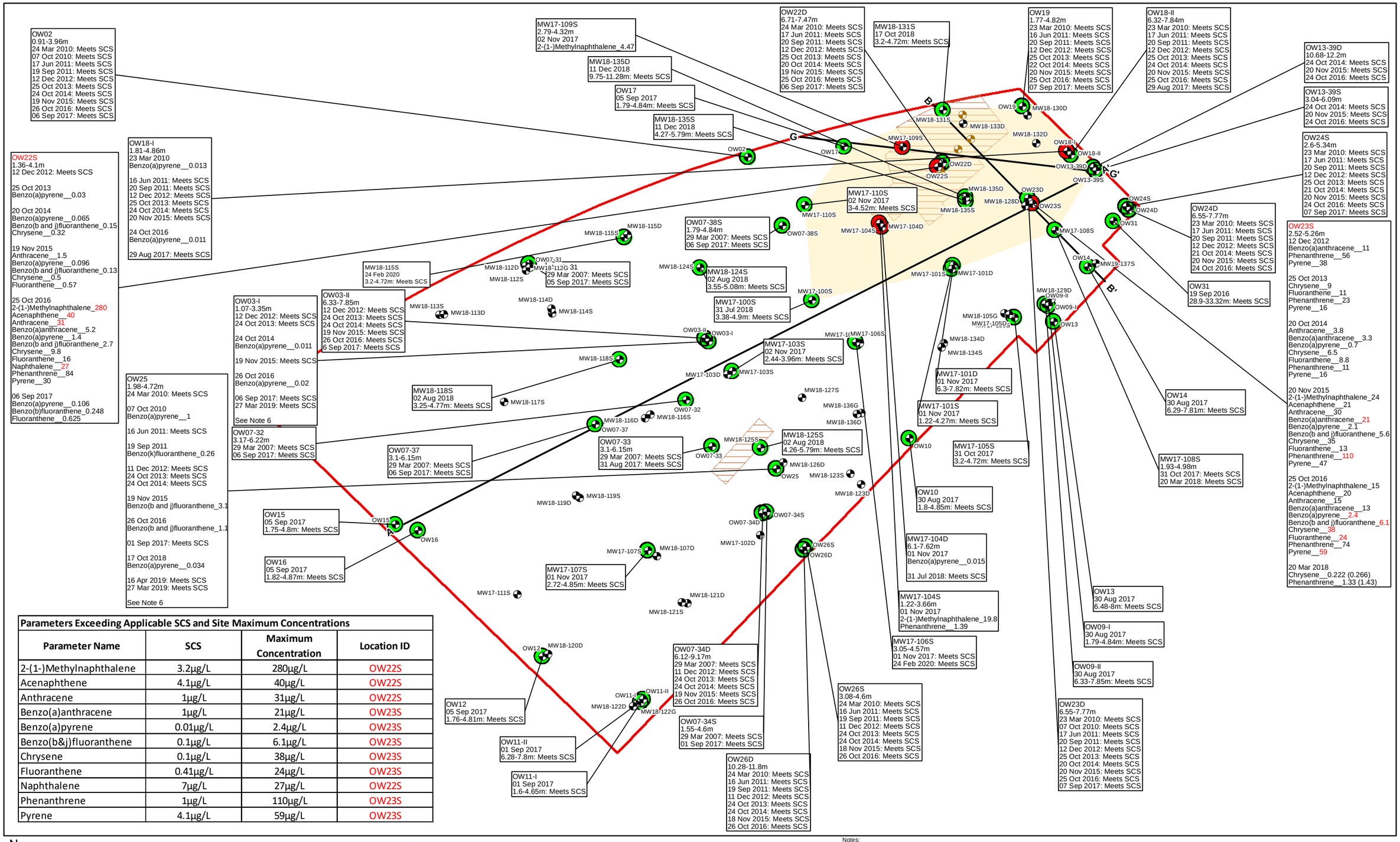
ch2m



- Approximate Groundwater Elevation
- Exceedance
- No Exceedance
- Vertical Delineation
- Fill
- Silt (Native)
- Stone Road Member (Eramosa Formation)
- Reformatory Quarry Member (Eramosa Formation)
- Vinemount Member (Eramosa Formation)
- Ancaster Member (Goat Island Formation)
- Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offsite distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

Figure 6-15d
Section F-F' - Groundwater Exceedances - PHC
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario



Parameters Exceeding Applicable SCS and Site Maximum Concentrations

Parameter Name	SCS	Maximum Concentration	Location ID
2-(1-)Methylnaphthalene	3.2µg/L	280µg/L	OW22S
Acenaphthene	4.1µg/L	40µg/L	OW22S
Anthracene	1µg/L	31µg/L	OW22S
Benzo(a)anthracene	1µg/L	21µg/L	OW23S
Benzo(a)pyrene	0.01µg/L	2.4µg/L	OW23S
Benzo(b&j)fluoranthene	0.1µg/L	6.1µg/L	OW23S
Chrysene	0.1µg/L	38µg/L	OW23S
Fluoranthene	0.41µg/L	24µg/L	OW23S
Naphthalene	7µg/L	27µg/L	OW22S
Phenanthrene	1µg/L	110µg/L	OW23S
Pyrene	4.1µg/L	59µg/L	OW23S

N

0 10 20 30
Metres

Sample Locations
Monitoring Well
Excavated Locations
Monitoring Well

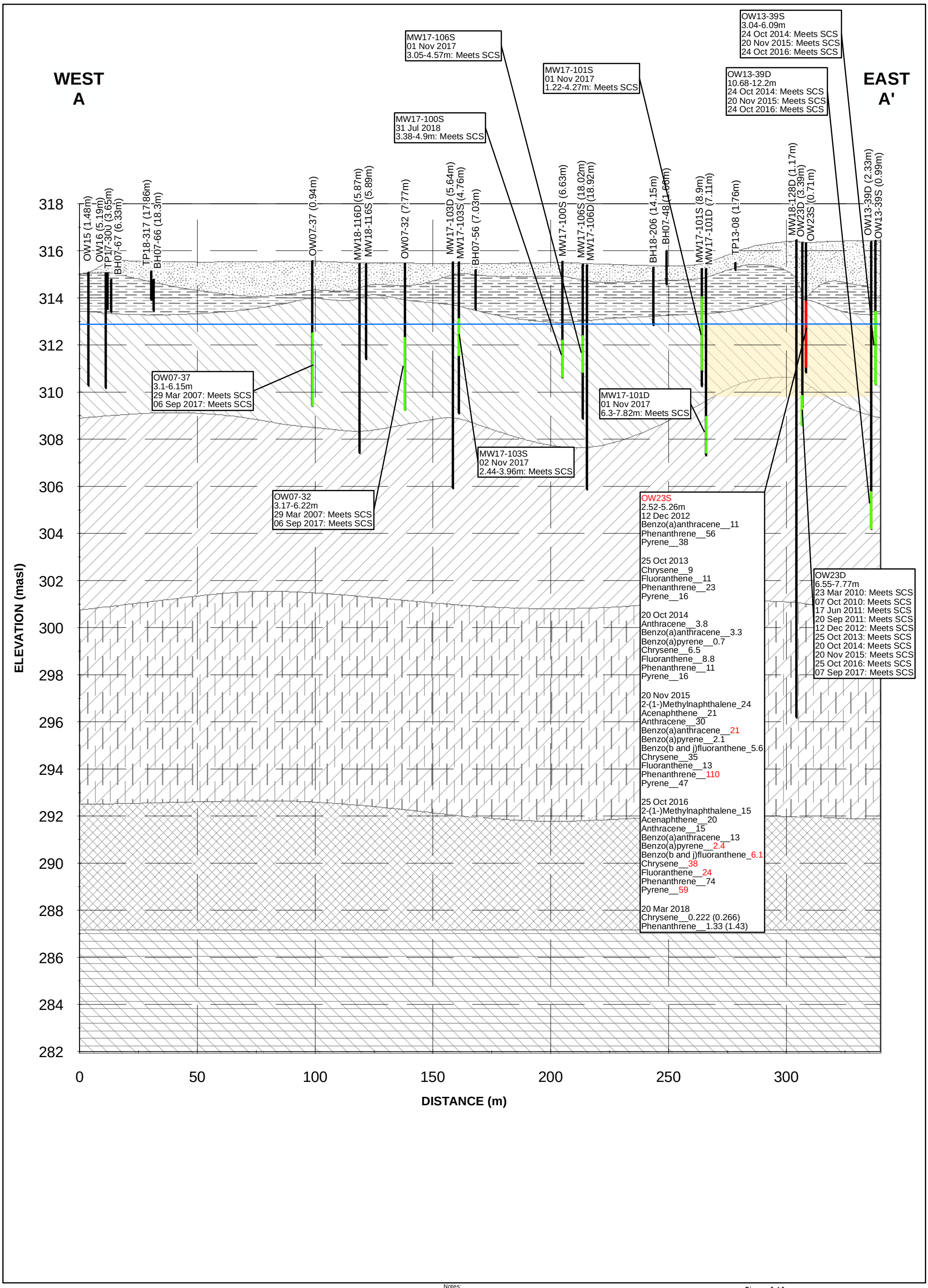
No Exceedance
Exceedance
Cross Section Location

Former IMICO Property Boundary
Historical Excavation area, EarthTech, 1999
Horizontal Delineation

Notes:
1. Historical locations are approximate. All samples, including those within excavation areas that have been removed (i.e. prior to 1999) have been shown for screening purposes.
2. Results in ( ) indicate field duplicates.
3. "J" indicates associated value is estimated.
4. Red text indicates the location of the Site maximum concentration of the analyte.
5. The estimated extent of impacts was inferred to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
6. Parameter(s) previously exceeding are considered to meet the SCS based on two clean subsequent samples. See Table 6-10c for additional details.

Figure 6-16
Groundwater Exceedances - PAHs
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

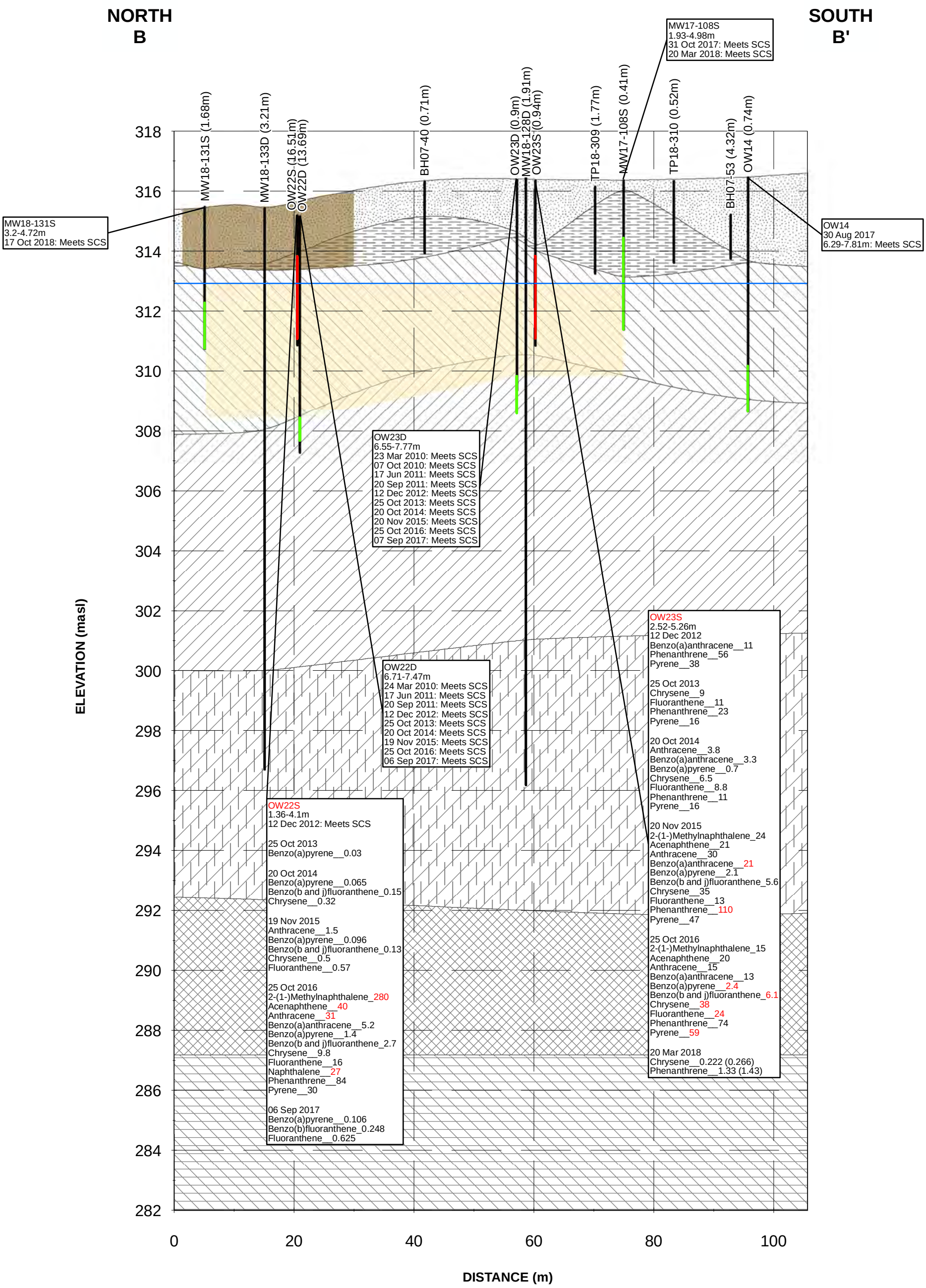


Approximate Groundwater Elevation
Exceedance
No Exceedance
Vertical Delineation
Fill
Silty Fine Sand
Stone Road Member (Eramosa Formation)
Reformatory Quarry Member (Eramosa Formation)
Vinemount Member (Eramosa Formation)
Ancaster Member (Goat Island Formation)
Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

Figure 6-16a
Section A-A' - Groundwater Exceedances - PAH
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

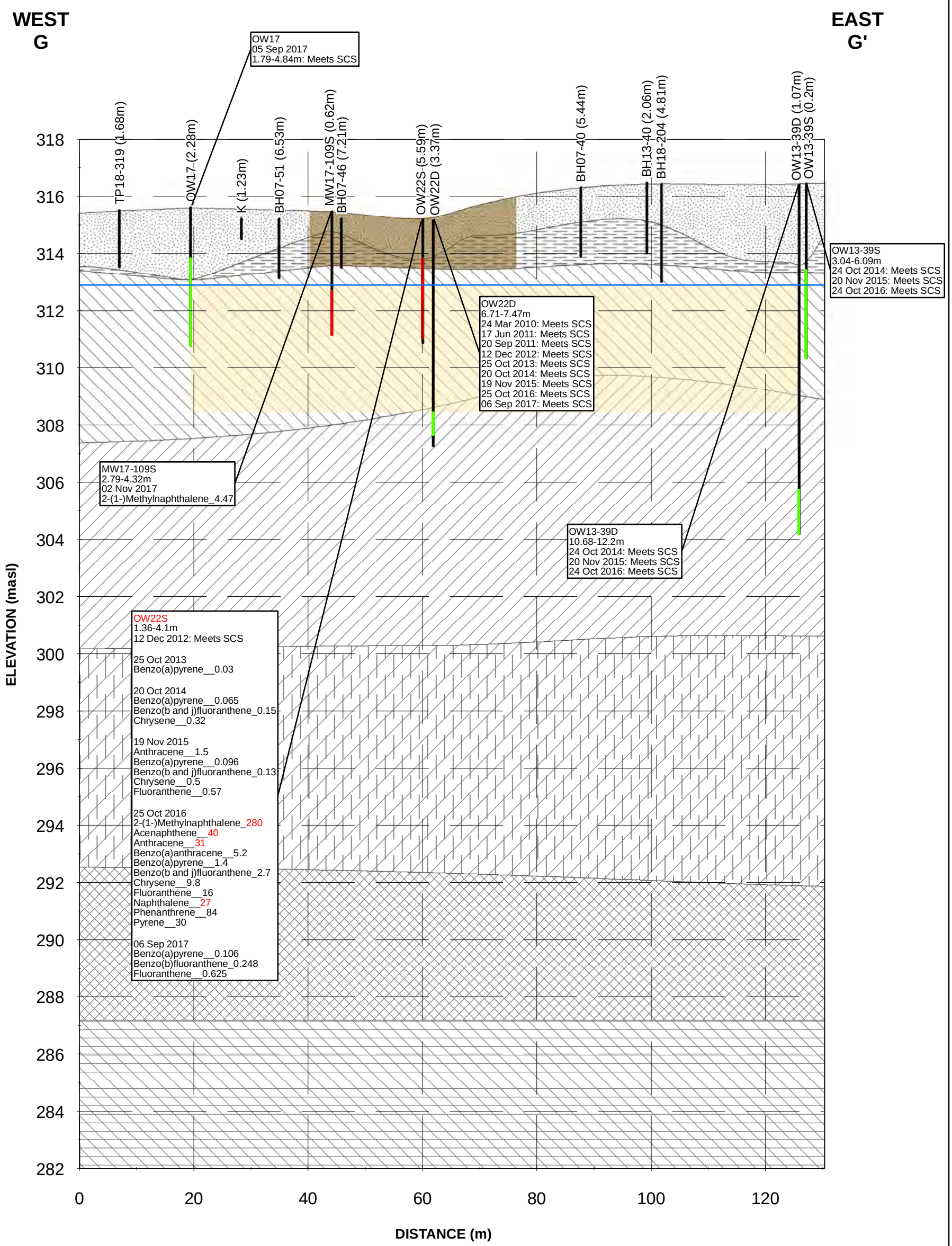
Jacobs



- Approximate Groundwater Elevation
- Exceedance
- No Exceedance
- Vertical Delineation
- Excavation Area
- Fill
- Silty Fine Sand
- Stone Road Member (Eramosa Formation)
- Reformatory Quarry Member (Eramosa Formation)
- Vinemount Member (Eramosa Formation)
- Ancaster Member (Goat Island Formation)
- Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

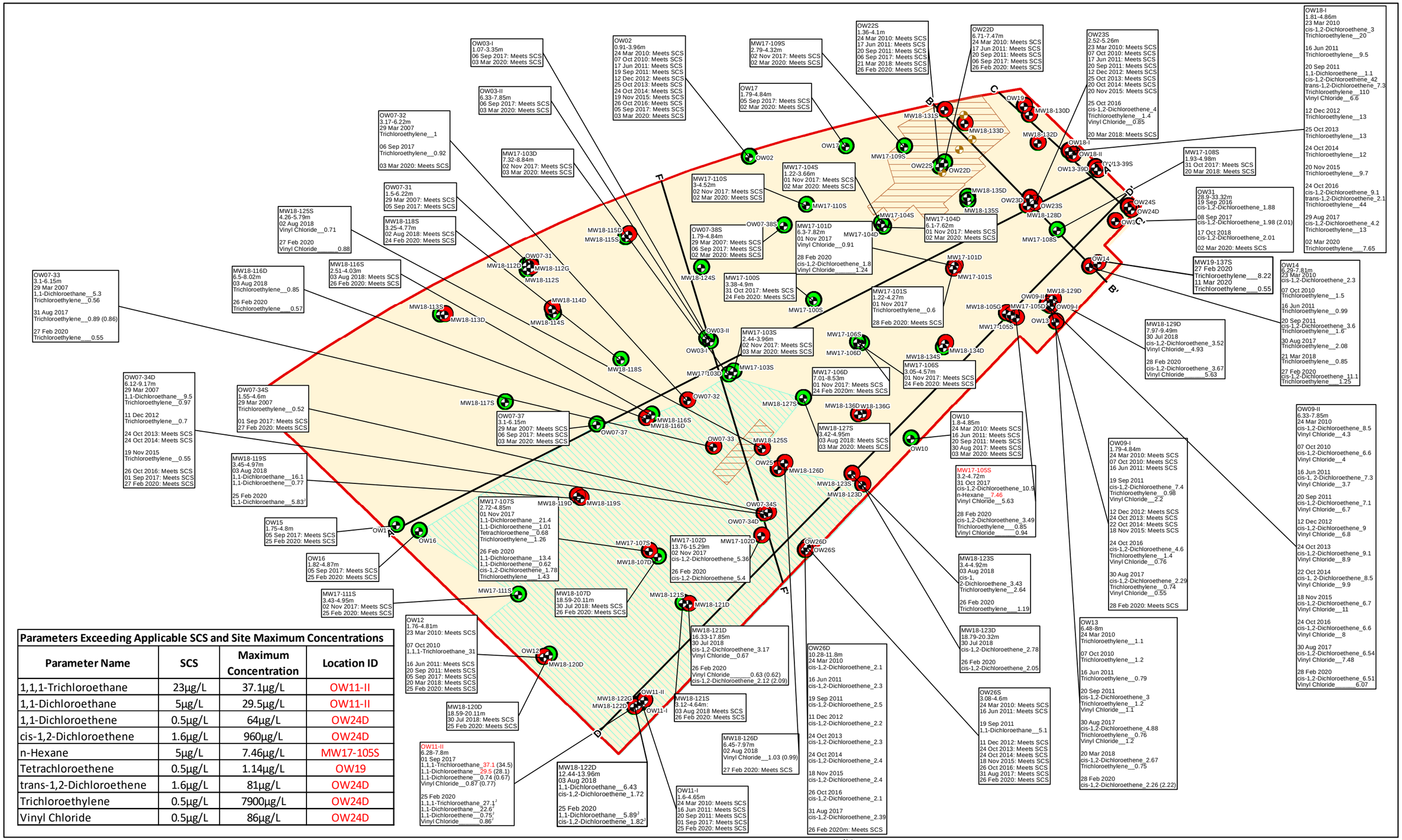
Figure 6-16b
Section B-B' - Groundwater Exceedances - PAHs
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario



- Approximate Groundwater Elevation
- Exceedance
- No Exceedance
- Excavation Area
- Fill
- Silty Fine Sand
- Stone Road Member (Eramosa Formation)
- Reformatory Quarry Member (Eramosa Formation)
- Vinemount Member (Eramosa Formation)
- Ancaster Member (Goat Island Formation)
- Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

Figure 6-16c
Section G-G' - Soil Exceedances - PAH
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario



Parameters Exceeding Applicable SCS and Site Maximum Concentrations

Parameter Name	SCS	Maximum Concentration	Location ID
1,1,1-Trichloroethane	23µg/L	37.1µg/L	OW11-II
1,1-Dichloroethane	5µg/L	29.5µg/L	OW11-II
1,1-Dichloroethene	0.5µg/L	64µg/L	OW24D
cis-1,2-Dichloroethene	1.6µg/L	960µg/L	OW24D
n-Hexane	5µg/L	7.46µg/L	MW17-105S
Tetrachloroethene	0.5µg/L	1.14µg/L	OW19
trans-1,2-Dichloroethene	1.6µg/L	81µg/L	OW24D
Trichloroethylene	0.5µg/L	7900µg/L	OW24D
Vinyl Chloride	0.5µg/L	86µg/L	OW24D

N

0 10 20 30
Metres

Sample Locations
Monitoring Well
Excavated Locations
Monitoring Well

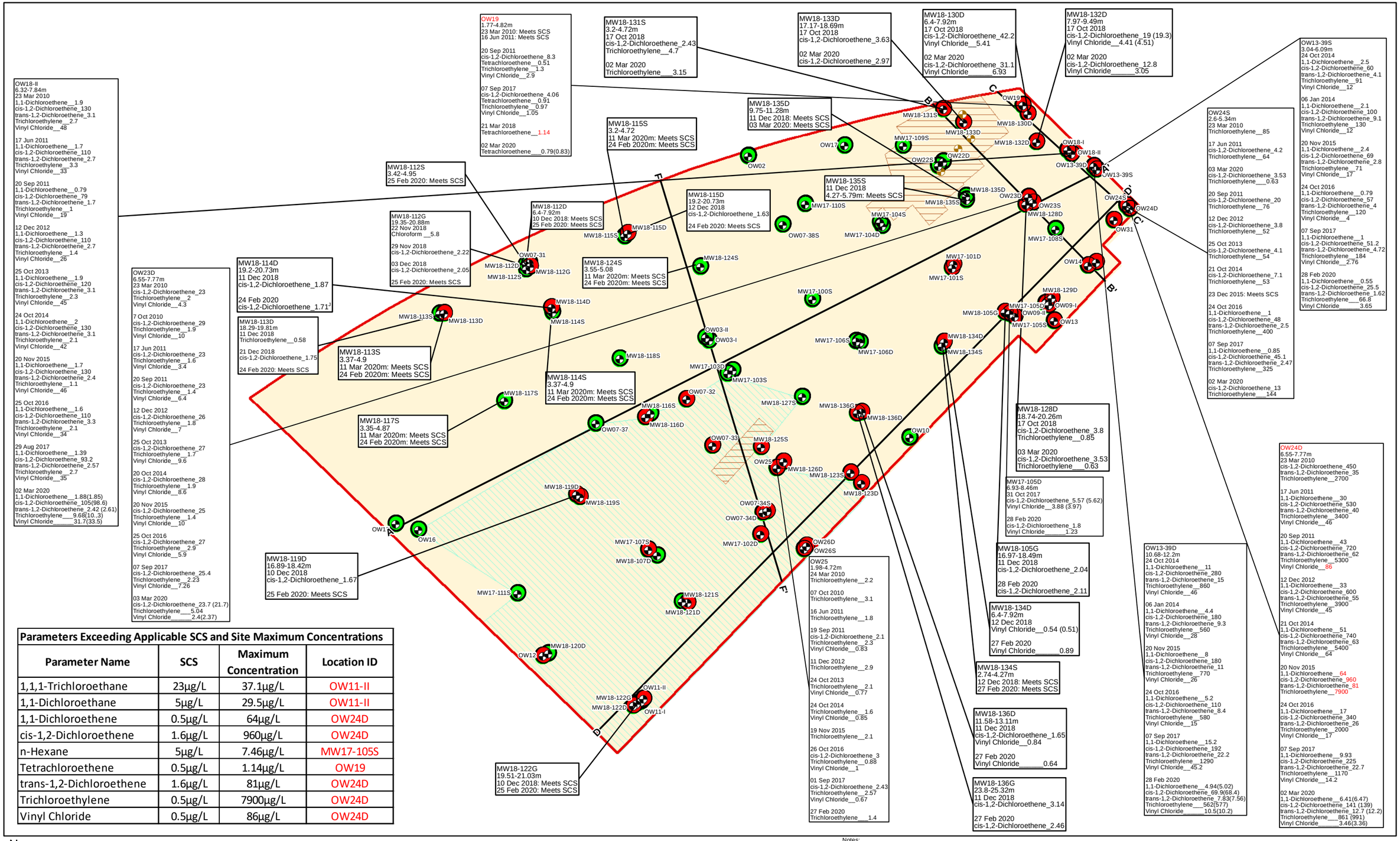
No Exceedance
Exceedance
Cross Section Location

Former IMICO Property Boundary
Historical Excavation area, EarthTech, 1999
Horizontal Delineation
TCA/DCA Plume

Notes:
1. Historical locations are approximate. All samples, including those within excavation areas that have been removed (i.e. prior to 1999) have been shown for screening purposes.
2. Results in ( ) indicate field duplicates.
3. "J" indicates associated value is estimated.
4. Red text indicates the location of the Site maximum concentration of the analyte.
5. The estimated extent of impacts was inferred to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
6. Horizontal delineation extends across the entire Site as almost deep wells (>10 mbgs) have cis-1,2-DCE above SCS.

Figure 6-17 (Part 1)
Groundwater Exceedances - VOCs
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs



Parameters Exceeding Applicable SCS and Site Maximum Concentrations			
Parameter Name	SCS	Maximum Concentration	Location ID
1,1,1-Trichloroethane	23µg/L	37.1µg/L	OW11-II
1,1-Dichloroethane	5µg/L	29.5µg/L	OW11-II
1,1-Dichloroethene	0.5µg/L	64µg/L	OW24D
cis-1,2-Dichloroethene	1.6µg/L	960µg/L	OW24D
n-Hexane	5µg/L	7.46µg/L	MW17-105S
Tetrachloroethene	0.5µg/L	1.14µg/L	OW19
trans-1,2-Dichloroethene	1.6µg/L	81µg/L	OW24D
Trichloroethylene	0.5µg/L	7900µg/L	OW24D
Vinyl Chloride	0.5µg/L	86µg/L	OW24D

N

0 10 20 30
Metres

Sample Locations
Monitoring Well
Excavated Locations
Monitoring Well

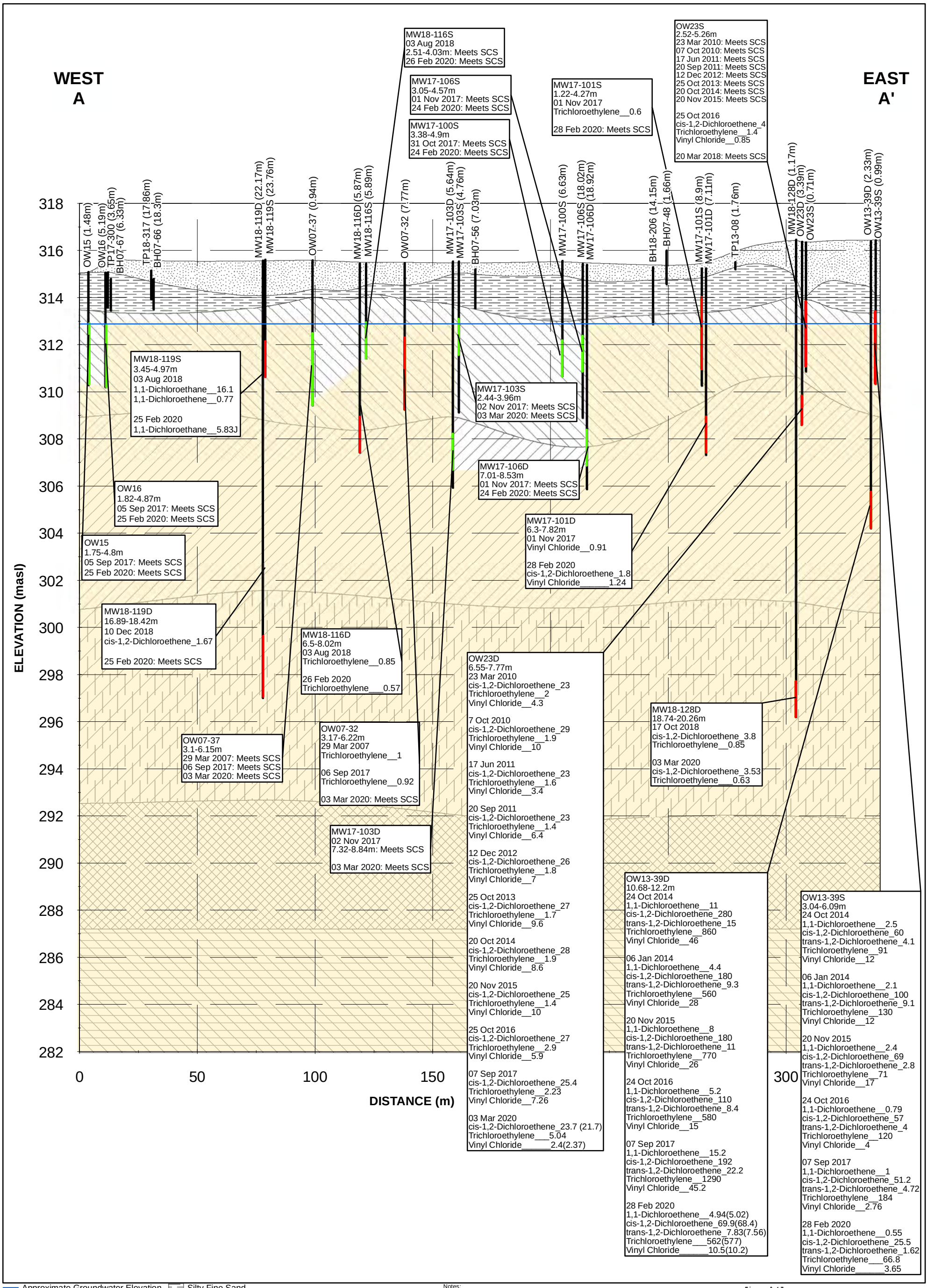
No Exceedance
Exceedance
Cross Section Location

Former IMICO Property Boundary
Historical Excavation area, EarthTech, 1999
Horizontal Delineation
TCA/DCA Plume

Notes:
1. Historical locations are approximate. All samples, including those within excavation areas that have been removed (i.e. prior to 1999) have been shown for screening purposes.
2. Results in ( ) indicate field duplicates.
3. "J" indicates associated value is estimated.
4. Red text indicates the location of the Site maximum concentration of the analyte.
5. The estimated extent of impacts was inferred to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
6. Horizontal delineation extends across the entire Site as almost deep wells (>10 mbgs) have cis-1,2-DCE above SCS.

Figure 6-17 (Part 2)
Groundwater Exceedances - VOCs
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

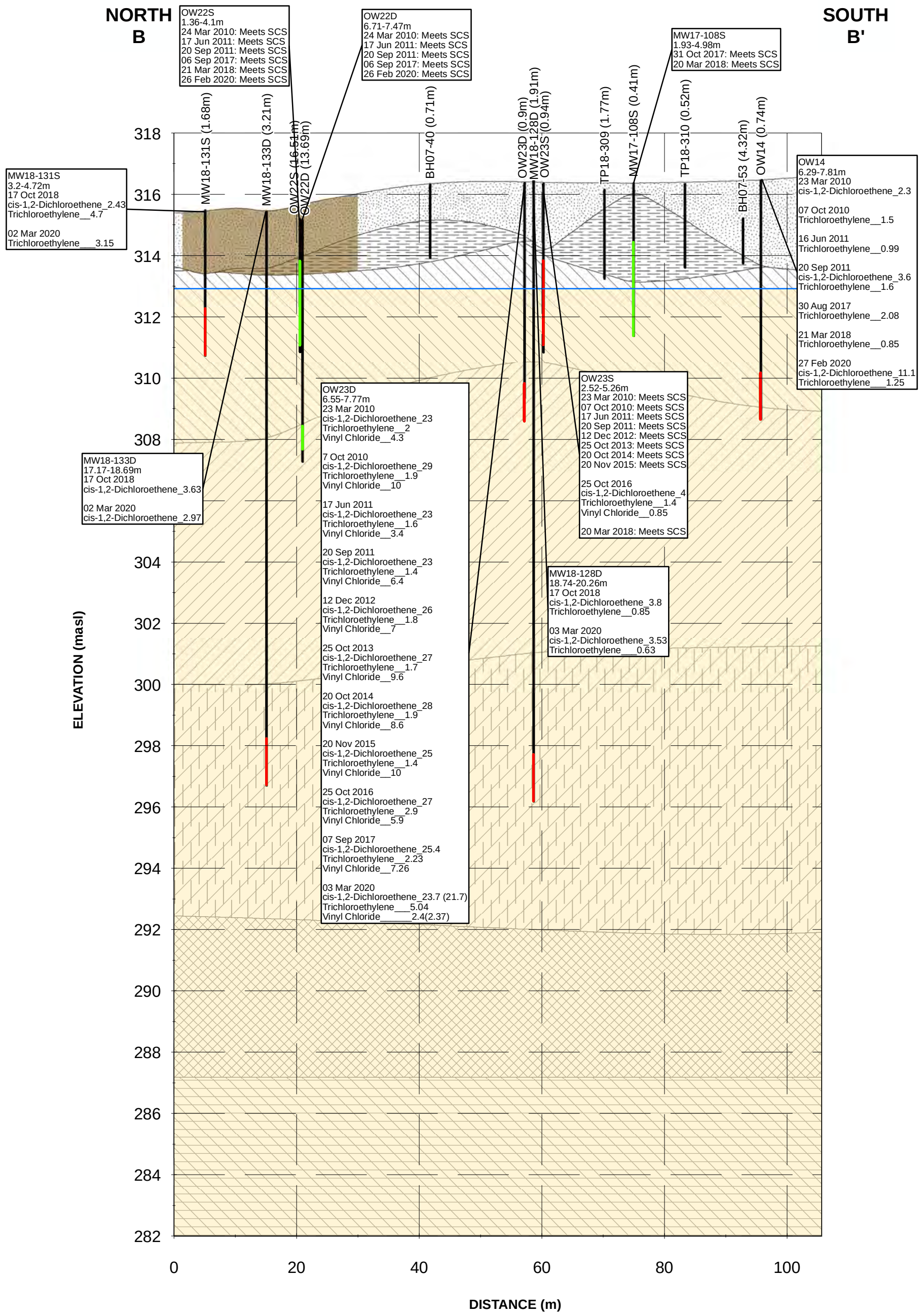


- Approximate Groundwater Elevation
- Exceedance
- No Exceedance
- Vertical Delineation
- Vertical Delineation Inferred Extent
- Fill
- Silty Fine Sand
- Stone Road Member (Eramosa Formation)
- Reformatory Quarry Member (Eramosa Formation)
- Vinemount Member (Eramosa Formation)
- Ancaster Member (Goat Island Formation)
- Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

Figure 6-17a
Section A-A' - Groundwater Exceedances - VOCs
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs



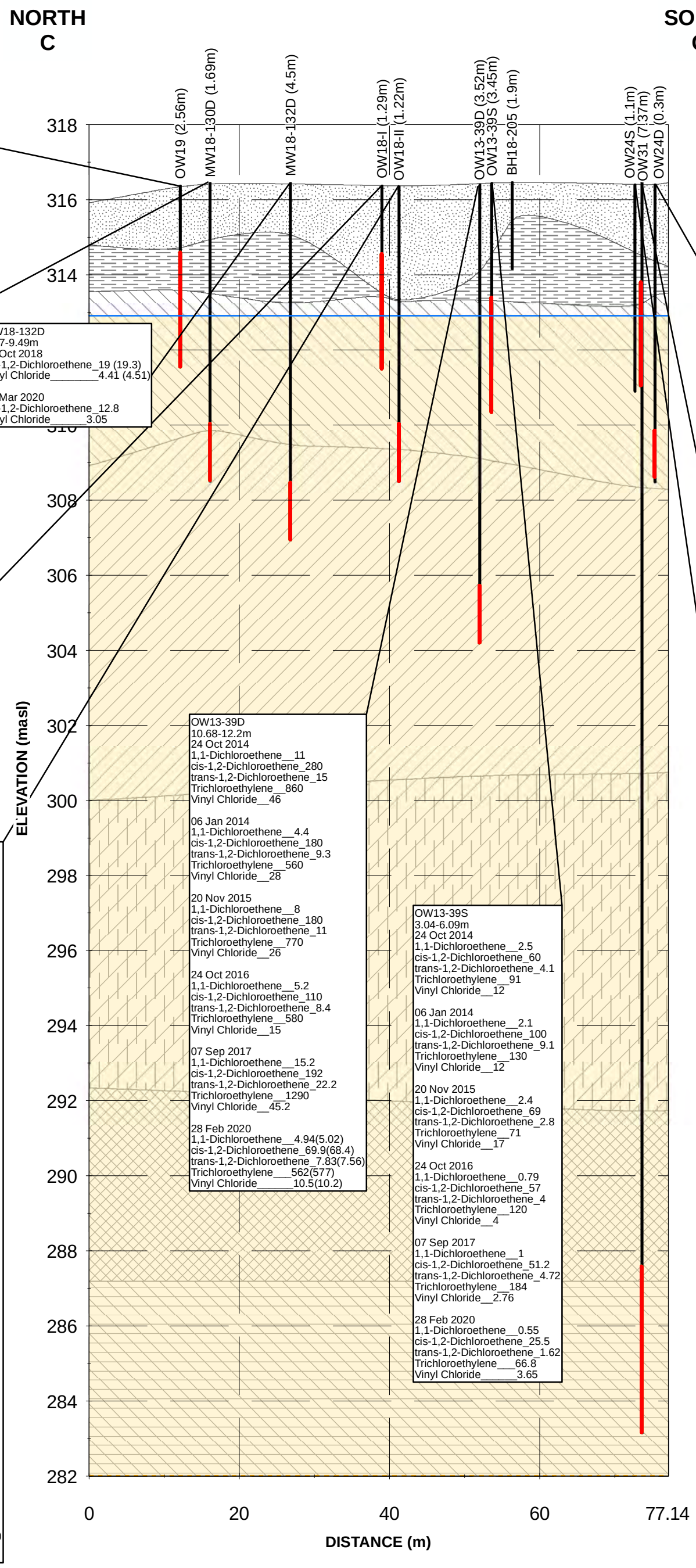
- Approximate Groundwater Elevation
- Exceedance
- No Exceedance
- Vertical Delineation
- Excavation Area
- Fill
- Silty Fine Sand
- Stone Road Member (Eramosa Formation)
- Reformatory Quarry Member (Eramosa Formation)
- Vinemount Member (Eramosa Formation)
- Ancaster Member (Goat Island Formation)
- Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

Figure 6-17b
Section B-B' - Groundwater Exceedances - VOCs
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

\\DC1VS01\GISPROJ\G\GUELPHCITYOF\IMICO\MAPFILES\IMICO\PHASETWO\DRAFTII\CROSSSECTIONB_GW_VOC.MXD KA077569 5/4/2020 11:03:20 AM



OW19
1.77-4.82m
23 Mar 2010: Meets SCS
16 Jun 2011: Meets SCS

20 Sep 2011
cis-1,2-Dichloroethene_8.3
Tetrachloroethene__0.51
Trichloroethylene__1.3
Vinyl Chloride__2.9

07 Sep 2017
cis-1,2-Dichloroethene_4.06
Tetrachloroethene__0.91
Trichloroethylene__0.97
Vinyl Chloride__1.05

21 Mar 2018
Tetrachloroethene__1.14

02 Mar 2020
Tetrachloroethene___0.79(0.83)

MW18-130D
6.4-7.92m
17 Oct 2018
cis-1,2-Dichloroethene_42.2
Vinyl Chloride_____5.41

02 Mar 2020
cis-1,2-Dichloroethene_31.1
Vinyl Chloride_____6.93

MW18-132D
7.97-9.49m
17 Oct 2018
cis-1,2-Dichloroethene_19 (19.3)
Vinyl Chloride_____4.41 (4.51)

02 Mar 2020
cis-1,2-Dichloroethene_12.8
Vinyl Chloride_____3.05

OW18-I
1.81-4.86m
23 Mar 2010
cis-1,2-Dichloroethene_3
Trichloroethylene__20

16 Jun 2011
Trichloroethylene__9.5

20 Sep 2011
1,1-Dichloroethene__1.1
cis-1,2-Dichloroethene_42
trans-1,2-Dichloroethene_7.3
Trichloroethylene__110
Vinyl Chloride__6.6

12 Dec 2012
Trichloroethylene__13

25 Oct 2013
Trichloroethylene__13

24 Oct 2014
Trichloroethylene__12

20 Nov 2015
Trichloroethylene__9.7

24 Oct 2016
cis-1,2-Dichloroethene_9.1
trans-1,2-Dichloroethene_2.1
Trichloroethylene__44

29 Aug 2017
cis-1,2-Dichloroethene_4.2
Trichloroethylene__13

02 Mar 2020
Trichloroethylene___7.65

OW18-II
6.32-7.84m
23 Mar 2010
1,1-Dichloroethene__1.9
cis-1,2-Dichloroethene_130
trans-1,2-Dichloroethene_3.1
Trichloroethylene__2.7
Vinyl Chloride__48

17 Jun 2011
1,1-Dichloroethene__1.7
cis-1,2-Dichloroethene_110
trans-1,2-Dichloroethene_2.7
Trichloroethylene__3.3
Vinyl Chloride__33

20 Sep 2011
1,1-Dichloroethene__0.79
cis-1,2-Dichloroethene_79
trans-1,2-Dichloroethene_1.7
Trichloroethylene__1
Vinyl Chloride__19

12 Dec 2012
1,1-Dichloroethene__1.3
cis-1,2-Dichloroethene_110
trans-1,2-Dichloroethene_2.7
Trichloroethylene__1.4
Vinyl Chloride__26

25 Oct 2013
1,1-Dichloroethene__1.9
cis-1,2-Dichloroethene_120
trans-1,2-Dichloroethene_3.1
Trichloroethylene__2.3
Vinyl Chloride__45

24 Oct 2014
1,1-Dichloroethene__2
cis-1,2-Dichloroethene_130
trans-1,2-Dichloroethene_3.1
Trichloroethylene__2.1
Vinyl Chloride__42

20 Nov 2015
1,1-Dichloroethene__1.7
cis-1,2-Dichloroethene_130
trans-1,2-Dichloroethene_2.4
Trichloroethylene__1.1
Vinyl Chloride__46

25 Oct 2016
1,1-Dichloroethene__1.6
cis-1,2-Dichloroethene_110
trans-1,2-Dichloroethene_3.3
Trichloroethylene__2.1
Vinyl Chloride__34

29 Aug 2017
1,1-Dichloroethene__1.39
cis-1,2-Dichloroethene_93.2
trans-1,2-Dichloroethene_2.57
Trichloroethylene__2.7
Vinyl Chloride__35

02 Mar 2020
1,1-Dichloroethene__1.88(1.85)
cis-1,2-Dichloroethene_105(98.6)
trans-1,2-Dichloroethene_2.42 (2.61)
Trichloroethylene___9.68(10.,3)
Vinyl Chloride_____31.7(33.5)

OW13-39D
10.68-12.2m
24 Oct 2014
1,1-Dichloroethene__11
cis-1,2-Dichloroethene_280
trans-1,2-Dichloroethene_15
Trichloroethylene__860
Vinyl Chloride__46

06 Jan 2014
1,1-Dichloroethene__4.4
cis-1,2-Dichloroethene_180
trans-1,2-Dichloroethene_9.3
Trichloroethylene__560
Vinyl Chloride__28

20 Nov 2015
1,1-Dichloroethene__8
cis-1,2-Dichloroethene_180
trans-1,2-Dichloroethene_11
Trichloroethylene__770
Vinyl Chloride__26

24 Oct 2016
1,1-Dichloroethene__5.2
cis-1,2-Dichloroethene_110
trans-1,2-Dichloroethene_8.4
Trichloroethylene__580
Vinyl Chloride__15

07 Sep 2017
1,1-Dichloroethene__15.2
cis-1,2-Dichloroethene_192
trans-1,2-Dichloroethene_22.2
Trichloroethylene__1290
Vinyl Chloride__45.2

28 Feb 2020
1,1-Dichloroethene__4.94(5.02)
cis-1,2-Dichloroethene_69.9(68.4)
trans-1,2-Dichloroethene_7.83(7.56)
Trichloroethylene___562(577)
Vinyl Chloride_____10.5(10.2)

OW13-39S
3.04-6.09m
24 Oct 2014
1,1-Dichloroethene__2.5
cis-1,2-Dichloroethene_60
trans-1,2-Dichloroethene_4.1
Trichloroethylene__91
Vinyl Chloride__12

06 Jan 2014
1,1-Dichloroethene__2.1
cis-1,2-Dichloroethene_100
trans-1,2-Dichloroethene_9.1
Trichloroethylene__130
Vinyl Chloride__12

20 Nov 2015
1,1-Dichloroethene__2.4
cis-1,2-Dichloroethene_69
trans-1,2-Dichloroethene_2.8
Trichloroethylene__71
Vinyl Chloride__17

24 Oct 2016
1,1-Dichloroethene__0.79
cis-1,2-Dichloroethene_57
trans-1,2-Dichloroethene_4
Trichloroethylene__120
Vinyl Chloride__4

07 Sep 2017
1,1-Dichloroethene__1
cis-1,2-Dichloroethene_51.2
trans-1,2-Dichloroethene_4.72
Trichloroethylene__184
Vinyl Chloride__2.76

28 Feb 2020
1,1-Dichloroethene__0.55
cis-1,2-Dichloroethene_25.5
trans-1,2-Dichloroethene_1.62
Trichloroethylene___66.8
Vinyl Chloride_____3.65

OW24D
6.55-7.77m
23 Mar 2010
cis-1,2-Dichloroethene_450
trans-1,2-Dichloroethene_35
Trichloroethylene__2700

17 Jun 2011
1,1-Dichloroethene__30
cis-1,2-Dichloroethene_530
trans-1,2-Dichloroethene_40
Trichloroethylene__3400
Vinyl Chloride__46

20 Sep 2011
1,1-Dichloroethene__43
cis-1,2-Dichloroethene_720
trans-1,2-Dichloroethene_62
Trichloroethylene__5300
Vinyl Chloride__86

12 Dec 2012
1,1-Dichloroethene__33
cis-1,2-Dichloroethene_600
trans-1,2-Dichloroethene_55
Trichloroethylene__3900
Vinyl Chloride__45

21 Oct 2014
1,1-Dichloroethene__51
cis-1,2-Dichloroethene_740
trans-1,2-Dichloroethene_63
Trichloroethylene__5400
Vinyl Chloride__64

20 Nov 2015
1,1-Dichloroethene__64
cis-1,2-Dichloroethene_960
trans-1,2-Dichloroethene_81
Trichloroethylene__7900

24 Oct 2016
1,1-Dichloroethene__17
cis-1,2-Dichloroethene_340
trans-1,2-Dichloroethene_26
Trichloroethylene__2000
Vinyl Chloride__17

07 Sep 2017
1,1-Dichloroethene__9.93
cis-1,2-Dichloroethene_225
trans-1,2-Dichloroethene_22.7
Trichloroethylene__1170
Vinyl Chloride__14.2

02 Mar 2020
1,1-Dichloroethene__6.41(6.47)
cis-1,2-Dichloroethene_141 (139)
trans-1,2-Dichloroethene_12.7 (12.2)
Trichloroethylene___861 (991)
Vinyl Chloride_____3.46(3.36)

OW31
28.9-33.32m
19 Sep 2016
cis-1,2-Dichloroethene_1.88

08 Sep 2017
cis-1,2-Dichloroethene_1.98 (2.01)

17 Oct 2018
cis-1,2-Dichloroethene_2.01

02 Mar 2020: Meets SCS

OW24S
2.6-5.34m
23 Mar 2010
Trichloroethylene__85

17 Jun 2011
cis-1,2-Dichloroethene_4.2
Trichloroethylene__64

20 Sep 2011
cis-1,2-Dichloroethene_20
Trichloroethylene__76

12 Dec 2012
cis-1,2-Dichloroethene_3.8
Trichloroethylene__52

25 Oct 2013
cis-1,2-Dichloroethene_4.1
Trichloroethylene__54

21 Oct 2014
cis-1,2-Dichloroethene_7.1
Trichloroethylene__53

23 Dec 2015: Meets SCS

24 Oct 2016
1,1-Dichloroethene__1
cis-1,2-Dichloroethene_48
trans-1,2-Dichloroethene_2.5
Trichloroethylene__400

07 Sep 2017
1,1-Dichloroethene__0.85
cis-1,2-Dichloroethene_45.1
trans-1,2-Dichloroethene_2.47
Trichloroethylene__325

02 Mar 2020
cis-1,2-Dichloroethene_13
Trichloroethylene___144

- Approximate Groundwater Elevation
- Exceedance
- No Exceedance
- Vertical Delineation
- Vertical Delineation Inferred Extent
- Fill
- Silty Fine Sand
- Stone Road Member (Eramosa Formation)
- Reformatory Quarry Member (Eramosa Formation)
- Vinemount Member (Eramosa Formation)
- Ancaster Member (Goat Island Formation)
- Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

Figure 6-17c
Section C-C' - Groundwater Exceedances - VOCs
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

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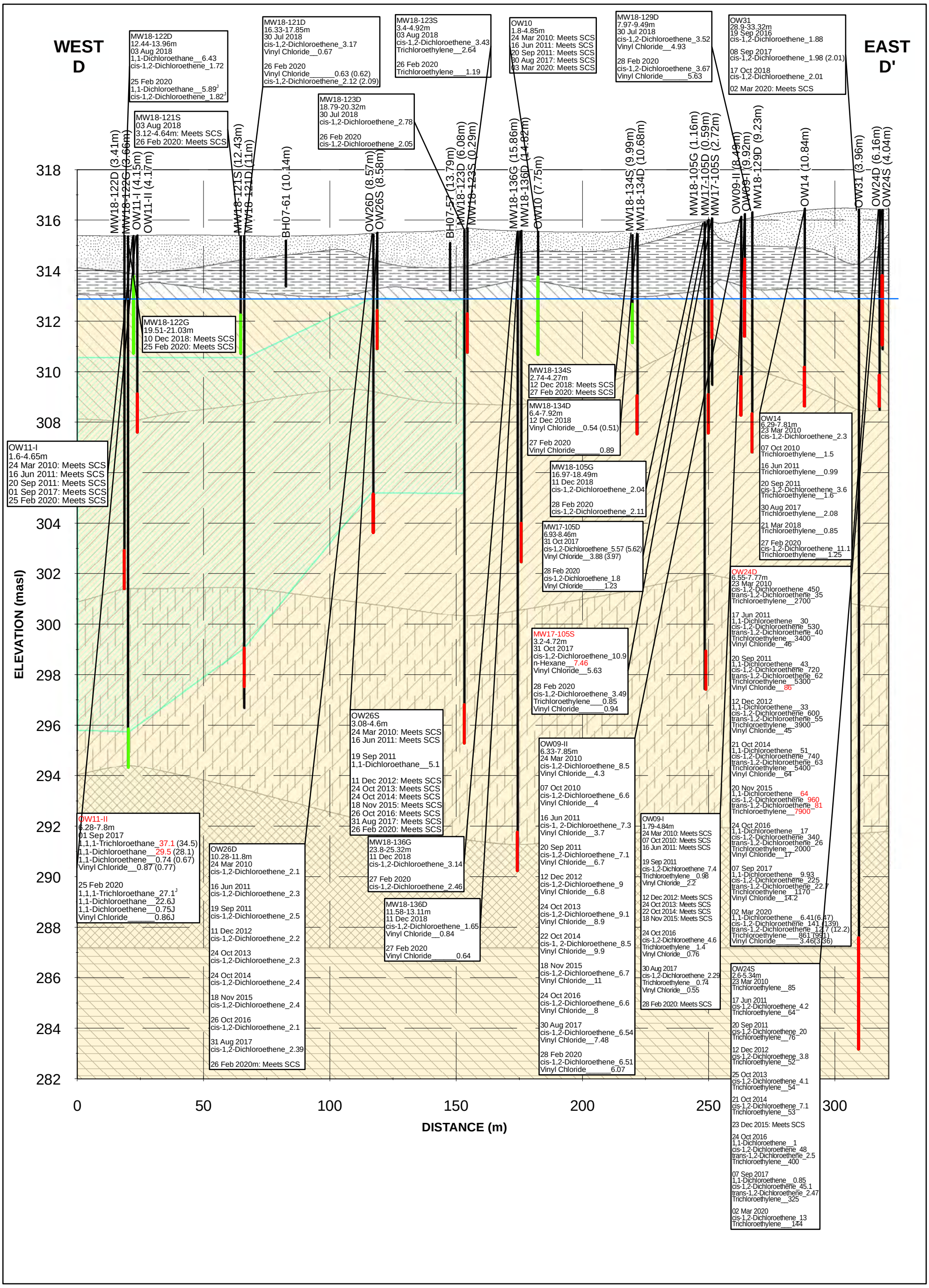
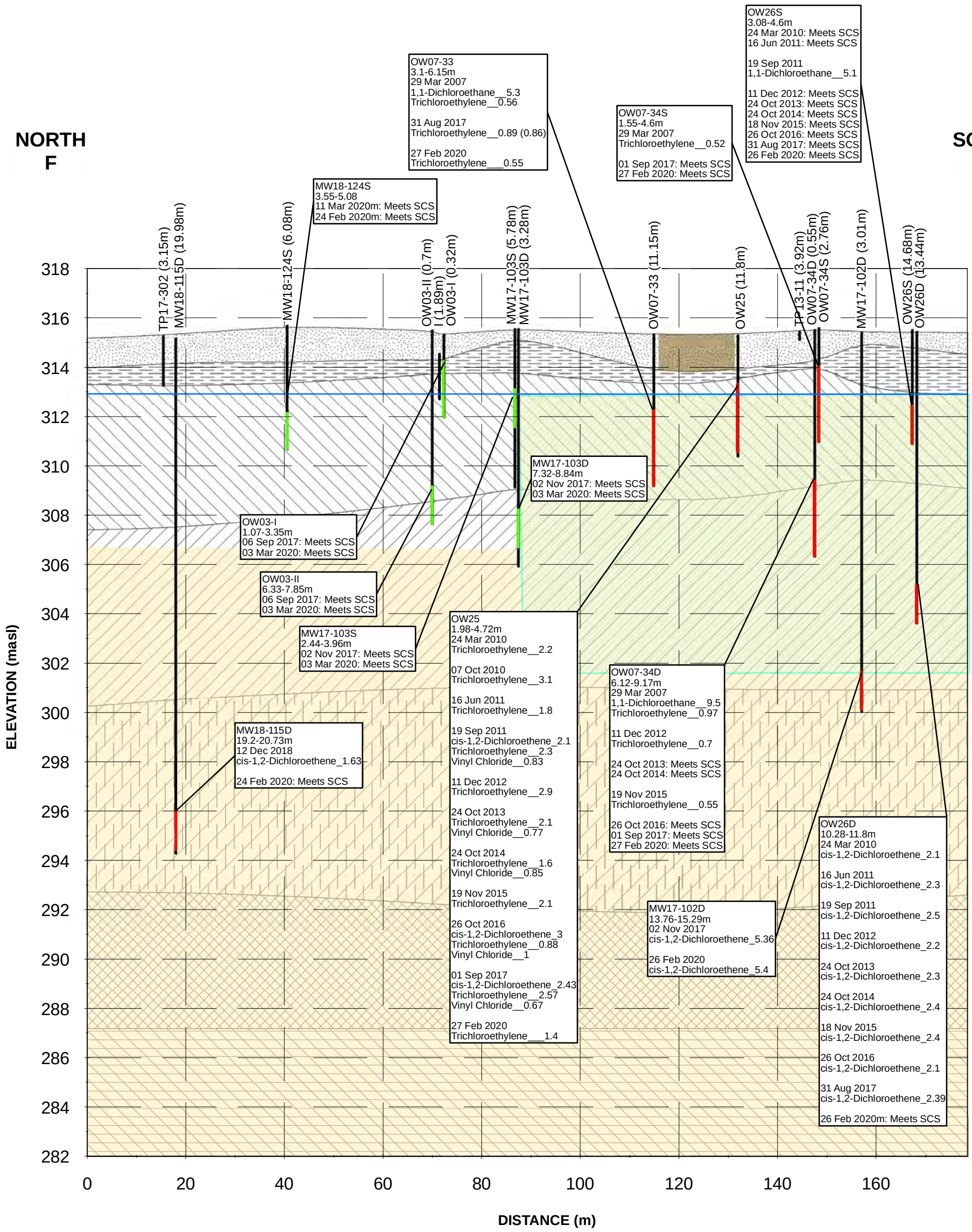


Approximate Groundwater Elevation
Exceedance
No Exceedance
Vertical Delineation
TCA/DCA Plume
Fill
Silty Fine Sand
Stone Road Member (Eramosa Formation)
Reformatory Quarry Member (Eramosa Formation)
Vinemount Member (Eramosa Formation)
Ancaster Member (Goat Island Formation)
Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

Figure 6-17d
Section D-D' - Groundwater Exceedances - VOCs
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs



- Approximate Groundwater Elevation
- Exceedance
- No Exceedance
- Vertical Delineation
- TCA/DCA Plume
- Excavation Area
- Fill
- Silty Fine Sand
- Stone Road Member (Eramosa Formation)
- Reformatory Quarry Member (Eramosa Formation)
- Vinemount Member (Eramosa Formation)
- Ancaster Member (Goat Island Formation)
- Niagara Falls Member Grainstone (Goat Island Formation)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. The offset distance from the cross-section line are shown in brackets following the location ID.
3. masl = metres above sea level
4. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
5. The average water table elevation of 312.9 masl for monitoring events between December 2017 and August 2018 is presented. Groundwater elevations at the Site ranged between 312.5 and 313.7 masl during this period.

Figure 6-17e
Section F-F' - Groundwater Exceedances - VOCs
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

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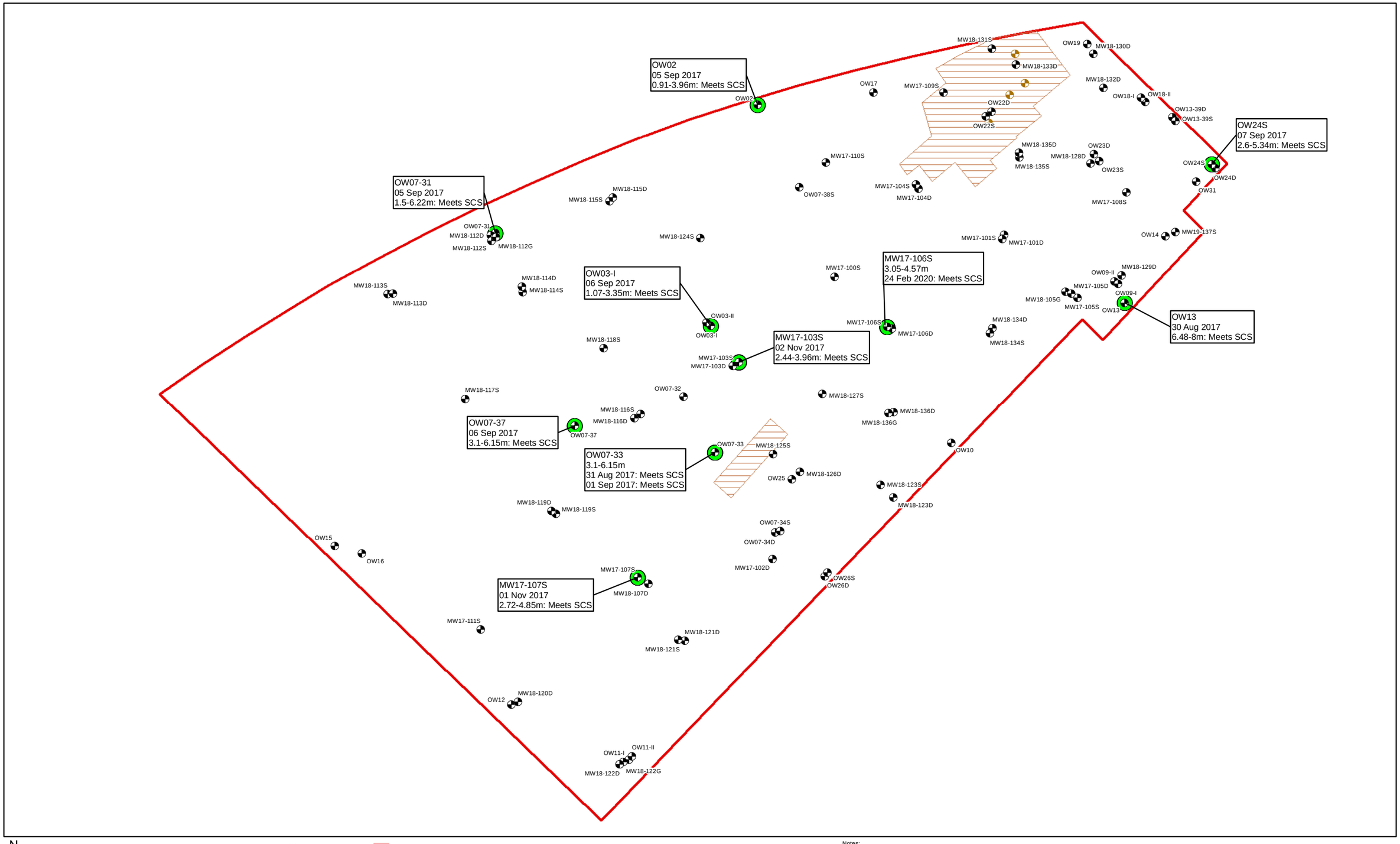

N

0 10 20 30
Metres

Sample Locations
Monitoring Well
Excavated Locations
Monitoring Well

No Exceedance

Former IMICO Property Boundary
Historical Excavation area, EarthTech, 1999

Notes:
1. Historical locations are approximate. All samples, including those within excavation areas that have been removed (i.e. prior to 1999) have been shown for screening purposes.
2. Results in ( ) indicate field duplicates.
3. "J" indicates associated value is estimated.
4. Red text indicates the location of the Site maximum concentration of the analyte.

Figure 6-18
Groundwater Exceedances - CPs
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

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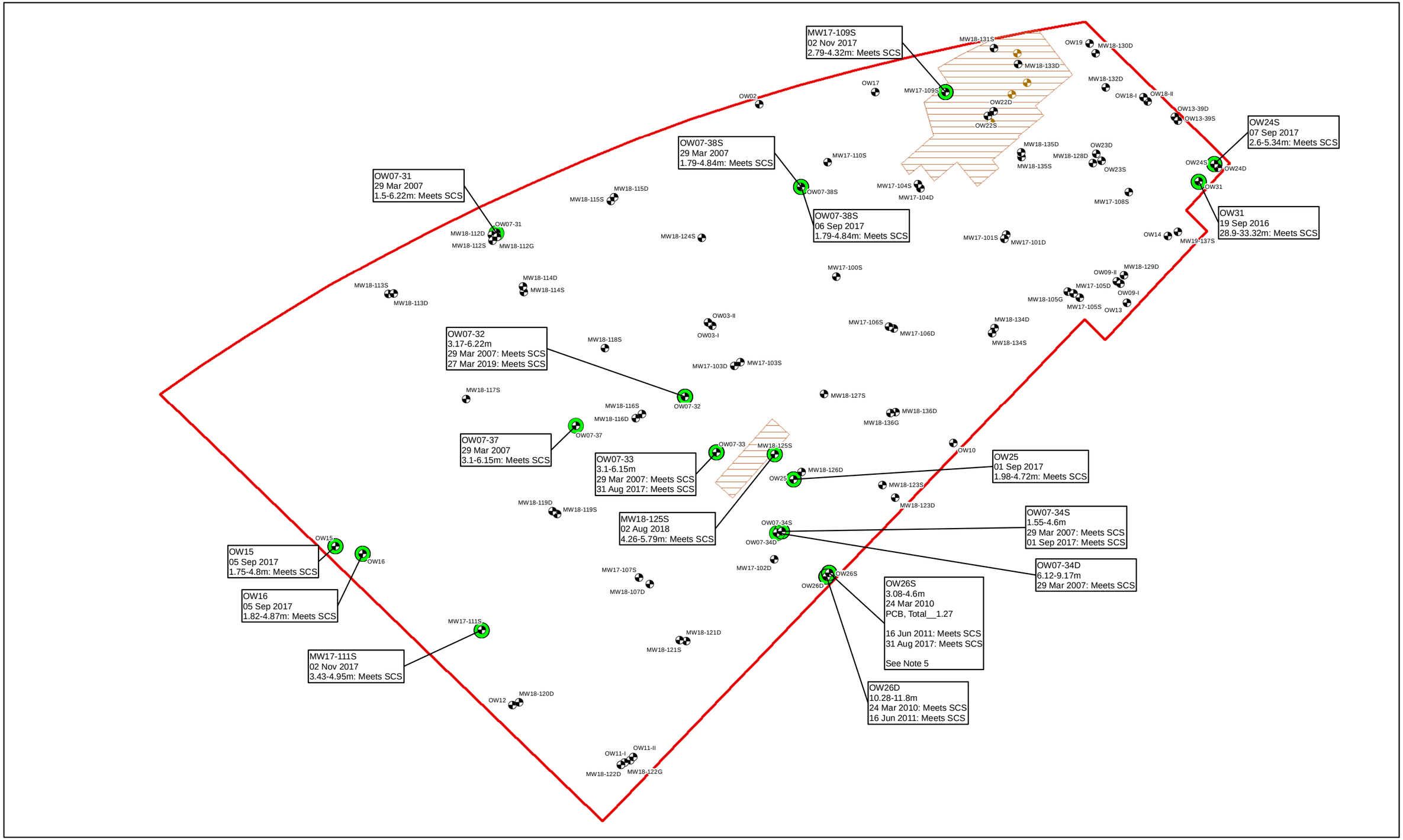

N

0 10 20 30
Metres

Sample Locations
Monitoring Well
Excavated Locations
Monitoring Well

No Exceedance

Former IMICO Property Boundary
Historical Excavation area, EarthTech, 1999

Notes:
1. Historical locations are approximate. All samples, including those within excavation areas that have been removed (i.e. prior to 1999) have been shown for screening purposes.
2. Results in ( ) indicate field duplicates.
3. "J" indicates associated value is estimated.
4. Red text indicates the location of the Site maximum concentration of the analyte.
5. Parameter(s) previously exceeding are considered to meet the SCS based on two clean subsequent samples. See Table 6-10c for additional details.

Figure 6-19
Groundwater Exceedances - PCBs
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

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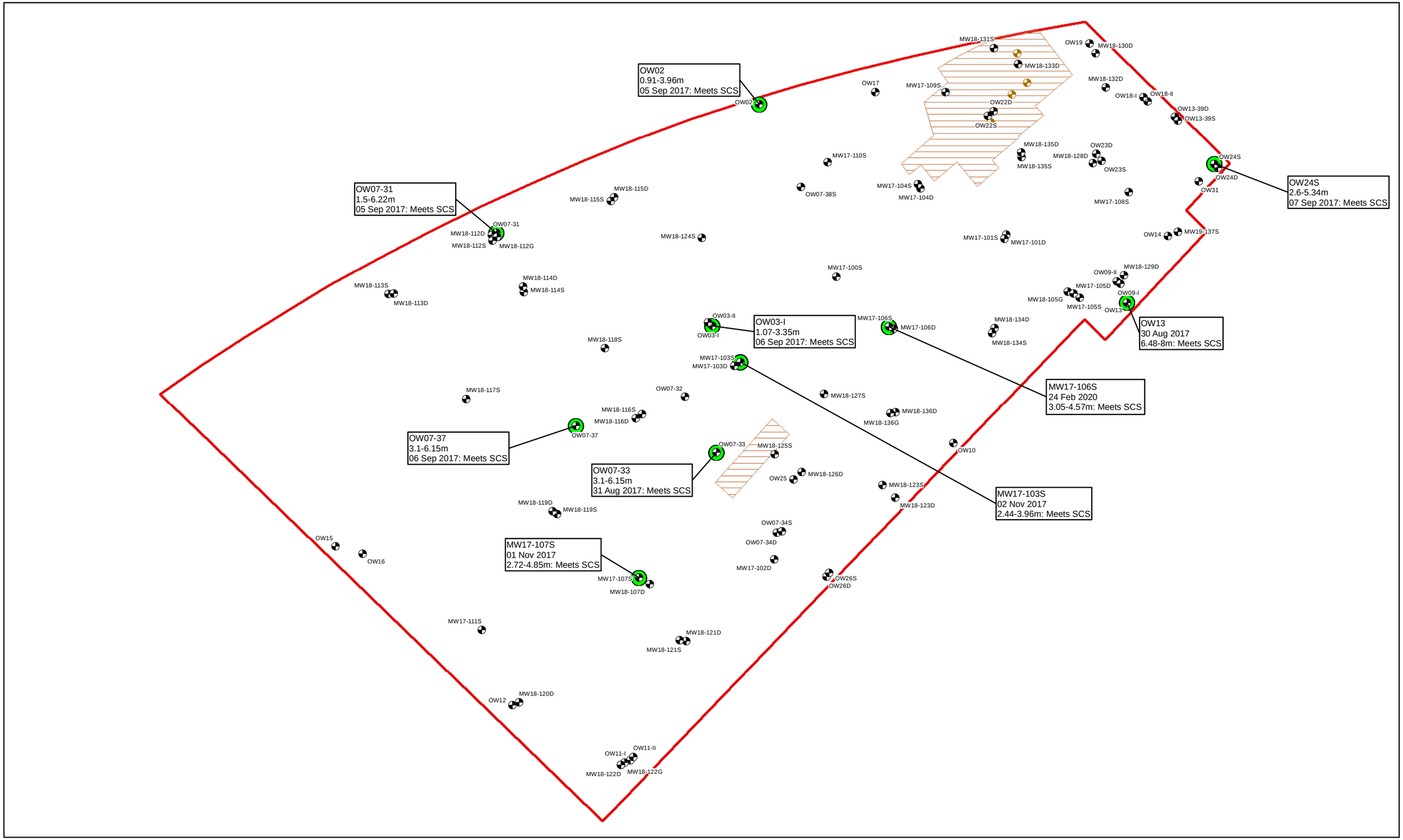

N

0 10 20 30
Metres

Sample Locations
Monitoring Well
Excavated Locations
Monitoring Well

No Exceedance

Former IMICO Property Boundary
Historical Excavation area, EarthTech, 1999

Notes:
1. Historical locations are approximate. All samples, including those within excavation areas that have been removed (i.e. prior to 1999) have been shown for screening purposes.
2. Results in ( ) indicate field duplicates.
3. "J" indicates associated value is estimated.
4. Red text indicates the location of the Site maximum concentration of the analyte.

Figure 6-20
Groundwater Exceedances - ABNs
Site Characterization and Conceptual Site Model
Former IMICO Foundry Facility
200 Beverley Street, Guelph, Ontario

Jacobs

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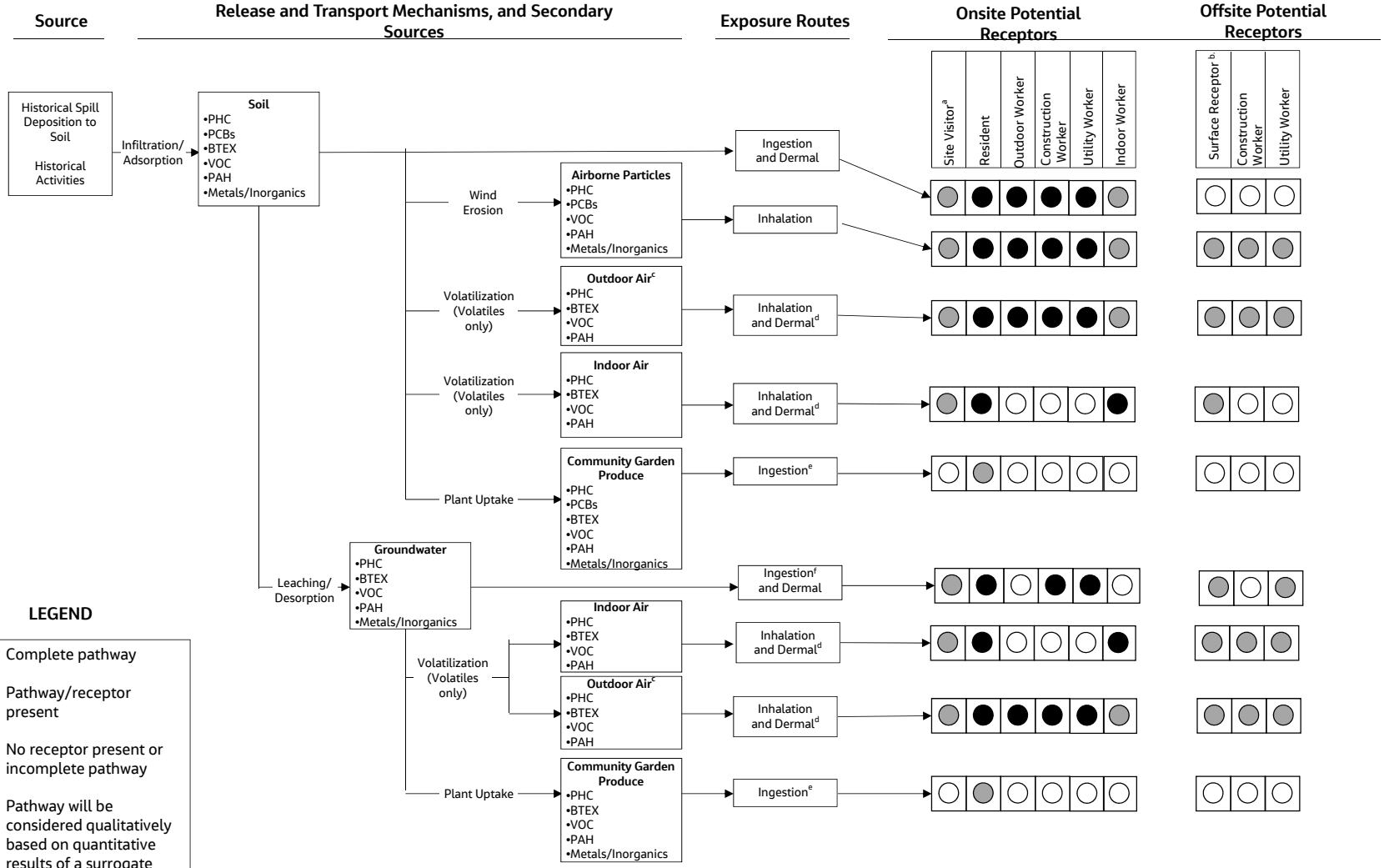


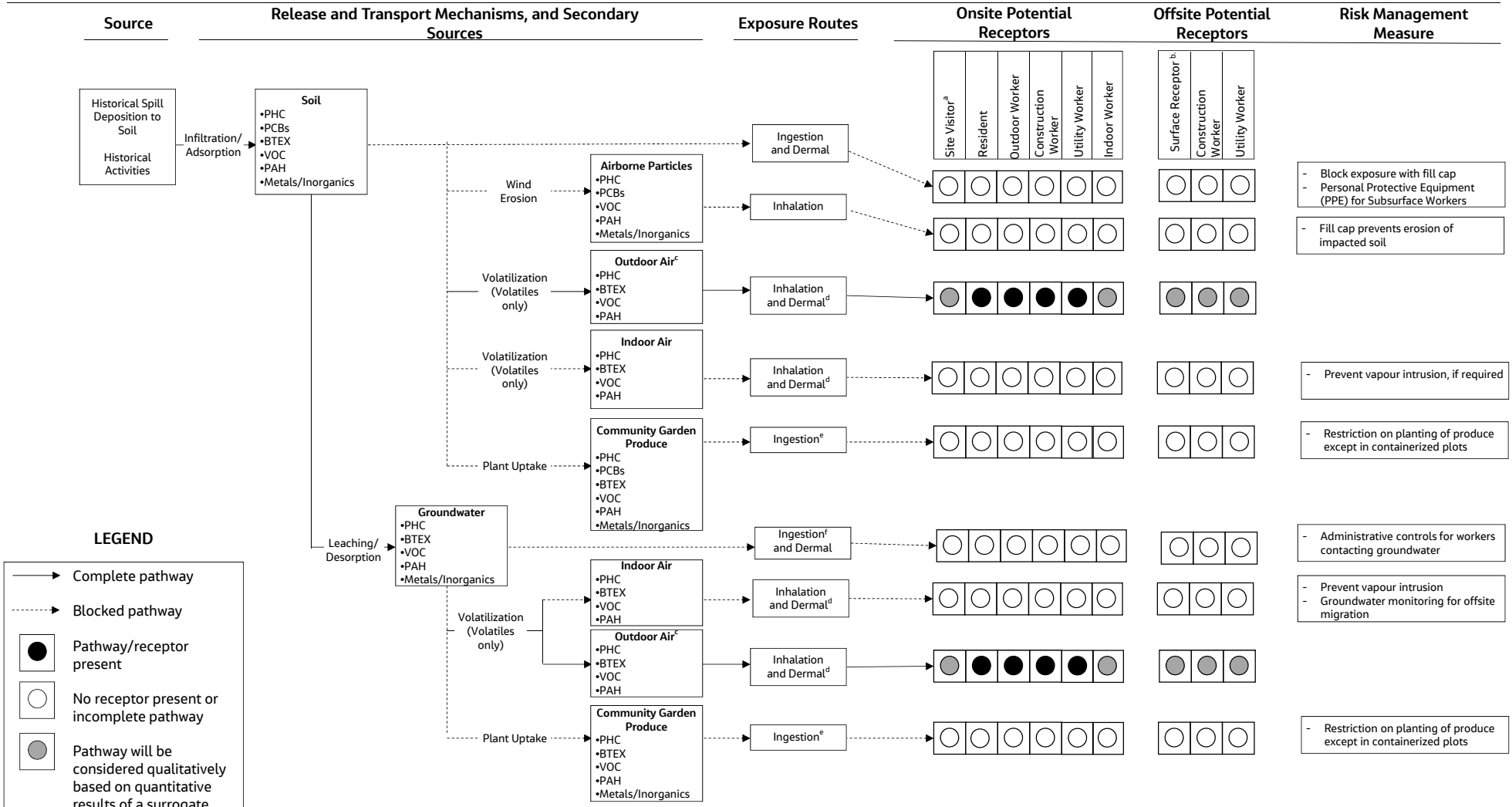
COC = contaminant of concern
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PHC = petroleum hydrocarbon
RMM = risk management measure
BTEX = benzene, toluene, ethylbenzene, xylenes
VOC = volatile organic compound

Notes:

a. Site Visitors from all age categories would be anticipated to frequent the Site.
b. Surface Receptor incorporates offsite surface receptors (that is, receptors not engaged in subsurface excavation activities), such as indoor workers, visitors, outdoor workers, or patrons of nearby properties that may be exposed to dust (soil particulates) or groundwater migrating offsite during the redevelopment of the property in the absence of RMMs.
c. Outdoor air inhalation includes both ambient and trench air inhalation, as appropriate.
d. Dermal exposure to vapours is a negligible pathway and will not be considered quantitatively.
e. There is high uncertainty associated with assessing the potential exposure to site COCs through ingestion of garden produce; therefore this pathway will not be considered quantitatively.
f. As groundwater at the Site is potable, the ingestion of groundwater pathway includes both incidental ingestion (as a result of subsurface activities) and ingestion of water from the municipal water supply

Figure 6-21. Human Health Conceptual Site Model
200 Beverley Street, Guelph, Ontario)

Jacobs



COC = contaminant of concern
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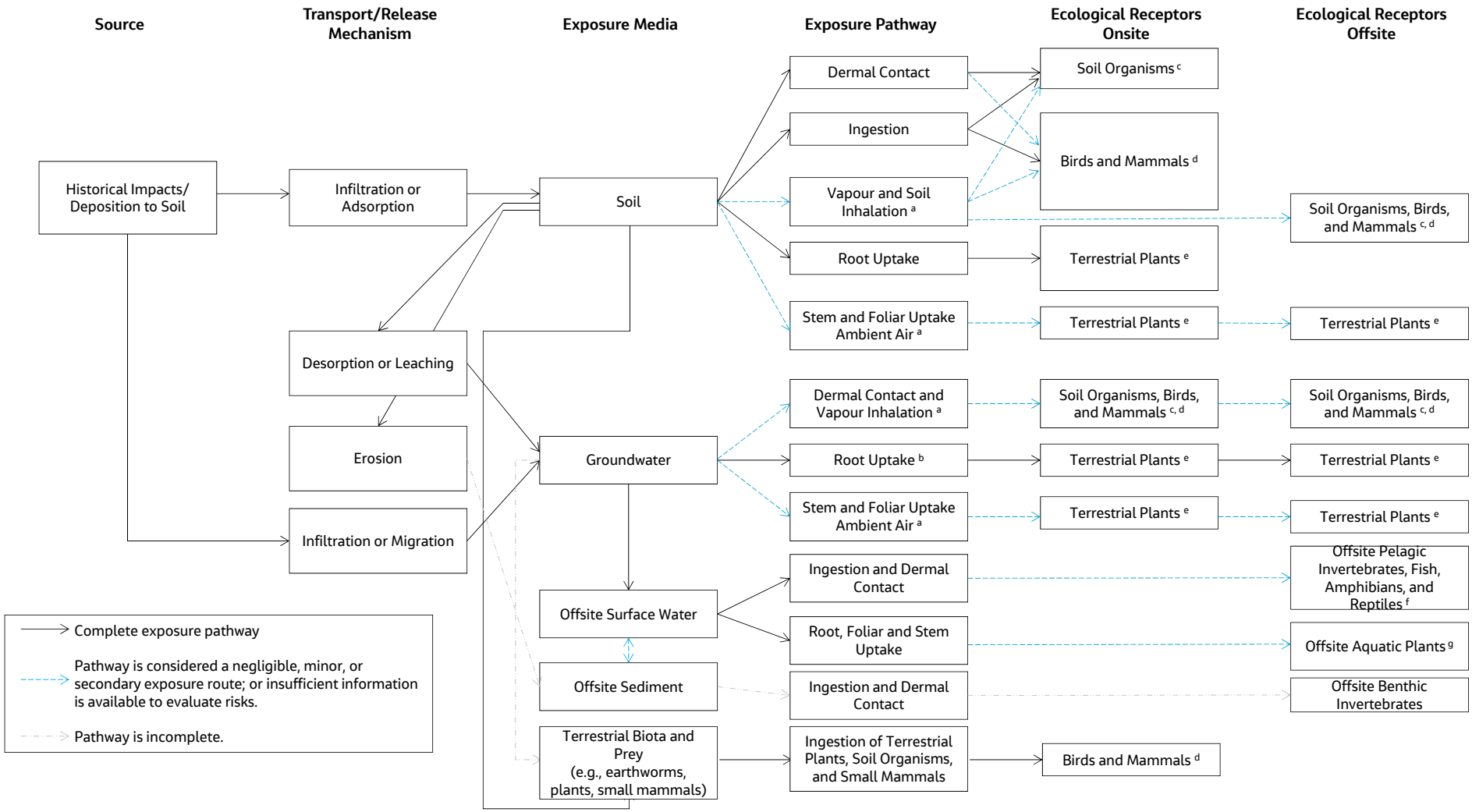
c. Outdoor air inhalation includes both ambient and trench air inhalation, as appropriate.
d. Dermal exposure to vapours is a negligible pathway and will not be considered quantitatively.
e. There is high uncertainty associated with assessing the potential exposure to site COCs through ingestion of garden produce; therefore this pathway will not be considered quantitatively.
f. As groundwater at the Site is potable, the ingestion of groundwater pathway includes both incidental ingestion (as a result of subsurface activities) and ingestion of water from the municipal water supply

Figure 6-22. Human Health Conceptual Site Model with Risk Management Measures
200 Beverley Street, Guelph, Ontario)

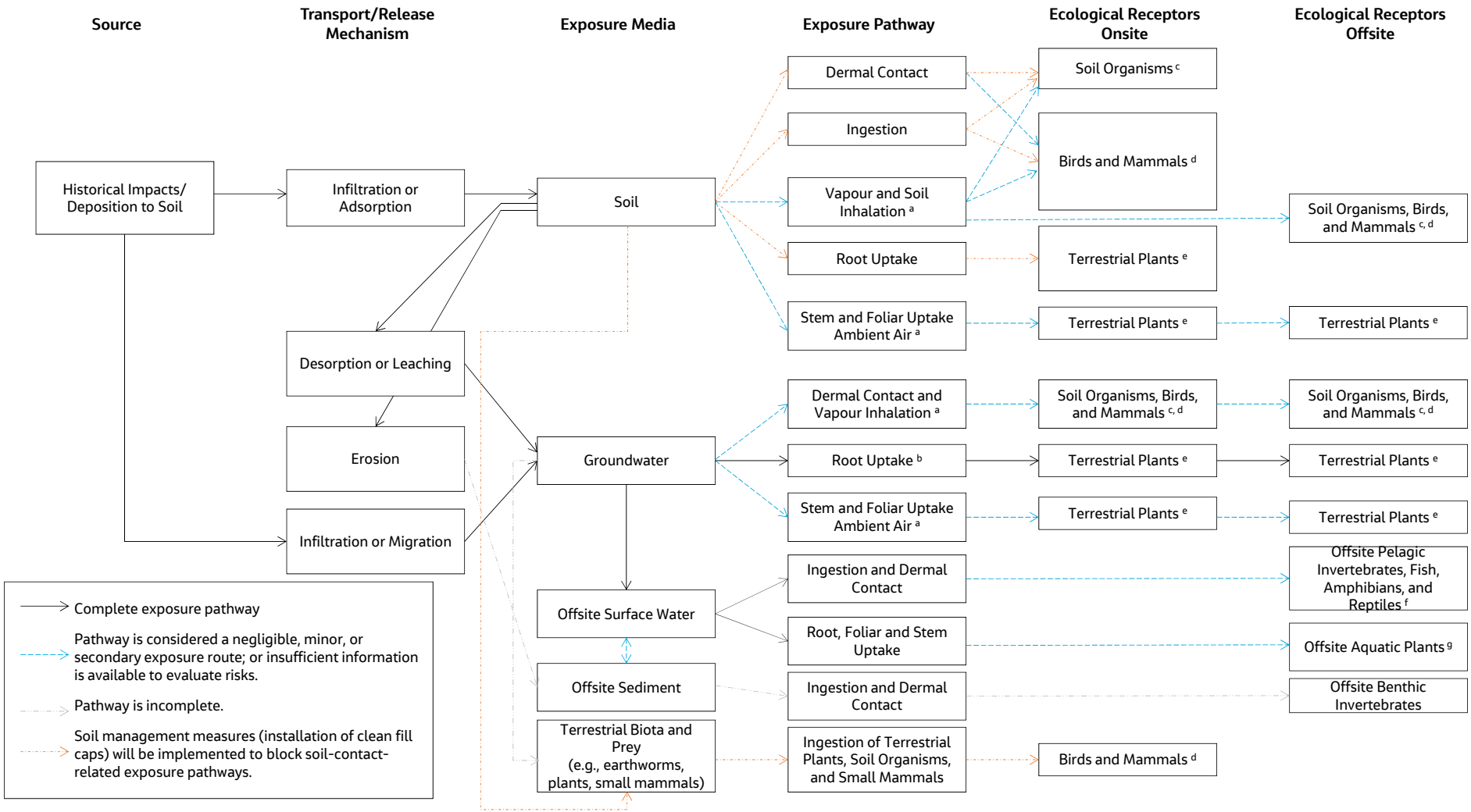
Jacobs



Notes:
a. Vapour and soil inhalation, and uptake of ambient air are secondary routes of exposure; limited toxicological information is available to evaluate these pathways.
b. Minimum depth to groundwater is less than 1.5 metres below ground surface.
c. Selected VECs: Earthworms for soil organisms.
d. Selected VECs: American Woodcock, Red-winged Blackbird, and Red-tailed Hawk for birds; Meadow Vole, Red Fox, and Short-tailed Shrew for mammals.
e. Selected VECs: Grasses and Manitoba Maple for terrestrial plants.
f. Selected VECs: Daphnia for pelagic invertebrates; Common Shiner and Northern Pike for fish; Green Frog for amphibians; and Midland Painted Turtle for reptiles.
g. Selected VECs: *Carex spp.* for aquatic plants.

Figure 6-23. Ecological Conceptual Site Model
200 Beverley Street, Guelph, Ontario

Jacobs



Notes:

a. Vapour and soil inhalation, and uptake of ambient air are secondary routes of exposure; limited toxicological information is available to evaluate these pathways.
b. Minimum depth to groundwater is less than 1.5 metres below ground surface.
c. Selected VECs: Earthworms for soil organisms.
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e. Selected VECs: Grasses and Manitoba Maple for terrestrial plants.
f. Selected VECs: Daphnia for pelagic invertebrates; Common Shiner and Northern Pike for fish; Green Frog for amphibians; and Midland Painted Turtle for reptiles.
g. Selected VECs: *Carex spp.* for aquatic plants.

Figure 6-24. Ecological Conceptual Site Model with Risk Management Measures
200 Beverley Street, Guelph, Ontario

Jacobs

Appendix A
Plan of Survey

METRIC: DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

PLAN OF SURVEY OF
PARTS OF LOTS 1, 2 and 3 RANGE 3, DIVISION 'F' PART OF BEVERLY STREET (CLOSED BY BY–LAW 4355–1957) REGISTERED PLAN 343 CITY OF GUELPH

SCALE – 1 : 400

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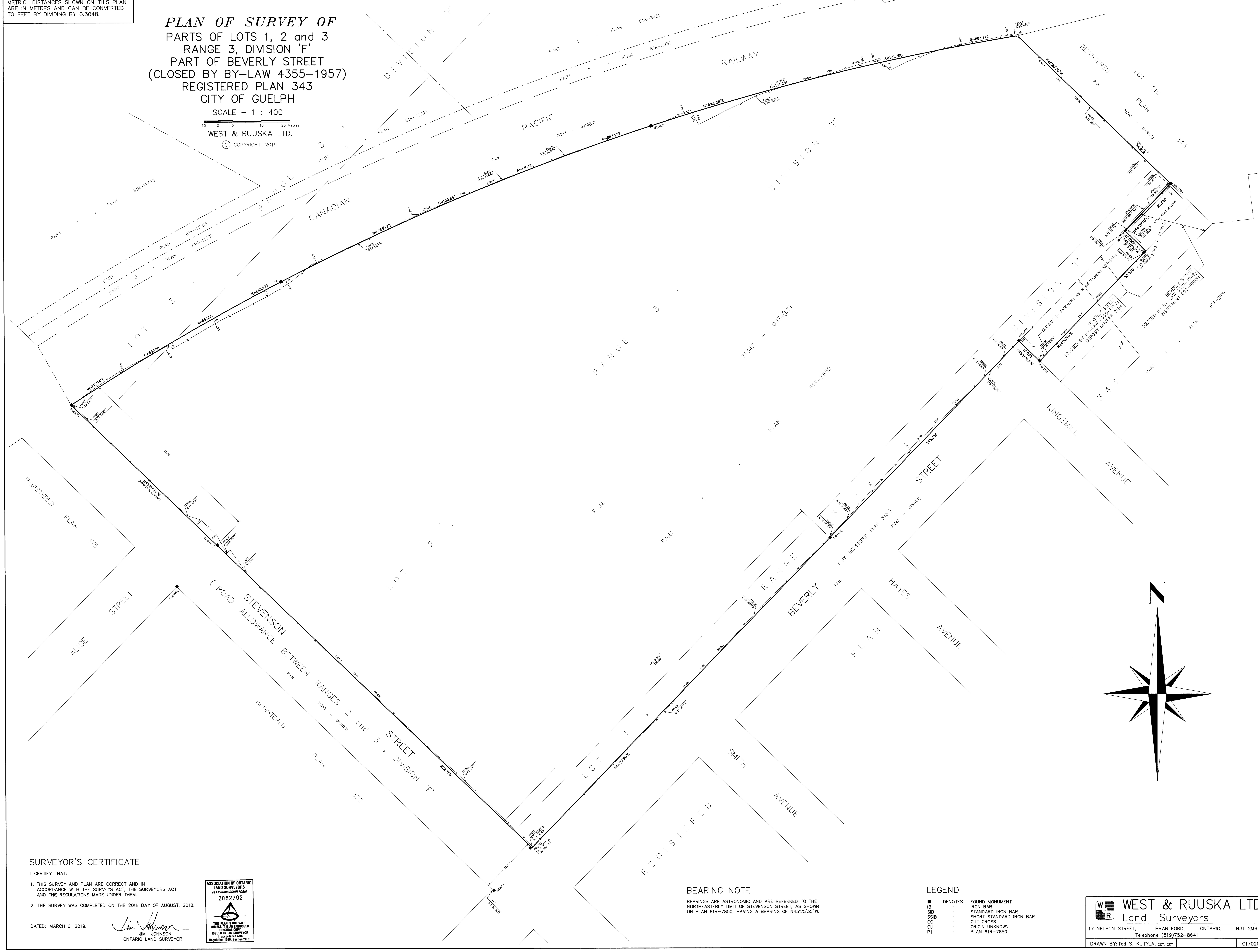

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:

1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM.
2. THE SURVEY WAS COMPLETED ON THE 20th DAY OF AUGUST, 2018.

DATED: MARCH 6, 2019.

JIM JOHNSON
ONTARIO LAND SURVEYOR

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
2082702
THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR In accordance with Regulation 1026, Section 29(3).

BEARING NOTE

BEARINGS ARE ASTRONOMIC AND ARE REFERRED TO THE NORTHEASTERLY LIMIT OF STEVENSON STREET, AS SHOWN ON PLAN 61R–7850, HAVING A BEARING OF N45°25'35"W.

LEGEND

■	DENOTES	FOUND MONUMENT
IB	"	IRON BAR
SIB	"	STANDARD IRON BAR
SSIB	"	SHORT STANDARD IRON BAR
CC	"	CUT CROSS
OU	"	ORIGIN UNKNOWN
P1	"	PLAN 61R–7850

WEST & RUUSKA LTD.
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17 NELSON STREET, BRANTFORD, ONTARIO, N3T 2M6
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DRAWN BY: Ted S. KUTYLA, CST, CET | C170202

Appendix B
Sampling and Analysis Plans

Appendix B: Table 1

Phase Two ESA Sampling and Analytical Plan: IMICO

Location ID	APEC[1]	Existing or New Location	Media	Approx. Depth to Bedrock (mbgs)	Approx. Depth of TP/BH/MW (mbgs)	Screen Length (m)	O.Reg. 153/04 Metals & Inorganics	O. Reg. 153/04 Hydride-forming Metals (Sb, As, Se)	O. Reg. 153/04 Metals only (Section 1.2.2 in Protocol Doc)	PAHs (lab filter for B(a)P)	ABNs (includes phenol)	Chlorophenols	SVOCs (PAH, ABNs, Chlorophenol)	PHCs	BTEX	VOCs	1,4-Dioxane	PCB Aroclors	Dioxin/Furans	Grain Size Distribution (sieve and hydrometer)	TOC	Purpose and Justification
BH17-01		New	Soil	2.7	2.7	NA	2			1	2			2		2	2			2	2	Maximum zinc concentration in soil detected at TP9 from 0.0 to 0.08 mbgs and PAHs above Table 6 RPI standards. Collect metals and ABN (phenol) from foundry sand. Phenol commonly associated with foundry sand and has not been characterized in soil. Collect metals, ABN (phenol) and PAH sample from native soil just above bedrock for vertical delineation. VOC, 1,4-Dioxane and PHC characterization and horizontal delineation of soil in the southeast corner of the site. 1, 4-Dioxane not previously characterized in soil and it is known to be associated with TCE and TCA. Collect VOC, 1,4-Dioxane and PHC from worst case soil based on field screening and collect second set from greater depth near bedrock interface to provide vertical delineation. Collect grain size and TOC samples from shallow fill and native soil.
TP17-01		New	Soil	1.7	1.7	NA	2				2			1		1		2	2			Phenol commonly associated with foundry sand and has not been characterized in soil. Collect metals and ABNs (phenol) from foundry sand and from a deeper native soil sample for vertical delineation. PHC and PCB exceedance for Table 6 RPI in soil at BH07-67 from 0.05 to 0.91 mbgs. PCBs were delineated vertically at BH07-67. Horizontal delineation of PCBs and PHCs to the south. Collect PCB and Dioxin/Furans sample from 0-0.3 mbgs, and one PCB and Dioxin/Furans from 0.3-0.6mbgs. Place deeper PCB and both Dioxin/Furans samples on hold pending the PCB result from the shallow sample. Collect PHCs and VOCs from worst case soil based on field screening.
TP17-02		New	Soil	1.7	1.7	NA	2			2	2			2		2				2	2	Phenol commonly associated with foundry sand and has not been characterized in soil. Collect metals and ABNs (phenol) from foundry sand and from a deeper native soil sample for vertical delineation. PAHs exceeded Table 6 RPI in shallow soil at OW07-32 and BH07-56. Provide vertical delineation for PAHs. Analysis of PHCs and VOCs for overall site coverage. Collect PAHs, PHCs and VOCs from shallow worst case soil based on field screening and from greater depth for vertical delineation. Collect grain size and TOC samples from shallow fill and native soil.
TP17-03		New	Soil	2	2	NA				2	2			2		2				2	2	Phenol commonly associated with foundry sand and has not been characterized in soil. Collect metals and ABNs (phenol) from foundry sand and from a deeper native soil sample for vertical delineation. Horizontal delineation of PAHs west of BH07-51 and northeast of BH07-56. Analysis of PHCs and VOCs for overall site coverage. Collect PAHs, PHCs and VOCs from shallow worst case soil based on field screening and from greater depth for vertical delineation. Collect grain size sample and TOC samples from shallow fill and native soil.
MW17-01S, D		New	Soil	2.3	2.3	NA	2			2	2			2		2	2	2	2			Phenol commonly associated with foundry sand and has not been characterized in soil. Collect metals and ABNs (phenol) from foundry sand and from a deeper native soil sample for vertical delineation. LNAPL located to the east at OW23-S. Soil delineation for VOCs, 1,4-Dioxane PHCs and PAHs to the west of the LNAPL area and provide vertical characterization. 1, 4-Dioxane not previously characterized
			Shallow		6		1			1				1		1	1					
			Deep		9		1			1				1		1	1					
MW17-02D		New	Soil	2.3	2.3		2			2	2			2		2						Phenol commonly associated with foundry sand and has not been characterized in soil. Collect metals and ABNs (phenol) from foundry sand and from a deeper native soil sample for vertical delineation. Maximum soil PAH detected at OW07-34 from 0 to 1.22 mbgs. To
			Deep		13											1						
MW17-03D		New	Soil	1.7	1.7					2						2						PAHs exceed Table 6 RPI at OW07-32 from 0.0 to 1.07 mbgs and benzene at TP11-6 from 0.10 to 0.20 mbgs. Collect PAH and VOC soil sample from worst case shallow soil based on field screening for horizontal delineation to the west of OW07-32 and a sample from
			Deep		13											1						
MW17-04S, D		New	Soil		1.9		2			2	2			2		2						Phenol commonly associated with foundry sand and has not been characterized in soil. Collect metals and ABNs (phenol) from foundry sand and from a deeper native soil sample for vertical delineation. Elevated PHCs suggesting the presence of LNAPL located to the east at OW22-S. Soil delineation for VOCs, PHCs and PAHs to the west of the potential LNAPL area and provide vertical characterization.
			Shallow		6		1			1				1		1						
			Deep		9		1			1				1		1						
MW17-05D		New	Soil	2.7	13		2			2	2			1		1					1	Phenol commonly associated with foundry sand and has not been characterized in soil. Collect metals and ABNs (phenol) from foundry sand and from a deeper native soil sample for vertical delineation. PAHs exceed Table 6 RPI in soil to the northeast at BH07-41 and TP-
			Deep													1						
MW17-06S, D		New	Soil		1.8		2			2	2			2		2					1	Characterize soil and groundwater in the area of a former gasoline UST and foundry sumps in the central portion of the site. Collect PAHs, PHCs and VOCs from worst case shallow soil based on field screening and second sample from deeper above bedrock to delineate vertically (TOC at this depth). Phenol commonly associated with foundry sand and has not been characterized in soil. Collect
			Shallow	1.8	6		1			1				1		1						
			Deep		9									1		1						
OW02	APEC-25, APEC-29, APEC-30	Existing	Shallow Groundwater	1.42	4	3.05	1						1	1		1						VOC, PAHs and PHC data to be sampled as per annual sampling program for 2017. Historical exceedances of VOCs and PHCs; non-detect results from 2004 to 2016. SVOCs and full metal analysis required for APEC coverage and for shallow north-western property coverage.
OW03-I	APEC-4, (APEC-7), APEC-29	Existing	Shallow Groundwater	1.66	3.4	2.28	1						1	1		1						PAHs to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes, and update of VOC and PHC data for shallow central property coverage added. ABNs and CPs added for APEC coverage.
OW03-II	APEC-4, (APEC-7),	Existing	Deep Groundwater	1.8	7.85	1.52	1			1				1		1						PAHs to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes, update of VOC and PHC for deep central property coverage.
OW04	APEC-8, APEC-9, APEC-29	Existing	Shallow Groundwater	2.29	3.1	1.83	1			1				1		1						Horizontal delineation of PAHs and PHC impacts in OW23S to the south (downgradient). Horizontal delineation of zinc impacts to the east (OW9-I) and full metal analysis for RSC purposes and APEC covereage. Determine limit of shallow VOCs impacts.
OW09-I	APEC-19, APEC-29	Existing	Shallow Groundwater	2.8	4.84	3.05	1			1				1		1						VOC, PHC and zinc to be sampled as per annyal sampling program for 2017. Horizontal delineation of PAHs impacts in OW23S to the south (downgradient) and for APEC coverage. Full metals analysis required for RSC purposes added; this location has known shallow zinc, TCE and VC impacts. MDLs have often exceeded standards for VOCs.
OW09-II	APEC-19, APEC-29	Existing	Deep Groundwater	2.8	7.85	1.52	1			1				1		1						VOC, PHC and zinc to be sampled as per annyal sampling program for 2017. Known VOC and metal (zinc and lead) exceedances. Full metals analysis required for RSC purposes, vertical delineation of known shallow zinc impacts at this location. Update PAH data for eastern corner of property and for APEC coverage.
OW10	APEC-14, APEC-29, APEC-32	Existing	Shallow Groundwater	2.1	4.85	3.05	1			1				1		1						VOC, PAHs, and PHC data update along south-eastern property boundary, for APEC coverage, and delineation. Known impacts at OW25, OW26S/D, OW07-34S/D. Full metals analysis required for RSC purposes, south-eastern property boundary coverage.
OW11-I	APEC-29, APEC-32	Existing	Shallow Groundwater	1.7	4.65	3.05	1			1				1		1						Full metals analysis required for RSC purposes. Update of VOC, PAHs, and PHC data for shallow southern property coverage.
OW11-II	APEC-29, APEC-32	Existing	Deep Groundwater	1.7	7.8	1.52	1			1				1		1						Full metals analysis required for RSC purposes. Update of VOC, PAHs, and PHC data for deep southern property coverage.

Appendix B: Table 1

Phase Two ESA Sampling and Analytical Plan: IMICO

Location ID	APEC[1]	Existing or New Location	Media	Approx. Depth to Bedrock (mbgs)	Approx. Depth of TP/BH/MW (mbgs)	Screen Length (m)	O.Reg. 153/04 Metals & Inorganics	O. Reg. 153/04 Hydride-forming Metals (Sb, As, Se)	O. Reg. 153/04 Metals only (Section 1.2.2 in Protocol Doc)	PAHs (lab filter for B(a)P)	ABNs (includes phenol)	Chlorophenols	SVOCs (PAH, ABNs, Chlorophenol)	PHCs	BTEX	VOCs	1,4-Dioxane	PCB Aroclors	Dioxin/Furans	Grain Size Distribution (sieve and hydrometer)	TOC	Purpose and Justification
OW12	APEC-27, APEC-28, APEC-29, APEC-33	Existing	Shallow Groundwater	2.2	4.81	3.05	1			1				1		1	1					Full metals analysis required for RSC purposes. Update of VOC, PAHs, and PHC data for shallow western property boundary. 1,4-Dioxane added for TCA exceedance.
OW13	APEC-19, APEC-29, APEC-31	Existing	Deep Groundwater	3.1	8	1.52	1						1	1		1						Horizontal delineation (deep) of known VOC impacts in OW9-II. Known VOC and zinc exceedances at this location. SVOCs (ABNs, PAHs and CPs) and PHCs added for APEC coverage.
OW14	APEC-29 (APEC-5)	Existing	Deep Groundwater	2.8	7.81	1.52	1			1				1		1	1					Full metals analysis required for RSC purposes. Update of VOC, PAHs, and PHC data for shallow eastern property boundary.
OW15	APEC-20, APEC-29, APEC-33	Existing	Shallow Groundwater	1.7	4.8	3.05	1			1				1		1		1				Full metals analysis required for RSC purposes. Update of VOC, PAHs, and PHC data for shallow western property coverage. PCBs added for coverage of APEC in groundwater based on historical soil historical exceedance.
OW16	APEC-20, APEC-29, APEC-33	Existing	Shallow Groundwater	1.8	4.87	3.05	1			1				1		1		1				Full metals analysis required for RSC purposes. Update of VOC, PAHs, and PHC data for shallow western property coverage. PCBs added for coverage of APEC in groundwater based on historical soil historical exceedance.
OW17	APEC-25, APEC-29, APEC-30	Existing	Shallow Groundwater	2.6	4.84	3.05	1			1				1		1						Horizontal delineation of PAHs, zinc, and PHC impacts to the northwest (cross-gradient) from OW22S. Determine western limit of shallow TCE impacts (west of offsite OW6). Full metals analysis required for RSC purposes.
OW18-I	APEC-10, APEC-31	Existing	Shallow Groundwater	3	4.86	3.05	1			1				1		1						VOC, PAHs, PHC and zinc to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes. Location with known shallow zinc, B(a)P and VOC impacts.
OW18-II	APEC-10, APEC-31	Existing	Deep Groundwater	3.2	7.84	1.52	1			1				1		1						VOC, PAHs, PHC and zinc to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes. Location with known zinc and VOC impacts. Vertical delineation of known shallow zinc, PAH and VOC impacts.
OW19	APEC-10, APEC-11, APEC-31	Existing	Shallow Groundwater	1.8	4.82	3.05	1			1				1		1						VOC, PAHs, PHC and zinc to be sampled as per annual sampling program for 2017. Horizontal delineation of PHC impacts to the northeast (cross-gradient) from OW22S. Determine northern limit of shallow VOC impacts (north of OW18-I). Full metals analysis required for RSC purposes. Location with known shallow zinc and VOC impacts.
OW22S	APEC-11, APEC-29	Existing	Shallow Groundwater	1.7	4.1	2.74	1			1				1		1						PAHs, PHC and zinc to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes. Location with known shallow zinc, PAH, PHC and BTEX impacts. Update of VOCs for horizontal delineation of shallow VOC impacts.
OW22D	APEC-11, APEC-29	Existing	Deep Groundwater	1.7	7.47	0.76	1							1		1	1					PAHs, PHC and zinc to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes, vertical delineation of known shallow zinc impacts. Update of VOCs for vertical and horizontal delineation of deep VOC impacts. 1,4-Dioxane added based on historical TCA exceedance.
OW23S	APEC-10	Existing	Shallow Groundwater	2.5	5.26	2.74	1			1				1		1						VOCs and PAHs to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes, horizontal delineation of known shallow zinc impacts (OW22S, OW18-I, OW9-I). PHCs included based on historical LNAPL observed in this location. Historical exceedances of VOCs, PAHs and PHCs. Do not sample if LNAPL found.
OW23D	APEC-10	Existing	Deep Groundwater	1.9	7.77	1.22	1			1				1		1	1					VOCs, PAHs and PHCs to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes, vertical delineation of known shallow zinc impacts (OW22S, OW18-I, OW9-I). Historical exceedances of VOCs, PHCs.
OW24S	APEC-31	Existing	Shallow Groundwater	3.3	5.34	2.74	1						1	1		1		1				VOCs and PAHs to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes, horizontal delineation of known shallow zinc impacts (OW18-I, OW9-I). Update PHC data for eastern corner of property, deep offsite impacts in nearby OW30D (offsite shallow OW30S not sampled). SVOCs and PCBs added for APEC coverage. Historical exceedances of VOC and zinc.
OW24D	APEC-31	Existing	Deep Groundwater	2.9	7.77	1.22	1							1		1	1					VOCs and PAHs to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes, vertical delineation of known shallow zinc impacts (OW18-I, OW9-I). Update PHC data for eastern corner of property, deep offsite impacts in nearby OW30D. 1,4-Dioxane added based on historical maximum TCE concentration on Site. Historical exceedances of VOC, zinc and F1.
OW25	APEC-1, APEC-17	Existing	Shallow Groundwater	2	4.72	2.74	1			1				1		1		1				VOC, PAHs, and PHC to be sampled as per annual sampling for 2017. Full metals analysis required for RSC purposes, APEC, and shallow central property coverage. PCBs added for APEC coverage and lateral delineation (upgradient) of historical exceedances at OW26S. Historical exceedances of VOCs, PAHs, F2 and F3.
OW26S	APEC-29, APEC-32	Existing	Shallow Groundwater	2.4	4.6	1.52	1							1		1	1	1				VOC and PHC to be sampled as per annual sampling for 2017. PAHs considered to be sufficiently characterized as previous data indicates non-detect concentrations from 2004 to 2016. Full metals analysis required for RSC purposes, shallow central downgradient property boundary and previous exceedances of zinc. 1,4-Dioxane added based on historical 1,1-DCA exceedance, detected TCA and as a downgradient location. PCBs added based on historical exceedances.
OW26D	APEC-29, APEC-32	Existing	Deep Groundwater	2.6	11.8	1.52	1							1		1	1					VOCs and PHCs to be sampled as per annual sampling for 2017. PAHs considered to be sufficiently characterized as previous data indicates non-detect concentrations from 2004 to 2016. Full metals analysis required for RSC purposes, deep central downgradient property boundary. Historical exceedances of VOCs. 1,4-Dioxane added based on being a downgradient location from TCA/DCA exceedances.
OW31	APEC-5, APEC-31	Existing	Deep Groundwater	NA	NA									1		1	1					Confirm and update VOC and PHC results from previous sampling event. 1,4-Dioxane added for coverage of deeper unit.

Appendix B: Table 1

Phase Two ESA Sampling and Analytical Plan: IMICO

Location ID	APEC[1]	Existing or New Location	Media	Approx. Depth to Bedrock (mbgs)	Approx. Depth of TP/BH/MW (mbgs)	Screen Length (m)	O.Reg. 153/04 Metals & Inorganics	O. Reg. 153/04 Hydride-forming Metals (Sb, As, Se)	O. Reg. 153/04 Metals only (Section 1.2.2 in Protocol Doc)	PAHs (lab filter for B(a)P)	ABNs (includes phenol)	Chlorophenols	SVOCs (PAH, ABNs, Chlorophenol)	PHCs	BTEX	VOCs	1,4-Dioxane	PCB Aroclors	Dioxin/Furans	Grain Size Distribution (sieve and hydrometer)	TOC	Purpose and Justification
OW07-31	APEC-25, APEC-29, APEC-30	Existing	Deep Groundwater	1.65	6.22	4.72	1						1	1		1						Update of VOC, PAHs, PHC and metals for APEC and deep northwestern property coverage and delineation as only available round of sampling (2007) indicated non-detect VOCs and PHCs and no PAH or metal exceedances. ABNs and CPs added for APEC coverage.
OW07-32	APEC-7, APEC-16, APEC-29	Existing	Deep Groundwater	1.65	6.22	3.05	1			1				1		1						Update of VOC, PAHs, PHCs and metals for APEC and deep central property coverage as only available round of sampling (2007) indicated exceedances of TCE and zinc and no exceedances of PAHs and non-detect PHCs.
OW07-33	APEC-1, APEC-17, APEC-22	Existing	Deep Groundwater	1.63	6.15	3.05	1						1	1		1	1	1				Horizontal delineation (upgradient) of VOC impacts in OW07-34D to the south. Update of PAHs, PHC and metals for deep central property coverage as only available round of sampling (2007) indicated exceedances of TCE and DCA, and no exceedances for metals. SVOCs, PCBs added for APEC coverage. 1,4-Dioxane added based on historical DCA exceedance.
OW07-34S	APEC-1	Existing	Shallow Groundwater	1.57	4.6	3.05	1			1				1		1		1				Update of VOC, PAH, and PHC for horizontal delineation (downgradient) of impacts in OW25. Update of PCBs for horizontal delineation (upgradient) of impacts in OW26S. Horizontal delineation (general Site) for zinc and APEC coverage for overall metals. Only available sampling (2007) indicated a marginal TCE exceedance and non-detect concentrations for PHCs, PCBs and no exceedances for PAHs and metals.
OW07-34D	APEC-1	Existing	Deep Groundwater	1.57	9.17	3.05	1							1		1	1					VOCs to be sampled as per annual sampling for 2017. PAHs considered to be sufficiently characterized as previous data indicates mainly non-detect concentrations from 2004 to 2016. Vertical delineation of PHC impacts in OW25 to the south (downgradient). Horizontal delineation (general Site) for zinc and APEC coverage for overall metals. 1,4-Dioxane added based on historical TCA/DCA exceedances.
OW07-37	APEC-12, APEC-15, APEC-29	Existing	Deep Groundwater	1.57	6.15	3.05	1						1	1		1						Update of VOC, PAHs, PHCs and metals for APEC and deep central property coverage. Only available sample (2007) indicated zinc exceedances, non-detect PHCs, PAHs and PCBs, and no exceedances for VOCs. ABNs and CPs added for APEC coverage.
OW07-38S	APEC-13, APEC-23 (APEC-18,24)	Existing	Shallow Groundwater	1.8	4.84	3.05	1			1				1		1						Update of VOCs, PAHs, PHCs and metals for shallow north property coverage and APEC coverage. Only available sampling (2007) indicated non-detect VOCs, PHCs, PAHs, PCBs, and no exceedances of metals. Provides lateral delineation of zinc concentrations.
OW13-39S	APEC-10, APEC-31	Existing	Shallow Groundwater	3.15	6.09	3.05	1							1		1						VOC and PHC to be sampled as per annual sampling for 2017. PAHs considered to be sufficiently characterized as previous data indicates concentrations well below Standards or non-detect from 2004 to 2016. Full metals analysis required for RSC purposes, horizontal delineation of known zinc impacts in shallow groundwater (OW18-I, OW9-I).
OW13-39D	APEC-10, APEC-31	Existing	Deep Groundwater	3.15	12.2	1.52	1							1		1	1					VOC and PHC to be sampled as per annual sampling for 2017. PAHs considered to be sufficiently characterized as previous data indicates concentrations well below Standards or non-detect from 2004 to 2016. Full metals analysis required for RSC purposes, vertical delineation of known zinc impacts in shallow groundwater (OW18-I, OW9-I). 1,4-Dioxane added as one of highest TCE locations on Site.

Notes:
1- APECs in brackets are outside the limits of the APEC, however sampling is proposed as may provide additional delineation information
mbgs - metres below ground surface
Standards refers to Ministry of Environment and Climate Change "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" dated July 1, 2011
Table 6 Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition and Residential, Parkland and Institutional (RPI) Property Use.
If no sample depth specified collect worst case.
The following field parameters will be measured in groundwater during well purging: pH, ORP, DO, Temperature turbidity and Specific Conductance.
Dioxin/Furan on hold pending PCB results
Do not request pH analysis in soil (metals/inorganics) where concrete is observed at surface.
QAQC samples: one duplicate to be collected for every 10 samples; one trip blank for each cooler containing a VOC sample.

Revision 1, August 28, 2017

Location	APEC (DCS 2014)	APEC[1]	Location ID	Existing or New Location	Media	Approx. Depth to Bedrock (m)	Approx. Depth of TP/BH/MW (m)	O.Reg. 511 Metals & Inorganics	PAHs	ABNs (includes phenol)	Chlorophenols	SVOCs (PAH, ABNs, Chlorophenol)	PHCs	VOCs	1,4-Dioxane	PCB Aroclors	Dioxin/Furans	Grain Size Distribution (sieve and hydrometer)	TOC	Purpose and Justification
BH17-01	1 & 2		BH17-01	New	Soil	2.7	2.7	2	1	2			2	2	2			2	2	Maximum zinc concentration in soil detected at TP9 from 0.0 to 0.08 mbgs and PAHs above Table 6 RPI standards. Collect metals and ABN (phenol) from foundry sand. Phenol commonly associated with foundry sand and has not been characterized in soil. Collect metals, ABN (phenol) and PAH sample from native soil just above bedrock for vertical delineation. VOC, 1,4-Dioxane and PHC characterization and horizontal delineation of soil in the southeast corner of the site. 1, 4-Dioxane not previously characterized in soil and it is known to be associated with TCE and TCA. Collect VOC, 1,4-Dioxane and PHC from worst case soil based on field screening and collect second set from greater depth near bedrock interface to provide vertical delineation. Collect grain size and TOC samples from shallow fill and native soil.
TP17-01	5		TP17-01	New	Soil	1.7	1.7	2		2			1	1		2	2			Phenol commonly associated with foundry sand and has not been characterized in soil. Collect metals and ABNs (phenol) from foundry sand and from a deeper native soil sample for vertical delineation. PHC and PCB exceedance for Table 6 RPI in soil at BH07-67 from 0.05 to 0.91 mbgs. PCBs were delineated vertically at BH07-67. Horizontal delineation of PCBs and PHCs to the south. Collect PCB and Dioxin/Furans sample from 0-0.3 mbgs, and one PCB and Dioxin/Furans from 0.3-0.6mbgs. Place deeper PCB and both Dioxin/Furans samples on hold pending the PCB result from the shallow sample. Collect PHCs and VOCs from worst case soil based on field screening.
TP17-02	1 & 6		TP17-02	New	Soil	1.7	1.7	2	2	2			2	2				2	2	Phenol commonly associated with foundry sand and has not been characterized in soil. Collect metals and ABNs (phenol) from foundry sand and from a deeper native soil sample for vertical delineation. PAHs exceeded Table 6 RPI in shallow soil at OW07-32 and BH07-56. Provide vertical delineation for PAHs. Analysis of PHCs and VOCs for overall site coverage. Collect PAHs, PHCs and VOCs from shallow worst case soil based on field screening and from greater depth for vertical delineation. Collect grain size and TOC samples from shallow fill and native soil.
TP17-03	1		TP17-03	New	Soil	2	2		2	2			2	2				2	2	Phenol commonly associated with foundry sand and has not been characterized in soil. Collect metals and ABNs (phenol) from foundry sand and from a deeper native soil sample for vertical delineation. Horizontal delineation of PAHs west of BH07-51 and northeast of BH07-56. Analysis of PHCs and VOCs for overall site coverage. Collect PAHs, PHCs and VOCs from shallow worst case soil based on field screening and from greater depth for vertical delineation. Collect grain size sample and TOC samples from shallow fill and native soil.

Location	APEC (DCS 2014)	APEC[1]	Location ID	Existing or New Location	Media	Approx. Depth to Bedrock (m)	Approx. Depth of TP/BH/MW (m)	O.Reg. 511 Metals & Inorganics	PAHs	ABNs (includes phenol)	Chlorophenols	SVOCs (PAH, ABNs, Chlorophenol)	PHCs	VOCs	1,4-Dioxane	PCB Aroclors	Dioxin/Furans	Grain Size Distribution (sieve and hydrometer)	TOC	Purpose and Justification
MW17-01S, D	1		MW17-01S, D	New	Soil	2.3	2.3	2	2	2			2	2	2	2	2			Phenol commonly associated with foundry sand and has not been characterized in soil. Collect metals and ABNs (phenol) from foundry sand and from a deeper native soil sample for vertical delineation. LNAPL located to the east at OW23-S. Soil delineation for VOCs, 1,4-Dioxane PHCs and PAHs to the west of the LNAPL area and provide vertical characterization. 1, 4-Dioxane not previously characterized in soil and it is known to be associated with TCE and TCA. Collect VOC, 1,4-Dioxane, PHC and PAHs from worst case soil based on field screening and collect second set from greater depth near bedrock interface to provide vertical delineation. PCBs detected above Table 6 RPI at TP8 from 0.05 to 0.15 mbgs. Delineate PCBs to the west of TP8. Collect PCB and Dioxin/Furans sample from 0-0.3 mbgs, and one PCB and Dioxin/Furans from 0.3-0.6mbgs. Place deeper PCB and both Dioxin/Furans samples on hold pending the PCB result from the shallow sample. Characterize shallow and deep groundwater along the western edge of the chlorinated VOC groundwater plume. 1, 4-Dioxane not previously characterized in groundwater and it is known to be associated with TCE and TCA plumes. Sample shallow and deep wells for dissolved metals (field filtered) due zinc exceedances of Table 6 in the eastern section of the property in 2015. Shallow well to screen the water table with a 3.1 m long screen. Deeper well to approximately 9 mbgs for vertical delineation of COCs.
					Shallow Groundwater		6	1	1				1	1	1					
					Deep Groundwater		9	1	1				1	1	1					
MW17-02D	1		MW17-02D	New	Soil	2.3	2.3	2	2	2			2	2						Phenol commonly associated with foundry sand and has not been characterized in soil. Collect metals and ABNs (phenol) from foundry sand and from a deeper native soil sample for vertical delineation. Maximum soil PAH detected at OW07-34 from 0 to 1.22 mbgs. To confirm elevated PAHs at OW07-34 collect a shallow worst case PAH soil sample and collect a second sample from a greater depth just above bedrock to provide vertical delineation. VOC exceedance in shallow soil at TP11 from 0.10 to 0.20 mbgs. Collect a shallow worst case VOC and PHC soil sample and collect a second sample from a greater depth just above bedrock to provide vertical delineation. VOCs detected in groundwater above Table 6 RPI at OW26D at a depth of approximately 8 mbgs. Install deep well at a depth of approximately 13 mbgs to provide vertical delineation of VOCs along the southern property boundary.
					Deep Groundwater		13							1						
MW17-03D	1 & 6		MW17-03D	New	Soil	1.7	1.7		2					2						PAHs exceed Table 6 RPI at OW07-32 from 0.0 to 1.07 mbgs and benzene at TP11-6 from 0.10 to 0.20 mbgs. Collect PAH and VOC soil sample from worst case shallow soil based on field screening for horizontal delineation to the west of OW07-32 and a sample from greater depth just above bedrock to provide vertical delineation. VOCs historically above Table 6 in groundwater at OW37-32, OW7-33 and OW07-37. Install deeper well to approximately 13 mbgs to provide vertical delineation of VOCs in groundwater.
					Deep Groundwater		13							1						
MW17-04S, D	1		MW17-04S, D	New	Soil		1.9	2	2	2			2	2						Phenol commonly associated with foundry sand and has not been characterized in soil. Collect metals and ABNs (phenol) from foundry sand and from a deeper native soil sample for vertical delineation. Elevated PHCs suggesting the presence of LNAPL located to the east at OW22-S. Soil delineation for VOCs, PHCs and PAHs to the west of the potential LNAPL area and provide vertical characterization. Collect worst case shallow soil sample for VOCs, PHCs and PAHs based on field screening and second set from deeper to provide vertical delineation. Characterize shallow and groundwater along the north western edge of the PHC groundwater plume and deep groundwater to the northwest of the VOC plume. Sample shallow and deep wells for dissolved metals (field filtered) due zinc exceedances of Table 6 in the eastern section of the property in 2015. Shallow well to screen the water table with a 3.1 m long screen. Deeper well to approximately 9 mbgs for vertical delineation of COCs.
					Shallow Groundwater		6	1	1				1	1						
					Deep Groundwater		9	1	1				1	1						
MW17-05D	1		MW17-05D	New	Soil	2.7	13	2	2	2			1	1					1	Phenol commonly associated with foundry sand and has not been characterized in soil. Collect metals and ABNs (phenol) from foundry sand and from a deeper native soil sample for vertical delineation. PAHs exceed Table 6 RPI in soil to the northeast at BH07-41 and TP-9. Collect shallow PAH soil sample from worst case based on field screening for horizontal delineation and a deeper sample from above bedrock for vertical delineation. Collect soil samples for TOC, PHCs, and VOCs from worst case soil based on field screening. VOCs exceed Table 6 in groundwater at OW9-II at a depth of approximately 8 mbgs. Install deeper well to approximately 13 mbgs to provide vertical delineation along the southern property boundary.
					Deep Groundwater									1						

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MW17-06S, D	1		MW17-06S, D	New	Soil	1.8	1.8	2	2	2			2	2					1	Characterize soil and groundwater in the area of a former gasoline UST and foundry sumps in the central portion of the site. Collect PAHs, PHCs and VOCs from worst case shallow soil based on field screening and second sample from deeper above bedrock to delineate vertically (TOC at this depth). Phenol commonly associated with foundry sand and has not been characterized in soil. Collect metals and ABNs (phenol) from foundry sand and from a deeper native soil sample for vertical delineation. Shallow well to screen the water table with a 3.1 m long screen. Deeper well to approximately 9 mbgs for vertical delineation of COCs.
					Shallow Groundwater		6	1	1				1	1						
					Deep Groundwater		9						1	1						
OW2	1		OW2	Existing	Shallow Groundwater	NA	NA	1												Annual sampling event for 2016 assumed to match 2015 event. VOC, PAHs, and PHC data from 2016 annual sampling event to be used. Full metals analysis required for RSC purposes, added for shallow north-western property coverage.
OW2	1	APEC-25, APEC-29, APEC-30	OW02	Existing	Shallow Groundwater	NA	NA	1				1	1	1						VOC, PAHs and PHC data to be sampled as per annual sampling program for 2017. Historical exceedances of VOCs and PHCs; non-detect results from 2004 to 2016. SVOCs and full metal analysis required for APEC coverage and for shallow north-western property coverage.
OW3-I	1		OW3-I	Existing	Shallow Groundwater	NA	NA	1					1	1						Annual sampling event for 2016 assumed to match 2015 event. PAHs data from 2016 annual sampling event to be used. Full metals analysis required for RSC purposes, and update of VOC and PHC data for shallow central property coverage added.
OW3-I	1	APEC-4, (APEC-7), APEC-29	OW03-I	Existing	Shallow Groundwater	NA	NA	1				1	1	1						PAHs to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes, and update of VOC and PHC data for shallow central property coverage added. ABNs and CPs added for APEC coverage.
OW3-II	1		OW3-II	Existing	Deep Groundwater	NA	NA	1					1	1						Annual sampling event for 2016 assumed to match 2015 event. PAHs data from 2016 annual sampling event to be used. Full metals analysis required for RSC purposes, update of VOC and PHC for deep central property coverage.
OW3-II	1	APEC-4, (APEC-7), APEC-29	OW03-II	Existing	Deep Groundwater	NA	NA	1	1				1	1						PAHs to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes, update of VOC and PHC for deep central property coverage.
OW4	1 & 2		OW4	Existing	Shallow Groundwater	NA	NA	1	1				1	1	1					Horizontal delineation of PAHs and PHC impacts in OW23S to the south (downgradient). Horizontal delineation of zinc impacts to the east (OW9-I). Determine limit of shallow VOCs impacts.
OW4	1 & 2	APEC-8, APEC-9, APEC-29	OW04	Existing	Shallow Groundwater	NA	NA	1	1				1	1						Horizontal delineation of PAHs and PHC impacts in OW23S to the south (downgradient). Horizontal delineation of zinc impacts to the east (OW9-I) and full metal analysis for RSC purposes and APEC covereage. Determine limit of shallow VOCs impacts.
OW9-I	1 & 2		OW9-I	Existing	Shallow Groundwater	NA	NA	1	1						1					Annual sampling event for 2016 assumed to match 2015 event. VOC, and PHC data from 2016 annual sampling event to be used. Horizontal delineation of PAHs impacts in OW23S to the south (downgradient). Full metals analysis required for RSC purposes added, this location has known shallow zinc impacts. 1,4-Dioxane added in eastern half of property based on historical TCE/TCA use.
OW9-I	1 & 2	APEC-19, APEC-29	OW09-I	Existing	Shallow Groundwater	NA	NA	1	1				1	1						VOC, PHC and zinc to be sampled as per annyal sampling program for 2017. Horizontal delineation of PAHs impacts in OW23S to the south (downgradient) and for APEC coverage. Full metals analysis required for RSC purposes added; this location has known shallow zinc, TCE and VC impacts. MDLs have often exceeded standards for VOCs.
OW9-II	1 & 2		OW9-II	Existing	Deep Groundwater	NA	NA	1	1						1					Annual sampling event for 2016 assumed to match 2015 event. VOC, and PHC data from 2016 annual sampling event to be used. Full metals analysis required for RSC purposes, vertical delineation of known shallow zinc impacts at this location. Update PAH data for eastern corner of property. 1,4-Dioxane added in eastern half of property based on historical TCE/TCA use.
OW9-II	1 & 2	APEC-19, APEC-29	OW09-II	Existing	Deep Groundwater	NA	NA	1	1				1	1						VOC, PHC and zinc to be sampled as per annyal sampling program for 2017. Known VOC and metal (zinc and lead) exceedances. Full metals analysis required for RSC purposes, vertical delineation of known shallow zinc impacts at this location. Update PAH data for eastern corner of property and for APEC coverage.
OW10	1		OW10	Existing	Shallow Groundwater	NA	NA	1	1				1	1	1					VOC, PAHs, and PHC data update along south-eastern property boundary, known impacts at OW25. Full metals analysis required for RSC purposes, south-eastern property boundary coverage.
OW10	1	APEC-14, APEC-29, APEC-32	OW10	Existing	Shallow Groundwater	NA	NA	1	1				1	1						VOC, PAHs, and PHC data update along south-eastern property boundary, for APEC coverage, and delineation. Known impacts at OW25, OW26S/D, OW07-34S/D. Full metals analysis required for RSC purposes, south-eastern property boundary coverage.
OW11-I	1 & 4	APEC-29, APEC-32	OW11-I	Existing	Shallow Groundwater	NA	NA	1	1				1	1						Full metals analysis required for RSC purposes. Update of VOC, PAHs, and PHC data for shallow southern property coverage.

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OW11-II	1 & 4	APEC-29, APEC-32	OW11-II	Existing	Deep Groundwater	NA	NA	1	1				1	1						Full metals analysis required for RSC purposes. Update of VOC, PAHs, and PHC data for deep southern property coverage.
OW12	1 & 4		OW12	Existing	Shallow Groundwater	NA	NA	1	1				1	1						Full metals analysis required for RSC purposes. Update of VOC, PAHs, and PHC data for shallow western property boundary.
OW12	1 & 4	APEC-27, APEC-28, APEC-29, APEC-33	OW12	Existing	Shallow Groundwater	NA	NA	1	1				1	1	1					Full metals analysis required for RSC purposes. Update of VOC, PAHs, and PHC data for shallow western property boundary. 1,4-Dioxane added for TCA exceedance.
OW13	1 & 2		OW13	Existing	Deep Groundwater	NA	NA	1						1	1					Horizontal delineation (deep) of known VOC impacts in OW9-II. 1,4-Dioxane added in eastern half of property based on historical TCE/TCA use.
OW13	1 & 2	APEC-19, APEC-29, APEC-31	OW13	Existing	Deep Groundwater	NA	NA	1				1	1	1						Horizontal delineation (deep) of known VOC impacts in OW9-II. Known VOC and zinc exceedances at this location. SVOCs (ABNs, PAHs and CPs) and PHCs added for APEC coverage.
OW14	1 & 2	APEC-29 (APEC-5)	OW14	Existing	Deep Groundwater	NA	NA	1	1				1	1	1					Full metals analysis required for RSC purposes. Update of VOC, PAHs, and PHC data for shallow eastern property boundary.
OW15		APEC-20, APEC-29, APEC-33	OW15	Existing	Shallow Groundwater	NA	NA	1	1				1	1		1				Full metals analysis required for RSC purposes. Update of VOC, PAHs, and PHC data for shallow western property coverage. PCBs added for coverage of APEC in groundwater based on historical soil historical exceedance.
OW16	1 & 5		OW16	Existing	Shallow Groundwater	NA	NA	1	1				1	1						Full metals analysis required for RSC purposes. Update of VOC, PAHs, and PHC data for shallow western property coverage.
OW16	1 & 5	APEC-20, APEC-29, APEC-33	OW16	Existing	Shallow Groundwater	NA	NA	1	1				1	1		1				Full metals analysis required for RSC purposes. Update of VOC, PAHs, and PHC data for shallow western property coverage. PCBs added for coverage of APEC in groundwater based on historical soil historical exceedance.
OW17	1	APEC-25, APEC-29, APEC-30	OW17	Existing	Shallow Groundwater	NA	NA	1	1				1	1						Horizontal delineation of PAHs, zinc, and PHC impacts to the northwest (cross-gradient) from OW22S. Determine western limit of shallow TCE impacts (west of offsite OW6). Full metals analysis required for RSC purposes.
OW18-I	1		OW18-I	Existing	Shallow Groundwater	NA	NA	1							1					Annual sampling event for 2016 assumed to match 2015 event. VOC, PAHs, and PHC data from 2016 annual sampling event to be used. Full metals analysis required for RSC purposes, location with known shallow zinc impacts. 1,4-Dioxane added in eastern half of property based on historical TCE/TCA use.
OW18-I	1	APEC-10, APEC-31	OW18-I	Existing	Shallow Groundwater	NA	NA	1	1				1	1						VOC, PAHs, PHC and zinc to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes. Location with known shallow zinc, B(a)P and VOC impacts.
OW18-II	1		OW18-II	Existing	Deep Groundwater	NA	NA	1							1					Annual sampling event for 2016 assumed to match 2015 event. VOC, PAHs, and PHC data from 2016 annual sampling event to be used. Full metals analysis required for RSC purposes, vertical delineation of known shallow zinc impacts. 1,4-Dioxane added in eastern half of property based on historical TCE/TCA use.
OW18-II	1	APEC-10, APEC-31	OW18-II	Existing	Deep Groundwater	NA	NA	1	1				1	1						VOC, PAHs, PHC and zinc to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes. Location with known zinc and VOC impacts. Vertical delineation of known shallow zinc, PAH and VOC impacts.
OW19	1		OW19	Existing	Shallow Groundwater	NA	NA	1					1	1	1					Annual sampling event for 2016 assumed to match 2015 event. PAHs data from 2016 annual sampling event to be used. Horizontal delineation of PHC impacts to the northeast (cross-gradient) from OW22S. Determine northern limit of shallow VOC impacts (north of OW18-I). Full metals analysis required for RSC purposes, location with known shallow zinc impacts.
OW19	1	APEC-10, APEC-11, APEC-31	OW19	Existing	Shallow Groundwater	NA	NA	1	1				1	1						VOC, PAHs, PHC and zinc to be sampled as per annual sampling program for 2017. Horizontal delineation of PHC impacts to the northeast (cross-gradient) from OW22S. Determine northern limit of shallow VOC impacts (north of OW18-I). Full metals analysis required for RSC purposes. Location with known shallow zinc and VOC impacts.
OW22S	1 & 7		OW22S	Existing	Shallow Groundwater	NA	NA	1						1	1					Annual sampling event for 2016 assumed to match 2015 event. PAHs and PHC data from 2016 annual sampling event to be used. Full metals analysis required for RSC purposes, location with known shallow zinc impacts. Horizontal delineation of shallow VOC impacts in OW6 (offsite, upgradient). 1,4-Dioxane added in eastern half of property based on historical TCE/TCA use.
OW22S	1 & 7	APEC-11, APEC-29	OW22S	Existing	Shallow Groundwater	NA	NA	1	1				1	1						PAHs, PHC and zinc to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes. Location with known shallow zinc, PAH, PHC and BTEX impacts. Update of VOCs for horizontal delineation of shallow VOC impacts.

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OW22D	1 & 7		OW22D	Existing	Deep Groundwater	NA	NA	1						1	1					Annual sampling event for 2016 assumed to match 2015 event. PAHs and PHC data from 2016 annual sampling event to be used. Full metals analysis required for RSC purposes, vertical delineation of known shallow zinc impacts. Horizontal delineation of deep VOC impacts in OW23D (upgradient). 1,4-Dioxane added in eastern half of property based on historical TCE/TCA use.
OW22D	1 & 7	APEC-11, APEC-29	OW22D	Existing	Deep Groundwater	NA	NA	1					1	1	1					PAHs, PHC and zinc to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes, vertical delineation of known shallow zinc impacts. Update of VOCs for vertical and horizontal delineation of deep VOC impacts. 1,4-Dioxane added based on historical TCA exceedance.
OW23S	1		OW23S	Existing	Shallow Groundwater	NA	NA	1							1					Annual sampling event for 2016 assumed to match 2015 event. VOC, PAHs, and PHC data from 2016 annual sampling event to be used. Full metals analysis required for RSC purposes, horizontal delineation of known shallow zinc impacts (OW22S, OW18-I, OW9-I).
OW23S	1	APEC-10	OW23S	Existing	Shallow Groundwater	NA	NA	1	1				1	1						VOCs and PAHs to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes, horizontal delineation of known shallow zinc impacts (OW22S, OW18-I, OW9-I). PHCs included based on historical LNAPL observed in this location. Historical exceedances of VOCs, PAHs and PHCs.
OW23D	1		OW23D	Existing	Deep Groundwater	NA	NA	1							1					Annual sampling event for 2016 assumed to match 2015 event. VOC, PAHs, and PHC data from 2016 annual sampling event to be used. Full metals analysis required for RSC purposes, vertical delineation of known shallow zinc impacts (OW22S, OW18-I, OW9-I).
OW23D	1	APEC-10	OW23D	Existing	Deep Groundwater	NA	NA	1	1				1	1	1					VOCs, PAHs and PHCs to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes, vertical delineation of known shallow zinc impacts (OW22S, OW18-I, OW9-I). Historical exceedances of VOCs, PHCs.
OW24S	1		OW24S	Existing	Shallow Groundwater	NA	NA	1					1		1					Annual sampling event for 2016 assumed to match 2015 event. VOC and PAHs data from 2016 annual sampling event to be used. Full metals analysis required for RSC purposes, horizontal delineation of known shallow zinc impacts (OW18-I, OW9-I). Update PHC data for eastern corner of property, deep offsite impacts in nearby OW30D (offsite shallow OW30S not sampled). 1,4-Dioxane added in eastern half of property based on historical TCE/TCA use.
OW24S	1	APEC-31	OW24S	Existing	Shallow Groundwater	NA	NA	1				1	1	1		1				VOCs and PAHs to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes, horizontal delineation of known shallow zinc impacts (OW18-I, OW9-I). Update PHC data for eastern corner of property, deep offsite impacts in nearby OW30D (offsite shallow OW30S not sampled). SVOCs and PCBs added for APEC coverage. Historical exceedances of VOC and zinc.
OW24D	1		OW24D	Existing	Deep Groundwater	NA	NA	1					1		1					Annual sampling event for 2016 assumed to match 2015 event. VOC and PAHs data from 2016 annual sampling event to be used. Full metals analysis required for RSC purposes, vertical delineation of known shallow zinc impacts (OW18-I, OW9-I). Update PHC data for eastern corner of property, deep offsite impacts in nearby OW30D. 1,4-Dioxane added in eastern half of property based on historical TCE/TCA use.
OW24D	1	APEC-31	OW24D	Existing	Deep Groundwater	NA	NA	1					1	1	1					VOCs and PAHs to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes, vertical delineation of known shallow zinc impacts (OW18-I, OW9-I). Update PHC data for eastern corner of property, deep offsite impacts in nearby OW30D. 1,4-Dioxane added based on historical maximum TCE concentration on Site. Historical exceedances of VOC, zinc and F1.
OW25	1 & 3		OW25	Existing	Shallow Groundwater	NA	NA	1							1	1				Annual sampling event for 2016 assumed to match 2015 event. VOC, PAHs, and PHC data from 2016 annual sampling event to be used. Full metals analysis required for RSC purposes, APEC and shallow central property coverage. 1,4-Dioxane added in eastern half of property based on historical TCE/TCA use.
OW25	1 & 3	APEC-1, APEC-17	OW25	Existing	Shallow Groundwater	NA	NA	1	1				1	1		1				VOC, PAHs, and PHC to be sampled as per annual sampling for 2017. Full metals analysis required for RSC purposes, APEC, and shallow central property coverage. PCBs added for APEC coverage and lateral delineation (upgradient) of historical exceedances at OW26S. Historical exceedances of VOCs, PAHs, F2 and F3.
OW26S	1		OW26S	Existing	Shallow Groundwater	NA	NA	1							1					Annual sampling event for 2016 assumed to match 2015 event. VOC, PAHs, and PHC data from 2016 annual sampling event to be used. Full metals analysis required for RSC purposes, shallow central downgradient property boundary. 1,4-Dioxane added in eastern half of property based on historical TCE/TCA use.

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OW26S	1	APEC-29, APEC-32	OW26S	Existing	Shallow Groundwater	NA	NA	1					1	1	1	1				VOC and PHC to be sampled as per annual sampling for 2017. PAHs considered to be sufficiently characterized as previous data indicates non-detect concentrations from 2004 to 2016. Full metals analysis required for RSC purposes, shallow central downgradient property boundary and previous exceedances of zinc. 1,4-Dioxane added based on historical 1,1-DCA exceedance, detected TCA and as a downgradient location. PCBs added based on historical exceedances.
OW26D	1		OW26D	Existing	Deep Groundwater	NA	NA	1							1					Annual sampling event for 2016 assumed to match 2015 event. VOC, PAHs, and PHC data from 2016 annual sampling event to be used. Annual sampling event for 2016 assumed to match 2015 event. VOC, PAHs, and PHC data from 2016 annual sampling event to be used. Full metals analysis required for RSC purposes, deep central downgradient property boundary. 1,4-Dioxane added in eastern half of property based on historical TCE/TCA use.
OW26D	1	APEC-29, APEC-32	OW26D	Existing	Deep Groundwater	NA	NA	1					1	1	1					VOCs and PHCs to be sampled as per annual sampling for 2017. PAHs considered to be sufficiently characterized as previous data indicates non-detect concentrations from 2004 to 2016. Full metals analysis required for RSC purposes, deep central downgradient property boundary. Historical exceedances of VOCs. 1,4-Dioxane added based on being a downgradient location from TCA/DCA exceedances.
OW31	1		OW31	Existing	Deep Groundwater (Goat Island Formation)	NA	NA							1	1					Confirm and update VOC results from previous sampling event.
OW31	1	APEC-5, APEC-31	OW31	Existing	Deep Groundwater (Goat Island Formation)	NA	NA						1	1	1					Confirm and update VOC and PHC results from previous sampling event. 1,4-Dioxane added for coverage of deeper unit.
OW07-31	1		OW07-31	Existing	Deep Groundwater	NA	NA	1	1				1	1						Full metals analysis required for RSC purposes, update of VOC, PAHs, and PHC for deep central property coverage.
OW07-31	1	APEC-25, APEC-29, APEC-30	OW07-31	Existing	Deep Groundwater	NA	NA	1				1	1	1						Update of VOC, PAHs, PHC and metals for APEC and deep northwestern property coverage and delineation as only available round of sampling (2007) indicated non-detect VOCs and PHCs and no PAH or metal exceedances. ABNs and CPs added for APEC coverage.
OW07-32	1 & 6	APEC-7, APEC-16, APEC-29	OW07-32	Existing	Deep Groundwater	NA	NA	1	1				1	1						Full metals analysis required for RSC purposes, update of VOC, PAHs, and PHC for deep central property coverage.
OW07-32	1 & 6	APEC-7, APEC-16, APEC-29	OW07-32	Existing	Deep Groundwater	NA	NA	1	1				1	1						Update of VOC, PAHs, PHCs and metals for APEC and deep central property coverage as only available round of sampling (2007) indicated exceedances of TCE and zinc and no exceedances of PAHs and non-detect PHCs.
OW07-33	1 & 3		OW07-33	Existing	Deep Groundwater	NA	NA	1	1				1	1						Horizontal delineation of VOC impacts in OW07-34D to the south (upgradient). Full metals analysis required for RSC purposes, update of PAHs, and PHC for deep central property coverage.
OW07-33	1 & 3	APEC-1, APEC-17, APEC-22	OW07-33	Existing	Deep Groundwater	NA	NA	1				1	1	1	1	1				Horizontal delineation (upgradient) of VOC impacts in OW07-34D to the south. Update of PAHs, PHC and metals for deep central property coverage as only available round of sampling (2007) indicated exceedances of TCE and DCA, and no exceedances for metals. SVOCs, PCBs added for APEC coverage. 1,4-Dioxane added based on historical DCA exceedance.
OW07-34S	1 & 3		OW07-34S	Existing	Shallow Groundwater	NA	NA		1				1	1	1	1				Horizontal delineation of VOC, PAH, and PHC impacts in OW25 to the south (downgradient).
OW07-34S	1 & 3	APEC-1	OW07-34S	Existing	Shallow Groundwater	NA	NA	1	1				1	1		1				Update of VOC, PAH, and PHC for horizontal delineation (downgradient) of impacts in OW25. Update of PCBs for horizontal delineation (upgradient) of impacts in OW26S. Horizontal delineation (general Site) for zinc and APEC coverage for overall metals. Only available sampling (2007) indicated a marginal TCE exceedance and non-detect concentrations for PHCs, PCBs and no exceedances for PAHs and metals.
OW07-34D	1 & 3		OW07-34D	Existing	Deep Groundwater	NA	NA						1		1					Annual sampling event for 2016 assumed to match 2015 event. VOC and PAHs data from 2016 annual sampling event to be used. Vertical delineation of PHC impacts in OW25 to the south (downgradient). 1,4-Dioxane added in eastern half of property based on historical TCE/TCA use.
OW07-34D	1 & 3	APEC-1	OW07-34D	Existing	Deep Groundwater	NA	NA	1					1	1	1					VOCs to be sampled as per annual sampling for 2017. PAHs considered to be sufficiently characterized as previous data indicates mainly non-detect concentrations from 2004 to 2016. Vertical delineation of PHC impacts in OW25 to the south (downgradient). Horizontal delineation (general Site) for zinc and APEC coverage for overall metals. 1,4-Dioxane added based on historical TCA/DCA exceedances.
OW07-37	1		OW07-37	Existing	Deep Groundwater	NA	NA	1	1				1	1						Full metals analysis required for RSC purposes, update of VOC, PAHs, and PHC for deep central property coverage.

Location	APEC (DCS 2014)	APEC[1]	Location ID	Existing or New Location	Media	Approx. Depth to Bedrock (m)	Approx. Depth of TP/BH/MW (m)	O.Reg. 511 Metals & Inorganics	PAHs	ABNs (includes phenol)	Chlorophenols	SVOCs (PAH, ABNs, Chlorophenol)	PHCs	VOCs	1,4-Dioxane	PCB Aroclors	Dioxin/Furans	Grain Size Distribution (sieve and hydrometer)	TOC	Purpose and Justification
OW07-37	1	APEC-12, APEC-15, APEC-29	OW07-37	Existing	Deep Groundwater	NA	NA	1				1	1	1						Update of VOC, PAHs, PHCs and metals for APEC and deep central property coverage. Only available sample (2007) indicated zinc exceedances, non-detect PHCs, PAHs and PCBs, and no exceedances for VOCs. ABNs and CPs added for APEC coverage.
OW07-38	1		OW07-38S	Existing	Shallow Groundwater	NA	NA	1	1				1	1						Full metals analysis required for RSC purposes, update of VOC, PAHs, and PHC for shallow north-east property coverage.
OW07-38	1	APEC-13, APEC-23 (APEC-18,24)	OW07-38S	Existing	Shallow Groundwater	NA	NA	1	1				1	1						Update of VOCs, PAHs, PHCs and metals for shallow north property coverage and APEC coverage. Only available sampling (2007) indicated non-detect VOCs, PHCs, PAHs, PCBs, and no exceedances of metals. Provides lateral delineation of zinc concentrations.
MW13-39S	1		MW13-39S	Existing	Shallow Groundwater	NA	NA	1							1					Annual sampling event for 2016 assumed to match 2015 event. VOC, PAHs, and PHC data from 2016 annual sampling event to be used. Full metals analysis required for RSC purposes, horizontal delineation of known zinc impacts in shallow groundwater (OW18-I, OW9-I). 1,4-Dioxane added in eastern half of property based on historical TCE/TCA use.
OW13-39S	1	APEC-10, APEC-31	OW13-39S	Existing	Shallow Groundwater	NA	NA	1					1	1						VOC and PHC to be sampled as per annual sampling for 2017. PAHs considered to be sufficiently characterized as previous data indicates concentrations well below Standards or non-detect from 2004 to 2016. Full metals analysis required for RSC purposes, horizontal delineation of known zinc impacts in shallow groundwater (OW18-I, OW9-I).
MW13-39D	1		MW13-39D	Existing	Deep Groundwater	NA	NA	1							1					Annual sampling event for 2016 assumed to match 2015 event. VOC, PAHs, and PHC data from 2016 annual sampling event to be used. Full metals analysis required for RSC purposes, vertical delineation of known zinc impacts in shallow groundwater (OW18-I, OW9-I). 1,4-Dioxane added in eastern half of property based on historical TCE/TCA use.
OW13-39D	1	APEC-10, APEC-31	OW13-39D	Existing	Deep Groundwater	NA	NA	1					1	1	1					VOC and PHC to be sampled as per annual sampling for 2017. PAHs considered to be sufficiently characterized as previous data indicates concentrations well below Standards or non-detect from 2004 to 2016. Full metals analysis required for RSC purposes, vertical delineation of known zinc impacts in shallow groundwater (OW18-I, OW9-I). 1,4-Dioxane added as one of highest TCE locations on Site.

Notes:

1- APECs in brackets are outside the limits of the APEC, however sampling is proposed as may provide additional delineation information
mbgs - metres below ground surface
Standards refers to Ministry of Environment and Climate Change "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" dated July 1, 2011
RPI - Residential, Parkland and Institutional Property Use
If no sample depth specified collect worst case.
The following field parameters will be measured in groundwater during well purging: pH, ORP, DO, Temperature turbidity and Specific Conductance
Dioxin/Furan on hold pending PCB results
Do not request pH analysis in soil (metals/inorganics) where concrete is observed at surface.

Appendix B: Table 2

Phase Two ESA Sampling and Analytical Plan: IMICO

Location ID	APEC[1]	Existing or New Location	Media	Approx. Depth to Bedrock (mbgs)	Approx. Depth of TP/BH/MW (mbgs)	Screen Length (m)	O.Reg. 153/04 Metals & Inorganics	O. Reg. 153/04 Hydride-forming Metals (Sb, As, Se)	O. Reg. 153/04 Metals only (Section 1.2.2 in Protocol Doc)	PAHs (lab filter for B(a)P)	ABNs (includes phenol)	Chlorophenols	SVOCs (PAH, ABNs, Chlorophenol)	PHCs	BTEX	VOCs	1,4-Dioxane	PCB Aroclors	Dioxin/Furans	Grain Size Distribution (sieve and hydrometer)	TOC	Purpose and Justification
BH17-200	APEC-15	New	Soil	1.6	1.6	NA	2						2	2		2						Characterize soil within APEC-15 (Sand Mixing/Storage) for COCs (PAHs, PHCs, CPs, ABNs, Metals). Collect PAHs, PHCs, VOCs, SVOCs and metals from shallow worst case soil based on field screening and from greater depth for vertical delineation.
BH17-201	APEC-22	New	Soil	1.6	1.6	NA	2			2				2				2	2			Characterize soil within APEC-22 (Transformer) for COCs (PHCs, PCBs). Additional analyses for metals and PAHs for site delineation purposes. Collect PCB and Dioxin/Furans sample from 0-0.3 mbgs, and one PCB and Dioxin/Furans from 0.3-0.6mbgs. Place deeper PCB and both Dioxin/Furans samples on hold pending the PCB result from the shallow sample.
BH17-202	APEC-14	New	Soil	2.1	2.1	NA	2			2				2		2						Characterize soil within APEC-14 (Auto Storage) for COCs (VOCs, PHCs, PAHs, metals). Collect PAHs, PHCs, VOCs and metals from shallow worst case soil based on field screening and from greater depth for vertical delineation.
BH17-203	APEC-10	New	Soil	2		NA			2					1		1						Characterize the EM31 in-phase anomaly identified in this area. Free phase product in nearby wells. Collect worst case sample for analysis of PHCs/VOCs.
TP17-300	APEC-20, APEC-21, APEC-29, APEC-33	New	Soil	1.7	1.7	NA	2						2	2		2		2	2			Test pit to address missing COCs in soil for APEC-20 and APEC-21. In vicinity of max concentrations for PCBs (at E from 0.33 mbgs), Oil & Grease (8% at E), BTEX (at BH07-66) and metals (As, Se at BH07-67). Phenol commonly associated with foundry sand and has not been characterized in soil. Collect metals and SVOCs (PAHs, phenol and CPs) from foundry sand and from a deeper native soil sample for vertical delineation. PCBs were delineated vertically at BH07-67. Horizontal delineation of PCBs and PHCs to the south, and vertical delineation required for PHCs. Collect PCB and Dioxin/Furans sample from 0-0.3 mbgs, and one PCB and Dioxin/Furans from 0.3-0.6mbgs. Place deeper PCB and both Dioxin/Furans samples on hold pending the PCB result from the shallow sample. Collect PHCs and VOCs from worst case soil based on field screening and from greater depth for vertical delineation.
TP17-301	APEC-4, APEC-13	New	Soil	1.6	1.6	NA	2						2	2						2	2	Characterize soil in within APEC-4 (Sand Storage) and APEC-13 (rail lines) for COCs (SVOCs, metals) and additional PHCs from shallow worst case soil based on field screening and from greater depth for vertical delineation. Collect grain size sample and TOC samples from shallow fill and native soil.
TP17-302	APEC-25, APEC-13	New	Soil	1.7	1.7	NA	2			2				2		2						Characterize soil within APEC-25 (Drum Storage) and APEC-13 (Rail Line). Collect PAHs, PHCs, VOCs and metals from shallow worst case soil based on field screening and from greater depth for vertical delineation.
TP17-303	APEC-27, APEC-28	New	Soil	2.2	2.2	NA	2			2				2		2						Characeterize soil within APEC-27 (Electrical Shop) and APEC-28 (Waste Oil Storage). Collect PAHs, PHCs, VOCs and metals from shallow worst case soil based on field screening and from greater depth for vertical delineation.
TP17-304	APEC-11	New	Soil	1.8	1.8	NA	2							2		2						Characterize soil within APEC-11 based on historical exceedances remaining on excavation walls (ES-10, non-reliable data for second maxiumum zinc at 6350 ug/g and TPH, no depth provided but assumed between 0 and 2 mbgs). Collect PHCs, VOCs and metals from shallow worst case soil based on field screening and from just above bedrock for vertical delineation.
TP17-305	APEC-11	New	Soil	1.8	1.8	NA	2							2		2						Characterize soil within APEC-11 based on historical exceedances remaining on excavation walls (L, non-reliable data for maximum zinc of 9774 ug/g and TPH at 0 to 0.3 mbgs). Collect PHCs, VOCs and metals from 0-0.3 mbgs or shallow worst case soil (if field screening shows otherwise) and from just above bedrock for vertical delineation.
TP17-306	APEC-17	New	Soil	1.3	1.3	NA	1			2				2		1		2				Investigate soil in the vicinity of remaining exceedances within APEC-17 (PCB Capacitors) for PCBs and PHCs. Excavation reports indicate PCB concentrations remaining at concentrations above the Table 6 RPI on soil, concrete and bedrock samples. Target sump area as this was the area of highest impact reported. Collect additional samples for metals, VOCs, PAHs to characterize the backfill used, and of any original soil remaining to delinate maximum PAH concentrations at OW07-34S to the south. This location also serves to investiage the EM31/GPR Area 3, where results suggest an area of fill materials. Take a sample of the bedrock surface and a clean sample below to delineate the reported concentrations on the bedrock surface.
TP17-307	APEC-1, APEC-7	New	Soil	1.3	1.3	NA								1		1						Characterize the EM31 and GPR anomaly that may represent a potential UST identified in this area. Collect worst case sample for analysis of PHCs/VOCs. Excavate a 10m long trench across the anomoly in a NW to SE direction looking for any signs of metal, piping, pits or tanks.
TP17-308	APEC-1, APEC-7	New	Soil	1.3	1.3	NA	1															Investigate the EM31/GPR Area 4, suggesting the presence of metals in the area, with a test pit (or convert to borehole if required), to the surface of bedrock. Collect samples or metal analysis, and any additional (PHCs/VOCs) only if field observations/evidence suggests potential impacts.
MW17-100S	APEC-6	New	Soil	2	2	NA	2							2		1						Monitoring well to assess soil and shallow groundwater in APEC-6 (Chipping/Grinding Room). Soil and groundwater to be analyzed for
			Shallow		6	1.52	1							1		1						APEC COCs (Metals). Collect PHCs and VOCs for horizontal delineation, from worst case soil based on field screening and collect
MW17-101S, D	APEC-2, APEC-29	New	Soil	2.3	2.3	NA	2						2	2		2	2	2	2			Monitoring well to assess shallow groundwater in APEC-2 (Machine Shop) and assess full metal analyses in soil. Soil and groundwater to
			Shallow		6	3.05	1			1				1		1	1					be analyzed for APEC COCs (VOCs, PHCs, PAHs, metals). Additional SVOCs for phenols and CP analyses commonly associated with
			Deep		9	1.52	1			1				1		1	1					foundry sand and has not been characterized in soil. Additional 1,4-dioxane for associateion with TCE/TCA. Additional PCB and
MW17-102D	APEC-1, APEC-29	New	Soil	2.3	2.3	NA	2			1			1	2		2						Maximum soil PAHs (66-900 ug/g) detected at OW07-34 from 0 to 1.22 mbgs. To confirm elevated PAHs at OW07-34 collect a shallow
			Deep		13	1.52								1		1						SVOC soil sample (to cover APEC-29, foundry sands) at 0 to 1.22 mbgs (or a different depth if field observations indicate greater impacts
MW17-103S, D	APEC-7	New	Soil	1.7	1.7	NA	2						2	2		2					2	Monitoring well to assess soil and groundwater in the vicinity of the former ASTs and oil house (APEC-7), in the vicinity of historical Oil & Grease exceedances at I (2.65%) and J (8.9%). Additional delineation of maximum Cu and Cd concentrations at I and Ag at J. Metals and SVOCs to be collected to assess foundry sand and PAHs northeast of OW07-32 and northwest of BH07-56 where exceedances occur. Collect metals and ABNs (phenol) from foundry sand and from a deeper native soil sample for vertical delineation. PAHs exceeded Table 6 RPI in shallow soil at OW07-32 and BH07-56. Provide vertical delineation for PAHs. Analysis of PHCs and VOCs for overall site coverage. Collect PAHs, PHCs and VOCs from shallow worst case soil based on field screening and from greater depth for vertical delineation. VOCs historically above Table 6 in groundwater at OW37-32 and OW7-33. Shallow well in shallow bedrock (seal in upper Guelph formation) to screen the water table (between 2-3 mbgs based on historical levels) with a 3.1 m long screen. Deeper well to tag Eramosa formation (approximately 9 mbgs) and install 5 ft screen just above bottom of Guelph formation, to provide vertical delineation of VOCs in groundwater.
			Shallow Groundwater		6	1.52	1						1	1		1						
			Deep Groundwater		9	1.52										1						

Appendix B: Table 2

Phase Two ESA Sampling and Analytical Plan: IMICO

Location ID	APEC[1]	Existing or New Location	Media	Approx. Depth to Bedrock (mbgs)	Approx. Depth of TP/BH/MW (mbgs)	Screen Length (m)	O.Reg. 153/04 Metals & Inorganics	O. Reg. 153/04 Hydride-forming Metals (Sb, As, Se)	O. Reg. 153/04 Metals only (Section 1.2.2 in Protocol Doc)	PAHs (lab filter for B(a)P)	ABNs (includes phenol)	Chlorophenols	SVOCs (PAH, ABNs, Chlorophenol)	PHCs	BTEX	VOCs	1,4-Dioxane	PCB Aroclors	Dioxin/Furans	Grain Size Distribution (sieve and hydrometer)	TOC	Purpose and Justification
MW17-104S, D	APEC-3	New	Soil	2.1	1.9	NA	2						2	2		2						Monitoring well to assess groundwater within APEC-3 (Annealing room). Phenol commonly associated with foundry sand and has not been characterized in soil. Collect metals and ABNs (phenol) from foundry sand and from a deeper native soil sample for vertical delineation. Elevated PHCs suggesting the presence of LNAPL located to the east at OW22S. Soil delineation for VOCs, PHCs and
			Shallow		6	2.44	1			1				1		1						
			Deep		9	1.52	1			1				1		1						
MW17-105S, D	APEC-8, APEC-9, APEC-19	New	Soil	2.3	2.3	NA	2						2	2		2					1	Monitoring well location to assess groundwater in the vicinity of APECs 8, 9 and 19 at the southeast end of the Site. Maximum (reliable) zinc concentration in soil detected at TP9 from 0.0 to 0.08 mbgs and PAHs above Table 6 RPI standards. Phenol commonly associated with foundry sand and has not been characterized in soil. Collect metals from 0 to 0.1 mbgs and ABNs (phenol) from foundry sand and
			Shallow		6	1.52	1			1				1		1						
			Deep		9	1.52	1							1		1						
MW17-106S, D	APEC-1, APEC-29	New	Soil	1.8	1.8	NA	2						2	2		2					1	Monitoring well to assess shallow groundwater at the southwest end of APEC -1 (Foundry). Soil and groundwater to be analyzed for APEC COCs (VOCs, PHCs, ABNs, PAHs, CPs and metals). Characterize soil and groundwater in the area of foundry sumps in the central portion of the site. Collect PAHs, PHCs and VOCs from worst case shallow soil based on field screening and second sample from
			Shallow		6	1.52	1			1				1		1						
			Deep		9	1.52								1		1						
MW17-107S	APEC-1, APEC-29	New	Soil	1.7	1.7	NA	2						2	2		2						Monitoring well to assess shallow groundwater at the southwest end of APEC -1 (Foundry). Soil and groundwater to be analyzed for APEC COCs (VOCs, PHCs, ABNs, PAHs, CPs and metals). Provides additional lateral delineation in soil and groundwater for all
			Shallow		6	2.13	1						1	1		1						
MW17-108S	APEC-5, APEC-29	New	Soil	2.8	2.8	NA	2			1			1	2		2	2			2	2	Monitoring well to assess shallow groundwater in APEC-5 (Galvanizing Building). Soil and groundwater to be analyzed for APEC COCs (VOCs, PHCs, PAHs, metals). Maxiumum zinc concentration of reliable data at TP9 from 0.0 to 0.08 mbgs and PAHs above Table 6 RPI
			Shallow		6	3.05	1			1				1		1						
MW17-109S	APEC-24	New	Soil	1.7	1.7	NA	2							2				2	2			Monitoring well to assess shallow groundwater within APEC-24 (PCB Storage Area). Soil and groundwater to be analyzed for APEC COCs (PHCs, PCBs) and metals for additional delineattion. Collect PCB and Dioxin/Furans sample from 0-0.3 mbgs, and one PCB and
			Shallow		6	1.52	1			1				1		1		1				
MW17-110S	APEC-18, APEC-13, APEC-23	New	Soil	1.8	1.8	NA	2			1			1	2		2				2	2	Monitoring well to assess shallow groundwater within APEC-18 (Coal Storage), additional location for APEC-13 (Rail line) and APEC-23 (Paint shop). Soil and groundwater to be analyzed for APEC COCs (VOCs, PHCs, PAHs, metals). Additional SVOCs in shallow soil to characterize foundry sand (phenols, chlorophenols). Horizontal delineation of PAHs west of BH07-51 and northeast of BH07-56. Collect PAHs, PHCs, VOCs and metals from shallow worst case soil based on field screening and from greater depth for vertical delineation. Collect grain size sample and TOC samples from shallow fill and native soil. Shallow well to screen the water table with a 3.1 m long screen, if possible (based on groundwater depth) top of screen and seal in bedrock.
			Shallow Groundwater		6	1.52	1			1				1		1						
MW17-111S	APEC-26	New	Soil	2	2	NA	1							1				1				Install monitoring well downgradient of former substation to assess COCs in shallow groundwater. Collect soil samples for APEC COCs (PHCs, PCBs) and metals. Collect PCBs from shallow soils and PHCs from worst case. Collect metals from 0 to 0.6 to provide lateral
			Shallow		6	1.52	1							1		1		1				
OW02	APEC-25, APEC-29, APEC-30	Existing	Shallow Groundwater	1.42	4	3.05	1						1	1		1						VOC, PAHs and PHC data to be sampled as per annual sampling program for 2017. Historical exceedances of VOCs and PHCs; non-detect results from 2004 to 2016. SVOCs and full metal analysis required for APEC coverage and for shallow north-western property coverage.
OW03-I	APEC-4, (APEC-7), APEC-29	Existing	Shallow Groundwater	1.66	3.4	2.28	1						1	1		1						PAHs to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes, and update of VOC and PHC data for shallow central property coverage added. ABNs and CPs added for APEC coverage.
OW03-II	APEC-4, (APEC-7),	Existing	Deep Groundwater	1.8	7.85	1.52	1			1				1		1						PAHs to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes, update of VOC and PHC for deep central property coverage.
OW04	APEC-8, APEC-9, APEC-29	Existing	Shallow Groundwater	2.29	3.1	1.83	1			1				1		1						Horizontal delineation of PAHs and PHC impacts in OW23S to the south (downgradient). Horizontal delineation of zinc impacts to the east (OW9-I) and full metal analysis for RSC purposes and APEC covereage. Determine limit of shallow VOCs impacts.
OW09-I	APEC-19, APEC-29	Existing	Shallow Groundwater	2.8	4.84	3.05	1			1				1		1						VOC, PHC and zinc to be sampled as per annyal sampling program for 2017. Horizontal delineation of PAHs impacts in OW23S to the south (downgradient) and for APEC coverage. Full metals analysis required for RSC purposes added; this location has known shallow zinc, TCE and VC impacts. MDLs have often exceeded standards for VOCs.
OW09-II	APEC-19, APEC-29	Existing	Deep Groundwater	2.8	7.85	1.52	1			1				1		1						VOC, PHC and zinc to be sampled as per annyal sampling program for 2017. Known VOC and metal (zinc and lead) exceedances. Full metals analysis required for RSC purposes, vertical delineation of known shallow zinc impacts at this location. Update PAH data for eastern corner of property and for APEC coverage.
OW10	APEC-14, APEC-29, APEC-32	Existing	Shallow Groundwater	2.1	4.85	3.05	1			1				1		1						VOC, PAHs, and PHC data update along south-eastern property boundary, for APEC coverage, and delineation. Known impacts at OW25, OW26S/D, OW07-34S/D. Full metals analysis required for RSC purposes, south-eastern property boundary coverage.
OW11-I	APEC-29, APEC-32	Existing	Shallow Groundwater	1.7	4.65	3.05	1			1				1		1						Full metals analysis required for RSC purposes. Update of VOC, PAHs, and PHC data for shallow southern property coverage.
OW11-II	APEC-29, APEC-32	Existing	Deep Groundwater	1.7	7.8	1.52	1			1				1		1						Full metals analysis required for RSC purposes. Update of VOC, PAHs, and PHC data for deep southern property coverage.
OW12	APEC-27, APEC-28, APEC-29, APEC-33	Existing	Shallow Groundwater	2.2	4.81	3.05	1			1				1		1	1					Full metals analysis required for RSC purposes. Update of VOC, PAHs, and PHC data for shallow western property boundary. 1,4-Dioxane added for TCA exceedance.
OW13	APEC-19, APEC-29, APEC-31	Existing	Deep Groundwater	3.1	8	1.52	1						1	1		1						Horizontal delineation (deep) of known VOC impacts in OW9-II. Known VOC and zinc exceedances at this location. SVOCs (ABNs, PAHs and CPs) and PHCs added for APEC coverage.
OW14	APEC-29 (APEC-5)	Existing	Deep Groundwater	2.8	7.81	1.52	1			1				1		1	1					Full metals analysis required for RSC purposes. Update of VOC, PAHs, and PHC data for shallow eastern property boundary.
OW15	APEC-20, APEC-29, APEC-33	Existing	Shallow Groundwater	1.7	4.8	3.05	1			1				1		1		1				Full metals analysis required for RSC purposes. Update of VOC, PAHs, and PHC data for shallow western property coverage. PCBs added for coverage of APEC in groundwater based on historical soil historical exceedance.
OW16	APEC-20, APEC-29, APEC-33	Existing	Shallow Groundwater	1.8	4.87	3.05	1			1				1		1		1				Full metals analysis required for RSC purposes. Update of VOC, PAHs, and PHC data for shallow western property coverage. PCBs added for coverage of APEC in groundwater based on historical soil historical exceedance.
OW17	APEC-25, APEC-29, APEC-30	Existing	Shallow Groundwater	2.6	4.84	3.05	1			1				1		1						Horizontal delineation of PAHs, zinc, and PHC impacts to the northwest (cross-gradient) from OW22S. Determine western limit of shallow TCE impacts (west of offsite OW6). Full metals analysis required for RSC purposes.

Appendix B: Table 2

Phase Two ESA Sampling and Analytical Plan: IMICO

Location ID	APEC[1]	Existing or New Location	Media	Approx. Depth to Bedrock (mbgs)	Approx. Depth of TP/BH/MW (mbgs)	Screen Length (m)	O.Reg. 153/04 Metals & Inorganics	O. Reg. 153/04 Hydride-forming Metals (Sb, As, Se)	O. Reg. 153/04 Metals only (Section 1.2.2 in Protocol Doc)	PAHs (lab filter for B(a)P)	ABNs (includes phenol)	Chlorophenols	SVOCs (PAH, ABNs, Chlorophenol)	PHCs	BTEX	VOCs	1,4-Dioxane	PCB Aroclors	Dioxin/Furans	Grain Size Distribution (sieve and hydrometer)	TOC	Purpose and Justification
OW18-I	APEC-10, APEC-31	Existing	Shallow Groundwater	3	4.86	3.05	1			1				1		1						VOC, PAHs, PHC and zinc to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes. Location with known shallow zinc, B(a)P and VOC impacts.
OW18-II	APEC-10, APEC-31	Existing	Deep Groundwater	3.2	7.84	1.52	1			1				1		1						VOC, PAHs, PHC and zinc to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes. Location with known zinc and VOC impacts. Vertical delineation of known shallow zinc, PAH and VOC impacts.
OW19	APEC-10, APEC-11, APEC-31	Existing	Shallow Groundwater	1.8	4.82	3.05	1			1				1		1						VOC, PAHs, PHC and zinc to be sampled as per annual sampling program for 2017. Horizontal delineation of PHC impacts to the northeast (cross-gradient) from OW22S. Determine northern limit of shallow VOC impacts (north of OW18-I). Full metals analysis required for RSC purposes. Location with known shallow zinc and VOC impacts.
OW22S	APEC-11, APEC-29	Existing	Shallow Groundwater	1.7	4.1	2.74	1			1				1		1						PAHs, PHC and zinc to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes. Location with known shallow zinc, PAH, PHC and BTEX impacts. Update of VOCs for horizontal delineation of shallow VOC impacts.
OW22D	APEC-11, APEC-29	Existing	Deep Groundwater	1.7	7.47	0.76	1							1		1	1					PAHs, PHC and zinc to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes, vertical delineation of known shallow zinc impacts. Update of VOCs for vertical and horizontal delineation of deep VOC impacts. 1,4-Dioxane added based on historical TCA exceedance.
OW23S	APEC-10	Existing	Shallow Groundwater	2.5	5.26	2.74	1			1				1		1						VOCs and PAHs to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes, horizontal delineation of known shallow zinc impacts (OW22S, OW18-I, OW9-I). PHCs included based on historical LNAPL observed in this location. Historical exceedances of VOCs, PAHs and PHCs. Do not sample if LNAPL found.
OW23D	APEC-10	Existing	Deep Groundwater	1.9	7.77	1.22	1			1				1		1	1					VOCs, PAHs and PHCs to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes, vertical delineation of known shallow zinc impacts (OW22S, OW18-I, OW9-I). Historical exceedances of VOCs, PHCs.
OW24S	APEC-31	Existing	Shallow Groundwater	3.3	5.34	2.74	1						1	1		1		1				VOCs and PAHs to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes, horizontal delineation of known shallow zinc impacts (OW18-I, OW9-I). Update PHC data for eastern corner of property, deep offsite impacts in nearby OW30D (offsite shallow OW30S not sampled). SVOCs and PCBs added for APEC coverage. Historical exceedances of VOC and zinc.
OW24D	APEC-31	Existing	Deep Groundwater	2.9	7.77	1.22	1							1		1	1					VOCs and PAHs to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes, vertical delineation of known shallow zinc impacts (OW18-I, OW9-I). Update PHC data for eastern corner of property, deep offsite impacts in nearby OW30D. 1,4-Dioxane added based on historical maximum TCE concentration on Site. Historical exceedances of VOC, zinc and F1.
OW25	APEC-1, APEC-17	Existing	Shallow Groundwater	2	4.72	2.74	1			1				1		1		1				VOC, PAHs, and PHC to be sampled as per annual sampling for 2017. Full metals analysis required for RSC purposes, APEC, and shallow central property coverage. PCBs added for APEC coverage and lateral delineation (upgradient) of historical exceedances at OW26S. Historical exceedances of VOCs, PAHs, F2 and F3.
OW26S	APEC-29, APEC-32	Existing	Shallow Groundwater	2.4	4.6	1.52	1							1		1	1	1				VOC and PHC to be sampled as per annual sampling for 2017. PAHs considered to be sufficiently characterized as previous data indicates non-detect concentrations from 2004 to 2016. Full metals analysis required for RSC purposes, shallow central downgradient property boundary and previous exceedances of zinc. 1,4-Dioxane added based on historical 1,1-DCA exceedance, detected TCA and as a downgradient location. PCBs added based on historical exceedances.
OW26D	APEC-29, APEC-32	Existing	Deep Groundwater	2.6	11.8	1.52	1							1		1	1					VOCs and PHCs to be sampled as per annual sampling for 2017. PAHs considered to be sufficiently characterized as previous data indicates non-detect concentrations from 2004 to 2016. Full metals analysis required for RSC purposes, deep central downgradient property boundary. Historical exceedances of VOCs. 1,4-Dioxane added based on being a downgradient location from TCA/DCA exceedances.
OW31	APEC-5, APEC-31	Existing	Deep Groundwater (Goat Island Formation)	3.4	33.32	4.42								1		1	1					Confirm and update VOC and PHC results from previous sampling event. 1,4-Dioxane added for coverage of deeper unit. Collect groundwater samples using low flow sampling techniques with the pump intake at approximately 32 mbgs which is within the lowest formation in the open boring at the bottom of the well. Duplicate samples are to be submitted for analysis including a trip blank for VOCs and F1. All samples from OW31 are to be submitted separately to the lab in their own cooler under a separate COC.
OW07-31	APEC-25, APEC-29, APEC-30	Existing	Deep Groundwater	1.65	6.22	4.72	1						1	1		1						Update of VOC, PAHs, PHC and metals for APEC and deep northwestern property coverage and delineation as only available round of sampling (2007) indicated non-detect VOCs and PHCs and no PAH or metal exceedances. ABNs and CPs added for APEC coverage.
OW07-32	APEC-7, APEC-16, APEC-29	Existing	Deep Groundwater	1.65	6.22	3.05	1			1				1		1						Update of VOC, PAHs, PHCs and metals for APEC and deep central property coverage as only available round of sampling (2007) indicated exceedances of TCE and zinc and no exceedances of PAHs and non-detect PHCs.
OW07-33	APEC-1, APEC-17, APEC-22	Existing	Deep Groundwater	1.63	6.15	3.05	1						1	1		1	1	1				Horizontal delineation (upgradient) of VOC impacts in OW07-34D to the south. Update of PAHs, PHC and metals for deep central property coverage as only available round of sampling (2007) indicated exceedances of TCE and DCA, and no exceedances for metals. SVOCs, PCBs added for APEC coverage. 1,4-Dioxane added based on historical DCA exceedance.
OW07-34S	APEC-1	Existing	Shallow Groundwater	1.57	4.6	3.05	1			1				1		1		1				Update of VOC, PAH, and PHC for horizontal delineation (downgradient) of impacts in OW25. Update of PCBs for horizontal delineation (upgradient) of impacts in OW26S. Horizontal delineation (general Site) for zinc and APEC coverage for overall metals. Only available sampling (2007) indicated a marginal TCE exceedance and non-detect concentrations for PHCs, PCBs and no exceedances for PAHs and metals.

Appendix B: Table 2

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Location ID	APEC[1]	Existing or New Location	Media	Approx. Depth to Bedrock (mbgs)	Approx. Depth of TP/BH/MW (mbgs)	Screen Length (m)	O.Reg. 153/04 Metals & Inorganics	O. Reg. 153/04 Hydride-forming Metals (Sb, As, Se)	O. Reg. 153/04 Metals only (Section 1.2.2 in Protocol Doc)	PAHs (lab filter for B(a)P)	ABNs (includes phenol)	Chlorophenols	SVOCs (PAH, ABNs, Chlorophenol)	PHCs	BTEX	VOCs	1,4-Dioxane	PCB Aroclors	Dioxin/Furans	Grain Size Distribution (sieve and hydrometer)	TOC	Purpose and Justification
OW07-34D	APEC-1	Existing	Deep Groundwater	1.57	9.17	3.05	1							1		1	1					VOCs to be sampled as per annual sampling for 2017. PAHs considered to be sufficiently characterized as previous data indicates mainly non-detect concentrations from 2004 to 2016. Vertical delineation of PHC impacts in OW25 to the south (downgradient). Horizontal delineation (general Site) for zinc and APEC coverage for overall metals. 1,4-Dioxane added based on historical TCA/DCA exceedances.
OW07-37	APEC-12, APEC-15, APEC-29	Existing	Deep Groundwater	1.57	6.15	3.05	1						1	1		1						Update of VOC, PAHs, PHCs and metals for APEC and deep central property coverage. Only available sample (2007) indicated zinc exceedances, non-detect PHCs, PAHs and PCBs, and no exceedances for VOCs. ABNs and CPs added for APEC coverage.
OW07-38S	APEC-13, APEC-23 (APEC-18,24)	Existing	Shallow Groundwater	1.8	4.84	3.05	1			1				1		1						Update of VOCs, PAHs, PHCs and metals for shallow north property coverage and APEC coverage. Only available sampling (2007) indicated non-detect VOCs, PHCs, PAHs, PCBs, and no exceedances of metals. Provides lateral delineation of zinc concentrations.
OW13-39S	APEC-10, APEC-31	Existing	Shallow Groundwater	3.15	6.09	3.05	1							1		1						VOC and PHC to be sampled as per annual sampling for 2017. PAHs considered to be sufficiently characterized as previous data indicates concentrations well below Standards or non-detect from 2004 to 2016. Full metals analysis required for RSC purposes, horizontal delineation of known zinc impacts in shallow groundwater (OW18-I, OW9-I).
OW13-39D	APEC-10, APEC-31	Existing	Deep Groundwater	3.15	12.2	1.52	1							1		1	1					VOC and PHC to be sampled as per annual sampling for 2017. PAHs considered to be sufficiently characterized as previous data indicates concentrations well below Standards or non-detect from 2004 to 2016. Full metals analysis required for RSC purposes, vertical delineation of known zinc impacts in shallow groundwater (OW18-I, OW9-I). 1,4-Dioxane added as one of highest TCE locations on Site.

Notes:
1- APECs in brackets are outside the limits of the APEC, however sampling is proposed as may provide additional delineation information
mbgs - metres below ground surface
Standards refers to Ministry of Environment and Climate Change "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" dated July 1, 2011
Table 6 Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition and Residential, Parkland and Institutional (RPI) Property Use.
If no sample depth specified collect worst case.
The following field parameters will be measured in groundwater during well purging: pH, ORP, DO, Temperature turbidity and Specific Conductance.
Dioxin/Furan on hold pending PCB results
Do not request pH analysis in soil (metals/inorganics) where concrete is observed at surface.
QAQC samples: one duplicate to be collected for every 10 samples; one trip blank for each cooler containing a VOC sample.

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Location ID	APEC (DCS 2014)	APEC[1]	Original (Proposal) Location ID	Existing or New Location	Media	Approx. Depth to Bedrock (m)	Approx. Depth of TP/BH/MW (m)	O.Reg. 511 Metals & Inorganics	PAHs	ABNs (includes phenol)	Chlorophenols	SVOCs (PAH, ABNs, Chlorophenol)	PHCs	VOCs	1,4-Dioxane	PCB Aroclors	Dioxin/Furans	Grain Size Distribution (sieve and hydrometer)	TOC	Purpose and Justification
BH17-200		APEC-15	New	New	Soil	1.6	1.6	2				2	2	2						Characterize soil within APEC-15 (Sand Mixing/Storage) for COCs (PAHs, PHCs, CPs, ABNs, Metals). Collect PAHs, PHCs, VOCs, SVOCs and metals from shallow worst case soil based on field screening and from greater depth for vertical delineation.
BH17-201		APEC-22	New	New	Soil	1.6	1.6	2	2				2			2	2			Characterize soil within APEC-22 (Transformer) for COCs (PHCs, PCBs). Additional analyses for metals and PAHs for site delineation purposes. Collect PCB and Dioxin/Furans sample from 0-0.3 mbgs, and one PCB and Dioxin/Furans from 0.3-0.6mbgs. Place deeper PCB and both Dioxin/Furans samples on hold pending the PCB result from the shallow sample.
BH17-202		APEC-14	New	New	Soil	2.1	2.1	2	2				2	2						Characterize soil within APEC-14 (Auto Storage) for COCs (VOCs, PHCs, PAHs, metals). Collect PAHs, PHCs, VOCs and metals from shallow worst case soil based on field screening and from greater depth for vertical delineation.
BH17-203		APEC-10	New	New	Soil	2							1	1						Characterize the EM31 in-phase anomaly identified in this area. Free phase product in nearby wells. Collect worst case sample for analysis of PHCs/VOCs.
TP17-300	5	APEC-20, APEC-21, APEC-29, APEC-33	TP17-01	New	Soil	1.7	1.7	2				2	2	2		2	2			Test pit to address missing COCs in soil for APEC-20 and APEC-21. In vicinity of max concentrations for PCBs (at E from 0.33 mbgs), Oil & Grease (8% at E), BTEX (at BH07-66) and metals (As, Se at BH07-67). Phenol commonly associated with foundry sand and has not been characterized in soil. Collect metals and SVOCs (PAHs, phenol and CPs) from foundry sand and from a deeper native soil sample for vertical delineation. PCBs were delineated vertically at BH07-67. Horizontal delineation of PCBs and PHCs to the south, and vertical delineation required for PHCs. Collect PCB and Dioxin/Furans sample from 0-0.3 mbgs, and one PCB and Dioxin/Furans from 0.3-0.6mbgs. Place deeper PCB and both Dioxin/Furans samples on hold pending the PCB result from the shallow sample. Collect PHCs and VOCs from worst case soil based on field screening and from greater depth for vertical delineation.
TP17-301		APEC-4, APEC-13	New	New	Soil	1.6	1.6	2				2	2					2	2	Characterize soil in within APEC-4 (Sand Storage) and APEC-13 (rail lines) for COCs (SVOCs, metals) and additional PHCs from shallow worst case soil based on field screening and from greater depth for vertical delineation. Collect grain size sample and TOC samples from shallow fill and native soil.
TP17-302		APEC-25, APEC-13	New	New	Soil	1.7	1.7	2	2				2	2						Characterize soil within APEC-25 (Drum Storage) and APEC-13 (Rail Line). Collect PAHs, PHCs, VOCs and metals from shallow worst case soil based on field screening and from greater depth for vertical delineation.
TP17-303		APEC-27, APEC-28	New	New	Soil	2.2	2.2	2	2				2	2						Characeterize soil within APEC-27 (Electrical Shop) and APEC-28 (Waste Oil Storage). Collect PAHs, PHCs, VOCs and metals from shallow worst case soil based on field screening and from greater depth for vertical delineation.
TP17-304		APEC-11	New	New	Soil	1.8	1.8	2					2	2						Characterize soil within APEC-11 based on historical exceedances remaining on excavation walls (ES-10, non-reliable data for second maxiumum zinc at 6350 ug/g and TPH, no depth provided but assumed between 0 and 2 mbgs). Collect PHCs, VOCs and metals from shallow worst case soil based on field screening and from just above bedrock for vertical delineation.
TP17-305		APEC-11	New	New	Soil	1.8	1.8	2					2	2						Characterize soil within APEC-11 based on historical exceedances remaining on excavation walls (L, non-reliable data for maximum zinc of 9774 ug/g and TPH at 0 to 0.3 mbgs). Collect PHCs, VOCs and metals from 0-0.3 mbgs or shallow worst case soil (if field screening shows otherwise) and from just above bedrock for vertical delineation.

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Location ID	APEC (DCS 2014)	APEC[1]	Original (Proposal) Location ID	Existing or New Location	Media	Approx. Depth to Bedrock (m)	Approx. Depth of TP/BH/MW (m)	O.Reg. 511 Metals & Inorganics	PAHs	ABNs (includes phenol)	Chlorophenols	SVOCs (PAH, ABNs, Chlorophenol)	PHCs	VOCs	1,4-Dioxane	PCB Aroclors	Dioxin/Furans	Grain Size Distribution (sieve and hydrometer)	TOC	Purpose and Justification
TP17-306		APEC-17	New	New	Soil	1.3	1.3	1	2				2	1		2				Investigate soil in the vicinity of remaining exceedances within APEC-17 (PCB Capacitors) for PCBs and PHCs. Excavation reports indicate PCB concentrations remaining at concentrations above the Table 6 RPI on soil, concrete and bedrock samples. Target sump area as this was the area of highest impact reported. Collect additional samples for metals, VOCs, PAHs to characterize the backfill used, and of any original soil remaining to delinate maximum PAH concentrations at OW07-34S to the south. This location also serves to investiage the EM31/GPR Area 3, where results suggest an area of fill materials. Take a sample of the bedrock surface and a clean sample below to delineate the reported concentrations on the bedrock surface.
TP17-307		APEC-1, APEC-7	New	New	Soil	1.3	1.3						1	1						Characterize the EM31 and GPR anomaly that may represent a potential UST identified in this area. Collect worst case sample for analysis of PHCs/VOCs. Excavate a 10m long trench across the anomoly in a NW to SE direction looking for any signs of metal, piping, pits or tanks.
TP17-308		APEC-1, APEC-7	New	New	Soil	1.3	1.3	1												Investigate the EM31/GPR Area 4, suggesting the presence of metals in the area, with a test pit (or convert to borehole if required), to the surface of bedrock. Collect samples or metal analysis, and any additional (PHCs/VOCs) only if field observations/evidence suggests potential impacts.
MW17-100S		APEC-6	New	New	Soil	2	2	2					2	1						Monitoring well to assess soil and shallow groundwater in APEC-6 (Chipping/Grinding Room). Soil and groundwater to be analyzed for APEC COCs (Metals). Collect PHCs and VOCs for horizontal delineation, from worst case soil based on field screening and collect second set of PHCs from greater depth near bedrock interface to provide vertical delineation. Characterize shallow groundwater for metals, VOCs and PHCs southwest of plumes. Shallow well to screen the water table with a 3.1 m long screen.
					Shallow Groundwater		6	1					1	1						
MW17-101S, D	1	APEC-2, APEC-29	MW17-01S, D	New	Soil	2.3	2.3	2				2	2	2	2	2	2			Monitoring well to assess shallow groundwater in APEC-2 (Machine Shop) and assess full metal analyses in soil. Soil and groundwater to be analyzed for APEC COCs (VOCs, PHCs, PAHs, metals). Additional SVOCs for phenols and CP analyses commonly associated with foundry sand and has not been characterized in soil. Additional 1,4-dioxane for associateion with TCE/TCA. Additional PCB and Dioxin/Furan analysis based on Table 6 RPI exceedances at TP13-08. Provides delineation for PHCs (max F3 location at TP13-08 and high TPH at ES-14), metals, PAHs and PCBs (TP8 from 0.05 to 0.15 mbgs). LNAPL located to the northeast at OW23S. Phenol commonly associated with foundry sand and has not been characterized in soil. Collect metals and SVOCs from foundry sand and from a deeper native soil sample for vertical delineation. Collect VOC, 1,4-Dioxane, PHC and PAHs from worst case soil based on field screening and collect second set from greater depth near bedrock interface to provide vertical delineation. Collect PCB and Dioxin/Furans sample from 0-0.3 mbgs, and one PCB and Dioxin/Furans from 0.3-0.6mbgs. Place deeper PCB and both Dioxin/Furans samples on hold pending the PCB result from the shallow sample. Characterize shallow and deep groundwater along the western edge of the chlorinated VOC groundwater plume. 1,4-Dioxane not previously characterized in groundwater and it is known to be associated with TCE and TCA plumes. Sample shallow and deep wells for dissolved metals (field filtered) due zinc exceedances of Table 6 in the eastern section of the property in 2015. Shallow well to screen the water table and potential LNAPL with a 3.1 m long screen. Deeper well to tag the Eramosa formation (approximately 9 mbgs) and place 5 ft screen, just above at bottom of Guelph formation, for vertical delineation of COCs.
					Shallow Groundwater		6	1	1				1	1	1					
					Deep Groundwater		9	1	1				1	1	1					
MW17-102D		APEC-1, APEC-29	MW17-02D	New	Soil	2.3	2.3	2	1			1	2	2						Maximum soil PAHs (66-900 ug/g) detected at OW07-34 from 0 to 1.22 mbgs. To confirm elevated PAHs at OW07-34 collect a shallow SVOC soil sample (to cover APEC-29, foundry sands) at 0 to 1.22 mbgs (or a different depth if field observations indicate greater impacts at a different depth) and collect a second PAH sample from a greater depth just above bedrock to provide vertical delineation. Collect metals from foundry sand and from a deeper native soil sample for vertical delineation. Benzene and F3 exceeds at TP13-11 from 0.10 to 0.20 mbgs. Collect a soil sample from 0.1 to 0.2 mbgs for VOC and PHC (or worst case if field observations show otherwise) and collect a second sample from a greater depth just above bedrock to provide vertical delineation. VOCs detected in groundwater above Table 6 RPI at OW26D at a depth of approximately 10-12 mbgs. Install deep well at a depth of approximately 13 mbgs to provide vertical delineation of VOCs along the southern property boundary.
					Deep Groundwater		13						1	1						

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MW17-103S, D	1 & 6	APEC-7	MW17-03D TP17-02	New	Soil	1.7	1.7	2				2	2	2					2	Monitoring well to assess soil and groundwater in the vicinity of the former ASTs and oil house (APEC-7), in the vicinity of historical Oil & Grease exceedances at I (2.65%) and J (8.9%). Additional delineation of maximum Cu and Cd concentrations at I and Ag at J. Metals and SVOCs to be collected to assess foundry sand and PAHs northeast of OW07-32 and northwest of BH07-56 where exceedances occur. Collect metals and ABNs (phenol) from foundry sand and from a deeper native soil sample for vertical delineation. PAHs exceeded Table 6 RPI in shallow soil at OW07-32 and BH07-56. Provide vertical delineation for PAHs. Analysis of PHCs and VOCs for overall site coverage. Collect PAHs, PHCs and VOCs from shallow worst case soil based on field screening and from greater depth for vertical delineation. VOCs historically above Table 6 in groundwater at OW37-32 and OW7-33. Shallow well in shallow bedrock (seal in upper Guelph formation) to screen the water table (between 2-3 mbgs based on historical levels) with a 3.1 m long screen. Deeper well to tag Eramosa formation (approximately 9 mbgs) and install 5 ft screen just above bottom of Guelph formation, to provide vertical delineation of VOCs in groundwater.
					Shallow Groundwater		6	1				1	1	1						
					Deep Groundwater		9							1						
MW17-104S, D		APEC-3	MW17-04S, D	New	Soil		1.9	2				2	2	2						Monitoring well to assess groundwater within APEC-3 (Annealing room). Phenol commonly associated with foundry sand and has not been characterized in soil. Collect metals and ABNs (phenol) from foundry sand and from a deeper native soil sample for vertical delineation. Elevated PHCs suggesting the presence of LNAPL located to the east at OW22S. Soil delineation for VOCs, PHCs and PAHs to the west of the potential LNAPL area and provide vertical characterization. Collect worst case shallow soil sample for VOCs, PHCs and PAHs based on field screening and second set from deeper to provide vertical delineation. Historical samples suggest exceedances of zinc and TPH remained (ES-15, ES-16) from the excavation to the northeast. Characterize shallow and groundwater along the north western edge of the PHC groundwater plume and deep groundwater to the northwest of the VOC plume. Sample shallow and deep wells for dissolved metals (field filtered) due zinc exceedances of Table 6 in the eastern section of the property in 2015. Shallow well to screen the water table and potential LNAPL with a 3.1 m long screen. Deeper well to tag Eramosa formation (approximately 9 mbgs) and install 5 ft screen just above bottom of Guelph formation, to provide vertical delineation of COCs.
					Shallow Groundwater		6	1	1				1	1						
					Deep Groundwater		9	1	1				1	1						
MW17-105S, D		APEC-8, APEC-9, APEC-19	MW17-05D	New	Soil		2.3	2				2	2	2					1	Monitoring well location to assess groundwater in the vicinity of APECs 8, 9 and 19 at the southeast end of the Site. Maximum (reliable) zinc concentration in soil detected at TP9 from 0.0 to 0.08 mbgs and PAHs above Table 6 RPI standards. Phenol commonly associated with foundry sand and has not been characterized in soil. Collect metals from 0 to 0.1 mbgs and ABNs (phenol) from foundry sand and from a deeper native soil samples for vertical delineation. PAHs exceed Table 6 RPI in soil to the northeast at BH07-41 and TP-9. Collect shallow PAH soil sample from worst case based on field screening for horizontal delineation and a deeper sample from above bedrock for vertical delineation. Collect soil samples for TOC, PHCs, and VOCs from worst case soil based on field screening. VOCs and zinc exceed Table 6 in groundwater at OW9-II at a depth of approximately 7 mbgs. PHCs exceed in deep wells to the northeast (OW31 and OW24D). As OW04 is dry, install shallow well to screen the water table with a 3.1 m long screen. Deeper well to tag Eramosa formation (approximately 9 mbgs) and install 5 ft screen just above bottom of Guelph formation, to provide vertical delineation of COCs along the southern property boundary.
					Shallow Groundwater	2.3	6	1	1				1	1						
					Deep Groundwater		9	1					1	1						
MW17-106S, D	1	APEC-1, APEC-29	MW17-06S, D	New	Soil		1.8	2				2	2	2					1	Monitoring well to assess shallow groundwater at the southwest end of APEC -1 (Foundry). Soil and groundwater to be analyzed for APEC COCs (VOCs, PHCs, ABNs, PAHs, CPs and metals). Characterize soil and groundwater in the area of foundry sumps in the central portion of the site. Collect PAHs, PHCs and VOCs from worst case shallow soil based on field screening and second sample from deeper above bedrock to delineate vertically (TOC at this depth). Phenol commonly associated with foundry sand and has not been characterized in soil. Collect metals and ABNs (phenol) from foundry sand and from a deeper native soil sample for vertical delineation. Shallow well to screen the water table with a 3.1 m long screen, if possible (based on groundwater depth) top of screen and seal in bedrock. Deeper well to tag Eramosa formation (approximately 9 mbgs) and install 5 ft screen just above bottom of Guelph formation, to provide vertical delineation of COCs.
					Shallow Groundwater	1.8	6	1	1				1	1						
					Deep Groundwater		9						1	1						

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Location ID	APEC (DCS 2014)	APEC[1]	Original (Proposal) Location ID	Existing or New Location	Media	Approx. Depth to Bedrock (m)	Approx. Depth of TP/BH/MW (m)	O.Reg. 511 Metals & Inorganics	PAHs	ABNs (includes phenol)	Chlorophenols	SVOCs (PAH, ABNs, Chlorophenol)	PHCs	VOCs	1,4-Dioxane	PCB Aroclors	Dioxin/Furans	Grain Size Distribution (sieve and hydrometer)	TOC	Purpose and Justification
MW17-107S	1	APEC-1, APEC-29	New	New	Soil	1.7	1.7	2				2	2	2						Monitoring well to assess shallow groundwater at the southwest end of APEC -1 (Foundry). Soil and groundwater to be analyzed for APEC COCs (VOCs, PHCs, ABNs, PAHs, CPs and metals). Provides additional lateral delineation in soil and groundwater for all parameters.Collect SVOCs and metals from fill (reworked native?) beneath concrete and a second sample from native soil just above bedrock for vertical delineation. Collect VOCs, PHCs from worst case soil based on field screening and collect second set from greater depth near bedrock interface to provide vertical delineation. Shallow well to screen the water table with a 3.1 m long screen, if possible (based on groundwater depth) top of screen and seal in bedrock.
					Shallow Groundwater		6	1				1	1	1						
MW17-108S	1 & 2	APEC-5, APEC-29	BH17-01	New	Soil	2.8	2.8	2	1			1	2	2	2			2	2	Monitoring well to assess shallow groundwater in APEC-5 (Galvanizing Building). Soil and groundwater to be analyzed for APEC COCs (VOCs, PHCs, PAHs, metals). Maxiumum zinc concentration of reliable data at TP9 from 0.0 to 0.08 mbgs and PAHs above Table 6 RPI standards. Additional samples for ABN (phenol) from foundry sand. Phenol commonly associated with foundry sand and has not been characterized in soil. Collect metals, ABN (phenol) and PAH sample from native soil just above bedrock for vertical delineation. VOC, 1,4-Dioxane and PHC characterization and horizontal delineation of soil in the southeast corner of the site. 1, 4-Dioxane not previously characterized in soil and it is known to be associated with TCE and TCA. Collect VOC, 1,4-Dioxane and PHC from worst case soil based on field screening and collect second set from greater depth near bedrock interface to provide vertical delineation. Collect grain size and TOC samples from shallow fill and native soil. Shallow well to screen the water table and potential LNAPL with a 3.1 m long screen.
					Shallow Groundwater		6	1	1				1	1						
MW17-109S	1 & 2	APEC-24	New	New	Soil	1.7	1.7	2					2			2	2			Monitoring well to assess shallow groundwater within APEC-24 (PCB Storage Area). Soil and groundwater to be analyzed for APEC COCs (PHCs, PCBs) and metals for additional delineattion. Collect PCB and Dioxin/Furans sample from 0-0.3 mbgs, and one PCB and Dioxin/Furans from 0.3-0.6mbgs. Place deeper PCB and both Dioxin/Furans samples on hold pending the PCB result from the shallow sample. Collect PHCs and metals from shallow worst case soil based on field screening and from greater depth for vertical delineation. Shallow well to screen the water table with a 3.1 m long screen, if possible (based on groundwater depth) top of screen and seal in bedrock. Collect additional VOC and PAH groundwater samples for delineation of exceedances to the east/southeast.
					Shallow Groundwater		6	1	1				1	1		1				
MW17-110S	1 & 2	APEC-18, APEC-13, APEC-23	TP17-03	New	Soil	1.8	1.8	2	1			1	2	2				2	2	Monitoring well to assess shallow groundwater within APEC-18 (Coal Storage), additional location for APEC-13 (Rail line) and APEC-23 (Paint shop). Soil and groundwater to be analyzed for APEC COCs (VOCs, PHCs, PAHs, metals). Additional SVOCs in shallow soil to characterize foundry sand (phenols, chlorophenols). Horizontal delineation of PAHs west of BH07-51 and northeast of BH07-56. Collect PAHs, PHCs, VOCs and metals from shallow worst case soil based on field screening and from greater depth for vertical delineation. Collect grain size sample and TOC samples from shallow fill and native soil. Shallow well to screen the water table with a 3.1 m long screen, if possible (based on groundwater depth) top of screen and seal in bedrock.
					Shallow Groundwater		6	1	1				1	1						
MW17-111S	1 & 2	APEC-26	New	New	Soil	2	2	1					1			1				Install monitoring well downgradient of former substation to assess COCs in shallow groundwater. Collect soil samples for APEC COCs (PHCs, PCBs) and metals. Collect PCBs from shallow soils and PHCs from worst case. Collect metals from 0 to 0.6 to provide lateral delineation to the southwest of maximum lead concentration in soil at BH07-65 (10,100 ug/g from 0.05 to 0.61 mbgs). Concentration is vertically delineated with sample at lower depth of 0.61 to 2.03 mbgs. Some southeast lateral delineation is provided with D/DSW7. Shallow well to screen the water table with a 3.1 m long screen, if possible (based on groundwater depth) top of screen and seal in bedrock. Groundwater samples to be collected for PHCs and PCBs. Sample additional metals and VOCs for lateral delineation of max concentrations of TCA (140 ug/L) and 1,1-DCA (11 ug/L), metal exceedances (Cd, Pb, Zn) and TPH exceedances previously reported in shallow groundwater along the south property boundary at OW12.
					Shallow Groundwater		6	1					1	1		1				

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Location ID	APEC (DCS 2014)	APEC[1]	Original (Proposal) Location ID	Existing or New Location	Media	Approx. Depth to Bedrock (m)	Approx. Depth of TP/BH/MW (m)	O.Reg. 511 Metals & Inorganics	PAHs	ABNs (includes phenol)	Chlorophenols	SVOCs (PAH, ABNs, Chlorophenol)	PHCs	VOCs	1,4-Dioxane	PCB Aroclors	Dioxin/Furans	Grain Size Distribution (sieve and hydrometer)	TOC	Purpose and Justification
OW02	1	APEC-25, APEC-29, APEC-30	OW2	Existing	Shallow Groundwater	NA	NA	1				1	1	1						VOC, PAHs and PHC data to be sampled as per annual sampling program for 2017. Historical exceedances of VOCs and PHCs; non-detect results from 2004 to 2016. SVOCs and full metal analysis required for APEC coverage and for shallow north-western property coverage.
OW03-I	1	APEC-4, (APEC-7), APEC-29	OW3-I	Existing	Shallow Groundwater	NA	NA	1				1	1	1						PAHs to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes, and update of VOC and PHC data for shallow central property coverage added. ABNs and CPs added for APEC coverage.
OW03-II	1	APEC-4, (APEC-7), APEC-29	OW3-II	Existing	Deep Groundwater	NA	NA	1	1				1	1						PAHs to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes, update of VOC and PHC for deep central property coverage.
OW04	1 & 2	APEC-8, APEC-9, APEC-29	OW4	Existing	Shallow Groundwater	NA	NA	1	1				1	1						Horizontal delineation of PAHs and PHC impacts in OW23S to the south (downgradient). Horizontal delineation of zinc impacts to the east (OW9-I) and full metal analysis for RSC purposes and APEC covereage. Determine limit of shallow VOCs impacts.
OW09-I	1 & 2	APEC-19, APEC-29	OW9-I	Existing	Shallow Groundwater	NA	NA	1	1				1	1						VOC, PHC and zinc to be sampled as per annyal sampling program for 2017. Horizontal delineation of PAHs impacts in OW23S to the south (downgradient) and for APEC coverage. Full metals analysis required for RSC purposes added; this location has known shallow zinc, TCE and VC impacts. MDLs have often exceeded standards for VOCs.
OW09-II	1 & 2	APEC-19, APEC-29	OW9-II	Existing	Deep Groundwater	NA	NA	1	1				1	1						VOC, PHC and zinc to be sampled as per annyal sampling program for 2017. Known VOC and metal (zinc and lead) exceedances. Full metals analysis required for RSC purposes, vertical delineation of known shallow zinc impacts at this location. Update PAH data for eastern corner of property and for APEC coverage.
OW10	1	APEC-14, APEC-29, APEC-32	OW10	Existing	Shallow Groundwater	NA	NA	1	1				1	1						VOC, PAHs, and PHC data update along south-eastern property boundary, for APEC coverage, and delineation. Known impacts at OW25, OW26S/D, OW07-34S/D. Full metals analysis required for RSC purposes, south-eastern property boundary coverage.
OW11-I	1 & 4	APEC-29, APEC-32	OW11-I	Existing	Shallow Groundwater	NA	NA	1	1				1	1						Full metals analysis required for RSC purposes. Update of VOC, PAHs, and PHC data for shallow southern property coverage.
OW11-II	1 & 4	APEC-29, APEC-32	OW11-II	Existing	Deep Groundwater	NA	NA	1	1				1	1						Full metals analysis required for RSC purposes. Update of VOC, PAHs, and PHC data for deep southern property coverage.
OW12	1 & 4	APEC-27, APEC-28, APEC-29, APEC-33	OW12	Existing	Shallow Groundwater	NA	NA	1	1				1	1	1					Full metals analysis required for RSC purposes. Update of VOC, PAHs, and PHC data for shallow western property boundary. 1,4-Dioxane added for TCA exceedance.
OW13	1 & 2	APEC-19, APEC-29, APEC-31	OW13	Existing	Deep Groundwater	NA	NA	1				1	1	1						Horizontal delineation (deep) of known VOC impacts in OW9-II. Known VOC and zinc exceedances at this location. SVOCs (ABNs, PAHs and CPs) and PHCs added for APEC coverage.
OW14	1 & 2	APEC-29 (APEC-5)	OW14	Existing	Deep Groundwater	NA	NA	1	1				1	1	1					Full metals analysis required for RSC purposes. Update of VOC, PAHs, and PHC data for shallow eastern property boundary.
OW15		APEC-20, APEC-29, APEC-33	OW15	Existing	Shallow Groundwater	NA	NA	1	1				1	1		1				Full metals analysis required for RSC purposes. Update of VOC, PAHs, and PHC data for shallow western property coverage. PCBs added for coverage of APEC in groundwater based on historical soil historical exceedance.
OW16	1 & 5	APEC-20, APEC-29, APEC-33	OW16	Existing	Shallow Groundwater	NA	NA	1	1				1	1		1				Full metals analysis required for RSC purposes. Update of VOC, PAHs, and PHC data for shallow western property coverage. PCBs added for coverage of APEC in groundwater based on historical soil historical exceedance.
OW17	1	APEC-25, APEC-29, APEC-30	OW17	Existing	Shallow Groundwater	NA	NA	1	1				1	1						Horizontal delineation of PAHs, zinc, and PHC impacts to the northwest (cross-gradient) from OW22S. Determine western limit of shallow TCE impacts (west of offsite OW6). Full metals analysis required for RSC purposes.

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Location ID	APEC (DCS 2014)	APEC[1]	Original (Proposal) Location ID	Existing or New Location	Media	Approx. Depth to Bedrock (m)	Approx. Depth of TP/BH/MW (m)	O.Reg. 511 Metals & Inorganics	PAHs	ABNs (includes phenol)	Chlorophenols	SVOCs (PAH, ABNs, Chlorophenol)	PHCs	VOCs	1,4-Dioxane	PCB Aroclors	Dioxin/Furans	Grain Size Distribution (sieve and hydrometer)	TOC	Purpose and Justification
OW18-I	1	APEC-10, APEC-31	OW18-I	Existing	Shallow Groundwater	NA	NA	1	1				1	1						VOC, PAHs, PHC and zinc to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes. Location with known shallow zinc, B(a)P and VOC impacts.
OW18-II	1	APEC-10, APEC-31	OW18-II	Existing	Deep Groundwater	NA	NA	1	1				1	1						VOC, PAHs, PHC and zinc to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes. Location with known zinc and VOC impacts. Vertical delineation of known shallow zinc, PAH and VOC impacts.
OW19	1	APEC-10, APEC-11, APEC-31	OW19	Existing	Shallow Groundwater	NA	NA	1	1				1	1						VOC, PAHs, PHC and zinc to be sampled as per annual sampling program for 2017. Horizontal delineation of PHC impacts to the northeast (cross-gradient) from OW22S. Determine northern limit of shallow VOC impacts (north of OW18-I). Full metals analysis required for RSC purposes. Location with known shallow zinc and VOC impacts.
OW22S	1 & 7	APEC-11, APEC-29	OW22S	Existing	Shallow Groundwater	NA	NA	1	1				1	1						PAHs, PHC and zinc to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes. Location with known shallow zinc, PAH, PHC and BTEX impacts. Update of VOCs for horizontal delineation of shallow VOC impacts.
OW22D	1 & 7	APEC-11, APEC-29	OW22D	Existing	Deep Groundwater	NA	NA	1					1	1	1					PAHs, PHC and zinc to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes, vertical delineation of known shallow zinc impacts. Update of VOCs for vertical and horizontal delineation of deep VOC impacts. 1,4-Dioxane added based on historical TCA exceedance.
OW23S	1	APEC-10	OW23S	Existing	Shallow Groundwater	NA	NA	1	1				1	1						VOCs and PAHs to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes, horizontal delineation of known shallow zinc impacts (OW22S, OW18-I, OW9-I). PHCs included based on historical LNAPL observed in this location. Historical exceedances of VOCs, PAHs and PHCs. Do not sample if LNAPL found.
OW23D	1	APEC-10	OW23D	Existing	Deep Groundwater	NA	NA	1	1				1	1	1					VOCs, PAHs and PHCs to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes, vertical delineation of known shallow zinc impacts (OW22S, OW18-I, OW9-I). Historical exceedances of VOCs, PHCs.
OW24S	1	APEC-31	OW24S	Existing	Shallow Groundwater	NA	NA	1				1	1	1		1				VOCs and PAHs to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes, horizontal delineation of known shallow zinc impacts (OW18-I, OW9-I). Update PHC data for eastern corner of property, deep offsite impacts in nearby OW30D (offsite shallow OW30S not sampled). SVOCs and PCBs added for APEC coverage. Historical exceedances of VOC and zinc.
OW24D	1	APEC-31	OW24D	Existing	Deep Groundwater	NA	NA	1					1	1	1					VOCs and PAHs to be sampled as per annual sampling program for 2017. Full metals analysis required for RSC purposes, vertical delineation of known shallow zinc impacts (OW18-I, OW9-I). Update PHC data for eastern corner of property, deep offsite impacts in nearby OW30D. 1,4-Dioxane added based on historical maximum TCE concentration on Site. Historical exceedances of VOC, zinc and F1.
OW25	1 & 3	APEC-1, APEC-17	OW25	Existing	Shallow Groundwater	NA	NA	1	1				1	1		1				VOC, PAHs, and PHC to be sampled as per annual sampling for 2017. Full metals analysis required for RSC purposes, APEC, and shallow central property coverage. PCBs added for APEC coverage and lateral delineation (upgradient) of historical exceedances at OW26S. Historical exceedances of VOCs, PAHs, F2 and F3.
OW26S	1	APEC-29, APEC-32	OW26S	Existing	Shallow Groundwater	NA	NA	1					1	1	1	1				VOC and PHC to be sampled as per annual sampling for 2017. PAHs considered to be sufficiently characterized as previous data indicates non-detect concentrations from 2004 to 2016. Full metals analysis required for RSC purposes, shallow central downgradient property boundary and previous exceedances of zinc. 1,4-Dioxane added based on historical 1,1-DCA exceedance, detected TCA and as a downgradient location. PCBs added based on historical exceedances.
OW26D	1	APEC-29, APEC-32	OW26D	Existing	Deep Groundwater	NA	NA	1					1	1	1					VOCs and PHCs to be sampled as per annual sampling for 2017. PAHs considered to be sufficiently characterized as previous data indicates non-detect concentrations from 2004 to 2016. Full metals analysis required for RSC purposes, deep central downgradient property boundary. Historical exceedances of VOCs. 1,4-Dioxane added based on being a downgradient location from TCA/DCA exceedances.
OW31	1	APEC-5, APEC-31	OW31	Existing	Deep Groundwater (Goat Island Formation)	NA	NA						1	1	1					Confirm and update VOC and PHC results from previous sampling event. 1,4-Dioxane added for coverage of deeper unit. Collect groundwater samples using low flow sampling techniques with the pump intake at approximately 32 mbgs which is within the lowest formation in the open boring at the bottom of the well. Duplicate samples are to be submitted for analysis including a trip blank for VOCs and F1. All samples from OW31 are to be submitted separately to the lab in their own cooler under a separate COC.

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Location ID	APEC (DCS 2014)	APEC[1]	Original (Proposal) Location ID	Existing or New Location	Media	Approx. Depth to Bedrock (m)	Approx. Depth of TP/BH/MW (m)	O.Reg. 511 Metals & Inorganics	PAHs	ABNs (includes phenol)	Chlorophenols	SVOCs (PAH, ABNs, Chlorophenol)	PHCs	VOCs	1,4-Dioxane	PCB Aroclors	Dioxin/Furans	Grain Size Distribution (sieve and hydrometer)	TOC	Purpose and Justification
OW07-31	1	APEC-25, APEC-29, APEC-30	OW07-31	Existing	Deep Groundwater	NA	NA	1				1	1	1						Update of VOC, PAHs, PHC and metals for APEC and deep northwestern property coverage and delineation as only available round of sampling (2007) indicated non-detect VOCs and PHCs and no PAH or metal exceedances. ABNs and CPs added for APEC coverage.
OW07-32	1 & 6	APEC-7, APEC-16, APEC-29	OW07-32	Existing	Deep Groundwater	NA	NA	1	1				1	1						Update of VOC, PAHs, PHCs and metals for APEC and deep central property coverage as only available round of sampling (2007) indicated exceedances of TCE and zinc and no exceedances of PAHs and non-detect PHCs.
OW07-33	1 & 3	APEC-1, APEC-17, APEC-22	OW07-33	Existing	Deep Groundwater	NA	NA	1				1	1	1	1	1				Horizontal delineation (upgradient) of VOC impacts in OW07-34D to the south. Update of PAHs, PHC and metals for deep central property coverage as only available round of sampling (2007) indicated exceedances of TCE and DCA, and no exceedances for metals. SVOCs, PCBs added for APEC coverage. 1,4-Dioxane added based on historical DCA exceedance.
OW07-34S	1 & 3	APEC-1	OW07-34S	Existing	Shallow Groundwater	NA	NA	1	1				1	1		1				Update of VOC, PAH, and PHC for horizontal delineation (downgradient) of impacts in OW25. Update of PCBs for horizontal delineation (upgradient) of impacts in OW26S. Horizontal delineation (general Site) for zinc and APEC coverage for overall metals. Only available sampling (2007) indicated a marginal TCE exceedance and non-detect concentrations for PHCs, PCBs and no exceedances for PAHs and metals.
OW07-34D	1 & 3	APEC-1	OW07-34D	Existing	Deep Groundwater	NA	NA	1					1	1	1					VOCs to be sampled as per annual sampling for 2017. PAHs considered to be sufficiently characterized as previous data indicates mainly non-detect concentrations from 2004 to 2016. Vertical delineation of PHC impacts in OW25 to the south (downgradient). Horizontal delineation (general Site) for zinc and APEC coverage for overall metals. 1,4-Dioxane added based on historical TCA/DCA exceedances.
OW07-37	1	APEC-12, APEC-15, APEC-29	OW07-37	Existing	Deep Groundwater	NA	NA	1				1	1	1						Update of VOC, PAHs, PHCs and metals for APEC and deep central property coverage. Only available sample (2007) indicated zinc exceedances, non-detect PHCs, PAHs and PCBs, and no exceedances for VOCs. ABNs and CPs added for APEC coverage.
OW07-38	1	APEC-13, APEC-23 (APEC-18,24)	OW07-38S	Existing	Shallow Groundwater	NA	NA	1	1				1	1						Update of VOCs, PAHs, PHCs and metals for shallow north property coverage and APEC coverage. Only available sampling (2007) indicated non-detect VOCs, PHCs, PAHs, PCBs, and no exceedances of metals. Provides lateral delineation of zinc concentrations.
OW13-39S	1	APEC-10, APEC-31	MW13-39S	Existing	Shallow Groundwater	NA	NA	1					1	1						VOC and PHC to be sampled as per annual sampling for 2017. PAHs considered to be sufficiently characterized as previous data indicates concentrations well below Standards or non-detect from 2004 to 2016. Full metals analysis required for RSC purposes, horizontal delineation of known zinc impacts in shallow groundwater (OW18-I, OW9-I).
OW13-39D	1	APEC-10, APEC-31	MW13-39D	Existing	Deep Groundwater	NA	NA	1					1	1	1					VOC and PHC to be sampled as per annual sampling for 2017. PAHs considered to be sufficiently characterized as previous data indicates concentrations well below Standards or non-detect from 2004 to 2016. Full metals analysis required for RSC purposes, vertical delineation of known zinc impacts in shallow groundwater (OW18-I, OW9-I). 1,4-Dioxane added as one of highest TCE locations on Site.

Notes:

1- APECs in brackets are outside the limits of the APEC, however sampling is proposed as may provide additional delineation information

mbgs - metres below ground surface

Standards refers to Ministry of Environment and Climate Change "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" dated July 1, 2011

RPI - Residential, Parkland and Institutional Property Use

If no sample depth specified collect worst case.

The following field parameters will be measured in groundwater during well purging: pH, ORP, DO, Temperature turbidity and Specific Conductance

Dioxin/Furan on hold pending PCB results

Do not request pH analysis in soil (metals/inorganics) where concrete is observed at surface.

Appendix B: Table 3

Phase Two ESA Sampling and Analytical Plan: IMICO

Location ID	APEC[1]	Existing or New Location	Media	Approx. Depth to Bedrock (mbgs)	Approx. Depth of TP/BH/MW (mbgs)	Screen Length (m)	O.Reg. 153/04 Metals & Inorganics	O. Reg. 153/04 Hydride-forming Metals (Sb, As, Se)	O. Reg. 153/04 Metals only (Section 1.2.2 in Protocol Doc)	PAHs (lab filter for B(a)P)	ABNs (includes phenol)	Chlorophenols	SVOCs (PAH, ABNs, Chlorophenol)	PHCs	BTEX	VOCs	Purpose and Justification
MW17-101D	APEC-2, APEC-29	Existing	Groundwater (ERAMOSA)	2.64	7.82	1.52		1									Arsenic concentrations detected above the Table 6 SCS in Eramosa (1 event-44.8 vs SCS 25). Surrounding wells in bedrock (24 wells, 62 samples), av = 8 ppb, next highest at OW9-II at 24 ppb. Confirm with a second sampling event to determine if additional drilling is required for delineation. Develop monitoring well (3 well volumes incl. sandpack), low flow (peristaltic) sampling to ensure sample is representative of the formation.
MW17-108S	APEC-5, APEC-29	Existing	Groundwater (FILL/SAND & GRAVEL/GUELPH)	3.25	4.98	3.05				1				1		1	No exceedances were detected during the 2017 sampling event, however during measurement of groundwater levels in December 2017, NAPL was detected in the well. Collect sample for PHCs, VOCs and PAHs. Special protocols for sampling beneath LNAPL; pipe intake to be set approx 0.6m below water elevation, leave sampling pipe in well at 0.6 m above well bottom, corresponding to 5.12 mbtop (well depth is 5.72 mbtop).
OW09-II	APEC-19, APEC-29	Existing	Groundwater (LOWER GUELPH)	2.8	7.85	1.52			1								Lead concentrations detected above the Table 6 SCS (10 ug/L) in the lower bedrock (Guelph formation); no other bedrock lead exceedances on Site (note OW07-33, lead exceedance of 15.6ug/L, well screened across fill to bedrock). Exceedances at OW09-II occured in 2010 and 2011, maximum MDL 50, detections ranged from 4.2 to 17ug/L (SCS is 10 ug/L). Concentrations met Table 6 SCS in 2010 (4.2 ug/L) and 2017 (9.4 ug/L). Confirm current concentration to determine if additional drilling is required for delineation. Develop monitoring well (3 well volumes incl. sandpack), low flow (peristaltic) sampling to ensure sample is representative of the formation.
OW11-II	APEC-29, APEC-32	Existing	Groundwater (LOWER GUELPH)	1.7	7.8	1.52			1								Cobalt concentrations detected above (5.8 ug/L) the Table 6 SCS (3.8 ug/L) in the lower bedrock (Guelph) in 2017. No cobalt exceeds in 24 bedrock wells, 28 samples, excluding OW11-II, max is 1.54 ug/L. Cobalt not a direct COC. Confirm current concentration to determine if additional drilling is required for delineation. Purge monitoring well using high flow methods prior to low flow sampling to ensure sample is representative of the formation.
OW12	APEC-27, APEC-28, APEC-29, APEC-33	Existing	Groundwater (SILT/GUELPH)	NA	4.81	3.05										1	VOC MDLs exceed the Table 6 SCS for sampling events between 2010 and 2015. 2017 sampling had no MDL exceedances. Collect VOCs to have a second set of samples with MDLs below Table 6 SCS to support the 2017 sampling round and dismiss previous MDL exceedances. Follow standard protocol used in 2017 (low flow).
OW13	APEC-19, APEC-29, APEC-31	Existing	Groundwater (LOWER GUELPH)	3.1	8	1.52										1	VOC MDLs exceed the Table 6 SCS for sampling events between 2010 and 2015. 2017 sampling had no MDL exceedances. Collect VOCs to have a second set of samples with MDLs below Table 6 SCS to support the 2017 sampling round and dismiss previous MDL exceedances. Follow standard protocol used in 2017 (low flow).
OW14	APEC-29 (APEC-5)	Existing	Groundwater (LOWER GUELPH)	2.8	7.81	1.52										1	VOC MDLs exceed the Table 6 SCS for sampling events between 2010 and 2015. 2017 sampling had no MDL exceedances. Collect VOCs to have a second set of samples with MDLs below Table 6 SCS to support the 2017 sampling round and dismiss previous MDL exceedances. Follow standard protocol used in 2017 (low flow).
OW19	APEC-10, APEC-11, APEC-31	Existing	Groundwater (FILL/SILT/GUELPH)	NA	4.82	3.05										1	VOC MDLs exceed the Table 6 SCS for sampling events between 2010 and 2015. 2017 sampling had no MDL exceedances. Collect VOCs to have a second set of samples with MDLs below Table 6 SCS to support the 2017 sampling round and dismiss previous MDL exceedances. Follow standard protocol used in 2017 (low flow).
OW22S	APEC-11, APEC-29	Existing	Groundwater (FILL/GUELPH)	NA	4.1	2.44			1							1	Uranium concentrations detected above the Table 6 SCS (20 ug/L) at the overburden/bedrock in 2017 with a concentration of 26 ug/L. Previous metals analysis in groundwater at this location did not include uranium. Uranium analyzed in groundwater on Site (34 locations, 64 samples). No exceedances of SCS. Soil concentations (1-2 ug/g in area, max 2.4 on site, SCS of 23 ug/g) do not suggest a uranium concern. Confirm current concentration to determine if additional drilling is required for delineation. VOC MDLs exceed the Table 6 SCS for sampling events between 2010 and 2015. 2017 sampling had no MDL exceedances. Collect VOCs to have a second set of samples with MDLs below Table 6 SCS to support the 2017 sampling round and dismiss previous MDL exceedances. Follow standard protocol used in 2017, low flow (peristaltic) sampling.
OW23S	APEC-10	Existing	Groundwater (FILL/GUELPH)	NA	5.26	2.74	1			1				1		1	OW23S was not sampled in the 2017 round due to the presence of NAPL. Collect samples for all identified parameters using techniques utilized on other NAPL projects: sample groundwater using low flow (peristaltic) pump with the pipe intake set approx 0.6 m below minimum water elevation (312.73-0.6=312.13 masl), corresponding to 4.24 mbtoc. Purpose to more accurately characterize the dissolved phase in the area of the NAPL plume for metals/inorganics (full O.Reg. 153/04 list not previously analyzed), VOCs, PAHs and PHCs (previous concentrations indicate likelyhood of free product in sample).

Appendix B: Table 3

Phase Two ESA Sampling and Analytical Plan: IMICO

Location ID	APEC[1]	Existing or New Location	Media	Approx. Depth to Bedrock (mbgs)	Approx. Depth of TP/BH/MW (mbgs)	Screen Length (m)	O.Reg. 153/04 Metals & Inorganics	O. Reg. 153/04 Hydride-forming Metals (Sb, As, Se)	O. Reg. 153/04 Metals only (Section 1.2.2 in Protocol Doc)	PAHs (lab filter for B(a)P)	ABNs (includes phenol)	Chlorophenols	SVOCs (PAH, ABNs, Chlorophenol)	PHCs	BTEX	VOCs	Purpose and Justification
OW07-31	APEC-25, APEC-29, APEC-30	Existing	Groundwater (SAND & GRAVEL/GUELPH/LOWER GUELPH)	NA	6.22	4.72		1									Arsenic concentrations in 2017 (45.7 ug/L) detected above the Table 6 SCS (25 ug/L) in a well that has a screen across the overburden into the lower bedrock. 2007 results (2.15 ug/L) were below the SCS. Surrounding wells, excluding the deep bedrock exceedance at MW17-101D) (49 wells, 138 samples), av = 4 ppb, next highest in the area (6 nearby wells) is 17ppb. Soil concentrations (3.1 ug/g) in the area do not suggest an arsenic concern. Confirm current concentrations to determine if there is an issue with the large screened interval (surficial impacts) and if additional drilling is required for delineation. Develop monitoring well (3 well volumes incl. sandpack), low flow (peristaltic) sampling to ensure sample is representative of the formation.
OW07-33	APEC-1, APEC-17, APEC-22	Existing	Groundwater (FILL/GUELPH/LOWER GUELPH)	NA	6.15	3.05			1								Lead concentrations in 2017 (15.6 ug/L) detected above the Table 6 SCS (10 ug/L) in a well that has a screen across the overburden into the lower bedrock. Concentrations met Table 6 SCS in 2007 (4 ug/L). Lead in soil elevated (107 ug/g) but below SCS (120 ug/g). Confirm current concentrations to determine if there is an issue with the large screened interval (surficial impacts) and if additional drilling is required for delineation. Develop monitoring well (3 well volumes incl. sandpack), low flow (peristaltic) sampling to ensure sample is representative of the formation.

Notes:

1- APECs in brackets are outside the limits of the APEC, however sampling is proposed as may provide additional delineation information

mbgs - metres below ground surface

Standards refers to Ministry of Environment and Climate Change "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" dated July 1, 2011

Table 6 Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition and Residential, Parkland and Institutional (RPI) Property Use.

If no sample depth specified collect worst case.

The following field parameters will be measured in groundwater during well purging: pH, ORP, DO, Temperature turbidity and Specific Conductance.

Dioxin/Furan on hold pending PCB results

Do not request pH analysis in soil (metals/inorganics) where concrete is observed at surface.

QAQC samples: one duplicate to be collected for every 10 samples; one trip blank for each cooler containing a VOC sample.

Revision 3, February 5, 2018

Appendix B: Table 4

Phase Two ESA Sampling and Analytical Plan: IMICO

Location ID	APEC[1]	Existing or New Location	Media	Approx. Depth to Bedrock (mbgs)	Approx. Depth of TP/BH/MW (mbgs)	Screen Length (m)	O.Reg. 153/04 Metals & Inorganics	O. Reg. 153/04 Hydride-forming Metals (Sb, As, Se)	O. Reg. 153/04 Metals only (Section 1.2.2 in Protocol Doc)	PAHs (lab filter for B(a)P)	ABNs (includes phenol)	Chlorophenols	SVOCs (PAH, ABNs, Chlorophenol)	PHCs	BTEX	VOCs	Purpose and Justification
MW17-101D	APEC-2, APEC-29	Existing	Groundwater (ERAMOSA)	1.91	7.82	1.52		1									Resampling in March 2018 to follow a single exceedance of Arsenic (44.8 ug/L vs. Table 6 SCS of 25) reported a value of 6.87 ug/L. Third sample to confirm clean (require two after an exceedance) to remove the need for delineation. Low flow, peristaltic pump, purge and sampling.
OW09-II	APEC-19, APEC-29	Existing	Groundwater (LOWER GUELPH)	2.8	7.85	1.52			1								Resampling to follow exceedances in 2010 (10ppb), 2011 (16 & 11 ppb), and 2012 (17/ <50ppb) of Lead (Table 6 SCS is 10 ug/L). 2017 was 9.41 ppb, March 2018 reported a value below the Table 6 SCS of 2.38 ug/L. Based on variability, third sample to provide more information (require minimum of two clean samples after an exceedance) to potentially remove the need for delineation. Detected concentrations fluctuate (5 to 20 ug/L), non-detect concentrations up to <50 ug/L. Low flow, peristaltic pump, purge and sampling.
OW11-II	APEC-29, APEC-32	Existing	Groundwater (LOWER GUELPH)	1.7	7.8	1.52			1								Resampling in March 2018 to follow a 2017 exceedance of Cobalt (5.8 ug/L vs. 3.8) reported a value below the Table 6 SCS of 1.36 ug/L. Third sample to confirm clean (require two after an exceedance) to remove the need for delineation. Low flow, peristaltic pump, purge and sampling.
OW22S	APEC-11, APEC-29	Existing	Groundwater (FILL/GUELPH)	NA	4.1	2.44			1								Resampling in March 2018 to follow a 2017 exceedance of uranium (26 ug/L vs. 20) reported a value below the Table 6 SCS of 7.24 ug/L. Third sample to confirm clean (require two after an exceedance) and remove as a COC in groundwater. Low flow, peristaltic pump, purge and sampling.
OW07-33	APEC-1, APEC-17, APEC-22	Existing	Groundwater (FILL/GUELPH/LOWER GUELPH)	NA	6.15	3.05			1								Resampling in March 2018 to follow a 2017 exceedance of lead (15.6 ug/L vs. 10) reported a value below the Table 6 SCS of 8.9 ug/L. Third sample to confirm clean (require two after an exceedance) and remove the need for delineation. Low flow, peristaltic pump, purge and sampling.

Notes:

1- APECs in brackets are outside the limits of the APEC, however sampling is proposed as may provide additional delineation information

mbgs - metres below ground surface

Standards refers to Ministry of Environment and Climate Change "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" dated July 1, 2011

Table 6 Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition and Residential, Parkland and Institutional (RPI) Property Use.

If no sample depth specified collect worst case.

The following field parameters will be measured in groundwater during well purging: pH, ORP, DO, Temperature turbidity and Specific Conductance.

QAQC samples: one duplicate to be collected for every 10 samples; one trip blank for each cooler containing a VOC sample.

Revision 4a, April 5, 2018

Appendix B: Table 4

Phase Two ESA Sampling and Analytical Plan: IMICO

Location ID	Existing or New Location	Media	Approx. Depth to Bedrock (mbgs)	Approx. Depth of TP/BH/MW (mbgs)	Screen Length (m)	O.Reg. 153/04 Metals & Inorganics	O. Reg. 153/04 Hydride-forming Metals (Sb, As, Se)	O. Reg. 153/04 Metals only (Section 1.2.2 in Protocol Doc)	PAHs (lab filter for B(a)P)	ABNs (includes phenol)	Chlorophenols	SVOCs (PAH, ABNs, Chlorophenol)	PHCs	BTEX	VOCs	1,4-Dioxane	PCB Aroclors	Dioxin/Furans	Grain Size Distribution (sieve and hydrometer)	Purpose and Justification
MW17-100S	Existing	Groundwater (GUELPH)	2.3	4.9	1.52				1											Sample existing well for lateral delineation of PAHs in Groundwater between MW17-104 and MW17-103. Low flow (peristaltic), purge and sampling to ensure sample is representative of the formation and ensure clear sample. Lab to filter sample for B(a)P sediment/particulate. Prioritize sampling at beginning of field event.
MW17-104D	Existing	Groundwater (LOWER GUELPH)	2.1	8	1.52				1											Resample existing well for PAHs to confirm concentration of B(a)P in Lower Guelph groundwater.Low flow (peristaltic), purge and sampling to ensure sample is representative of the formation and ensure clear sample. Lab to filter sample for B(a)P sediment/particulate. Prioritize sampling at beginning of field event.
MW18-107D	New	Groundwater (ERAMOSA)	2.03	20	1.52										1					Vertical delineation of VOCs (PCE, 1,1-DCE, 1,1-DCA and TCE) in the groundwater at MW17-107S.
MW18-112S	New	Groundwater (FILL/GUELPH)	1.65	5	1.52		1													Elevated arsenic measured in OW07-31, however well screen extends from sand and gravel to 6.22 mbgs (exceeding the saturated screen length of 3.1 m). Monitoring well proposed to replace OW07-31, and isolate the shallow groundwater to determine the stratigraphic unit where the Arsenic concentrations are occuing. Historical groundwater levels have ranged from 1.38 to 2.34 mbgs.
MW18-112D	New	Groundwater (LOWER GUELPH)	1.65	8	1.52		1													Elevated arsenic measured in OW07-31, however well screen extends from sand and gravel to 6.22 mbgs (exceeding the saturated screen length of 3.1 m). Monitoring well proposed to replace OW07-31, and isolate the deeper groundwater (lower Guelph formation) to determine the stratigraphic unit where the Arsenic concentrations are occuing.
MW18-113S	New	Groundwater (FILL/GUELPH)	1.65	5	1.52		1													Lateral delineation of Arsenic in GW in shallow groundwater (Guelph) - Assumes impacts are in the upper groundwater.
MW18-114S	New	Groundwater (FILL/GUELPH)	1.65	5	1.52		1													Lateral delineation of Arsenic in GW in shallow groundwater (Guelph) - Assumes impacts are in the upper groundwater.
MW18-115S	New	Groundwater (FILL/GUELPH)	1.65	5	1.52		1													Lateral delineation of Arsenic in GW in shallow groundwater (Guelph) - Assumes impacts are in the upper groundwater.
MW18-116S	New	Groundwater (GUELPH)	1.65	4	1.52			1							1					Monitoring well to replace OW07-32, OW07-37 (as they extend from fill to lower Guelph), to characterize the Guelph and determine where Zinc and VOC exceedances are occuring. Historical water levels have shown to reside within the Guelph between 1.98 and 2.96 mbgs, so intent is to isolate the upper Guelph formation.
MW18-116D	New	Groundwater (LOWER GUELPH)	1.65	8	1.52			1							1					Monitoring well to replace OW07-32, OW07-37 in the lower Guelph (or Eramosa) for potential vertical delineation of Zinc in GW or characterization if Zinc occurs at this depth. Additional characterization and delineation of VOCs.
MW18-117S	New	Soil	1.65	1.65	NA			1					1	1						Lateral delineation of BTEX and PHCs in soil from BH07-66, collect from worst case; otherwise from fill. Additional characterization of metals.
MW18-117S	New	Groundwater (GUELPH)	1.65	5	1.52			1												Lateral delineation of Zinc in GW in shallow groundwater (Guelph) northwest of OW07-37 - Assumes impacts are in the upper groundwater
MW18-118S	New	Groundwater (GUELPH)	1.65	5	1.52			1	1						1					Lateral delineation of Zinc and VOCs in GW in shallow groundwater (Guelph) north of OW07-32 and OW07-37 - Assumes impacts are in the upper groundwater. Additionally provides delineation for PAHs from OW03-I.
MW18-119S	New	Groundwater (FILL/GUELPH)	1.65	5	1.52			1							1					Lateral delineation of Zinc in GW in shallow groundwater (Fill/Guelph) south of OW07-37 - Assumes impacts are in the upper groundwater. Additionally provides lateral delineation of VOCs in upper groundwater north and west of MW17-107S and OW07-33.
MW18-120D	New	Soil	2.2	2.2	NA			1												Collect Metals for characterization of soil at OW12.
MW18-120D	New	Groundwater (ERAMOSA)	2.2	20	1.52			1							1					Vertical delineation of Zinc in the Lower Guelph or Eramosa formation at OW12. Also provides lateral delineation of VOCs in the Guelph north of OW11-II.
MW18-121S	New	Soil	2.2	2.2	NA			1												Collect Metals for characterization of soil.

Appendix B: Table 4

Phase Two ESA Sampling and Analytical Plan: IMICO

Location ID	Existing or New Location	Media	Approx. Depth to Bedrock (mbgs)	Approx. Depth of TP/BH/MW (mbgs)	Screen Length (m)	O.Reg. 153/04 Metals & Inorganics	O. Reg. 153/04 Hydride-forming Metals (Sb, As, Se)	O. Reg. 153/04 Metals only (Section 1.2.2 in Protocol Doc)	PAHs (lab filter for B(a)P)	ABNs (includes phenol)	Chlorophenols	SVOCs (PAH, ABNs, Chlorophenol)	PHCs	BTEX	VOCs	1,4-Dioxane	PCB Aroclors	Dioxin/Furans	Grain Size Distribution (sieve and hydrometer)	Purpose and Justification
MW18-121S	New	Groundwater (GUELPH)	2.2	5	1.52			1							1					Lateral delineation of Zinc and VOCs in GW in the groundwater (Guelph Formation) west of OW26 and east of OW12.
MW18-121D	New	Groundwater (ERAMOSA)	2.2	20	1.52										1					Lateral delineation of VOCs in groundwater within the Eramosa, west of OW07-34D, MW17-102D and OW26D.
MW18-122D	New	Soil	1.7	1.7	NA	1			1											Characterization of soil at OW11-II.
MW18-122D	New	Groundwater (LOWER GUELPH)	1.7	15	1.52										1					Vertical delineation of VOC impacts (TCA, DCA, DCE, VC) found at OW11-II (Guelph) in the Eramosa formation.
MW18-123D	New	Soil	2.4	2.4	NA	1			1						1					Characterization of soil at MW18-123
MW18-123S	New	Groundwater (GUELPH)	2.4	5	1.52										1					Lateral delineation of VOCs in groundwater within the Guelph between OW26S and OW10.
MW18-123D	New	Groundwater (ERAMOSA)	2.4	20	1.52										1					Lateral delineation of VOCs in groundwater within the Eramosa, between OW26S and OW10.
MW18-124S	New	Soil	1.8	1.8	NA			1	2											Lateral delineation of PAHs north of TP17-301. Collect one sample from fill and a second from the sand and gravel. Additional general characterization for metals.
MW18-124S	New	Groundwater (FILL/GUELPH)	1.8	5	1.52				1											Lateral delineation of benzo(a)pyrene in groundwater within the Fill/Guelph north of OW03-I. Lab to filter for B(a)P. (update wording to match)
MW18-125S	New	Soil	2	2	NA			1	1				1				2			Maximum historical location for PCBs indicated in rock (CS-66, CS-67) above 5 ug/g. Collect a sample near excavation floor for PCB analysis. Keep core (top portion) from bedrock (min 1 meter), install well into Guelph. If impacts found (soil or groundwater) crush and analyze the core for PCBs.
MW18-125S	New	Groundwater (GUELPH)	2	6	3.05				1				1		1		1			Analyze area where historically PCBs have remained (Earth Tech report) to determine if the water table is impacted in the direct area. Additionally delineate PHCs and PAHs north of OW25, characterize for VOCs.
MW18-126D	New	Soil	2	2	NA			1	1				1		1		1			Laterally delineate PHCs in soil north of TP13-11, additional characterization at location of OW25 (no previous soil data).
MW18-126D	New	Groundwater (LOWER GUELPH)	2	8	1.52								1		1					Vertical delineation of PHCs in groundwater within the Lower Guelph near OW25. Additional lateral delineation of VOCs (DCA and TCE) from OW07-33 and OW07-34D.
MW18-127S	New	Groundwater (GUELPH)	2	5	1.52								1		1					Lateral delineation of PHCs and VOCs in groundwater within the Guelph north of OW25.
MW18-128D	New	Groundwater (ERAMOSA)	2.5	20	1.52								1							Vertical delineation of PHCs in groundwater within the Eramosa at OW23D.
MW18-129D	New	Soil	3	3	NA	1			1				1							Characterize soil in the area of OW09-I/II.
MW18-129D	New	Groundwater (ERAMOSA)	3	10	1.52			1							1					Vertical delineation of maximum Lead in groundwater within the Eramosa formation near OW09-II. Secondary vertical delineation for zinc and VOCs in area for OW09-I/II, OW13, OW14.
MW18-130D	New	Groundwater (LOWER GUELPH)	1.5	8	1.52			1												Vertical delineation of maximum Zinc in the lower Guelph formation at OW19.
MW18-131S	New	Groundwater (GUELPH)	1.5	5	1.52			1					1							Lateral delineation of maximum Zinc in the Silt/Guelph west of OW19. Also provides additional delineation of PHCs north of OW22S.

Appendix B: Table 4

Phase Two ESA Sampling and Analytical Plan: IMICO

Location ID	Existing or New Location	Media	Approx. Depth to Bedrock (mbgs)	Approx. Depth of TP/BH/MW (mbgs)	Screen Length (m)	O.Reg. 153/04 Metals & Inorganics	O. Reg. 153/04 Hydride-forming Metals (Sb, As, Se)	O. Reg. 153/04 Metals only (Section 1.2.2 in Protocol Doc)	PAHs (lab filter for B(a)P)	ABNs (includes phenol)	Chlorophenols	SVOCs (PAH, ABNs, Chlorophenol)	PHCs	BTEX	VOCs	1,4-Dioxane	PCB Aroclors	Dioxin/Furans	Grain Size Distribution (sieve and hydrometer)	Purpose and Justification
MW18-132D	New	Groundwater (ERAMOSA)	3.2	10	1.52			1												Vertical delineation of Zinc in groundwater within the Eramosa formation near OW18-II. Possible movement of location if lower Guelph well at OW19 is impacted or not.
MW18-133D	New	Groundwater (ERAMOSA)	1.5	20	1.52			1												Vertical delineation of Zinc in the Eramosa for the northern area.
BH18-204	New	Soil	2.44	2.44	NA										2					Exceedance of TCE from 1.83-2.44 (Sample extends to bedrock at 2.44) BH @ BH13-40 to confirm concentration (possible averaging) just above bedrock contact (at water table) and one above at about 1 m to show if source is on Site or from groundwater.
BH18-205	New	Soil	3.2	3.2	NA								1		2					BH @ OW13-39D to vertically delineate TCE impacts (max conc on site of 1 ug/g) in sand and gravel (2.29-2.52 mbgs) Collect sample at approx 1 m, at previous impacts and within water table, just above bedrock contact. Bedrock occurs at 3.15 mbgs Additionally delineate PHCs east of MW17-108S
BH18-206	New	Soil	2	2	NA	1							1							Laterally delineate PHCs in soil west of MW17-101S/D
BH18-207	New	Soil	3.25	3.25	NA			2					1							Lateral delineation of Maximum Zinc in the soil east of MW17-108S. Collect two samples from fill and the sand and gravel. Additional Characterization for PHCs.
BH18-208	New	Soil	2	2	NA			1	1											Test pit to laterally delineate PAHs at MW17-110S (0-0.61 mbgs previous sample) in fill. Metals for additional characterization.
TP18-309	New	Soil	3.25	3.25	NA			2					1							Lateral delineation of Maximum Zinc in the soil north of MW17-108S. Collect two samples from fill and the sand and gravel. Additional Characterization for PHCs.
TP18-310	New	Soil	3.25	3.25	NA			2					1							Lateral delineation of Maximum Zinc in the soil south of MW17-108S Collect two samples from fill and the sand and gravel. Additional Characterization for PHCs.
TP18-311	New	Soil	2.03	2.1	NA			2												Confirm maximum concentration for BH07-65 (lead). Collect sample from fill and sand & gravel.
TP18-312	New	Soil	2.03	2.1	NA			2												Lateral delineation of Maximum Lead in the soil west of BH07-65. Collect sample from fill and sand & gravel.
TP18-313	New	Soil	2.03	2.1	NA			2												Lateral delineation of Maximum Lead in the soil north of BH07-65. Collect sample from fill and sand & gravel.
TP18-314	New	Soil	2.03	2.1	NA			2												Lateral delineation of Maximum Lead in the soil east of BH07-65. Collect sample from fill and sand & gravel.
TP18-315	New	Soil	2	2	NA				2				1	1						TP to confirm and vertically delineate at TP13-11 (0.1 - 0.3 mbgs) and at OW07-34D where maximum PAHs occur (0-1.22 mbgs), up to 900 ug/g. One sample to be collected in fill, second sample to be collected at deeper than 1.22mbgs in Sand &Gravel. Additionally to vertically delineate BTEX and PHC impacts in fill (0.1 - 0.3 mbgs) Bedrock occurs at 1.83 mbgs based on TP13-11, 1.57 mbgs based on OW07-34.
TP18-316	New	Soil	2	2	NA				2				2				2			F3, PCB and PAH impacts in FILL (0.1 - 0.3) at TP13-08. PAHs include some site maximums. Confirm PCB concentrations, and collect sample for vertical delineation of all parameters below at 0.3 to 0.6 and additional below 0.6 -0.9 on hold. Bedrock occurs at 1.83 mbgs based on TP13-08.
TP18-317	New	Soil	1.32	1.32	NA								1	1						Maximum concentrations in soil at BH07-66 from 0.5-1.22 mbgs in Fill; bedrock occurs at 1.32, and BTEX was not previously collected in the sand and gravel. Collect sample for vertical delineation of maximum. Additionally laterally delineate PHCs north east of TP17-300.
TP18-318	New	Soil			NA			1	1				1	1			1			Laterally delineate PHCs, BTEX, PAHs and PCBs southeast of TP17-300. Additionally characterize for metals.
TP18-319	New	Soil	2.5	2.5	NA			1	2											Test pit to laterally delineate PAHs at MW17-110S and BH07-51. Collect one sample in fill and one in sand and gravel. Additionally collect a metal sample for characterization.

Appendix B: Table 4

Phase Two ESA Sampling and Analytical Plan: IMICO

Location ID	Existing or New Location	Media	Approx. Depth to Bedrock (mbgs)	Approx. Depth of TP/BH/MW (mbgs)	Screen Length (m)	O.Reg. 153/04 Metals & Inorganics	O. Reg. 153/04 Hydride-forming Metals (Sb, As, Se)	O. Reg. 153/04 Metals only (Section 1.2.2 in Protocol Doc)	PAHs (lab filter for B(a)P)	ABNs (includes phenol)	Chlorophenols	SVOCs (PAH, ABNs, Chlorophenol)	PHCs	BTEX	VOCs	1,4-Dioxane	PCB Aroclors	Dioxin/Furans	Grain Size Distribution (sieve and hydrometer)	Purpose and Justification
All Locations - Groundwater Snapshot		Groundwater																		Event 1 - Time TBD
All Locations - Groundwater Snapshot		Groundwater																		Event 2 - TBD
Locations to be Determined - Hydraulic Conductivity Testing		Groundwater																		Anticipate 12 wells (4 stratigraphic units, 3 wells per unit)
All New Locations - Locationand Elevation Survey	New																			Have contractor set benchmark on Site (cross-cut).
Additional VOC locations		Groundwater	TBD	TBD											TBD					Delineation of VOCs on the eastern portion of the Site is not complete. Additional mointoring wells may be required and will be provided under separate scope/cover as part of the OW31 delineation work.

Notes:
1- APECs in brackets are outside the limits of the APEC, however sampling is proposed as may provide additional delineation information
mbgs - metres below ground surface
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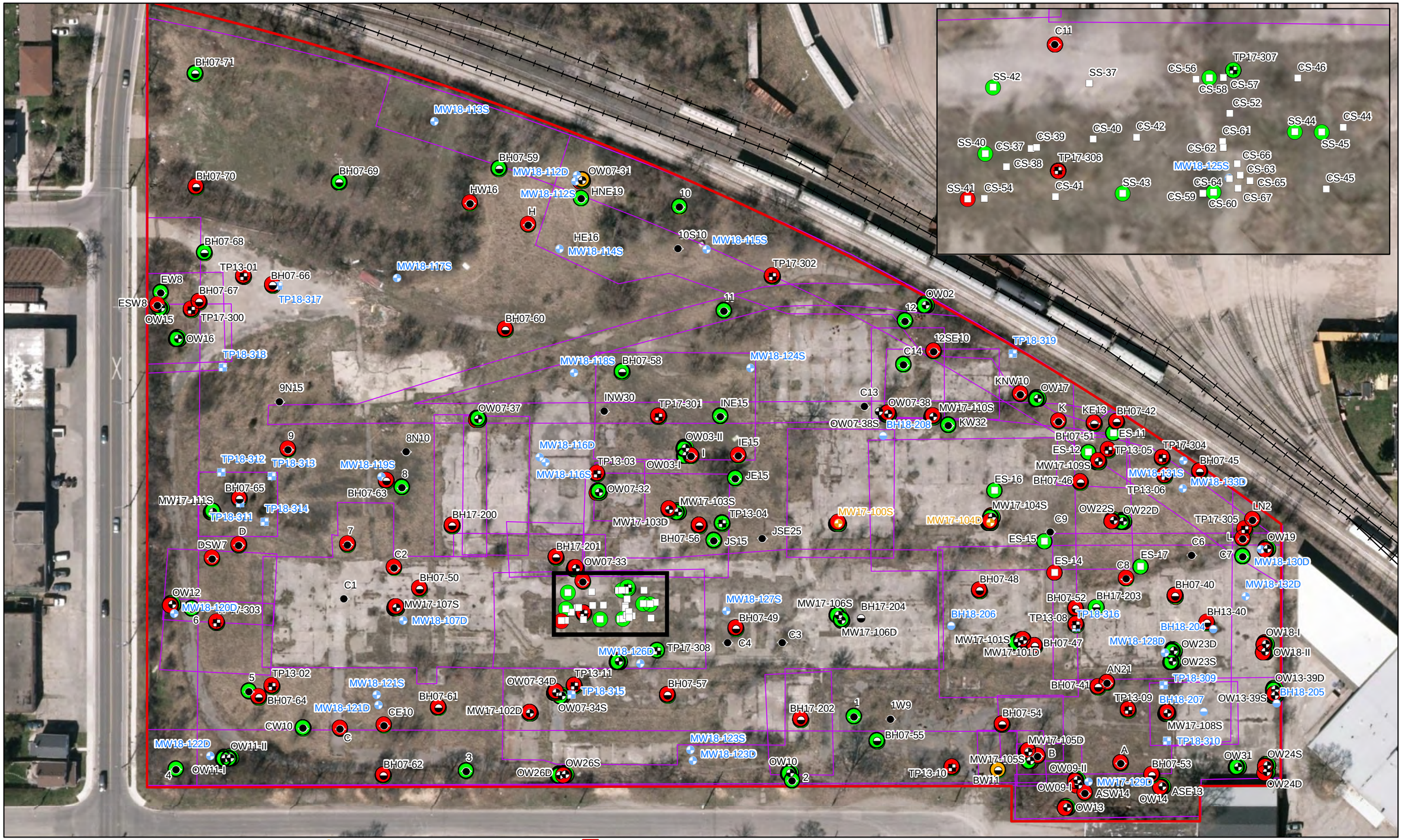
Table 6 Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition and Residential, Parkland and Institutional (RPI) Property Use.
If no sample depth specified collect worst case.
The following field parameters will be measured in groundwater during well purging: pH, ORP, DO, Temperature turbidity and Specific Conductance.
Do not request pH analysis in soil (metals/inorganics) where concrete is observed at surface.
QAQC samples: one duplicate to be collected for every 10 samples; one trip blank for each cooler containing a VOC sample.

Revision 5, May 3, 2018



Sample Locations
- Borehole
- Confirmatory
- Monitoring Well
- Other
- Test Pit

Monitoring Well to be Resampled

Proposed Locations
- Borehole
- Monitoring Well
- Test Pit

Location Sample Results
- No Exceedance
- ND Exceedance
- Exceedance

Surveyed Property Boundary
APEC
Railway

N

0 10 20 30
Metres

Notes:
1. Source of Imagery: Esri, City of Guelph Ortho 2012

Figure 1
SAP
Sample Results
Former IMICO Foundry Facility
200 Beverly Street, Guelph, Ontario

ch2m

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Appendix B: Table 5

Phase Two ESA Sampling and Analytical Plan: IMICO

Location ID	Existing or New Location	Media	Approx. Depth to Bedrock (mbgs)	Approx. Depth of TP/BH/MW (mbgs)	Screen Length (m)	O.Reg. 153/04 Metals & Inorganics	O. Reg. 153/04 Hydride-forming Metals (Sb, As, Se)	O. Reg. 153/04 Metals only (Section 1.2.2 in Protocol Doc)	PAHs (lab filter for B(a)P)	ABNs (includes phenol)	Chlorophenols	SVOCs (PAH, ABNs, Chlorophenol)	PHCs	BTEX	VOCs	1,4-Dioxane	PCB Aroclors	Dioxin/Furans	Grain Size Distribution (sieve and hydrometer)	Purpose and Justification
OW25	Existing	Groundwater							1											Resample existing well for PAHs to confirm concentrations of PAHs. 2017 results are non-detect with low flow; repeat for a second confirmatory. Low flow (peristaltic), purge and sampling to ensure sample is representative of the formation and ensure clear sample. Lab to filter sample for B(a)P sediment/particulate. Prioritize sampling at beginning of field event.
OW31	Existing	Groundwater													3					Resample VOCs at OW31 to confirm the toluene concentrations reported during the pumping sampling results.
MW18-128D	Existing	Groundwater													1					Sample groundwater at MW18-128D for VOCs to vertically and horizontally delineate east end of Site. (Current delineation uses OW31)
MW18-130D	Existing	Groundwater											1		1					Sample groundwater at MW18-130D to vertically delineate max (PCE - 1.14 ug/L) at OW19, and vertically and horizontally delineate BTEX/PHCs at the north end of the Site.
MW18-131S	Existing	Groundwater							1						1					Sample groundwater at MW18-131S for VOCs and PAHs to horizontally delineate at the north property boundary of Site.
MW18-132D	Existing	Groundwater											1		1					Sample groundwater at MW18-132D for VOCs/PHCs to vertically and horizontally delineate north end of Site.
MW18-133D	Existing	Groundwater													1					Sample groundwater at MW18-133D for VOCs to vertically and horizontally delineate north end of Site within the lower Vinemount.
BH17-100i	New	Soil	NA	1		pH only														Additional sampling required at location of elevated pH. Advance borehole within 1-2 m of MW17-100S and collect sample from exact interval (0.15 - 0.61 mbgs). Ensure absolutely no concrete/ concrete dust from coring is in sample collected.
BH17-100ii	New	Soil	NA	1		pH only														Additional sampling required at location of elevated pH. Advance borehole within 1-2 m of MW17-100S and collect sample from exact interval (0.15 - 0.61 mbgs). Ensure absolutely no concrete/ concrete dust from coring is in sample collected.
BH17-204i	New	Soil	NA	1		pH only														Additional sampling required at location of elevated pH. Advance borehole within 1-2 m of BH17-204 and collect sample from exact interval (0.3 - 0.46 mbgs). Ensure absolutely no concrete/ concrete dust from coring is in sample collected.
BH17-204ii	New	Soil	NA	1		pH only														Additional sampling required at location of elevated pH. Advance borehole within 1-2 m of BH17-204 and collect sample from exact interval (0.3 - 0.46 mbgs). Ensure absolutely no concrete/ concrete dust from coring is in sample collected.
MW18-105G	New	Groundwater	2.6	15	1.5										1					Vertical delineation of VOCs and BTEX in groundwater at MW18-105S/D in the lower Vinemount member of the Eramosa. Install a 1.5m screen, at least 10m the Vinemount, top of screen (including sand pack) min 5m below MW18-105D (aprox 15 mbgs/301.5 masl).
MW18-112G	New	Groundwater	2	20	1.5		1								1					Target base of Vinemount for vertical delineation of Arsenic in groundwater at MW18-122S/D. Install a 1.5m screen fully in the lower Vinemount member (approximate 20m/295 masl). If Goat Island Formation is encountered, idenify transition point, grout up 1 metre and place bottom of screen at top of grout.
MW18-113D	New	Groundwater	1.7	12	1.5		1								1					Lateral delineation of Arsenic in groundwater in the upper Vinemount member of the Eramosa at MW18-113S. Install a 1.5m screen within the Vinemount member (approximate depth of 12m /302 masl). Additional VOC sampling to characterize Vinemount on northwest portion of the Site.
MW18-114D	New	Groundwater	1.2	12	1.5		1								1					Lateral delineation of Arsenic in groundwater in the upper Vinemount member of the Eramosa at MW18-144S. Install a 1.5m screen within the Vinemount member (approximate depth of 12m /302 masl). Additional VOC sampling to characterize Vinemount on northwest portion of the Site.
MW18-115D	New	Groundwater	2.3	12	1.5		1								1					Lateral delineation of Arsenic in groundwater in the upper Vinemount member of the Eramosa at MW18-115S. Install a 1.5m screen within the Vinemount member (approximate depth of 12m /302 masl). Additional VOC sampling to characterize Vinemount on northwest portion of the Site.
MW18-119D	New	Groundwater	2.3	12	1.5										1					Vertical/horizontal delineation of VOCs in groundwater in the lower Vinemount at MW18-119S. Install a 1.5m screen, at least 10m the Vinemount, without screen or sand pack straddling units (estimated 12m/303 masl).
MW18-122G	New	Groundwater	2.3	25	1.5										1					Vertical delineation of VOCs (chloroethanes) in groundwater at maxiumum concentrations (OW11-I/II) in the lower Vinemount. Install a 1.5m screen fully in the lower Vinemount, top of screen (including sand pack) min 5m below MW18-122D (estimated 25m/290 masl). If Goat Island Formation is encountered, idenify transition point, grout up 1 metre and place bottom of screen at top of grout.
MW18-134S	New	Groundwater		5	1.5										1					Lateral delineation of BTEX/VOCs in groundwater over the Stone Road member of the Eramosa. Install a 1.5m screen, targeting the Stone Road member at an approximate depth of 15ft (4.5m) or 311 masl.
MW18-134D	New	Groundwater		8.5	1.5										1					Lateral delineation of BTEX/VOCs in groundwater in the Reformatory Quarry member of the Eramosa. Install a 1.5m screen, targeting the Reformatory Quarry member at an approximate depth of 28ft (8.5m) or 307.5 masl.
MW18-135S	New	Groundwater		5	1.5			1	1				1		1					Lateral delineation of PHCs, BTEX, VOCs and PAHs in shallow groundwater (Stone Road Member). Install a 1.5m screen, targeting the Stone Road member at an approximate depth of 15ft (4.5m) or 311 masl.

Appendix B: Table 5

Phase Two ESA Sampling and Analytical Plan: IMICO

Location ID	Existing or New Location	Media	Approx. Depth to Bedrock (mbgs)	Approx. Depth of TP/BH/MW (mbgs)	Screen Length (m)	O.Reg. 153/04 Metals & Inorganics	O. Reg. 153/04 Hydride-forming Metals (Sb, As, Se)	O. Reg. 153/04 Metals only (Section 1.2.2 in Protocol Doc)	PAHs (lab filter for B(a)P)	ABNs (includes phenol)	Chlorophenols	SVOCs (PAH, ABNs, Chlorophenol)	PHCs	BTEX	VOCs	1,4-Dioxane	PCB Aroclors	Dioxin/Furans	Grain Size Distribution (sieve and hydrometer)	Purpose and Justification
MW18-135D	New	Groundwater		15	1.5				1				1		1					Lateral delineation of PHCs, BTEX, VOCs and PAHs in groundwater (Vinemount Member). Install a 1.5 m screen, targetting Vinemount at an approximate depth of 15m/301 masl.
MW18-136D	New	Groundwater		12	1.5										1					Lateral delineation of VOCs within the Vinemount to the east of MW18-123D and MW126D. Install a 1.5m in the upper Vinemount (estimated 12m/303 masl).
MW18-136G	New	Groundwater		25	1.5										1					Lateral delineation of VOCs within the Vinemount to the east of MW18-123D and MW126D. Install a 1.5m fully in the lower Vinemount (estimated 25m/290 masl). If Goat Island Formation is encountered, idenify transition point, grout up 1 metre and place bottom of screen at top of grout.

Notes:

mbgs - metres below ground surface

Standards refers to Ministry of Environment and Climate Change "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" dated July 1, 2011

Table 6 Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition and Residential, Parkland and Institutional (RPI) Property Use

The following field parameters will be measured in groundwater during well purging: pH, ORP, DO, Temperature turbidity and Specific Conductance

QAQC samples: one duplicate to be collected for every 10 samples; one trip blank for each cooler containing a VOC sample.

Revision 6, October 10, 2018

Appendix B: Table 6

Phase Two ESA Sampling and Analytical Plan: IMICO

Location ID	Existing or New Location	Media	Approx. Depth to Bedrock (mbgs)	Approx. Depth of TP/BH/MW (mbgs)	Screen Length (m)	O.Reg. 153/04 Metals & Inorganics	O. Reg. 153/04 Hydride-forming Metals (Sb, As, Se)	O. Reg. 153/04 Metals only (Section 1.2.2 in Protocol Doc)	PAHs (lab filter for B(a)P)	ABNs (includes phenol)	Chlorophenols	SVOCs (PAH, ABNs, Chlorophenol)	PHCs	BTEX	VOCs	1,4-Dioxane	PCB Aroclors	Dioxin/Furans	Grain Size Distribution (sieve and hydrometer)	Purpose and Justification
BH17-100i	New	Soil	NA	1		pH only														Additional sampling required at location of elevated pH. Advance borehole within 1-2 m of MW17-100S and collect sample from exact interval (0.15 - 0.61 mbgs). Ensure absolutely no concrete/ concrete dust from coring is in sample collected.
BH17-100ii	New	Soil	NA	1		pH only														Additional sampling required at location of elevated pH. Advance borehole within 1-2 m of MW17-100S and collect sample from exact interval (0.15 - 0.61 mbgs). Ensure absolutely no concrete/ concrete dust from coring is in sample collected.
BH17-204i	New	Soil	NA	1		pH only														Additional sampling required at location of elevated pH. Advance borehole within 1-2 m of BH17-204 and collect sample from exact interval (0.3 - 0.46 mbgs). Ensure absolutely no concrete/ concrete dust from coring is in sample collected.
BH17-204ii	New	Soil	NA	1		pH only														Additional sampling required at location of elevated pH. Advance borehole within 1-2 m of BH17-204 and collect sample from exact interval (0.3 - 0.46 mbgs). Ensure absolutely no concrete/ concrete dust from coring is in sample collected.
MW18-105G	New	Groundwater	2.6	15	1.5										1					Vertical delineation of VOCs and BTEX in groundwater at MW18-105S/D in the lower Vinemount member of the Eramosa. Install a 1.5m screen, at least 10m the Vinemount, top of screen (including sand pack) min 5m below MW18-105D (aprox 15 mbgs/301.5 masl).
MW18-112G	New	Groundwater	2	20	1.5		1								1					Target base of Vinemount for vertical delineation of Arsenic in groundwater at MW18-122S/D. Install a 1.5m screen fully in the lower Vinemount member (approximate 20m/295 masl). If Goat Island Formation is encountered, idenify transition point, grout up 1 metre and place bottom of screen at top of grout.
MW18-113D	New	Groundwater	1.7	12	1.5		1								1					Lateral delineation of Arsenic in groundwater in the upper Vinemount member of the Eramosa at MW18-113S. Install a 1.5m screen within the Vinemount member (approximate depth of 12m /302 masl). Additional VOC sampling to characterize Vinemount on northwest portion of the Site.
MW18-114D	New	Groundwater	1.2	12	1.5		1								1					Lateral delineation of Arsenic in groundwater in the upper Vinemount member of the Eramosa at MW18-144S. Install a 1.5m screen within the Vinemount member (approximate depth of 12m /302 masl). Additional VOC sampling to characterize Vinemount on northwest portion of the Site.
MW18-115D	New	Groundwater	2.3	12	1.5		1								1					Lateral delineation of Arsenic in groundwater in the upper Vinemount member of the Eramosa at MW18-115S. Install a 1.5m screen within the Vinemount member (approximate depth of 12m /302 masl). Additional VOC sampling to characterize Vinemount on northwest portion of the Site.
MW18-119D	New	Groundwater	2.3	12	1.5										1					Vertical/horizontal delineation of VOCs in groundwater in the lower Vinemount at MW18-119S. Install a 1.5m screen, at least 10m the Vinemount, without screen or sand pack straddling units (estimated 12m/303 masl).
MW18-122G	New	Groundwater	2.3	25	1.5										1					Vertical delineation of VOCs (chloroethanes) in groundwater at maxiumum concentrations (OW11-I/II) in the lower Vinemount. Install a 1.5m screen fully in the lower Vinemount, top of screen (including sand pack) min 5m below MW18-122D (estimated 25m/290 masl). If Goat Island Formation is encountered, idenify transition point, grout up 1 metre and place bottom of screen at top of grout.
MW18-134S	New	Groundwater		5	1.5										1					Lateral delineation of BTEX/VOCs in groundwater over the Stone Road member of the Eramosa. Install a 1.5m screen, targeting the Stone Road member at an approximate depth of 15ft (4.5m) or 311 masl.
MW18-134D	New	Groundwater		8.5	1.5										1					Lateral delineation of BTEX/VOCs in groundwater in the Reformatory Quarry member of the Eramosa. Install a 1.5m screen, targeting the Reformatory Quarry member at an approximate depth of 28ft (8.5m) or 307.5 masl.
MW18-135S	New	Groundwater		5	1.5			1	1				1		1					Lateral delineation of PHCs, BTEX, VOCs and PAHs in shallow groundwater (Stone Road Member). Install a 1.5m screen, targeting the Stone Road member at an approximate depth of 15ft (4.5m) or 311 masl.
MW18-135D	New	Groundwater		15	1.5				1				1		1					Lateral delineation of PHCs, BTEX, VOCs and PAHs in groundwater (Vinemount Member). Install a 1.5 m screen, targetting Vinemount at an approximate depth of 15m/301 masl.
MW18-136D	New	Groundwater		12	1.5										1					Lateral delineation of VOCs within the Vinemount to the east of MW18-123D and MW126D. Install a 1.5m in the upper Vinemount (estimated 12m/303 masl).
MW18-136G	New	Groundwater		25	1.5										1					Lateral delineation of VOCs within the Vinemount to the east of MW18-123D and MW126D. Install a 1.5m fully in the lower Vinemount (estimated 25m/290 masl). If Goat Island Formation is encountered, idenify transition point, grout up 1 metre and place bottom of screen at top of grout.

Notes:
mbgs - metres below ground surface
Standards refers to Ministry of Environment and Climate Change "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" dated July 1, 2011
Table 6 Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition and Residential, Parkland and Institutional (RPI) Property Use.
The following field parameters will be measured in groundwater during well purging: pH, ORP, DO, Temperature turbidity and Specific Conductance.
QAQC samples: one duplicate to be collected for every 10 samples; one trip blank for each cooler containing a VOC sample.
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Revision 6b, November 12, 2018

Appendix B: Table 1

Phase Two ESA Sampling and Analytical Plan: IMICO

Location ID	Existing or New Location	Media	Approx. Depth to Bedrock (mbgs)	Approx. Depth of TP/BH/MW (mbgs)	Screen Length (m)	O.Reg. 153/04 Metals & Inorganics	O. Reg. 153/04 Hydride-forming Metals (Sb, As, Se)	O. Reg. 153/04 Metals only (Section 1.2.2 in Protocol Doc)	PAHs (lab filter for B(a)P)	ABNs (includes phenol)	Chlorophenols	SVOCs (PAH, ABNs, Chlorophenol)	PHCs	BTEX	VOCs	PCB Aroclors	Purpose and Justification
MW18-112G	Existing	Groundwater													1		Resample to confirm result; marginal cis-1,2-dichloroethylene exceedance in previous groundwater sample.
MW18-112D	Existing	Groundwater													1		Vertical delineation (above) of cis-1,2-dichloroethylene present in MW18-112G
MW18-114D	Existing	Groundwater					1										Resample to confirm result; marginal antimony exceedance in previous groundwater sample.
MW18-113D	Existing	Groundwater													1		Resample to confirm result; marginal trichloroethylene exceedance in previous groundwater sample.
MW17-102D	Existing	Groundwater												1			Resample to confirm result; marginal benzene exceedance in previous groundwater sample.
MW18-114D	Existing	Groundwater	--	--	--		1										Second resample for antimony to confirm meets the SCS. No exceedance in previous sample.
OW07-37	Existing	Groundwater	--	--	--			1									Second resample for zinc to confirm meets the SCS. No exceedance in previous sample.
OW23D	Existing	Groundwater	--	--	--								1				Second resample for PHC F3 to confirm meets the SCS. No exceedance in previous sample.
OW25	Existing	Groundwater	--	--	--				1				1				Second resample for PHC F2 and PHC F3 to confirm meets the SCS. No exceedance in previous sample. Isolated benzo(a)pyrene exceedance, not vertically delineated. Two options (below) based on the results of this sample.
OW24D	Existing	Groundwater	--	--	--								1				Second resample for PHC F1 to confirm meets the SCS. No exceedance in previous sample.
OW3-I	Existing	Groundwater	--	--	--				1								Second resample for benzo(a)pyrene to confirm meets the SCS. No exceedance in the previous sample.
OW25	Existing	Groundwater	--	--	--				1								If the first benzo(a)pyrene sample from OW25 meets the SCS, complete a second PAHs resample at OW25.
BH19-209	New	Soil	--	--											2		Horizontal delineation of TCE impacts in soil north of BH13-40 and OW13-39S. Collect samples from above water table at 0.75 mbgs and 2.0 to 2.5 mbgs.
BH19-210	New	Soil	--	--											2		Horizontal delineation of TCE impacts in soil south of BH18-204. Collect samples from above water table at 0.75 mbgs and 2.0 to 2.5 mbgs.
BH19-211	New	Soil	--	--											2		Horizontal delineation of TCE impacts in soil south of BH18-205. Collect samples from above water table at 0.75 mbgs and 2.0 to 2.5 mbgs.
BH17-102i	New	Soil	--	--											1		Additional sampling to confirm cardinal detection of TCE, collect sample within 2 m of MW17-102D from 0.15 to 0.30 mbgs.Additional boreholes (BH19-212 through 215 below) if TCE concentrations confirmed.
BH17-102ii	New	Soil	--	--											1		Additional sampling to confirm cardinal detection of TCE, collect sample within 2 m of MW17-102D from 0.15 to 0.30 mbgs.Additional boreholes (BH19-212 through 215 below) if TCE concentrations confirmed.
BH17-100i	New	Soil	--	1	--	pH only											Additional sampling required at location of elevated pH. Advance borehole within 1-2 m of MW17-100S and collect sample from exact interval (0.3-0.46 mbgs). Ensure absolutely no concrete/ concrete dust from coring is in sample collected.
BH17-100ii	New	Soil	--	1	--	pH only											Additional sampling required at location of elevated pH. Advance borehole within 1-2 m of MW17-100S and collect sample from exact interval (0.3-0.46 mbgs). Ensure absolutely no concrete/ concrete dust from coring is in sample collected.
MW19-137S	New	Groundwater	2.8	5.1	3.05												Monitoring well to determine if LNAPL observed upgraidient at MW17-108S, OW23S and MW18-135D is potentially migrating offsite. Install well adjacent to OW14 (as far south east as possible), screen water table (approximately 313.6 masl/3.6 mbgs at OW14) with 3.05 m screen. No groundwater sample collection, observation for LNAPL only.
OW07-32	Existing	Groundwater	--	--												1	APEC-16 (Transformers) lists PCBs as COPCs in groundwater, but PCBs have not been sampled in groundwater to date within this APEC.

Notes:

mbgs - metres below ground surface

Standards refers to Ministry of Environment and Climate Change "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" dated July 1, 2011

Table 6 Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition and Residential, Parkland and Institutional (RPI) Property Use

The following field parameters will be measured in groundwater during well purging: pH, ORP, DO, Temperature turbidity and Specific Conductance

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Revision 7, January 17, 2019

Appendix B: Table 6

Phase Two ESA Sampling and Analytical Plan: IMICO

Location ID	Existing or New Location	Media	Approx. Depth to Bedrock (mbgs)	Approx. Depth of TP/BH/MW (mbgs)	Screen Length (m)	O.Reg. 153/04 Metals & Inorganics	O. Reg. 153/04 Hydride-forming Metals (Sb, As, Se)	O. Reg. 153/04 Metals only (Section 1.2.2 in Protocol Doc)	PAHs (lab filter for B(a)P)	ABNs (includes phenol)	Chlorophenols	SVOCs (PAH, ABNs, Chlorophenol)	PHCs	BTEX	VOCs	PCB Aroclors	Purpose and Justification
All Wells, except OW07-31	Existing	Groundwater													92		A second sampling round is required, specifically for VOCs, for up to all monitoring wells on the Site. Based on discussions with the City and MECP personnel, sampling the full network of wells is proposed. Additional parameters for specific wells indicated in the following 3 lines.
MW17-106S	Existing	Groundwater										1					Sample of ABNs and CPs in existing groundwater well to provide additional coverage of these parameters within the eastern portion of the foundry (APEC-1) based on MECP comment 9a on the P2 CSM.
MW18-115S	Existing	Groundwater							1				1				Sampling of existing shallow well to provide additional characterization of the former drum storage area (APEC-25) as well as to provide lateral delineation/edge of shallow VOC impacts to the south and address gaps in shallow VOC sampling in northwestern corner of the Site (to address MECP comments 9r and 10 bullet 4 on P2 CSM).
MW18-117S	Existing	Groundwater											1				Groundwater sampling of PHCs centred in the PHC-impacted area in soils on the western part of the Site to address MECP comment 10, bullet 6 on P2 CSM; sampling of VOCs to provide lateral delineation/edge of shallow VOC impacts to the south and address gaps in shallow VOC sampling in northwestern corner of the Site (to address MECP comment 10 bullet 4 on P2 CSM).
BH20-212	New	Soil	2.1 - 2.6	2.1 - 2.6		2			2				2		2		Additional location on west side of annealing room (APEC-03) to add distribution/coverage based on MECP comment 9b on the P2 CSM. Collect one surfical sample (less than 1 m depth) targetting worst case fill, and a second sample above the bedrock contact; the latter to be placed on hold, analysis pending results of the first. Full metals and & inorganics analysis required for APEC characterization. Do not submit a pH sample.
BH18-207i	New	Soil	2.5	2.5		1			2				1		2		Additional location within the footprint of the former Galvanizing Room (APEC-05) at BH18-207, determine concentrations of Zinc at bedrock surface (~2.3mbgs). Collect soil sample for PAHs and VOCs from the fill (0.15-0.76) and second soil sample at the bedrock surface for metals, PAHs, VOCs and PHCs. Submit the shallow sample (PAHs/VOCs) and the metals (no inorganics) only for the deep sample; all other parameters for the deep sample to be submitted on hold. Do not submit a pH sample.
MW20-XXX	New	Groundwater				1			1				1		1		If results from BH in galvanizing room have new maximum concentration(s) in soil, drill into bedrock and install monitoring well screening the water table.
TP20-320	New	Soil	2.1	2.1		2			2				2		2		Additional location (central) to characterize the backfill material in the excavation at the north portion of the property in the area of the former Plating building (APEC-11). Collect one sample of the backfill material from a mid-point depth (surface to bedrock) or at worst case if backfill appears impacted. Collect an additional deeper sample above the bedrock only if one of the following observed: a difference in mateiral (i.e. native or older/different fill material (unexcavated material)), a difference in impact (ie more or less than the above horizon sampled) encountered. Full metals and & inorganics analysis for characterization. Do not submit a pH sample.
TP20-321	New	Soil	2	2		2			2				2		2		Additional location (central) to characterize the backfill material in the excavation at the north portion of the property in the area of the former Plating building (APEC-11). Collect one sample of the backfill material from a mid-point depth (surface to bedrock) or at worst case if backfill appears impacted. Collect an additional deeper sample above the bedrock only if one of the following observed: a difference in mateiral (i.e. native or older/different fill material (unexcavated material)), a difference in impact (ie more or less than the above horizon sampled) encountered. Full metals and & inorganics analysis required for APEC characterization. Do not submit a pH sample.
BH20-213	New	Soil	1.0 - 2.3	1.0 - 2.3		2						2					Additional location covering both APEC-12 (coal storage) to add distribution/coverage based on MECP comment 9i on the P2 CSM. Collect one surfical sample (less than 1 m depth) targetting worst case fill, and a second sample above the bedrock contact; the latter to be placed on hold, analysis pending results of the first. Full metals and & inorganics analysis required for APEC characterization. Do not submit a pH sample.
MW20-XXX	New	Groundwater				1						1	1				If soil impacts related to APEC-12 or APEC-15 are found, drill into bedrock and install monitoring well screening the water table.
TP20-322	New	Soil	1.4	1.4		2			2				2		2		Additional sampling location in northern leg of rail line (APEC-13) and drum storage area (APEC-25) based on MECP comment 9a/r on the P2 CSM. Collect one surfical sample (less than 1 m depth) targetting worst case fill, and a second sample above the bedrock contact; the latter to be placed on hold, analysis pending results of the first. Full metals and & inorganics analysis required for APEC characterization. Do not submit a pH sample.
TP20-323	New	Soil	2.3	2.3		2			2								Additional sampling required in northern leg of rail line (APEC-13) based on MECP comment 9a on the P2 CSM. Collect one surfical sample (less than 1 m depth) targetting worst case fill, and a second sample above the bedrock contact; the latter to be placed on hold, analysis pending results of the first. Full metals and & inorganics analysis required for APEC characterization. Do not submit a pH sample.
BH20-214	New	Soil	1.8 - 2.1	1.8 - 2.1		2			2				2		2		Additional location in the central part of the coal storage (APEC-18) and paint shop (APEC-23) based on MECP comment 9n/q on the P2 CSM. Collect one surfical sample (less than 1 m depth) targetting worst case fill, and a second sample above the bedrock contact; the latter to be placed on hold, analysis pending results of the first. Full metals and & inorganics analysis required for APEC characterization. Do not submit a pH sample.
TP20-324	New	Soil	2.4 - 2.8	2.4 - 2.8		2			2				2		2		Additonal sampling location in the footprint of the former electrical shop (APEC-27) based on MECP comment 9s. Collect one surfical sample (less than 1 m depth) targetting worst case fill, and a second sample above the bedrock contact; the latter to be placed on hold, analysis pending results of the first. Full metals and & inorganics analysis required for APEC characterization. Do not submit a pH sample.
MW18-113S	Existing	Groundwater													1		Second sampling event of VOCs

Appendix B: Table 6

Phase Two ESA Sampling and Analytical Plan: IMICO

Location ID	Existing or New Location	Media	Approx. Depth to Bedrock (mbgs)	Approx. Depth of TP/BH/MW (mbgs)	Screen Length (m)	O.Reg. 153/04 Metals & Inorganics	O. Reg. 153/04 Hydride-forming Metals (Sb, As, Se)	O. Reg. 153/04 Metals only (Section 1.2.2 in Protocol Doc)	PAHs (lab filter for B(a)P)	ABNs (includes phenol)	Chlorophenols	SVOCs (PAH, ABNs, Chlorophenol)	PHCs	BTEX	VOCs	PCB Aroclors	Purpose and Justification
MW18-114S	Existing	Groundwater													1		Second sampling event of VOCs
MW18-115S	Existing	Groundwater													1		Second sampling event of VOCs
MW19-137S	Existing	Groundwater													1		Second sampling event of VOCs

Notes:

mbgs - metres below ground surface

Standards refers to Ministry of Environment and Climate Change "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" dated July 1, 2011

Table 6 Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition and Residential, Parkland and Institutional (RPI) Property Use

The following field parameters will be measured in groundwater during well purging: pH, ORP, DO, Temperature turbidity and Specific Conductance

Do not request pH analysis in soil (metals/inorganics) where concrete is observed at surface.

QAQC samples: one duplicate to be collected for every 10 samples; one trip blank for each cooler containing a VOC sample.

Revision 8, February 11, 2020

N

0 10 20 30 40
Metres

Location for sampling VOCs in Groundwater
Location requiring two VOC sampling events in Groundwater
Location requiring additional groundwater parameters
Borehole

Proposed Locations
Borehole
Test Pit

Railway
Excavated Area
Surveyed Property Boundary

Notes:
1. Source of Imagery: Esri, City of Guelph Ortho 2012.

Figure 1
Proposed Sampling Locations
Sampling and Analysis Plan – Revision 8
Former IMICO Foundry Facility
200 Beverly Street, Guelph, Ontario

ch2m

\\BROOKSIDEFILES\GIS_SHARE\ENBG\00_PROJ\G\GUELPHCITYOF\IMICO\GIS\MAPFILES\IMICO\SAP\R8\PROPOSEDLOCATIONS.MXD SCYR 2/11/2020 9:16:47 AM

Appendix C
Borehole and Monitoring Well and Test Pit Logs

BOREHOLE LOG

PROJECT: 98-224

BOREHOLE: BH7

FORMER IMICO SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 8 May 1998
GEOLOGIST BJS
ELEVATION 315.2 m ASL

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	COMMENTS
		SILTY SAND Dark brown to black silty sand, trace gravel, moist. -Switching to medium brown silty sand with trace plastic and trace clayey silt fill from 0.30 to 0.61 m. Cobbles found from 0.30 m. No odours.		1		SS	24		80		Photovac 0 ppm, Sample taken from 0.0 m to 0.15 m (BH7-SS1).
1				2		SS	19/ 0.18m		90		Photovac 0 ppm, Sample taken from 1.0 m to 1.15 m (BH7-SS2).
1.5		Borehole terminated at 1.52 m on limestone bedrock.									

BOREHOLE LOG

PROJECT: 98-393

BOREHOLE: BH22

FORMER IMICO FOUNDRY SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 4 September 1998
GEOLOGIST BJS
ELEVATION 316.3 m ASL

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	COMMENTS
0.2		**CONCRETE**									
		FILL Dark brown silty fine sand (foundry sand) fill, some gravel and brick, iron slag, moist, compact to dense. -Observed some clayey silt fill, wet, cobbles at 0.76 m.		1		SS	10		85		Microtip= 0 ppm.
1				2		SS	28		80		Microtip= 0 ppm.
		-More frequent cobbles at 1.52 m.		3		SS	40		75		Microtip= 0 ppm.
2											
2.6				4		SS	15/ 0.075 m		0		
		Borehole terminated at 2.56 m on presumed bedrock surface.									

Printed: 6 OCT 98

Gartner Lee Limited

BOREHOLE LOG

PROJECT: 98-393

BOREHOLE: BH23

FORMER IMICO FOUNDRY SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 4 September 1998
GEOLOGIST BJS
ELEVATION 316.3 m ASL

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	COMMENTS
0.2		**CONCRETE**									
		FILL Dark brown silty fine sand (probably foundry sand) fill, some brick, iron slag, nails, moist, compact to dense.		1		SS	23		90		Microtip= 0 ppm.
1		-Fuel odour detected at 1.04 m.		2		SS	25/0.125 m		60		Microtip= 0 ppm.
		-Cobbles more frequent and fuel odour at 1.52 m.		3		SS	45/0.125 m				
1.8		Borehole terminated at 1.80 m due to auger refusal.									

Gartner Lee Limited

BOREHOLE LOG

PROJECT: 98-393

BOREHOLE: BH24

FORMER IMICO FOUNDRY SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 4 September 1998
GEOLOGIST BJS
ELEVATION 316.3 m ASL

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	COMMENTS
0.2		**CONCRETE**									
		FILL Dark brown and black silty fine sand (probably foundry sand) fill, some iron slag, moist, compact.		1		SS	12		70		Microtip= 0 ppm.
1		-Becoming a red/brown/grey clayey silt fill, WTPL at 1.1 m, compact.		2		SS	27		50		Microtip= 0 ppm.
2		-Large cobble at 2.29 m.		3		SS	27		0		
2.6		Borehole terminated at 2.62 m on presumed bedrock surface.		4		SS	34/ 0.23 m		50		

Gartner Lee Limited

Project: **CITY of GUELPH** Contract No: **49520-1**

Borehole: **BH07-40**

Boring date: **08/02/2007** Supervised by: **G.C.Yule**

Monitoring Well: **n/a**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd.**

Drilling Method: **Power Probe 9700 w/ Double Tube**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface Elevation: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		CONCRETE SLAB - 150mm thick											
	0.15	**SAND and GRAVEL (FILL)** - dark brown, damp, medium to coarse, some coal and clinker				SS-1			57		N	⊕	
	0.30	**TOPSOIL (NATIVE)** - black, wet, trace hydrocarbon odour				SS-1A					T	⊕	Inorganics, Metals, PAH, VOC's, BTEX/F1, F2-F4 and PCB's Analyses
1													
	1.22	**SAND and LIMESTONE GRAVEL** - brown, damp, fine to medium, some silt				SS-2			100		N	⊕	
2													
	2.13	**SAND** - grey, damp to moist, fine, some silt, trace chemical odour				SS-2A					T	⊕	Metals, VOC's, F2-F4 and PCB's Analyses
	2.39	**END of BOREHOLE @ 2.39m** Refusal on inferred bedrock.											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **G.C.Yule**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: CITY of GUELPH | Contract No: 49520-1 | Borehole: BH07-41

Boring date: 08/02/2007 | Supervised by: G.C.Yule | Monitoring Well: n/a

Borehole Location: 200 Beverley Street, Guelph

Driller: Profile Drilling Ltd.

Drilling Method: Power Probe 9700 w/ Double Tube

Sheet 1 of 1

Scale (m)	Stratigraphy: Elev. (m) Depth (m)	Description (Ground Surface Elevation: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		SAND, COAL and CLINKER (FILL/REWORKED NATIVE) - black, damp, medium				SS-1			63		N	⊕	Inorganics, Metals, PAH, F2-F4 and PCB's Analyses
						SS-1A					N		DUP #4 Metals Analyses
	0.61	**SAND and LIMESTONE GRAVEL (NATIVE)** - brown, damp, medium to coarse											
1													
						SS-2			24		N	⊕	Metals, VOC's and F2-F4 Analyses
2													
	2.29	**END of BOREHOLE @ 2.29m** Refusal on inferred bedrock.											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS - Very Strong

Prepared by: G.C.Yule

Checked by: S.Prior

Date: 06/03/07

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **CITY of GUELPH** Contract No: **49520-1**

Borehole: **BH07-42**

Boring date: **22/02/2007** Supervised by: **G.C.Yule**

Monitoring Well: **n/a**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd.**

Drilling Method: **Power Probe 9700 w/ Double Tube**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface Elevation: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		SILTY SAND and COAL (FILL/REWORKED NATIVE) - black, damp, medium				SS-1			67		N	⊕	Inorganics, Metals, VOC's, BTEX/F1, F2-F4, TOC and PCB's Analyses
	0.61	**SILTY SAND and LIMESTONE GRAVEL (NATIVE)** - brown, damp, fine to medium				SS-1A					N	⊕	
1						SS-2			100		N	⊕	Metals and VOC's Analyses DUP # 14 Metals Analyses
	1.68	**END of BOREHOLE @ 1.68m** Refusal on inferred bedrock.											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **G.C.Yule**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **CITY of GUELPH** Contract No: **49520-1**

Borehole: **BH07-45**

Boring date: **08/02/2007** Supervised by: **G.C.Yule**

Monitoring Well: **n/a**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd.**

Sheet 1 of 1

Drilling Method: **Power Probe 9700 w/ Double Tube**

Scale (m)	Stratigraphy: Elev. (m) Depth (m)	Description (Ground Surface Elevation: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		SAND (FILL) - greyish brown, damp, medium to fine, some gravel, trace silt				SS-1			83		N	⊕	Metals and F2-F4 Analyses
						SS-1A					N		VOC's Analyses
1						SS-2			100		N	⊕	Metals, PAH and PCB's Analyses DUP # 2 PAH, VOC's, BTEX/F1, F2-F4 and PCB's Analyses
	1.78	**END of BOREHOLE @ 1.78m** Refusal on inferred bedrock.											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **G.C.Yule**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **CITY of GUELPH** Contract No: **49520-1**

Borehole: **BH07-46**

Boring date: **08/02/2007** Supervised by: **G.C.Yule**

Monitoring Well: **n/a**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd.**

Sheet 1 of 1

Drilling Method: **Power Probe 9700 w/ Double Tube**

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface Elevation: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Condition	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
1		**SAND and GRAVEL (FILL)** - brown, damp, medium to coarse				SS-1 SS-1A			83		N N	⊕	Metals and PCB's Analyses
	1.22	**SAND and GRAVEL (NATIVE)** - greyish brown, moist, medium to coarse, trace hydrocarbon odour				SS-2			100		T	⊕	Metals, PAH, VOC's, F2-F4 and PCB's Analyses
	1.68	**END of BOREHOLE @ 1.68m** Refusal on inferred bedrock.											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **G.C.Yule**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **CITY of GUELPH** Contract No: **49520-1**

Borehole: **BH07-47**

Boring date: **08/02/2007** Supervised by: **G.C.Yule**

Monitoring Well: **n/a**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd.**

Drilling Method: **Power Probe 9700 w/ Double Tube**

Sheet 1 of 1

Scale (m)	Stratigraphy: Elev. (m) Depth (m)	Description (Ground Surface Elevation: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Condition	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		CONCRETE SLAB - 150mm thick											
	0.15	**SAND and GRAVEL (NATIVE)** - brown, damp, medium to coarse				SS-1			100		N	⊕	Metals Analyses
1						SS-2			100		N	⊕	Metals, PAH, VOC's, BTEX/F1, F2-F4 and PCB's Analyses
		- becoming moist @ 1.68m											
	1.80	**END of BOREHOLE @ 1.8m**											
		Refusal on inferred bedrock.											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS - Very Strong

Prepared by: **G.C.Yule**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **CITY of GUELPH** Contract No: **49520-1**

Borehole: **BH07-48**

Boring date: **08/02/2007** Supervised by: **G.C.Yule**

Monitoring Well: **n/a**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd.**

Sheet 1 of 1

Drilling Method: **Power Probe 9700 w/ Double Tube**

Scale (m)	Stratigraphy: Elev. (m) Depth (m)	Description (Ground Surface Elevation: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		CONCRETE SLAB - 100mm thick											
	0.10	**SILTY SAND and GRAVEL (FILL/REWORKED)** - brown, damp, fine to medium				SS-1			100		N	⊕	Metals, PAH, BTEX/F1, F2-F4 and PCB's Analyses
1													
	1.22	**SAND and LIMESTONE GRAVEL (NATIVE)** - brown, moist to damp, medium				SS-2			100		N	⊕	Metals, BTEX/F1 and F2-F4 Analyses
	1.42	**END of BOREHOLE @ 1.42m**											
		Refusal on inferred bedrock.											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **G.C.Yule**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **CITY of GUELPH** Contract No: **49520-1**

Borehole: **BH07-49**

Boring date: **09/02/2007** Supervised by: **G.C.Yule**

Monitoring Well: **n/a**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd.**

Sheet 1 of 1

Drilling Method: **Power Probe 9700 w/ Double Tube**

Scale (m)	Stratigraphy: Elev. (m) Depth (m)	Description (Ground Surface Elevation: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		CONCRETE SLAB - 150mm thick											
	0.15	**TOPSOIL (NATIVE)** - dark brown, moist, silty, some fine sand				SS-1			79		N	⊕	Metals Analyses
	0.30	**SAND and LIMESTONE GRAVEL** - brown, damp, medium				SS-1A					N	⊕	
1						SS-2			100		N	⊕	Metals, PAH, VOC's, BTEX/F1, F2-F4 and PCB's Analyses
	1.83	**END of BOREHOLE @ 1.83m** Refusal on inferred bedrock.											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **G.C.Yule**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **CITY of GUELPH** Contract No: **49520-1**

Borehole: **BH07-50**

Boring date: **08/02/2007** Supervised by: **G.C.Yule**

Monitoring Well: **n/a**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd.**

Drilling Method: **Power Probe 9700 w/ Double Tube**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface Elevation: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
	0.05	**CONCRETE SLAB** - 50mm thick **SAND (FILL/REWORKED NATIVE)** - dark brown, damp, fine to medium, some silt				SS-1			75		N	⊕	Inorganics, Metals, F2-F4 and PCB's Analyses
1	1.07	**SAND and LIMESTONE GRAVEL (NATIVE)** - brown, damp, fine to medium				SS-1A					N	⊕	
						SS-2			100		N	⊕	Metals and PCB's Analyses
	1.67	**END of BOREHOLE @ 1.67m** Refusal on inferred bedrock.											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS - Very Strong

Prepared by: **G.C.Yule**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **CITY of GUELPH** Contract No: **49520-1**

Borehole: **BH07-51**

Boring date: **08/02/2007** Supervised by: **G.C.Yule**

Monitoring Well: **n/a**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd.**

Drilling Method: **Power Probe 9700 w/ Double Tube**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface Elevation: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
1		**SAND (FILLREWORKED NATIVE)** - dark brown to black, damp, fine, some gravel and fine coal, trace red brick				SS-1 SS-1A			73		N N	⊕	Metals, F2-F4, TOC and PCB's Analyses
2	1.22	**SAND and LIMESTONE GRAVEL (NATIVE)** - brown, damp to moist, fine to medium, some silt				SS-2			88		N	⊕	Metals, PAH, VOC's, BTEX/F1 and F2-F4 Analyses
	2.06	**END of BOREHOLE @ 2.06m** Refusal on inferred bedrock.											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS - Very Strong

Prepared by: **G.C.Yule**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **CITY of GUELPH** Contract No: **49520-1**

Borehole: **BH07-52**

Boring date: **08/02/2007** Supervised by: **G.C.Yule**

Monitoring Well: **n/a**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd.**

Sheet 1 of 1

Drilling Method: **Power Probe 9700 w/ Double Tube**

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface Elevation: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		SILTY SAND (FILL/REWORKED NATIVE) - dark brown, damp, fine to medium, some humus and gravel, trace tin foil and fine coal				SS-1			75		N	⊕	Metals, PAH, BTEX/F1, F2-F4, TOC and PCB's Analyses DUP # 3 PCB's Analyses
1													
	1.22	**SAND and GRAVEL (NATIVE)** - dark brown, damp, medium to coarse, some silt				SS-2			90		N	⊕	
	1.83	**SAND** - brown, moist, medium, some silt, trace to some limestone gravel				SS-2A					N	⊕	Metals, BTEX/F1 and F2-F4 Analyses
2	2.01	**END of BOREHOLE @ 2.01m** Refusal on inferred bedrock.											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS - Very Strong

Prepared by: **G.C.Yule**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **CITY of GUELPH** Contract No: **49520-1**

Borehole: **BH07-53**

Boring date: **08/02/2007** Supervised by: **G.C.Yule**

Monitoring Well: **n/a**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd.**

Sheet 1 of 1

Drilling Method: **Power Probe 9700 w/ Double Tube**

Scale (m)	Stratigraphy: Elev. (m) Depth (m)	Description (Ground Surface Elevation: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
1		**SAND and GRAVEL (FILL/REWORKED NATIVE)** - dark brown, damp, fine to medium, silty				SS-1 SS-1A			83		N N	⊕ ⊕	Inorganics, Metals, PAH, VOC's and F2-F4 Analyses
	1.22	**SAND and LIMESTONE GRAVEL (NATIVE)** - brown, damp, medium				SS-2			100		N	⊕	Metals, VOC's, BTEX/F1 and F2-F4 Analyses
	1.47	**END of BOREHOLE @ 1.47m** Refusal on inferred bedrock.											DUP #1 Inorganics, Metals, PAH, VOC's and F2-F4 Analyses

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **G.C.Yule**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **CITY of GUELPH** Contract No: **49520-1**

Borehole: **BH07-54**

Boring date: **08/02/2007** Supervised by: **G.C.Yule**

Monitoring Well: **n/a**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd.**

Sheet 1 of 1

Drilling Method: **Power Probe 9700 w/ Double Tube**

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface Elevation: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Condition	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV ☐ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		SILTY SAND (FILL/REWORKED NATIVE) - dark brown, damp, fine, some gravel, trace fine coal and clinker				SS-1 SS-1A			77		N N	⊕	Metals, BTEX/F1 and F2-F4 Analyses
	0.61	**SAND and LIMESTONE GRAVEL (NATIVE) -** brown, damp, medium to coarse, trace silt				SS-1B					N	⊕	
1						SS-2			100		N	⊕	Inorganics, Metals, PAH, BTEX/F1 and F2-F4 Analyses
2													
	2.39	**END of BOREHOLE @ 2.39m** Refusal on inferred bedrock.											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **G.C.Yule**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **CITY of GUELPH** Contract No: **49520-1**

Borehole: **BH07-55**

Boring date: **08/02/2007** Supervised by: **G.C.Yule**

Monitoring Well: **n/a**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd.**

Sheet 1 of 1

Drilling Method: **Power Probe 9700 w/ Double Tube**

Scale (m)	Stratigraphy: Elev. (m) Depth (m)	Description (Ground Surface Elevation: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Condition	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		SAND (FILL/REWORKED NATIVE) - dark brown, damp, fine to medium, some silt, trace slag				SS-1			75		N	⊕	
						SS-1A					N	⊕	
1	0.91	**SAND and LIMESTONE GRAVEL (NATIVE)** - brown, damp, medium, trace silt				SS-1B					N	⊕	Metals, PAH, VOC's, BTEX/F1 and F2-F4 Analyses
						SS-2			100		N	⊕	
	1.80	**END of BOREHOLE @ 1.8m** Refusal on inferred bedrock.											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS - Very Strong

Prepared by: **G.C.Yule**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **CITY of GUELPH** Contract No: **49520-1**

Borehole: **BH07-56**

Boring date: **09/02/2007** Supervised by: **G.C.Yule**

Monitoring Well: **n/a**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd.**

Drilling Method: **Power Probe 9700 w/ Double Tube**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface Elevation: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		SAND and GRAVEL (FILL/REWORKED NATIVE) - black and brown, damp, medium to coarse, some coal and clinker, trace humus				SS-1 SS-1A			83		N N	⊕	Metals, PAH, VOC's, BTEX/F1, F2-F4 and PCB's Analyses
1	0.91	**SAND (NATIVE)** - brown, moist, fine to medium, some silt and gravel				SS-1B					N	⊕	
	1.22	**SAND and LIMESTONE GRAVEL** - brown, moist to damp, medium, trace silt				SS-2					N	⊕	Metals and VOC's Analyses
	1.67	**END of BOREHOLE @ 1.67m** Refusal on inferred bedrock.											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **G.C.Yule**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **CITY of GUELPH** Contract No: **49520-1**

Borehole: **BH07-57**

Boring date: **08/02/2007** Supervised by: **G.C.Yule**

Monitoring Well: **n/a**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd.**

Drilling Method: **Power Probe 9700 w/ Double Tube**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface Elevation: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
	0.05	**SILTY TOPSOIL (FILL)** - dark brown, damp, trace red brick and coal				SS-1			67		N	⊕	
		SILTY SAND (FILL/REWORKED NATIVE) - dark brown, damp, fine to medium, some gravel, trace to some fine coal and red brick				SS-1A					N	⊕	Inorganics, Metals, PAH, VOC's, BTEX/F1, F2-F4 and PCB's Analyses DUP #5 Metals Analyses
1													
	1.22	**SAND and LIMESTONE GRAVEL (NATIVE)** - brown, damp, fine to medium, some to trace silt				SS-2			100		N	⊕	Metals Analyses
	1.88	**END of BOREHOLE @ 1.88m** Refusal on inferred bedrock.											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **G.C.Yule**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: CITY of GUELPH | Contract No: 49520-1 | Borehole: BH07-58

Boring date: 09/02/2007 | Supervised by: G.C.Yule | Monitoring Well: n/a

Borehole Location: 200 Beverley Street, Guelph

Driller: Profile Drilling Ltd.

Drilling Method: Power Probe 9700 w/ Double Tube

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface Elevation: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Condition	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		SAND and GRAVEL (FILL/REWORKED NATIVE) - dark brown, damp, medium to coarse, some coal and clinker				SS-1 SS-1A			88		N N	⊕ ⊕	Metals, PAH, VOC's, BTEX/F1, F2-F4 and PCB's Analyses
	0.61	**SAND (FILL/REWORKED NATIVE)** - black, damp, medium, some fine coal, trace gravel				SS-1B					N	⊕	
1	1.22	**SAND and LIMESTONE GRAVEL (NATIVE)** - brown, damp, medium, trace silt				SS-2			88		N	⊕	Metals Analyses
	1.63	**END of BOREHOLE @ 1.63m** Refusal on inferred bedrock.											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS - Very Strong

Prepared by: G.C.Yule

Checked by: S.Prior

Date: 06/03/07

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: CITY of GUELPH | Contract No: 49520-1 | Borehole: BH07-59

Boring date: 09/02/2007 | Supervised by: G.C.Yule | Monitoring Well: n/a

Borehole Location: 200 Beverley Street, Guelph

Driller: Profile Drilling Ltd.

Drilling Method: Power Probe 9700 w/ Double Tube

Sheet 1 of 1

Scale (m)	Stratigraphy: Elev. (m) Depth (m)	Description (Ground Surface Elevation: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Condition	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		SILTY TOPSOIL (FILL/REWORKED NATIVE) black, moist to damp, trace fine sand and gravel, trace coal				SS-1			100		N	⊕	
						SS-1A					N		Metals, PAH, VOC's, BTEX/F1 and PCB's Analyses
	0.30	**SAND and LIMESTONE GRAVEL (NATIVE)** - brown, damp, medium, trace silt				SS-1B					N	⊕	Metals Analyses
	0.69	**END of BOREHOLE @ 0.69m** Refusal on inferred bedrock.											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: G.C.Yule

Checked by: S.Prior

Date: 06/03/07

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **CITY of GUELPH** Contract No: **49520-1**

Borehole: **BH07-60**

Boring date: **09/02/2007** Supervised by: **G.C.Yule**

Monitoring Well: **n/a**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd.**

Sheet 1 of 1

Drilling Method: **Power Probe 9700 w/ Double Tube**

Scale (m)	Stratigraphy: Elev. (m) Depth (m)	Description (Ground Surface Elevation: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		SAND and GRAVEL (FILL/REWORKED NATIVE) - black, damp, medium to coarse, some coal and clinker				SS-1 SS-1A			89		N N		Inorganics, Metals, PAH, VOC's, BTEX/F1 and F2-F4 Analyses
1	0.76	**SAND (NATIVE)** - brown, damp, medium, some limestone gravel, trace silt				SS-1B					N		Metals Analyses
	1.19	**END of BOREHOLE @ 1.19m** Refusal on inferred bedrock.											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **G.C.Yule**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **CITY of GUELPH** Contract No: **49520-1**

Borehole: **BH07-61**

Boring date: **08/02/2007** Supervised by: **G.C.Yule**

Monitoring Well: **n/a**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd.**

Drilling Method: **Power Probe 9700 w/ Double Tube**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface Elevation: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Condition	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
	0.05	**SANDY TOPSOIL (FILL/REWORKED NATIVE)** - dark brown, damp, medium, some to trace fine coal				SS-1			75		N	⊕	Metals, PAH, VOC's, BTEX/F1, F2-F4, TOC and PCB's Analyses
						SS-1A					N	⊕	
		SAND (FILL/REWORKED NATIVE) - dark brown to brown, damp, medium, trace silt and fine coal											
1													
	1.22	**SILTY TOPSOIL (NATIVE)** - dark brown, damp				SS-2			100		N	⊕	Metals Analyses
	1.37	**SAND and LIMESTONE GRAVEL** - brown, damp, medium, trace to some silt				SS-2A					N	⊕	
	1.83	**END of BOREHOLE @ 1.83m** Refusal on inferred bedrock.											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS - Very Strong

Prepared by: **G.C.Yule**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **CITY of GUELPH** Contract No: **49520-1**

Borehole: **BH07-62**

Boring date: **08/02/2007** Supervised by: **G.C.Yule**

Monitoring Well: **n/a**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd.**

Sheet 1 of 1

Drilling Method: **Power Probe 9700 w/ Double Tube**

Scale (m)	Stratigraphy: Elev. (m) Depth (m)	Description (Ground Surface Elevation: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
	0.05	**SAND and HUMUS (FILL)** - dark brown, damp, medium				SS-1			75		N	⊕	
						SS-1A					N	⊕	Inorganics and Metals Analyses
		SAND (FILL/REWORKED NATIVE) - brown, damp, medium, some limestone gravel											
	0.61	**SAND (FILL/REWORKED NATIVE)** - dark brown, damp, medium, some silt and fine coal				SS-1B					N	⊕	Inorganics, Metals, PAH, VOC's, F2-F4 and PCB's Analyses DUP #6 Metals Analyses
1													
	1.22					SS-2			100		N	⊕	
2		**END of BOREHOLE @ 2.03m** Refusal on inferred bedrock.											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS - Very Strong

Prepared by: **G.C.Yule**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **CITY of GUELPH** Contract No: **49520-1**

Borehole: **BH07-63**

Boring date: **09/02/2007** Supervised by: **G.C.Yule**

Monitoring Well: **n/a**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd.**

Sheet 1 of 1

Drilling Method: **Power Probe 9700 w/ Double Tube**

Scale (m)	Stratigraphy: Elev. (m) Depth (m)	Description (Ground Surface Elevation: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
1		**COAL and CLINKER (FILL)** - black, damp, some sand				SS-1 SS-1A			63		N N		Metals and VOC's Analyses
	1.22	**SILTY SAND (NATIVE)** - brown, damp, fine to medium, some limestone gravel				SS-2			85		N		Inorganics, Metals, VOC's, BTEX/F1, F2-F4 and TOC Analyses
	1.88	**END of BOREHOLE @ 1.88m** Refusal on inferred bedrock.											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS - Very Strong

Prepared by: **G.C.Yule**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **CITY of GUELPH** Contract No: **49520-1**

Borehole: **BH07-64**

Boring date: **08/02/2007** Supervised by: **G.C.Yule**

Monitoring Well: **n/a**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd.**

Drilling Method: **Power Probe 9700 w/ Double Tube**

Sheet 1 of 1

Scale (m)	Stratigraphy: Elev. (m) Depth (m)	Description (Ground Surface Elevation: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
	0.05	**TOPSOIL (FILL)** - black, damp, some medium sand, trace roots				SS-1			67		N	⊕	Inorganics, Metals, PAH, VOC's, BTEX/F1 and F2-F4 Analyses
		SAND (FILL/REWORKED NATIVE) - dark brown, damp, medium, trace to some silt and coal, trace glass				SS-1A					N	⊕	
1													
	1.22	**SAND and LIMESTONE GRAVEL (NATIVE)** - brown, damp, fine to medium, some silt				SS-2			71		N	⊕	Metals Analyses
2													
	2.29	**END of BOREHOLE @ 2.29m** Refusal on inferred bedrock.											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **G.C.Yule**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **CITY of GUELPH** Contract No: **49520-1**

Borehole: **BH07-65**

Boring date: **09/02/2007** Supervised by: **G.C.Yule**

Monitoring Well: **n/a**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd.**

Drilling Method: **Power Probe 9700 w/ Double Tube**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface Elevation: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Condition	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		SILTY TOPSOIL (FILL/REWORKED NATIVE) black, damp, some fine sand and coal, trace gravel				SS-1			63		N	⊕	Metals, PAH, BTEX/F1, F2-F4 and PCB's Analyses
						SS-1A					N	⊕	
	0.61	**SILTY SAND and LIMESTONE GRAVEL (NATIVE)** - brown, damp, fine				SS-1B					N	⊕	
1													
						SS-2			94		N	⊕	Metals, VOC's and PCB's Analyses
2	2.03	**END of BOREHOLE @ 2.03m** Refusal on inferred bedrock.											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **G.C.Yule**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **CITY of GUELPH** Contract No: **49520-1**

Borehole: **BH07-66**

Boring date: **09/02/2007** Supervised by: **G.C.Yule**

Monitoring Well: **n/a**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd.**

Drilling Method: **Power Probe 9700 w/ Double Tube**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface Elevation: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Condition	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
1		**SAND (FILL/REWORKED NATIVE)** - black, damp, medium to coarse, some gravel and coal				SS-1 SS-1A			100		N N	⊕ ⊕	Metals, PAH, BTEX/F1, F2-F4 and PCB's Analyses
	1.22	**SAND and LIMESTONE GRAVEL (NATIVE)** - brown, damp, medium				SS-2			100		N	⊕	Metals, F2-F4 and PCB's Analyses
	1.32	**END of BOREHOLE @ 1.32m** Refusal on inferred bedrock.											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **G.C.Yule**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **CITY of GUELPH** Contract No: **49520-1**

Borehole: **BH07-67**

Boring date: **09/02/2007** Supervised by: **G.C.Yule**

Monitoring Well: **n/a**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd.**

Sheet 1 of 1

Drilling Method: **Power Probe 9700 w/ Double Tube**

Scale (m)	Stratigraphy: Elev. (m) Depth (m)	Description (Ground Surface Elevation: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
	0.05	**SAND and GRAVEL (FILL)** - brown, damp				SS-1			83		N	⊕	
		SILTY COAL and CLINKER (FILL/REWORKED NATIVE) - black, damp, some fine to medium sand, trace to some humus, trace hydrocarbon odour				SS-1A					N	⊕	Metals, VOC's, F2-F4 and PCB's Analyses
1	0.91	**SAND and LIMESTONE GRAVEL (NATIVE)** - greyish brown, damp, fine to medium				SS-1B					N	⊕	
						SS-2			100		N	⊕	Metals, VOC's, and PCB's Analyses
	1.37	**END of BOREHOLE @ 1.37m** Refusal on inferred bedrock.											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **G.C.Yule**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **CITY of GUELPH** Contract No: **49520-1**

Borehole: **BH07-68**

Boring date: **09/02/2007** Supervised by: **G.C.Yule**

Monitoring Well: **n/a**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd.**

Sheet 1 of 1

Drilling Method: **Power Probe 9700 w/ Double Tube**

Scale (m)	Stratigraphy: Elev. (m) Depth (m)	Description (Ground Surface Elevation: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		SAND and GRAVEL (FILL/REWORKED NATIVE) - black, damp, medium to coarse, some coal and clinker, trace humus				SS-1			83		N	⊕	Metals, F2-F4 and PCB's Analyses
						SS-1A					N		Metals, F2-F4 and PCB's Analyses
	0.61	**SAND and LIMESTONE GRAVEL (NATIVE)** - brown, damp, medium, trace silt				SS-1B					N	⊕	
1						SS-2			100		N	⊕	
	1.32	**END of BOREHOLE @ 1.32m** Refusal on inferred bedrock.											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **G.C.Yule**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **CITY of GUELPH** Contract No: **49520-1**

Borehole: **BH07-69**

Boring date: **09/02/2007** Supervised by: **G.C.Yule**

Monitoring Well: **n/a**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd.**

Sheet 1 of 1

Drilling Method: **Power Probe 9700 w/ Double Tube**

Scale (m)	Stratigraphy: Elev. (m) Depth (m)	Description (Ground Surface Elevation: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Condition	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
	0.08	**SAND and GRAVEL (FILL)** - brown, damp, medium to coarse				SS-1 SS-1A			83		N N	⊕	Inorganics, Metals, PAH, VOC's and F2-F4 Analyses
		SAND (FILL/REWORKED NATIVE) - black and dark brown, damp, medium, some coal and clinker, trace to some gravel											
1	1.22	**SAND and LIMESTONE GRAVEL (NATIVE)** - brown, damp, medium, trace silt				SS-2			100		N	⊕	Metals Analyses
	1.42	**END of BOREHOLE @ 1.42m** Refusal on inferred bedrock.											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **G.C.Yule**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **CITY of GUELPH** Contract No: **49520-1** Borehole: **BH07-70**

Boring date: **09/02/2007** Supervised by: **G.C.Yule** Monitoring Well: **n/a**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd.** **Sheet 1 of 1**

Drilling Method: **Power Probe 9700 w/ Double Tube**

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface Elevation: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
	0.05	**SAND and GRAVEL (FILL)** - brown, damp, medium				SS-1			63		N	⊕	Inorganics, Metals, PAH, BTEX/F1, F2-F4 and PCB's Analyses
		SAND and GRAVEL (FILL/REWORKED NATIVE) - black and brown, damp, medium, some silt and coal & clinker				SS-1A					N	⊕	
1	1.22	**SAND (FILL/REWORKED NATIVE)** - black, damp, medium, trace gravel				SS-2			75		N	⊕	Metals and F2-F4 Analyses
	1.73	**END of BOREHOLE @ 1.73m** Refusal on inferred bedrock.											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS - Very Strong

Prepared by: **G.C.Yule**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **CITY of GUELPH** Contract No: **49520-1**

Borehole: **BH07-71**

Boring date: **09/02/2007** Supervised by: **G.C.Yule**

Monitoring Well: **n/a**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd.**

Sheet 1 of 1

Drilling Method: **Power Probe 9700 w/ Double Tube**

Scale (m)	Stratigraphy: Elev. (m) Depth (m)	Description (Ground Surface Elevation: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Condition	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
	0.05	**SAND and GRAVEL (FILL)** - brown, damp, medium to coarse				SS-1			63		N	⊕	Inorganics, Metals, PAH, VOC's and F2-F4 Analyses
		SAND, COAL and CLINKER (FILL/REWORKED NATIVE) - black, damp, medium to fine, some red brick				SS-1A					N	⊕	
1	1.22	**SAND and LIMESTONE GRAVEL (NATIVE)** - brown, damp, medium to fine				SS-2			100		N	⊕	Metals Analyses
	1.32	**END of BOREHOLE @ 1.32m**											
		Refusal on inferred bedrock.											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **G.C.Yule**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **IMICO - Guelph** Contract No: **701996**

Borehole: **BH13-40**

Boring date: **12/12/2013** Supervised by: **M. McCormick**

Monitoring Well: **n/a**

Borehole Location: **200 Beverly Street, Guelph, Ontario**

Driller: **Aardvark Drilling**

Sheet 1 of 1

Drilling Method: **CME 55T w/ HSA**

Scale (m)	Stratigraphy: Elev. (m) Depth (m)	Description (Ground Surface Elevation:316.47m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Condition	Blows/ 300mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
	316.37	**CONCRETE** - 100 mm thick				GS-1					N		
	0.10	**GRAVEL (FILL)** , crushed limestone											
	316.27	**SAND and GRAVEL (NATIVE)** , brown, medium to coarse, some cobbles											
	0.20												
						GS-2					N		
1													
						GS-3					N		
						SS-1					N		VOCs, PAHs, BTEX/ PHC (F1-F4), Metals and Inorganics Analyses.
2													
	314.03												
	2.44	**END of BOREHOLE @ 2.44m**											
		Refusal on inferred bedrock.											
3													
4													
5													
6													

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **D. Arnaud**

Checked by: **S.Prior**

Date: **11/02/14**

DCS
DECOMMISSIONING CONSULTING SERVICES

COREHOLE LOGS
Former IMICO Property
Guelph, Ontario

Corehole	Depth (m)	Stratigraphy	PID (ppm)	Samples (mbg)
C1	0.00 - 0.19	Concrete	2.5	
	0.19 - 0.61	Medium to dark brown silty sand - **FILL**		C1-2
	0.61 - 1.07	Reddish brown clayey **SILT**		C1-3
C2	0.00 - 0.17	Concrete	2	
	0.17 - 0.61	Black silty sand - **FILL**, foundry sand odour		C2-1
	0.61 - 1.07	Black silty sand - **FILL**, light foundry sand odour		C2-2
C3	0.00 - 0.15	Concrete		
	0.15	Refusal		
		Note: C3 located approximately 1.2 m below floor grade		
C4	0.00 - 0.33	Concrete	0	
	0.33 - 0.61	Inferred to be clayey silt with cobbles and boulders		
	0.61	Refusal		
		Note: C4 located approximately 1.2 m below floor grade		
C5	0.00 - 0.08	Interlocking bricks		
	0.08 - 0.23	Concrete		
	0.23	Refusal		
C6	0.00 - 0.17	Concrete	0.5	
	0.17 - 0.61	Dark brown to black silty sand **FILL**, perhaps foundry sand		C6-1
	0.61 - 0.76	Dark brown to black silty sand **FILL**, less foundry sand than above, petroleum oil-like odour		C6-2
	0.76	Refusal		
C7	0.00 - 0.23	Concrete	110	
	0.23 - 1.22	Dark brown to black silty sand **FILL**, slight solvent-like odour		C7-1 (0.23-0.61) C7-2 (0.61-1.22)
C8	0.00 - 0.14	Concrete	13	
	0.14 - 0.76	Dark brown to black silty sand **FILL**, slight solvent-like odour		C8-1
	0.76 - 1.22	Dark brown to black silty sand **FILL**, occaisional gravel beginning at 0.91m, slight solvent-like odour		C8-2
C9	0.00 - 0.13	Concrete	0	
	0.13	Refusal		

COREHOLE LOGS
Former IMICO Property

Corehole	Depth (m)	Stratigraphy	PID (ppm)	Samples (mbg)
C10	0.00 - 0.13	Concrete	0	
	0.13 - 0.61	Brown SAND and GRAVEL, trace silt		C10-1
	0.61 - 1.22	No sample recovered		
		Note: C10 located in a pit approximately 1 metre below floor grade		
C11	0.00 - 0.16	Concrete	0.5	
	0.16 - 0.34	Concrete- second layer		
	0.34 - 0.40	Light brown mixed SAND and gravel		C11-1
C12	0.00 - 0.13	Concrete	5	
	0.13 - 0.30	Brown to grey coarse sand and gravel, slight ammonia-like odour -**FILL**		C12-1
	0.30	Refusal		
C13	0.00 - 0.14	Concrete	4	
	0.14 - 0.91	Dark brown to black medium sand, trace silt, trace gravel - **FILL**, including cinders and foundry sand, slight ammonia-like odour		C13-1
	0.91 - 1.20	Dark brown to black medium sand, trace silt with gravel - **FILL**		C13-2
	1.20 - 1.22	Brown **SILTY SAND**		
		Note: C13 located in a pit approximately 1 m below floor grade		
C14	0.00 - 0.12	Concrete	0	
	0.12 - 1.22	Dark brown to black sand, trace silt, some gravel - **FILL** including cinders and foundry sand		C14-1 (0.12-0.61) C14-2 (0.61-1.22)
C15	0.00 - 0.13	Concrete	0	
	0.13 - 0.91	Brown to grey coarse sand and gravel - **FILL**		
	0.91	Refusal		

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London

BOREHOLE 1

Sheet 1 Of 1

Client: BANK OF MONTREAL E.O. No.: 90K26
Project Location: FORMER IMICO PROPERTY-GUELPH
Borehole Location: SEE FIGURE 6
Drilling Contractor: ATCOST Date: APRIL 25/91
Monitoring Well Data – Pipe: 5.1cm PVC
– Screen: 5.1cm PVC #10 SLOT
Other Monitors: 1.6cm HDPE SOIL GAS PROBE

Elevation:
– Datum: GEODETIC
– Ground surface: 315.75
–Measuring Pt.: 316.46 (TOC)

Logged By: E.T. Checked By: D.K.
Drawn By: W.J.G. Scale: 1:40

Depth Scale (ft.)	(m)	Boring Method	Soil Profile – Description	Strat. Plot	Elev. (m) / Depth (m)	Sample Number	Interval	Type	"N" Value	PID 100 200 300	Monitoring Well Details
					315.75						Lockable Protective Casing
0	0.0	Power Auger Hollow Stem	Silty fine to medium sand, trace clay, dark brn. to blk, moist, light weathered hydrocarbon odour, fill.		0.00	AU-1		AU			CEMENT; BENTONITE SEAL
1	0.5										
2											
3	1.0		Silty sand, with cobbles and boulders, dark brn. to blk., moist, weathered hydrocarbon odour, fill.								SOIL GAS PROBE
4											
5	1.5		Clayeysilt, trace to some mixed sandy, reddish brn., moist(tip wet), strange weathered hyrdocarbon odour, fill.		313.87	SS-1		SS	48		SANDPACK
6											
7	2.0	Rotary Core NQ			1.88						313.23 ON MAY 2/91
8	2.5		Limestone, very hard weathered, grey, fractured, occasional shaley partings, vuggy.			CORE-1		RX			
9											
10	3.0		–Weathered hydrocarbon odour extending to approx. 3.35 mbg.								WELLSCREEN
11					312.40						
12	3.5				3.35						
13	4.0				311.79						
14			END OF BOREHOLE		3.96						
15	4.5										
16	5.0										
17											
18	5.5										
19											
20	6.0										

Note: This borehole log was prepared for hydrogeological and/or environmental assessment purpose and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpertation by Proctor & Redfern personnel before use by others.

BOREHOLE LOG

PROJECT: 98-224

BOREHOLE: OW1-II

FORMER IMICO SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 11 May 1998
GEOLOGIST BJS
ELEVATION 315.6 m ASL GS

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	COMMENTS
		SANDY SILT Dark brown, medium to coarse sandy silt, some gravel, brick, moist to wet, some black ash fragments, no odours. -Becoming wet with some odour from 0.76 to 1.37 m.		1		SS	6		40		Photovac 0 ppm
1				2		SS	5		40		Photovac 0 ppm, Sample taken from 0.76 to 1.37 m.
		-Cobble in tip of spoon, saturated with some odour from 1.52 to 2.13 m.		3		SS	7		40		Photovac 36.9 ppm
2											
2.5		-Oily sheen on soil sample with strong hydrocarbon odour from 2.13 to 2.29 m. -Spoon bouncing at 2.29 m - presumed bedrock surface. Benseal seal from 2.30 to 2.45 m.		4		HQ			100	9	Photovac 9.7 ppm, Sample taken from 2.13 to 2.29 m. (AS4-OW1-II)
3		**LIMESTONE** Grey limestone with occasional shale stringers, porous, vuggy, some crystalline structure, fractured. -Becoming highly fractured with occasional shale partings from 3.23 m and increasing with depth.		5		HQ			100	8	W.L. @ 3.61m BGS on May 11/98.
4											
				6		HQ			99	27	
5											
5.9											
6		**SHALEY LIMESTONE** Grey shaley limestone, more frequent shale partings, some crystalline structure. -Becoming vuggy with more frequent shale inclusions, fractures decreasing with depth.		7		HQ			100	48	
7											
7.8		Borehole terminated at 7.83 m in shaley limestone bedrock.									

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London

BOREHOLE 2

Sheet 1 Of 1

Client: BANK OF MONTREAL E.O. No.: 90K26
Project Location: FORMER IMICO PROPERTY-GUELPH
Borehole Location: SEE FIGURE 6
Drilling Contractor: ATCOST Date: APRIL 25/91
Monitoring Well Data – Pipe: 5.1cm PVC
– Screen: 5.1cm PVC #10 SLOT
Other Monitors:

Elevation:
– Datum: GEODETIC
– Ground surface: 315.23
–Measuring Pt.: 315.97 (TOC)

Logged By: E.T. Checked By: D.K.
Drawn By: W.J.G. Scale: 1:40

Depth Scale	Boring Method	Soil Profile – Description	Strat. Plot	Elev. Depth	Sample				PID 100 200 300	Monitoring Well Details
				315.23						Lockable Protective Casing
0.0	Power Auger Hollow Stem	Silty sand, trace clay, blk. staining, minor gravel, moist fill, evidence of foundry sands.		0.00	SS-1	SS	16			CEMENT
0.5					SS-2	SS	13			BENTONITE SEAL
1.0				313.85/ 1.38						
		Silty sand, light brn. moist								
1.5	Rotary Core NQ	Limestone, very weathered grey fractured, occasional shaley partings,		313.81/ 1.42	CORE-1	RX				▽ 313.70 ON MAY 2/91
2.0		Limestone becomes more competent								WELLSCREEN
2.5										SANDPACK
3.0										
3.5				311.27						
4.0		END OF BOREHOLE		3.96						
4.5										
5.0										
5.5										
6.0										

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BOREHOLE 3

Sheet 1 Of 1

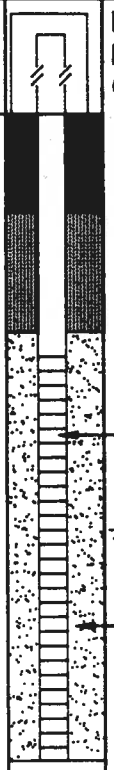
Client: BANK OF MONTREAL E.O. No.: 90K26
Project Location: FORMER IMICO PROPERTY–GUELPH
Borehole Location: SEE FIGURE 6
Drilling Contractor: ATCOST Date: APRIL 25/91
Monitoring Well Data – Pipe: 5.1cm PVC
– Screen: 5.1cm PVC #10 SLOT
Other Monitors:

Elevation:
– Datum: GEODETIC
– Ground surface: 315.41
–Measuring Pt.: 316.11 (TOC)

Logged By: E.T. Checked By: D.K.
Drawn By: W.J.G. Scale: 1:40

Depth Scale (ft.)	Depth Scale (m)	Boring Method	Soil Profile – Description	Strat. Plot	Elev. (m) / Depth (m)	Sample – Number	Sample – Interval	Sample – Type	Sample – "N" Value	PID 100	PID 200	PID 300
					315.49							
0	0.0	Power Auger Hollow Stem	Mixed sands with brick and metal debris–fill.		0.00							
1												
2	0.5											
3	1.0				314.34							
4			Silty sand course, grey till, with cobbles and boulders.		1.07							
5	1.5				313.75							
6		Rotary Core NQ	Limestone, very weathered grey, fractured.		1.66	CORE–1		RX				
7	2.0											
8					312.97							
8	2.5		Zone of more porous and crystalline rock.		2.44 / 312.67							
9					2.74							
10	3.0											
11					312.06							
	3.5		END OF BOREHOLE		3.35							
12												
13	4.0											
14												
15	4.5											
16												
17	5.0											
18	5.5											
19												
20	6.0											

Monitoring Well Details



Note: This borehole log was prepared for hydrogeological and/or environmental assessment purpose and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpertation by Proctor & Redfern personnel before use by others.

BOREHOLE LOG

PROJECT: 98-224

BOREHOLE: OW3-II

FORMER IMICO SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 4 May 1998
GEOLOGIST BJS
ELEVATION 315.3 m ASL GE

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	COMMENTS
		SILT AND FINE SAND Medium to dark brown silt and fine sand, some gravel, trace glass, moist. -Yellow to light brown powdery substance (likely old brick) from 0.3 to 0.4 m.		1		SS	25		70		Photovac 1.5 ppm
1		-Dark brown silty fine sand, with a trace of gravel and brick, saturated from 0.76 m to 1.25 m.		2		SS	12		60		
		-Becoming an olive brown and yellow (rust) brown fine sandy silt, saturated with no odour from 1.25 to 1.37 m.									Photovac 0 ppm
1.8		-Becoming light brown to grey silty fine sand and weathered limestone pieces at 1.52 m.		3			30/ 0.15m		95		Photovac 0 ppm
2		**LIMESTONE** Grey limestone with occasional shale partings, highly fractured and weathered, vuggy appearance, trace of fossil, some oxidation along fractures.		4		HQ			97	0	
3		-Some crystalline quartz detected in voids.		5		HQ			92	7	W.L. @ 2.94 m BGS on May 4/98.
4											
5				6		HQ			100	24	
6											
6.5		**SHALEY LIMESTONE** Dark grey to black shaley limestone.		7		HQ			84	16	
7.0 7		**LIMESTONE** Grey limestone with shale partings, vuggy, quartz crystals in voids, highly fractured.									
7.9		Borehole terminated at 7.85 metres in limestone.									

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BOREHOLE 4

Sheet 1 Of 1

Client: BANK OF MONTREAL E.O. No.: 90K26
Project Location: FORMER IMICO PROPERTY–GUELPH
Borehole Location: SEE FIGURE 6
Drilling Contractor: ATCOST Date: APRIL 26/91
Monitoring Well Data – Pipe: 5.1cm PVC
– Screen: 5.1cm PVC #10 SLOT
Other Monitors:

Elevation:
– Datum: GEODETIC
– Ground surface: 315.75
–Measuring Pt.: 316.55 (TOC)

Logged By: E.T. Checked By: D.K.
Drawn By: W.J.G. Scale: 1:40

Depth Scale (ft.)	Depth Scale (m)	Boring Method	Soil Profile – Description	Strat. Plot	Elev. (m) / Depth (m)	Sample Number	Sample Interval	Sample Type	Sample "N" Value	PID 100	PID 200	PID 300	Monitoring Well Details
					315.75								Lockable Protective Casing
0–2	0.0–0.5	Power Auger Hollow Stem	Silty sand, some clay, blk. staining, minor organics, moist fill containing foundry sands, cinders & slag.		0.00 / 315.14	SS-1		SS	13				CEMENT; BENTONITE SEAL
2–7	0.5–2.3	Power Auger Hollow Stem	Slity sand, with cobbles and boulders, moist.		0.61 / 313.46	OW-3 SS-2		SS; SS	48				WELLSCREEN
7–10	2.3–3.0	Rotary Core NQ	Limestone, weathered, grey, very hard, porous, occasional shale partings, vuggy.		2.29 / 312.65	CORE-1		RX					SANDPACK; ▽ 312.87 ON MAY 2/91
10–20	3.0–6.0		END OF BOREHOLE		3.10								

Note: This borehole log was prepared for hydrogeological and/or environmental assessment purpose and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpertation by Proctor & Redfern personnel before use by others.

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BOREHOLE 5

Sheet 1 Of 1

Client: BANK OF MONTREAL E.O. No.: 90K26
Project Location: FORMER IMICO PROPERTY-GUELPH
Borehole Location: SEE FIGURE 6
Drilling Contractor: ATCOST Date: April 26/91
Monitoring Well Data – Pipe: 5.1cm PVC
– Screen: 5.1cm PVC #10 SLOT
Other Monitors:

Elevation:
– Datum: GEODETIC
– Ground surface:
–Measuring Pt.: 315.83

Logged By: E.T. Checked By: D.K.
Drawn By: W.J.G. Scale: 1:40

Depth Scale (ft.)	Depth Scale (m)	Boring Method	Soil Profile – Description	Strat. Plot	Elev. (m) / Depth (m)	Sample Number	Sample Interval	Sample Type	Sample "N" Value	PID 100	PID 200	PID 300	Monitoring Well Details
					319.83								Lockable Protective Casing
0	0.0	Power Auger Hollow Stem	Silty sand topsoil some gravel, oily		0.00								
1			Silty sand, blk. staining foundry sands, slag, moist.			SS-1		SS	7				CEMENT
2	0.5				315.09								BENTONITE SEAL
3			Sand, med. to course with pebbles, gravel, light brn. to grey, moist.		0.74 / 314.81	SS-2		SS	46				
4	1.0		–Cobbles and boulders below 1.2m.		1.02	SS-3		SS	39				CAVE
5	1.5				314.23	SS-4		SS					
6		Rotary Core HQ	Limestone, weathered, grey, fractured, porous and vuggy.		1.60								BENTONITE SEAL
7	2.0												
8	2.5												SANDPACK
9						CORE-1		RX					WELLSCREEN
10	3.0												
11	3.5												312.56 ON MAY 2/91
12													
13	4.0												
14					311.49								
15	4.5		END OF BOREHOLE		4.34								
16													
17	5.0												
18	5.5												
19													
20	6.0												

Note: This borehole log was prepared for hydrogeological and/or environmental assessment purpose and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpertation by Proctor & Redfern personnel before use by others.

BOREHOLE LOG

PROJECT: 98-224

BOREHOLE: OW9-I 1 of 1

FORMER IMICO SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 7 May 1998
GEOLOGIST BJS
ELEVATION 316.1 m ASL GE

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	COMMENTS
316.1		**SILTY FINE SAND** Dark brown silty fine sand to sandy silt, some clumps of silt, some coarse sand and trace gravel fill, moist, no staining or odours.		1		SS	12		40		Photovac 4.2 ppm
		-Limestone cobbles observed from 0.76m.		2		SS	19		60		Photovac 0 ppm
1											
314.2		314.2		3		SS	43/ 0.15m		75		
2		-Silty sand, gravel and limestone cobbles with some granite cobbles.		4		HQ			87	37	
313.3 2.8		**LIMESTONE** Grey limestone, porous, vuggy. -Iron staining and occasional shale partings, fractured with some sandy silt in fractures.									
3											W.L. @ 2.93 m BGS on May 7/98.
		-Some crystalline structure and some clayey silt observed in fractures from 3.39 m.		5		HQ			100	50	
4											
311.3 4.8		Borehole terminated at 4.84 metres in limestone bedrock.	311.3								

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BOREHOLE LOG

PROJECT: 98-224

BOREHOLE: OW9-II

FORMER IMICO SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 7 May 1998
GEOLOGIST BJS
ELEVATION 316.0 m ASL GE

316

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	COMMENTS
		SILTY FINE SAND Dark brown silty fine sand to sandy silt, some clumps of silt, some coarse sand and trace gravel fill, moist, no staining or odours. -Limestone cobbles observed from 0.76m.									Straight augered to bedrock. Soil stratigraphy inferred from BHOW9-I.
1											
2		-Silty sand, gravel and limestone cobbles with some granite cobbles.									
313.2 2.8		**LIMESTONE** Grey limestone, porous, vuggy. -Becoming iron stained with occasional shale partings, fractured from 3.00 m. -Better quality rock, with some crystalline structure with increasing depth.		1		HQ			80	0	
3				2		HQ			100	56	
4											W.L. @ 3.84 m BGS on May 7/98.
5		-Becoming highly fractured from 4.82 to 6.29 m.		3		HQ			100	28	
6		Sh. P. to 309.6									
309.6		-Becoming a grey limestone to shaley limestone, occasional shale partings, vuggy, some crystalline structure, better rock quality from 6.29 m.	309.6	4		HQ			100	45	
7											
308.1 7.9		Borehole terminated at 7.85 m in limestone bedrock.	308.1								

Printed: 8 JUN 98

Gartner Lee Limited

BOREHOLE LOG

PROJECT: 98-224

BOREHOLE: OW10-I

FORMER IMICO SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 11 May 1998
GEOLOGIST BJS
ELEVATION 315.3 m ASL GE

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	COMMENTS
315.3		**SANDY SILT** Dark brown fine sandy silt, trace gravel, trace asphalt, rootlets, wet.		1		SS	5		50		Photovac 0 ppm
1		-Becoming moist at 0.76 m. -Cobbles from 0.91 m. -Spoon bouncing on a cobble at 0.95 m.		2		SS	3/ 0.19m		95		Photovac 0 ppm
313.5		313.5		3		SS	14/ 0.15m		80		
313.2 2.1	2										
		LIMESTONE Brownish grey limestone, occasional shale partings, vuggy, porous, fractured, some crystalline structure.		4		HQ			95	23	
3											W.L. @ 3.08 m BGS on May 11/98.
		-Becoming grey and highly fractured at 3.45 m.		5		HQ			100	16	
4											
310.4 4.9		Borehole terminated at 4.85 m in limestone bedrock.	310.4								

Printed: 8 JUN 98

Gartner Lee Limited

BOREHOLE LOG

PROJECT: 98-224

BOREHOLE: OW11-I

FORMER IMICO SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 5 May 1998
GEOLOGIST BJS
ELEVATION 315.2 m ASL

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	COMMENTS
315.2		**SANDY SILT TOPSOIL** Dark brown fine sandy silt topsoil, some gravel, brick, grass, moist, no staining or odours.		1		SS	12		50		Photovac 1.9 ppm
314.4 0.8		**SANDY SILT** Dark brown fine sandy silt. -Becoming a dark brown silty fine sand, moist at 1.0 m. -Piece of wood fragment found from 1.2 to 1.22 m.		2		SS	15		60		Photovac 0 ppm
1											
316.6 313.5 1.7		-Becoming a dark brown fine sandy silt, trace gravel, wet at 1.52 m.	313.6	3		SS	33		60		Photovac 0 ppm
		LIMESTONE Grey weathered limestone, some coarse sand, wet.									W.L. @ 1.71 m BGS on May 5/98.
2		-Becoming vuggy, porous and fractured with occassional shale partings from 2.00 m. -Dark grey shaley limestone or shale seam found from 2.15 to 2.30 m.		4		HQ			92	26	
3		-Piece of granite (biotite) found at 3.20 m. (Poor quality rock - breaking up during drilling).		5		HQ			95	0	
				6		HQ			98	37	
4											
310.5 4.7		Borehole terminated at 4.65 m in limestone bedrock.	310.5								

Printed: 8 JUN 98

Gartner Lee Limited

BOREHOLE LOG

PROJECT: 98-224

BOREHOLE: OW11-II 1 of 1

FORMER IMICO SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 6 May 1998
GEOLOGIST BJS
ELEVATION 315.2 m ASL GE

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE TYPE	SAMPLE N VALUE	SAMPLE % WATER	SAMPLE % REC	SAMPLE % RQD	COMMENTS
315.2		**SANDY SILT TOPSOIL** Dark brown fine sandy silt topsoil, some gravel, brick, grass, moist, no staining or odours.									Straight augered to bedrock. Soil stratigraphy inferred from BHOW11-II.
314.4 0.8		**SANDY SILT** Dark brown fine sandy silt. -Becoming a dark brown silty fine sand, moist at 1.0 m. -Becoming a dark brown fine sandy silt, trace of gravel, wet at 1.52 m.									
313.5 1.7		**LIMESTONE** Grey weathered limestone, some coarse sand, wet. -Becoming highly fractured, vuggy, porous with some crystalline deposits from 2.05 m.		1		HQ			87	15	W.L. @ 2.51 m BGS on May 6/98.
2		-Occasional shale partings found from 2.91 m.		2		HQ			92	26	
3		-Fracturing found both horizontally and vertically from 3.29 m.		3		HQ			100	22	
4											
310.2 5		-Calcite crystals found at 4.79 m. -Shale content in limestone increasing with depth.		4		HQ			100	30	
6											
308.9			308.9	5		HQ			100	56	
7											
7.8		Borehole terminated at 7.80 m in limestone bedrock.	307.4								

Printed: 8 JUN 98

Gartner Lee Limited

BOREHOLE LOG

PROJECT: 98-224

BOREHOLE: OW12-I

FORMER IMICO SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 6 May 1998
GEOLOGIST BJS
ELEVATION 315.3 m ASL GE

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	COMMENTS
		SILTY FINE SAND Dark brown to black silty fine sand, trace rootlets and grass, moist, no staining or odours.		1		SS	10		60		Photovac 0 ppm
		-Becoming cobbley from 0.61 m, moist with lots of rootlets from 0.76 m .		2		SS	56		10		Photovac 0 ppm
1											
		-Becoming a medium to dark brown cemented silty sand and gravel mixed with pieces of limestone from 1.52.		3		SS	41/ 0.15m		70		Photovac 0 ppm
				4		HQ			100		
2											
2.2		-Grey granite boulder found at 2.10 m.		5		HQ			50	0	W.L. @ 2.21 m BGS on May 6/98.
		LIMESTONE Grey limestone, occasional shale partings, porous, vuggy, fractured with some crystalline structure. -Becoming highly fractured from 2.52 m.		6		HQ			100	0	
3											
				7		HQ			100	0	
4											
4.8		Borehole terminated at 4.81 m in limestone bedrock.									

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Gartner Lee Limited

BOREHOLE LOG

PROJECT: 98-393

BOREHOLE: OW13-II 1 of 1

FORMER IMICO FOUNDRY SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 1 September 1998
GEOLOGIST BJS
ELEVATION 316.3 m ASL

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	COMMENTS
		SILTY SAND AND GRAVEL Brown silty sand and gravel, cobbles, moist, compact.									
1		-Limestone cobbles found at 0.91 m.		1		SS	19/ 0.15 m		60		Microtip= 0 ppm
2				2		SS	30/ 0.10 m		0		
				3		SS	30/ 0.10 m		60		Microtip= 0 ppm
3.1 3		**SHALEY LIMESTONE** Grey shaley limestone, occasional shale partings, highly fractured. -Becoming brownish grey, porous, vuggy at 3.26 m. -Crystalline structure found below 3.43 m. -Rust coloured oxidation observed from 3.60 to 3.73m.		4		HQ			93	35	
				5		HQ			100	49	
4											
5		-Turning grey at 4.91 m.		6		HQ			99	54	
6											
				7		HQ			100	66	
7											
8.0 8		Borehole terminated at 8.0 m in shaley limestone bedrock.									

Printed: 6 OCT 98

Gartner Lee Limited

BOREHOLE LOG

PROJECT: 98-393

BOREHOLE: OW14-II

FORMER IMICO FOUNDRY SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 1 September 1998
GEOLOGIST BJS
ELEVATION 316.2 m ASL

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	COMMENTS
316.2		**FILL** Medium brown silty sand and gravel fill, moist, compact to dense. -Trace of iron slag at 0.76 m.		1		SS	36		50		Microtip= 0 ppm.
1				2		SS	14		25		Microtip= 0 ppm.
				3		SS	20/ 0.15 m		50		Microtip= 0 ppm.
2				4		SS					
313.4 2.8		**SHALEY LIMESTONE** Grey shaley limestone, occasional shale partings, highly weathered to about 3.37 m, porous. -Becoming vuggy with some crystalline structure at 3.37 m. -Rust colouration from 3.70 to 3.96 m.		5		HQ			80	0	
3				6		HQ			60	0	
				7		HQ			99	19	
4											
5				8		HQ			100	71	
6											
309.9			309.9								
				9		HQ			100	85	
7											
308.4 7.8		Borehole terminated at 7.81 m in shaley limestone.	308.4								

Printed: 6 OCT 98

Gartner Lee Limited

BOREHOLE LOG

PROJECT: 98-393

BOREHOLE: OW15-I

FORMER IMICO FOUNDRY SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 2 September 1998
GEOLOGIST BJS
ELEVATION 314.8 m ASL

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	COMMENTS
		SILTY SAND AND GRAVEL Medium brown silty sand and gravel, moist, compact to dense.		1		SS	20/0.15 m				Microtip= 0 ppm.
1				2		SS	29		25		Microtip= 0 ppm.
1.7		**SHALEY LIMESTONE** Grey shaley limestone, occasional shale partings, porous, vuggy, fractured. Some crystalline structure below 1.71 m.		3		SS	45/0.23 m		60	0	Microtip= 0 ppm.
				4		HQ			100	7	
2				5		HQ			100		
3				6		HQ			100	9	
4											
4.8		Borehole terminated at 4.80 m in shaley limestone.									

Gartner Lee Limited

BOREHOLE LOG

PROJECT: 98-393

BOREHOLE: OW16-I

FORMER IMICO FOUNDRY SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 2 September 1998
GEOLOGIST BJS
ELEVATION 314.9 m ASL

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	COMMENTS
		SILTY SAND AND GRAVEL Medium brown silty sand and gravel, moist. -Black coal like material from 0.40 to 0.61 m.		1		SS	42		25		Microtip= 0 ppm.
1				2		SS	40/ 0.23 m		60		Microtip= 0 ppm.
1.8		**SHALEY LIMESTONE** Grey shalely limestone, occasional shale partings, porous, vuggy, some fossils, fine crystalline structure, highly fractured to 3.30 m.		3		HQ			92	0	
2				4		HQ			100	0	
3				5		HQ			100	28	
4											
4.9		Borehole terminated at 4.87 m in shaley limestone.									

Printed: 6 OCT 98

Gartner Lee Limited

BOREHOLE LOG

PROJECT: 98-393

BOREHOLE: OW17-I

FORMER IMICO FOUNDRY SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 2 September 1998
GEOLOGIST BJS
ELEVATION 315.4 m ASL

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	COMMENTS
		FILL Medium brown silty sand and gravel fill, trace coal like material, moist, compact to dense. -Cobbles found below 0.61 m. -Becoming dark brown to black fine sand from 0.76 to 1.0 m. -Becoming rust coloured from 1.0 to 1.21 m. -Becoming dark brown to black below 1.52 m.		1		SS	42		35		Microtip= 0 ppm.
1				2		SS	25		75		Microtip= 0 ppm.
				3		SS	13/ 0.15 m		80		Microtip= 0 ppm.
2											
2.6				4		SS	21/ 0.13 m				Microtip= 0 ppm.
		LIMESTONE Brownish grey limestone, occasional shale partings, porous, vuggy, highly fractured. -Some crystalline structure at 3.28 m.		5		HQ			100	0	
3											
				6		HQ			100	15	
4											
4.8		Borehole terminated at 4.84 m in limestone bedrock.									

Printed: 6 OCT 98

Gartner Lee Limited

BOREHOLE LOG

PROJECT: 98-393

BOREHOLE: OW18-I

FORMER IMICO FOUNDRY SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 3 September 1998
GEOLOGIST BJS
ELEVATION 316.3 m ASL

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE TYPE	SAMPLE N VALUE	SAMPLE % WATER	SAMPLE % REC	SAMPLE % RQD	COMMENTS
0.2		**CONCRETE**									
		FILL Medium to dark brown fine sandy silt fill mixed with iron slag, trace coarse sand, compact to dense, moist.									
1		-Limestone pieces at 1.06 m.									
2											
3.0											
3		**LIMESTONE** Grey limestone cobble layer from 3.0 to 3.21 m. -Becoming a brown grey limestone with occasional shale partings, porous, vuggy, highly fractured, fine crystalline structure at 3.21 m. Rust colouring to 3.42 m.		1 2		HQ HQ			100		
4											
4.9		Borehole terminated at 4.86 m in limestone bedrock.									

Printed: 6 OCT 98

Gartner Lee Limited

BOREHOLE LOG

PROJECT: 98-393

BOREHOLE: OW18-II 1 of 1

FORMER IMICO FOUNDRY SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 3 September 1998
GEOLOGIST BJS
ELEVATION 316.3 m ASL

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	COMMENTS
0.2		**CONCRETE**									
		FILL Medium to dark brown fine sandy silt fill mixed with iron slag, trace coarse sand, compact to dense, moist.		1		SS	11		70		Microtip= 0 ppm.
1		-Limestone pieces at 1.06 m.		2		SS	50/ 0.15 m		50		Microtip= 0 ppm.
2				3		SS	50/ 0.15 m		50		
				4		SS	30/ 0.15 m		0		
3		Grey limestone cobble layer from 3.0 to 3.21 m.		6		HQ	20/ 0.05 m		100	67	
3.2		**LIMESTONE** Brown grey limestone with occasional shale partings, porous, vuggy, highly fractured to about 4.8 m, fine crystalline structure from 3.21 m. Rust colouring to 3.42 m.		5		SS			94	6	
				7		HQ					
4											
5				8		HQ			100	66	
6											
				9		HQ			100	57	
7											
7.8		Borehole terminated at 7.84 m in limestone.									

Printed: 6 OCT 98

Gartner Lee Limited

BOREHOLE LOG

PROJECT: 98-393

BOREHOLE: OW19-I

FORMER IMICO FOUNDRY SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 3 September 1998
GEOLOGIST BJS
ELEVATION 316.3 m ASL

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	COMMENTS
0.2		**CONCRETE**									
		FILL Medium brown, rust brown, black fine sandy silt fill mixed with iron slag and coal like material, moist, compact.		1		SS	18		60		Microtip= 0 ppm.
1				2		SS	14		75		Microtip= 0 ppm.
1.8				3		SS	18		75		Microtip= 0 ppm.
2		**SANDY SILT** Medium to dark red brown fine sandy silt with some cobbles, moist, compact to dense. -Limestone pieces at 2.29 m.		4		SS	67/ 0.23 m		70		
2.8		**LIMESTONE** Brown grey limestone with occasional shale partings, porous, vuggy, fractured, fine crystalline structure. -Becoming fossiliferous at 3.3 m.		5		HQ			98	36	
3				6		HQ			100	7	
4											
4.8		Borehole terminated at 4.82 m in limestone.									

Gartner Lee Limited

BOREHOLE LOG

PROJECT: 98-393

BOREHOLE: OW20-I

FORMER IMICO FOUNDRY SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 4 September 1998
GEOLOGIST BJS
ELEVATION 316.3 m ASL

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	COMMENTS
0.2		**CONCRETE**									
		FILL Medium brown silty sand and gravel fill, moist, brick layer from 0.27 to 0.76 m. -Concrete and brick wall from 0.76 to 1.52 m.		1		SS	19/ 0 125 m		25		Microtip= 0 ppm.
1				2		SS			0		
1.8				3		SS			0		
2		**SILTY SAND AND GRAVEL** Medium to dark brown silty sand and gravel.									Auger sample taken at about 1.8 m.
2.7				4		SS			0		
3		**LIMESTONE** Grey limestone with occasional shale partings, vuggy, porous, some crystalline structure, highly fractured, some rust oxidation along fractures.		5		HQ			94	0	
				6		HQ			100	9	
4											
5				7		HQ			100	14	
5.6		Borehole terminated at 5.58 m in limestone bedrock.									

Printed: 6 OCT 98

Gartner Lee Limited

BOREHOLE LOG

PROJECT: 98-393

BOREHOLE: OW21-I

FORMER IMICO FOUNDRY SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 4 September 1998
GEOLOGIST BJS
ELEVATION 315.5 m ASL

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	COMMENTS
0.2		**CONCRETE**									
		FILL Red brown silt and sand fill, iron slag, cobbles, moist, compact.		1		SS	28/ 0.15 m		90		Microtip= 0 ppm.
1		-Becoming a black silt with some sand, cobbles, wet, odour at 1.22 m.		2		SS	18/ 0.20 m		0		
		-Auger sample taken from 1.68 to 1.98 m. Greyish black silt and sand, gravel, cobbles, heavy fuel odour, wet.		3		AS					Microtip= 572 ppm.
2.2 2		**LIMESTONE** Grey limestone, occasional shale partings, vuggy, porous, fine crystalline, highly fractured.		4		HQ			88	11	
3				5		HQ			100	14	
4											
5.1 5				6		HQ			100	43	
		Borehole terminated at 5.07 m in limestone.									

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Gartner Lee Limited

BOREHOLE LOG

PROJECT: 98-393

BOREHOLE: OW22S 1 of 1

FORMER IMICO FOUNDRY SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 12 July 1999
GEOLOGIST JSK
ELEVATION 315.0 m ASL

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE TYPE	SAMPLE N VALUE	SAMPLE % WATER	SAMPLE % REC	SAMPLE % RQD	COMMENTS
1		**FILL** Light brown gravel and sand fill. -Light grey fill, moist, hydrocarbon odour.									
1.7											
2		**LIMESTONE** Light grey crystalline limestone, weathered, fractured with black staining, vuggy, calcite crystals in vugs, crumbly zones, occasional shale partings, strong hydrocarbon odour, irridescent sheen on core.		1		RC			90	4	
3											
4											
4.3		Borehole terminated at 4.27 m in limestone.									

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Gartner Lee Limited

BOREHOLE LOG

PROJECT: 98-393

BOREHOLE: OW22D

FORMER IMICO FOUNDRY SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 12 July 1999
GEOLOGIST JSK
ELEVATION 315.0 m ASL

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	COMMENTS
		FILL Light brown mixed gravel, sand, silt fill. -Becoming grey, moist, strong hydrocarbon odour (fuel oil/diesel type odour) from auger cuttings at 0.31 m.									
1		-Becoming a grey sandy gravel (limestone/dolostone) fill, compact to dense, moist, trace hydrocarbon odour at 1.22 m.		1		SS			100		
1.7		-Becoming saturated at 1.52 m.		2		SS			100	19	
2		**LIMESTONE** Light grey limestone, crystalline, fractured, some fractures with calcite crystals, appears massive, numerous 1-5 mm vugs, medium hard, porous. Fracture with black staining at 1.78 m, 1.82 m, 1.85 m, 1.96 m, 2.08 m, 2.16 m, 2.34 m.									
3		Fracture with black staining and hydrocarbon odour (fuel oil/diesel type odour) at 2.62 m, 2.79 m, 2.84 m and 3.66 m to 4.11 m.		3		SS			100	10	
4				4		SS			100	28	
5											
5.3		**SHALEY LIMESTONE** Light grey to dark grey shaley limestone, appears less fractured than above limestone, no hydrocarbon odour, limestone zones porous, vuggy, crystalline, some black staining on fractures. -Weathered shale parting at 5.84 m. -Becoming medium hard at 5.95 m. -Weathered shale parting at 6.53 m. -Weathered shale parting at 6.68 m.		5		SS			78	58	
6											
7		-Becoming vuggy at 6.86 m to 6.91 m. -Weathered shale parting at 7.29 m. -Weathered shale parting at 7.44 m.									
7.9		-Trace hydrocarbon odour from fracture at 7.72 m. Borehole terminated at 7.87 m in shaley limestone.									

Printed: 26 AUG 99

Gartner Lee Limited

BOREHOLE LOG

PROJECT: 98-393

BOREHOLE: OW23S

FORMER IMICO FOUNDRY SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 13 July 1999
GEOLOGIST JSK
ELEVATION 316.3 m ASL

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	COMMENTS
0.2		**CONCRETE SLAB** Concrete floor slab									
		FILL Light brown, gravelly fine to coarse sand, silty fill, like Granular "A", hydrocarbon odour to 0.76 m. -Becoming moist and very dense at 0.76 m. -Hydrocarbon odour at 1.22 m.		1		SS			33		
1				2		SS			50		
2											
2.5		-Crushed limestone pieces (weathered) with sand and gravel from 2.29 m to 2.52 m.		3		SS			100		
		LIMESTONE Buff brown weathered crystalline limestone, crumbly. -Becoming brown-grey, fractured with black staining, low quality, porous, vuggy, trace hydrocarbon odour.		4		RC			52	0	
3		-Becoming light grey, poor quality, medium hard at 3.63 m. Fuel oil/diesel type odour.		5		RC			100	24	
4											
5											
5.5		Borehole terminated at 5.54 m in limestone.									

Printed: 13 AUG 99

Gartner Lee Limited

BOREHOLE LOG

PROJECT: 98-393

BOREHOLE: OW23D 1 of 1

FORMER IMICO FOUNDRY SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 13 July 1999
GEOLOGIST JSK
ELEVATION ~~8.0~~ 316.32 m ASL

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	COMMENTS
0.2		**CONCRETE** Concrete floor slab									
1		**FILL** Light brown gravelly fine to coarse sand, some silt fill, moist, like Granular "A", hydrocarbon odour.									
1.9											
2		**LIMESTONE** Light grey crystalline limestone, massive, porous, vuggy, medium hard, vertical and horizontal fractures with black staining, some light brown staining, strong fuel oil type odour.									
3				1		RC			100	0	
		-Becoming fossiliferous, weathered, occasional shale partings, strong diesel/fuel oil type odour, some sulphur odour at 3.35 m. Light brown fluid on core with diesel/fuel oil type odour, sulphurous from 3.38 m to 3.40 m.		2		RC			100	0	
4											
5		-Vugs containing calcite crystals, black and light brown staining on porous zone, trace hydrocarbon odour at 4.72 m.		3		RC			56	0	
				4		RC			100	54	
6											
6.5											
7.0		**SHALEY LIMESTONE** Light to medium grey shaley limestone, hard, massively layered, no odour, occasional crystalline lined vugs. Borehole terminated at 7.95 m in shaley limestone.									

Printed: 13 AUG 99

Gartner Lee Limited

BOREHOLE LOG

PROJECT: 98-393

BOREHOLE: OW24S 1 of 1

FORMER IMICO FOUNDRY SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 14 July 1999
GEOLOGIST JSK
ELEVATION 316.3 m ASL GE

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	COMMENTS
316.3											
0.1		~~CONCRETE~~ ~~Concrete floor slab~~									
		SANDY SILT Light brown gravelly sandy silt, dense, trace hydrocarbon odour.									
1											
2		313.7									
3											
313 3.3		**LIMESTONE** Buff brown to grey brown limestone, crystalline with fossilferous zones throughout, vuggy, some vugs containing white crystals, occasional shale partings. -Rust coloured staining on fractures from 3.61 m to 3.91 m.		1		RC			93	23	
4											
5											
5.5		Borehole terminated at 5.54 m in limestone.									

Printed: 13 AUG 99

Gartner Lee Limited

BOREHOLE LOG

PROJECT: 98-393

BOREHOLE: OW24D 1 of 1

FORMER IMICO FOUNDRY SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 14 July 1999
GEOLOGIST JSK
ELEVATION 316.3 m ASL

316.3

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	COMMENTS
0.1		**CONCRETE** Concrete floor slab.									
		SAND Light brown gravelly fine to coarse sand, some silt, moist, trace hydrocarbon odour.									
1		-Becoming a gravelly sandy silt below 1.52 m.									
2											
2.9											
3		**LIMESTONE** Light brown to light grey limestone, vuggy, porous, crystalline with fossils noted, slight odour of hydrocarbon (fuel oil type odour) in top 8 cm of rock. -Occasional shale partings and vugs lined with clear/white crystals at 3.56 m.		1		RC			45	0	
				2		RC			88	13	
4		-Fracture with orange-brown staining at 3.68 m, 3.78 m, 3.89 m, 3.91 m, 3.96 m, 4.01 m, 4.09 m, 4.14 m, 4.19 m, 4.26 m.									
				3		RC			100	25	
5		-Becoming light brown, massive to massively layered, good quality, breaks only subhorizontally along shale partings at 4.83 m.		4		RC			100	63	
6											
7				5		RC			75	0	
		-Becoming buff brown, less porous/vuggy, occasional fossilferrous zones at 7.37 m.									
7.9		Borehole terminated at 7.90 m in limestone.									

Printed: 26 AUG 99

Gartner Lee Limited

BOREHOLE LOG

PROJECT: 98-393

BOREHOLE: OW25

FORMER IMICO FOUNDRY SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 15 July 1999
GEOLOGIST JSK 315.13
ELEVATION ~~316.1~~ m ASL 46

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	COMMENTS
0.1		**CONCRETE** Concrete floor slab									
		SANDY SILT Mottled light brown to dark brown sandy silt, moist, trace hydrocarbon odour. -Becoming a gravelly sandy silt, compact to dense at 0.91 m. -Becoming very dense with a faint hydrocarbon odour at 1.52 m.		1		SS			33		
				2		SS			0		
2.0		**LIMESTONE** Light brown limestone, crystalline, some fossils, vuggy with calcite crystals, porous, massively layered, occasional shale partings, no odour, rust coloured staining to 2.29 m.		3		RC			100	19	
				4		RC			100	100	
4.9		Borehole terminated at 4.88 m in limestone.									

Printed: 13 AUG 99

Gartner Lee Limited

BOREHOLE LOG

PROJECT: 22-393

BOREHOLE: OW26S

FORMER IMICO SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 13 August 2002
GEOLOGIST PJAM/DJG
ELEVATION 315.5 m ASL

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	COMMENTS
315.5		**SANDY SILT (FILL)** Dark brown sandy silt fill, trace gravel, trace asphalt, occasional rootlet, dry, loose.		1		CS			17		**PID READINGS**
1 314.3 1.2		**SANDY SILT (NATIVE)** Orange brown silt with fine and coarse sand, some medium subangular gravel, occasional cobble, moist, loose to compact, layer of orangey brown silty clay to clayey silt, approximately 0.05 m thick, APL to WTPL, firm to stiff. -Becoming greyish brown silt with fine and medium sand, occasional rounded gravel, moist, loose to compact below 1.4 m depth.		2		CS			75		-0 ppm at 1.2 m depth -84 ppm at 1.4 m depth -22.1 ppm at 1.5 m depth
2 313.1 2.4				3		CS			100		-0 ppm at 2.0 m depth
		LIMESTONE Light brown to greyish brown limestone, vuggey, occasional shale parting, aphanitic to fine crystalline, massively bedded, very broken, fractures weathered with calcite crystals on fracture faces, medium hard.	312.9	4		HQ			10	0	-Oil in pores of rock core.
3 312.9				5		HQ			100	0	
4 310.9 4.6		-Becoming light grey with slight increase in shale content below 4.5 m depth. Borehole terminated at 4.6 m depth in limestone.	310.9								

Printed: 9 Dec 02

Gartner Lee Limited

BOREHOLE LOG

PROJECT: 22-393

BOREHOLE: OW26D 1 of 1

FORMER IMICO SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 14 August 2002
GEOLOGIST PJAM/DJG
ELEVATION 315.5 m ASL

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	COMMENTS
315.5		**SANDY SILT (FILL)** Dark brown sandy silt fill, trace gravel, trace asphalt, occasional rootlet, dry, loose.		1		CS			17		**PID READINGS**
314.3 1.2		**SANDY SILT (NATIVE)** Orange brown silt with fine and coarse sand, some medium subangular gravel, occasional cobble, moist, loose to compact. -Layer of orangey brown silty clay to clayey silt, approximately 0.05 m thick, APL to WTPL, firm to stiff at 1.4 m depth. -Becoming greyish brown silt with fine and medium sand, occasional rounded gravel, moist, loose to compact below 1.4 m depth.		2		CS			75		-0 ppm at 1.2 m depth -84 ppm at 1.4 m depth -22.1 ppm at 1.5 m depth
312.9 2.6				3		CS			100		
				4		PQ			100	0	-Oil in pores of rock core.
		LIMESTONE Light brown to greyish brown limestone, vuggey, aphanitic to fine crystalline, heavily bedded, very broken, occasional fossil, occasional shale parting, fractures weathered with calcite crystals on fracture faces, medium hard. -Fracture infilled with fine to medium sand at 3.1 m depth. -Becoming light grey, higher shale content below 4.5 m depth.		5		PQ			100	9	
				6		HQ			100	0	
				7		HQ			100	21	
		-Becoming thinly bedded below 6.3 m depth.		8		HQ			100	71	
		-Open fractures with rust coloured staining on fracture faces, occasional fossiliferous zones below 7.9 m depth.		9		HQ			93	23	
				10		HQ			100	77	-Contact between "Guelph" and "Eramosa" formations appears gradational.
305.1			305.1								
304.5		-Becoming grey shaley limestone, thinly laminated to thinly bedded, occasional shale parting, occasional vug with calcite deposit on fracture face, some fossil deposits, open fractures with rust colored staining in fracture faces, occasional fossiliferous zones below 10.9 m depth.		11		HQ			100	85	
303.7 11.8		Borehole terminated at 11.8 m depth in shaley limestone.	303.7								

Printed: 8 Dec 02

Gartner Lee Limited

Project: **CITY of GUELPH** Contract No: **49520-1** Borehole: **OW07-31**

Boring date: **22/02/2007** Supervised by: **G.C.Yule, C. Archibald** Monitoring Well: **Installed**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd. + Lantech Drilling**

Drilling Method: **Power Probe 9700 w/ Double Tube + CME 75 Power Auger**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface Elevation: 315.93m)	Symbol	Samples: Well	Details	Water Level	Sample Type and Number	Condition	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		SAND and COAL (FILL/REWORKED NATIVE) - black, damp, medium, trace gravel					SS-1			63		N	⊕	Inorganics, Metals, VOC's, BTEX/F1 and F2-F4 Analyses DUP #8 VOC's, BTEX/F1 and F2 to F4 Analyses
1	314.71 1.22	**SAND and LIMESTONE GRAVEL (NATIVE)** - brown, damp, medium, trace to some silt					SS-2			86		N	⊕	
	314.28 1.65	**LIMESTONE (BEDROCK)**-grey/brown, fine grain crystalline vesicular, some organic mud/ shaley laminations, calcite mineralization as amygdular nodules, pitting, banding, highly fractured.					Run1			62	0			
2														
3							Run2			100	0			
4		Heavily fractured 4.27-4.6m, weathered, residual carbonate rich sands, shaley partings												
							Run3			100	30			
5														
6	309.71 6.22	**MARLED LIMESTONE high mud content** -dark grey/brown, fine grain, increased mud and organic content, shale laminations 1-3mm, amygdular calcite nodules												
		END OF BORE HOLE @ 6.22m												
		Note: original sampling found infered bedrock (refusal) @ 1.58m												

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS - Very Strong

Prepared by: **G.C.Yule, C. Archibald**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **CITY of GUELPH** Contract No: **49520-1** Borehole: **OW07-32**

Boring date: **22/02/2007** Supervised by: **G.C.Yule, C. Archibald** Monitoring Well: **Installed**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd. + Lantech Drilling**

Drilling Method: **Power Probe 9700 w/ Double Tube + CME 75 Power Auger**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface Elevation: 315.56m)	Symbol	Samples: Well	Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		SAND and GRAVEL (FILL/REWORKED NATIVE) - black, damp, medium, some coal					SS-1			63		N	⊕	Inorganics, Metals, PAH, BTEX/F1, F2-F4, VOC's and PCB's Analyses
1	314.49 / 1.07	**SAND and LIMESTONE GRAVEL (NATIVE)** - brown, damp, medium, some silt					SS-2			100		N	⊕	VOC's, BTEX/F1, F2-F4 and PCB's Analyses
	313.91 / 1.65	**LIMESTONE (BEDROCK)** Grey, fine grain vesicular, some calcite banding, heavily fractured, shaley partings					Run1			100	9			
2														
		Highly Fractured 2.74m-3.0m, shaley partings, crystalline calcite mineralization												
3							Run2			100	26			
		Highly Fractured 3.48m-4.6m, shaley partings, white crystalline calcite fill												
4														
							Run3			100	40			
5		Highly Fractured 3.48m-4.6m, shaley partings, some calcite remineralization												
6														
	309.34 / 6.22	**END of BOREHOLE @6.22m**												

Note: original sampling found infered bedrock (refusal) @ 1.5m

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS - Very Strong

Prepared by: **G.C.Yule, C. Archibald**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **CITY of GUELPH** Contract No: **49520-1** Borehole: **OW07-33**

Boring date: **22/02/2007** Supervised by: **G.C.Yule, C. Archibald** Monitoring Well: **Installed**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd. + Lantech Drilling** **Sheet 1 of 1**

Drilling Method: **Power Probe 9700 w/ Double Tube + CME 75 Power Auger**

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface Elevation: 315.36m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Condition	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		SAND and LIMESTONE GRAVEL (FILL) - brown, damp, medium to coarse				SS-1			64		N		Inorganics, Metals, VOC's, BTEX/F1, F2-F4 and PCB's Analyses
1													
	313.73 / 1.63	**LIMESTONE (BEDROCK)-** Light grey/brown, fine grain crystalline, vesicular 0.5-5mm, mud/ silt/ organicmaterial at fractures				Run1			100	44			
2													
	312.92 / 2.44	Highly fractured 2.4-2.6m, silt and organic rich											
		MARLED LIMESTONE high mud content -dark grey/brown, fine grain crystalline, increased mud, content, shaley partings and trace residual sand at fractures, Pitted with large crystalline caclite lined vesicles 2-30mm											
3		Fractured from 3.1-3.3m, vertical to sub-vertical				Run2			100	46			
		Intermittent shaley partings 1-3mm and increased calcite lined vesicles 3.76m-4.22m											
4													
						Run3			100	64			
5													
		Shaley partings 1-3mm, crystalline calcite lined vesicles 1-5cm, 5.18-6.15m.											
6	309.21 / 6.15	**END OF BOREHOLE@6.15m** Note: original sampling found infered bedrock (refusal) @ 1.19m											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS - Very Strong

Prepared by: **G.C.Yule, C. Archibald**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: CITY of GUELPH | Contract No: 49520-1 | Borehole: OWO7-34S

Boring date: 12/03/2007 | Supervised by: C.W.Archibald | Monitoring Well: Installed

Borehole Location: 200 Beverley Street, Guelph

Driller: Lantech Drilling

Drilling Method: CME 75 Power Auger

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface Elevation: 315.50m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
1		**SAND and LIMESTONE GRAVEL (FILL/ REWORKED NATIVE)** - brown, damp, fine to medium											
	313.93 / 1.57	**LIMESTONE (BEDROCK)** -Lt. Grey-Brn., fine grain crystalline vesicular1-5mm, some calcite nodules1mm-10cm, residual carbonate sands, shaley partings, black organic shale at fractures, highly fractured 1.68-4.0m				Run1			100	0			
2													
3						Run2			100	18			
4		Minor red-Brn Iron staining											
	310.90 / 4.60	**END OF BOREHOLE@ 4.6m**											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: C.W.Archibald

Checked by:

Date: 06/03/07

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **CITY of GUELPH** Contract No: **49520-1** Borehole: **OW07-34D**

Boring date: **22/02/2007** Supervised by: **G.C.Yule, C. Archibald** Monitoring Well: **Installed**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd. + Lantech Drilling**

Drilling Method: **Power Probe 9700 w/ Double Tube + CME 75 Power Auger**

Sheet 1 of 2

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface Elevation: 315.62m)	Symbol	Samples: Well	Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV ☐ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		SILTY SAND (FILL/REWORKED NATIVE) - black, damp to moist, fine to medium, some gravel and coal					SS-1			50		N	⊕	Inorganics, Metals, PAH, VOC's, BTEX/F1, F2-F4, TOC and PCB's Analyses DUP #11 PCB's Analyses
1														
	314.40 1.22	**SAND and LIMESTONE GRAVEL (NATIVE)** - brown, damp, fine to medium					SS-2			100		N	⊕	PCB's Analyses
	314.05 1.57	**LIMESTONE (BEDROCK)** Lt. Grey-Brn., fine grain crystalline, some calcite banding, heavily fractured, shaley partings					Run1			100	0			
2		Highly fractured, weathered, residual carbonate sands, crystalline calcite 1.57-3.05m												
3		Fractured, weathered, residual carbonate sands, 3.15-3.25m Fractured, increased mud/organic content, shaley partings, crystalline calcite 3.35-3.66m					Run2			100	25			
4		Weathered residual carbonate sand 4.0-4.09m												
	311.05 4.57	**MARLED LIMESTONE high mud content** -dark grey/brown, fine grain crystalline, increased mud, content, shaley partings and trace residual sand at fractures, Pitted with large crystalline caclite lined vesicles 0.5-20mm Carbonate sand bed, 10cm thickness, black shale deposit at contacts					Run3			100	48			
5														
6							Run4			100	73			

Continued

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **G.C.Yule, C. Archibald**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **CITY of GUELPH** Contract No: **49520-1** Borehole: **OW07-34D**

Boring date: **22/02/2007** Supervised by: **G.C.Yule, C. Archibald** Monitoring Well: **Installed**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd. + Lantech Drilling**

Drilling Method: **Power Probe 9700 w/ Double Tube + CME 75 Power Auger**

Sheet 2 of 2

Scale (m)	Stratigraphy: Elev. (m) Depth (m)	Description	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
8		Highly weathered, Red-Brn. Iron staining, crystalline calcite to 3mm, residual carbonate sands 6.9-7.47m				Run5			98	44			
9	306.45 9.17	**END of BOREHOLE @ 9.17m** Note: original sampling found inferred bedrock (refusal) @ 1.27m											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **G.C.Yule, C. Archibald**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **CITY of GUELPH** Contract No: **49520-1** Borehole: **OW07-37**

Boring date: **22/02/2007** Supervised by: **G.C.Yule, C. Archibald** Monitoring Well: **Installed**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd. + Lantech Drilling** **Sheet 1 of 1**

Drilling Method: **Power Probe 9700 w/ Double Tube + CME 75 Power Auger**

Scale (m)	Elev. (m) Depth (m)	Description (Ground Surface Elevation: 316.52m)	Symbol	Well Details	Water Level	Sample Type and Number	Condition	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		SAND and GRAVEL (FILL/REWORKED NATIVE) - black, damp, medium to coarse, some coal				SS-1			75		N		Metals, PAH, VOC's and F2-F4 Analyses
	315.91 0.61	**SAND (FILL/REWORKED NATIVE)** - brown, damp, medium, some gravel				SS-1A					N		Metals, PAH, VOC's and F2-F4 Analyses
1	315.30 1.22	**SILTY SAND and LIMESTONE GRAVEL (NATIVE)** - brown, damp, fine to medium				SS-2			100		N		
	314.95 1.57	**LIMESTONE (BEDROCK)**- Light grey/brown, fine grain crystalline, vesicular, calcite nodules 0.25- 2cm, highly fractured, mud/ silt/ organic material at fractures				Run1			77	0			
2		Heavily Fractured, 2.44m-2.74m											
3		Heavily Fractured, 3.15m-3.60m				Run2			100	23			
	312.92 3.60												
	312.86 3.66	**MARLED LIMESTONE high mud content** -dark grey/brown, fine grain crystalline, increased mud, content, calite mineralization,some shaley partings, trace residual sand at fractures, minor iron staining											
4						Run3			100	48			
5		Iron staining in vertical fracture											
6	310.37 6.15	Iron staining in vertical fracture											
		END of BOREHOLE @ 6.15m											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **G.C.Yule, C. Archibald**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **CITY of GUELPH** Contract No: **49520-1** Borehole: **OW07-38**

Boring date: **22/02/2007** Supervised by: **G.C.Yule, C. Archibald** Monitoring Well: **Installed**

Borehole Location: **200 Beverley Street, Guelph**

Driller: **Profile Drilling Ltd. + Lantech Drilling** **Sheet 1 of 1**

Drilling Method: **Power Probe 9700 w/ Double Tube + CME 75 Power Auger**

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface Elevation: 316.60m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		SAND and COAL (FILL/REWORKED NATIVE) - black, damp, medium, trace gravel				SS-1			69		N	⊕	Metals,VOC's and F2-F4 Analyses
1													
	315.38 1.22	**SILTY SAND (NATIVE)** - brown, damp, some limestone gravel				SS-2			100		N	⊕	VOC's Analyses
	314.80 1.80	**LIMESTONE (BEDROCK)**Grey, fine grain vesicular, some calcite nodules/banding, heavily fractured, shaley partings and residual carbonate sands				Run1			90	24			
2													
3						Run2			100	32			
4													
	311.76 4.84	Weathered sandstone band											
		END of BOREHOLE @ 4.84m											
		Note: original sampling found infered bedrock (refusal) @ 1.68m											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **G.C.Yule, C. Archibald**

Checked by: **S.Prior**

Date: **06/03/07**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **IMICO - Guelph** Contract No: **701996**

Borehole: **OW13-39(S)**

Boring date: **12/12/2013** Supervised by: **M. McCormick**

Monitoring Well: **Installed**

Borehole Location: **200 Beverly Street, Guelph, Ontario**

Driller: **Aardvark Drilling**

Sheet 1 of 1

Drilling Method: **CME 55T w/ HSA**

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface Elevation:316.50m)	Symbol	Well Details	Water Level	Sample Type and Number	Condition	Blows/ 300mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
	316.40 0.10	**TOPSOIL (FILL)** , black, damp, some medium sand, trace roots				SS-1		10 12 17	60		N		
		SAND and GRAVEL (NATIVE) , brown, medium to coarse, some cobbles, trace silt											
						SS-2		41 19 22	75		N		
1													
						SS-3		29 33/150	75		N		
2													
						SS-4		42 50/75	50		N		VOCs, Metals and Inorganics Analyses
3	313.35 3.15	**LIMESTONE BEDROCK** , light brown, vuggy with some calcite crystals				RC-1			100	62			
4													
						RC-2			93	75			
5													
6	310.41 6.09	**END of BOREHOLE @ 6.09m**											
		Water level at 3.53mbgs (el 312.97) on 6 January 2014.											Groundwater analyzed for VOCs.

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **D. Arnaud**

Checked by: **S.Prior**

Date: **11/02/14**

DCS
DECOMMISSIONING CONSULTING SERVICES

Project: **IMICO - Guelph** Contract No: **701996**

Borehole: **OW13-39(D)**

Boring date: **11/12/2013** Supervised by: **M. McCormick**

Monitoring Well: **Installed**

Borehole Location: **200 Beverly Street, Guelph, Ontario**

Driller: **Aardvark Drilling**

Sheet 1 of 2

Drilling Method: **CME 55T w/ HSA**

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface Elevation:316.50m)	Symbol	Well Details	Water Level	Sample Type and Number	Condition	Blows/ 300mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
	316.40 0.10	**TOPSOIL (FILL)** , black, damp, some medium sand, trace roots				SS-1		3 3 36			N		
		SAND and GRAVEL (NATIVE) , brown, medium to coarse, some cobbles, trace silt											
1						SS-2		35 35 8	0		N		
						SS-3		35 35/75	0		N		
2						SS-4		35/75	0		N		
		- becomes wet @ 2.74m											
3	313.35 3.15	**LIMESTONE BEDROCK** , light brown, vuggy with some calcite crystals				RC-1			100	62			
4													
5						RC-2			98	64			
6													
						RC-3			97	70			

Continued

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **D. Arnaud**

Checked by: **S.Prior**

Date: **11/02/14**

DCS
DECOMMISSIONING CONSULTING SERVICES

Project: **IMICO - Guelph** Contract No: **701996**

Borehole: **OW13-39(D)**

Boring date: **11/12/2013** Supervised by: **M. McCormick**

Monitoring Well: **Installed**

Borehole Location: **200 Beverly Street, Guelph, Ontario**

Driller: **Aardvark Drilling**

Sheet 2 of 2

Drilling Method: **CME 55T w/ HSA**

Scale (m)	Stratigraphy: Elev. (m) Depth (m)	Description	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Condition	Blows/ 300mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
8						RC-4			93	80			
9						RC-5			96	83			
10													
11						RC-6			100	96			
12	304.30 12.20	**END of BOREHOLE @ 12.20m** Water level at 3.03mbgs (el 313.47) on 6 January 2014.											Groundwater analyzed for VOCs.
13													

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **D. Arnaud**

Checked by: **S.Prior**

Date: **11/02/14**

DCS
DECOMMISSIONING CONSULTING SERVICES

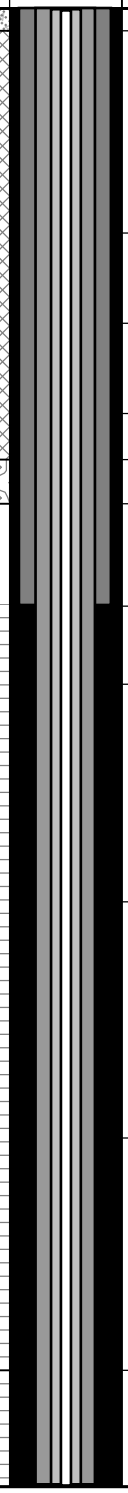
BOREHOLE NO. OW31

PROJECT NAME: IMICO TCE VERTICAL DELINEATION STUDY
PROJECT NO.: 161-09287-00 / 3316442
CLIENT: CITY OF GUELPH
DATE COMPLETED: Sep 13, 2016
BOREHOLE TYPE: CONTINUOUS CORE
SUPERVISOR: SH/BH
GROUND ELEVATION: 316.46 mASL
REVIEWER: PH

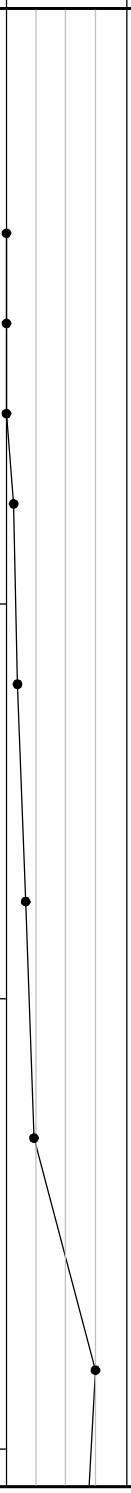
UTM CO-ORDINATES
UTM Zone: 17 NAD: 83
Easting: 562387
Northing: 4822400

DEPTH (m)	STRATIGRAPHIC DESCRIPTION	SAMPLE TYPE	TCE	cis-1,2 DCE	trans-1,2 DCE	VC	CORE PHOTOGRAPH
0.0							
0.2	**CONCRETE**						
	FILL - Brown - Medium/coarse grained sand - Some gravel; stones - No staining, no odours - Damp	GS1	0.0				No core recovered (0 to 4 m)
1.0							
		GS2	0.0				
2.0							
		GS3	0.0				
3.0							
3.1	**SAND AND GRAVEL (SW)** - Grey / brown - Coarse sand and gravel - Some silt - Strong hydrocarbon odours, no visible staining - Wet	GS4	29.9				
3.4							
4.0	**DOLOSTONE (Guelph Formation)** - Brown to tan colour - Fossiliferous - Magnesium/iron staining along fractures - No odours	GS5	45.7	39.8			Core Box 1 of 11 (4 to 6.7 m)
5.0	- Very vuggy; highly porous - Calcification at 5.9 mbgs - Minor hydrocarbon staining						
	- Large vugs at 5.3, 5.4, 5.7, 6.6, 7.5, 8.4, 8.9 mbgs	GS6	79.0	34.9			
6.0							
7.0		GS7	114.0	57.5	2.3	22.7	Core Box 2 of 11 (6.7 to 9.8 m)
8.0	- Heavy staining at 8.1 mbgs - Abundant horizontal fractures	GS8	369.2	168.3	13.0	28.7	
9.0							
9.2	**DOLOMUDSTONE (Eramosa Formation)** - Grey - light grey - Some fossil debris - Large vugs (less common) - Thickly bedded - Fractues common at mud streaks	GS9	324.7	89.7	17.8	21.4	
10.0							

STRATIGRAPHY



MONITOR DETAILS (Telescoped Borehole)



Drilling and Casing Details
-Hollow stem auger from surface to 4.0 m.
-8 5/8" casing installed and sealed with concrete from surface to 4 mbgs (over-drilled into bedrock from 3.3 to 4.0 m)
-HQ coring using air rotary from 4.0 to 12.20 m
-6 5/8" casing installed and sealed from surface to12.20 m
-HQ coring using air rotary from 12.20 to 28.9 m
-4" casing installed and sealed from surface to 28.9
-HQ coring using air rotary from 28.9 to 33.3 m
-Open hole from 28.9 to 33.3 m

Sample Notes
-All units are in ug/L
cis-1,2-DCE = cis-1,2-Dichloroethylene
trans-1,2-DCE = trans-1,2-Dichloroethylene
TCE = Trichloroethylene
VC = Vinyl Chloride

Groundwater sample collected at 4.6 mbgs for comprehensive analysis of Metals & Inorganics, PAHs, PHCs, VOCs

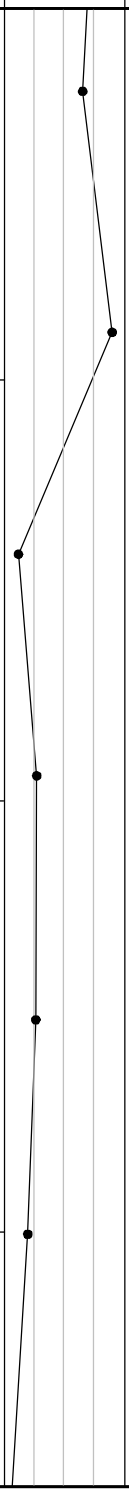
WSP GEOLOGIC (METRIC) WITH UTM WSP_ENV_V1.GPJ WSP_ENV_V1.GDT 10/4/16

BOREHOLE NO. OW31

PROJECT NAME: IMICO TCE VERTICAL DELINEATION STUDY
PROJECT NO.: 161-09287-00 / 3316442
CLIENT: CITY OF GUELPH
DATE COMPLETED: Sep 13, 2016
BOREHOLE TYPE: CONTINUOUS CORE
SUPERVISOR: SH/BH
GROUND ELEVATION: 316.46 mASL
REVIEWER: PH

UTM CO-ORDINATES
UTM Zone: 17 NAD: 83
Easting: 562387
Northing: 4822400

DEPTH (m)	STRATIGRAPHIC DESCRIPTION	SAMPLE TYPE	TCE	cis-1,2 DCE	trans-1,2 DCE	VC	CORE PHOTOGRAPH	REMARKS
10.0	- Iron/Manganese staining in fractures - Yellow-orange (sphalerite) and dolomite lined vugs							
	- Occasional carbonate mud clasts; few laminaions (~mm scale) appear banded	GS10					Core Box 3 of 11 (9.8 to 12.5 m)	No water between 10.6 - 11.5 mbgs
11.0								
	- Light/dark grey - Rare vugs - Muddy / fossil rich clasts at 11.7 mbgs - Slight petroleum hydrocarbon odour (natural) upon break	GS11	446.5	153.6	18.6	37.0		
12.0								
	- Occasional fossils - Dark banding (grey-black) - Stylolitic seams - Small (<1cm) rare vugs	GS12						No water between 12.2 - 12.9 mbgs
13.0								
		GS13	57.7	46.3		30.2	Core Box 4 of 11 (12.5 to 15.4 m)	
	- Rare fossiliferous content; some ostracod rich beds - Rare stylolitic seams - Hydrocarbon odour from fractures - Natural breaks / partings at muddy seams							
14.0								
		GS14	134.0	127.1		17.8		
15.0								
	- Light/dark grey - Rare fossil content - Hydrocarbon odour upon break							
16.0		GS15	130.0	146.5	28.6	16.4	Core Box 5 of 11 (15.4 to 18.3 m)	
17.0								
		GS16	96.8	103.6	15.4	39.7		
18.0	18.0 — - Vinemount member of the Eramosa Formation							No water between 18.3 - 19.6 mbgs
19.0	- Dark grey - black - Massive in appearance; thickly bedded - Compentent - Occassional fossil debris - Strong hydrocarbonn odour	GS17					Core Box 6 of 11 (18.3 to 21.1 m)	
	- Very competent - Low permeability	GS18	26.4	34.3		67.4		
20.0								



WSP GEOLOGIC (METRIC) WITH UTM WSP_ENV_V1.GPJ WSP_ENV_V1.GDT 10/4/16

BOREHOLE NO. OW31

PROJECT NAME: IMICO TCE VERTICAL DELINEATION STUDY
PROJECT NO.: 161-09287-00 / 3316442
CLIENT: CITY OF GUELPH
DATE COMPLETED: Sep 13, 2016
BOREHOLE TYPE: CONTINUOUS CORE
SUPERVISOR: SH/BH
GROUND ELEVATION: 316.46 mASL
REVIEWER: PH

UTM CO-ORDINATES
UTM Zone: 17 NAD: 83
Easting: 562387
Northing: 4822400

DEPTH (m)	STRATIGRAPHIC DESCRIPTION	SAMPLE TYPE	TCE	cis-1,2 DCE	trans-1,2 DCE	VC	CORE PHOTOGRAPH	REMARKS
20.0	- Thin to thickly bedded - No fossil content - Strong hydrocarbon odour - Large vug (~3cm) at 20 mbgs - Infilled with pyrite and dolostone - Thin to thickly bedded - Minor fossil debris - Verticle fracture from 21.0 to 21.6 mbgs - Strong hydrocarbon odours							
21.0		GS19	36.8	45.6		17.0		
22.0	- Reduced hydrocarbon odours - Large verticle fractures from 23.4 to 23.6 mbgs - Calcite and pyrite nodules (<0.5 to 1.5 cm)						Core Box 7 of 11 (21.1 to 24.2 m)	
23.0		GS20	25.1	16.1		49.8		
24.0	- Large vug at 25.47 mbgs, no pyrite - Stylolitic seams with fossil debris - Low hydrocarbon odours							
24.8	**DOLOMUDSTONE (Goat Island Formation - Ancaster Member)** - Large fracture at 24.8 mbgs - Heavily bioturbated - Low hydrocarbon odour - Cherty dolomudstone from 28.9 - 30.4 mbgs							
25.0		GS21	17.1	39.8		49.9	Core Box 8 of 11 (24.2 to 26.7 m)	
26.0		GS23	11.6	36.4				
		GS22	21.0	68.6		20.4		
27.0								
28.0		GS24	68.0	111.7		33.7	Core Box 9 of 11 (26.7 to 29.7 m)	
29.0								No water between 29 - 30.5 mbgs
30.0		GS25						

TCE (ug/L): 150 300 450

WSP GEOLOGIC (METRIC) WITH UTM WSP_ENV_V1.GPJ WSP_ENV_V1.GDT 10/4/16

BOREHOLE NO. OW31

PROJECT NAME: IMICO TCE VERTICAL DELINEATION STUDY
PROJECT NO.: 161-09287-00 / 3316442
CLIENT: CITY OF GUELPH
DATE COMPLETED: Sep 13, 2016
BOREHOLE TYPE: CONTINUOUS CORE
SUPERVISOR: SH/BH
GROUND ELEVATION: 316.46 mASL
REVIEWER: PH

UTM CO-ORDINATES
UTM Zone: 17 NAD: 83
Easting: 562387
Northing: 4822400

DEPTH (m)	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR DETAILS (Telescoped Borehole)	SAMPLE TYPE	SAMPLE TCE	SAMPLE cis-1,2 DCE	SAMPLE trans-1,2 DCE	SAMPLE VC	CORE PHOTOGRAPH	TCE (ug/L) 150 300 450	REMARKS
30.0											
30.4	- Niagara Falls Member (?) of Goat Island formation - Light grey - blue - Porous - Massive in appearance with abundant stylolite - No fossil content								Core Box 10 of 11 (29.7 to 31.7 m)		
31.0											
32.0				GS26	0.0	0.0		0.0	Core Box 11 of 11 (31.7 to 33.3 m)		Groundwater sample collected at end of hole for comprehensive analysis of Metals & Inorganics, PAHs, PHCs, VOCs
33.0				GS27	0.0	0.0		0.0			
33.3	BOREHOLE TERMINATED AT 33.32										
34.0											Above surface casing completed with 4" monument riser extending 1.14 m above ground surface. No PVC monitoring well installed. Lockable cap on well with temporary lock installed.
35.0											
36.0											
37.0											
38.0											
39.0											
40.0											

WSP GEOLOGIC (METRIC) WITH UTM WSP_ENV_V1.GPJ WSP_ENV_V1.GDT 10/4/16

LOG OF TEST PIT A

EO:	90K26	Date:	January 22, 1991
Project:	IMICO, Guelph, Ontario	Field Supervisor:	J.P. Francois
Location:	See Figure 5	Elevation of Ground Surface:	317.90 m

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
317.90	0.00	0.00	Asphalt	Frozen
317.80	0.10	0.33	Fill – Mixed sands and gravel	Construction Material
317.70	0.20	0.66		
317.60	0.30	0.98		Sample A–1 composite
317.50	0.40	1.31		from 03–1.0 m
317.40	0.50	1.64		
317.30	0.60	1.97		
317.20	0.70	2.30		
317.10	0.80	2.62	Course sand fill and	
317.00	0.90	2.95	cobbles and boulders	
316.90	1.00	3.28		Sample A–2 composite
316.80	1.10	3.61		from 1–2 m
316.70	1.20	3.94		
316.60	1.30	4.26		
316.50	1.40	4.59		
316.40	1.50	4.92		
316.30	1.60	5.25		
316.20	1.70	5.58		
316.10	1.80	5.90		
316.00	1.90	6.23		
315.90	2.00	6.56		
315.80	2.10	6.89		Sample A3
315.70	2.20	7.22		
315.60	2.30	7.54		
315.50	2.40	7.87		
315.40	2.50	8.20		
315.30	2.60	8.53		
315.20	2.70	8.86		
315.10	2.80	9.18		
315.00	2.90	9.51		
314.90	3.00	9.84		
314.80	3.10	10.17		
314.70	3.20	10.50	Bedrock	End of test pit – 3.2 m
314.60	3.30	10.82		
314.50	3.40	11.15		
314.40	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT ASW14

EO:	90K26	Date:	January 23, 1991
Project:	IMICO, Guelph, Ontario	Field Supervisor:	J.P. Francois
Location:	See Figure 5	Elevation of Ground Surface:	317.58 m

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
317.58	0.00	0.00	Asphalt	Sample ASW14-1
317.48	0.10	0.33		
317.38	0.20	0.66		
317.28	0.30	0.98	Medium sand	Sample ASW14-2, composite 0.3-0.6m
317.18	0.40	1.31		
317.08	0.50	1.64		
316.98	0.60	1.97		End of test pit - 0.6 m
316.88	0.70	2.30		
316.78	0.80	2.62		
316.68	0.90	2.95		
316.58	1.00	3.28		
316.48	1.10	3.61		
316.38	1.20	3.94		
316.28	1.30	4.26		
316.18	1.40	4.59		
316.08	1.50	4.92		
315.98	1.60	5.25		
315.88	1.70	5.58		
315.78	1.80	5.90		
315.68	1.90	6.23		
315.58	2.00	6.56		
315.48	2.10	6.89		
315.38	2.20	7.22		
315.28	2.30	7.54		
315.18	2.40	7.87		
315.08	2.50	8.20		
314.98	2.60	8.53		
314.88	2.70	8.86		
314.78	2.80	9.18		
314.68	2.90	9.51		
314.58	3.00	9.84		
314.48	3.10	10.17		
314.38	3.20	10.50		
314.28	3.30	10.82		
314.18	3.40	11.15		
314.08	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 24, 1991

LOG OF TEST PIT AN21

EO:	90K26	Date:	January 22, 1991
Project:	IMICO, Guelph, Ontario	Field Supervisor:	J.P. Francois
Location:	See Figure 5	Elevation of Ground Surface:	316.68

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
316.68	0.00	0.00	Sandy topsoil	Sample AN21-1, composite of 0 -0.9 m
316.58	0.10	0.33		
316.48	0.20	0.66		
316.38	0.30	0.98	Gravel backfill	
316.28	0.40	1.31		
316.18	0.50	1.64		
316.08	0.60	1.97		
315.98	0.70	2.30		
315.88	0.80	2.62		
315.78	0.90	2.95	Fill - medium sand yellow, some gravel	Sample AN21-2, composite of 0.9 to 1.70 m. Metal pipe at 0.9 m possible catchbasin tile, discharging very low flow of hydrocarbon contaminated water (sheen on water)
315.68	1.00	3.28		
315.58	1.10	3.61		
315.48	1.20	3.94		
315.38	1.30	4.26		
315.28	1.40	4.59		
315.18	1.50	4.92		
315.08	1.60	5.25		Sample AN21-3 at 1.70 m
314.98	1.70	5.58		
314.88	1.80	5.90		
314.78	1.90	6.23		
314.68	2.00	6.56	Concrete/cast metal pipe Possible water supply	End of test pit -2.0m
314.58	2.10	6.89		
314.48	2.20	7.22		
314.38	2.30	7.54		
314.28	2.40	7.87		
314.18	2.50	8.20		
314.08	2.60	8.53		
313.98	2.70	8.86		
313.88	2.80	9.18		
313.78	2.90	9.51		
313.68	3.00	9.84		
313.58	3.10	10.17		
313.48	3.20	10.50		
313.38	3.30	10.82		
313.28	3.40	11.15		
313.18	3.50	11.48		

Comments: Test pit containing water from possible catchbasin tile, otherwise appears to be dry
Test pit backfilled January 22, 1991

LOG OF TEST PIT B

EO:	90K26	Date:	January 22, 1991
Project:	IMICO, Guelph, Ontario	Field Supervisor:	J.P. Francois
Location:	See Figure 5	Elevation of Ground Surface:	316.36 m

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
316.36	0.00	0.00	Asphalt and gravel	Frozen, sample B–1
316.26	0.10	0.33		
316.16	0.20	0.66		
316.06	0.30	0.98	Sand, red with cobbles and rootlets	Sample B–2, composite of 0.3–1 m
315.96	0.40	1.31		
315.86	0.50	1.64		
315.76	0.60	1.97		
315.66	0.70	2.30		
315.56	0.80	2.62		
315.46	0.90	2.95		
315.36	1.00	3.28	Coarse sand, brown to grey with gravel	Sample B–3, composite of 1–1.4 m
315.26	1.10	3.61		
315.16	1.20	3.94		
315.06	1.30	4.26		
314.96	1.40	4.59		End of test pit –1.4 m
314.86	1.50	4.92		
314.76	1.60	5.25		
314.66	1.70	5.58		
314.56	1.80	5.90		
314.46	1.90	6.23		
314.36	2.00	6.56		
314.26	2.10	6.89		
314.16	2.20	7.22		
314.06	2.30	7.54		
313.96	2.40	7.87		
313.86	2.50	8.20		
313.76	2.60	8.53		
313.66	2.70	8.86		
313.56	2.80	9.18		
313.46	2.90	9.51		
313.36	3.00	9.84		
313.26	3.10	10.17		
313.16	3.20	10.50		
313.06	3.30	10.82		
312.96	3.40	11.15		
312.86	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT BW11

EO: 90K26
Project: IMICO, Guelph, Ontario
Location: See Figure 5

Date: January 23, 1991
Field Supervisor: J.P. Francois
Elevation of Ground Surface: 316.78

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
316.78	0.00	0.00	Concrete	
316.68	0.10	0.33		
316.58	0.20	0.66	Granular material	
316.48	0.30	0.98		Sample BW11-1 at 0.4 m
316.38	0.40	1.31		
316.28	0.50	1.64		
316.18	0.60	1.97		
316.08	0.70	2.30		Sample BW11-2 at 0.8 m
315.98	0.80	2.62		End of test pit 0.8 m
315.88	0.90	2.95		
315.78	1.00	3.28		
315.68	1.10	3.61		
315.58	1.20	3.94		
315.48	1.30	4.26		
315.38	1.40	4.59		
315.28	1.50	4.92		
315.18	1.60	5.25		
315.08	1.70	5.58		
314.98	1.80	5.90		
314.88	1.90	6.23		
314.78	2.00	6.56		
314.68	2.10	6.89		
314.58	2.20	7.22		
314.48	2.30	7.54		
314.38	2.40	7.87		
314.28	2.50	8.20		
314.18	2.60	8.53		
314.08	2.70	8.86		
313.98	2.80	9.18		
313.88	2.90	9.51		
313.78	3.00	9.84		
313.68	3.10	10.17		
313.58	3.20	10.50		
313.48	3.30	10.82		
313.38	3.40	11.15		
313.28	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 24, 1991

LOG OF TEST PIT C

EO:	90K26	Date:	January 22, 1991
Project:	IMICO, Guelph, Ontario	Field Supervisor:	J.P. Francois
Location:	See Figure 5	Elevation of Ground Surface:	314.57

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
314.57	0.00	0.00	Fill – silt, black sooty stained	Sample C–1, composite
314.47	0.10	0.33		of 0–02.m
314.37	0.20	0.66	Fill – medium sand red stained,	Sample C–2, composite
314.27	0.30	0.98	with thin metal rods and	of 0.3–0.8 m
314.17	0.40	1.31	wood chips	
314.07	0.50	1.64		
313.97	0.60	1.97		
313.87	0.70	2.30		
313.77	0.80	2.62	Fill – silt, dark stained	Sample C–3, grab at 0.8 m
313.67	0.90	2.95	Till – sand medium to fine, brown	Sample C–4, composite of
313.57	1.00	3.28	with pebbles, cobbles and boulders	0.9–1.3 m
313.47	1.10	3.61		
313.37	1.20	3.94		
313.27	1.30	4.26		
313.17	1.40	4.59	Till – sand, course, grey with boulders	
313.07	1.50	4.92		End of test pit –1.5 m
312.97	1.60	5.25		
312.87	1.70	5.58		
312.77	1.80	5.90		
312.67	1.90	6.23		
312.57	2.00	6.56		
312.47	2.10	6.89		
312.37	2.20	7.22		
312.27	2.30	7.54		
312.17	2.40	7.87		
312.07	2.50	8.20		
311.97	2.60	8.53		
311.87	2.70	8.86		
311.77	2.80	9.18		
311.67	2.90	9.51		
311.57	3.00	9.84		
311.47	3.10	10.17		
311.37	3.20	10.50		
311.27	3.30	10.82		
311.17	3.40	11.15		
311.07	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT CW10

EO: 90K26
Project: IMICO, Guelph, Ontario
Location: See Figure 5

Date: January 22, 1991
Field Supervisor: J.P. Francois
Elevation of Ground Surface: 315.17

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
315.17	0.00	0.00	Gravel	Frozen
315.07	0.10	0.33		
314.97	0.20	0.66	Fill sand	Sample CW10-1
314.87	0.30	0.98		
314.77	0.40	1.31		
314.67	0.50	1.64		
314.57	0.60	1.97	Fill – silty, black sooty	Sample CW10-2
314.47	0.70	2.30		
314.37	0.80	2.62		
314.27	0.90	2.95		End of test pit – 0.9 m
314.17	1.00	3.28		
314.07	1.10	3.61		
313.97	1.20	3.94		
313.87	1.30	4.26		
313.77	1.40	4.59		
313.67	1.50	4.92		
313.57	1.60	5.25		
313.47	1.70	5.58		
313.37	1.80	5.90		
313.27	1.90	6.23		
313.17	2.00	6.56		
313.07	2.10	6.89		
312.97	2.20	7.22		
312.87	2.30	7.54		
312.77	2.40	7.87		
312.67	2.50	8.20		
312.57	2.60	8.53		
312.47	2.70	8.86		
312.37	2.80	9.18		
312.27	2.90	9.51		
312.17	3.00	9.84		
312.07	3.10	10.17		
311.97	3.20	10.50		
311.87	3.30	10.82		
311.77	3.40	11.15		
311.67	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT CE10

EO:	90K26	Date:	January 22, 1991
Project:	IMICO, Guelph, Ontario	Field Supervisor:	J.P. Francois
Location:	See Figure 5	Elevation of Ground Surface:	314.37

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
314.37	0.00	0.00	Asphalt	
314.27	0.10	0.33	Fill	Sample CE10-1
314.17	0.20	0.66		
314.07	0.30	0.98		
313.97	0.40	1.31		Sample CE10-2
313.87	0.50	1.64		
313.77	0.60	1.97		End of test pit – 0.6 m
313.67	0.70	2.30		
313.57	0.80	2.62		
313.47	0.90	2.95		
313.37	1.00	3.28		
313.27	1.10	3.61		
313.17	1.20	3.94		
313.07	1.30	4.26		
312.97	1.40	4.59		
312.87	1.50	4.92		
312.77	1.60	5.25		
312.67	1.70	5.58		
312.57	1.80	5.90		
312.47	1.90	6.23		
312.37	2.00	6.56		
312.27	2.10	6.89		
312.17	2.20	7.22		
312.07	2.30	7.54		
311.97	2.40	7.87		
311.87	2.50	8.20		
311.77	2.60	8.53		
311.67	2.70	8.86		
311.57	2.80	9.18		
311.47	2.90	9.51		
311.37	3.00	9.84		
311.27	3.10	10.17		
311.17	3.20	10.50		
311.07	3.30	10.82		
310.97	3.40	11.15		
310.87	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT D

EO:	90K26	Date:	January 22, 1991
Project:	IMICO, Guelph, Ontario	Field Supervisor:	J.P. Francois
Location:	See Figure 5	Elevation of Ground Surface:	314.80

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
314.80	0.00	0.00	Topsoil	
314.70	0.10	0.33	Fill – medium sand, black to red with clean brown sand lenses. Iron rods and slag throughout.	Sample D–1
314.60	0.20	0.66		
314.50	0.30	0.98		
314.40	0.40	1.31		
314.30	0.50	1.64		
314.20	0.60	1.97		
314.10	0.70	2.30		
314.00	0.80	2.62	Dark brown silty soil	
313.90	0.90	2.95	Medium to fine sand, brown till with pebbles, cobbles and boulders	Sample D–2
313.80	1.00	3.28		
313.70	1.10	3.61		
313.60	1.20	3.94		End of test pit – 1.2 m
313.50	1.30	4.26		
313.40	1.40	4.59		
313.30	1.50	4.92		
313.20	1.60	5.25		
313.10	1.70	5.58		
313.00	1.80	5.90		
312.90	1.90	6.23		
312.80	2.00	6.56		
312.70	2.10	6.89		
312.60	2.20	7.22		
312.50	2.30	7.54		
312.40	2.40	7.87		
312.30	2.50	8.20		
312.20	2.60	8.53		
312.10	2.70	8.86		
312.00	2.80	9.18		
311.90	2.90	9.51		
311.80	3.00	9.84		
311.70	3.10	10.17		
311.60	3.20	10.50		
311.50	3.30	10.82		
311.40	3.40	11.15		
311.30	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT DSW7

EO:	90K26	Date:	January 22, 1991
Project:	IMICO, Guelph, Ontario	Field Supervisor:	J.P. Francois
Location:	See Figure 5	Elevation of Ground Surface:	314.82

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
314.82	0.00	0.00	Foundry sand	Sample DSW7-1 and DSW7-1a
314.72	0.10	0.33		
314.62	0.20	0.66		
314.52	0.30	0.98		
314.42	0.40	1.31		
314.32	0.50	1.64		End of test pit – 0.5 m
314.22	0.60	1.97		
314.12	0.70	2.30		
314.02	0.80	2.62		
313.92	0.90	2.95		
313.82	1.00	3.28		
313.72	1.10	3.61		
313.62	1.20	3.94		
313.52	1.30	4.26		
313.42	1.40	4.59		
313.32	1.50	4.92		
313.22	1.60	5.25		
313.12	1.70	5.58		
313.02	1.80	5.90		
312.92	1.90	6.23		
312.82	2.00	6.56		
312.72	2.10	6.89		
312.62	2.20	7.22		
312.52	2.30	7.54		
312.42	2.40	7.87		
312.32	2.50	8.20		
312.22	2.60	8.53		
312.12	2.70	8.86		
312.02	2.80	9.18		
311.92	2.90	9.51		
311.82	3.00	9.84		
311.72	3.10	10.17		
311.62	3.20	10.50		
311.52	3.30	10.82		
311.42	3.40	11.15		
311.32	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT EW 8

EO:	90K26	Date:	January 22, 1991
Project:	IMICO, Guelph, Ontario	Field Supervisor:	J.P. Francois
Location:	See Figure 5	Elevation of Ground Surface:	313.83

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
313.83	0.00	0.00	Asphalt and gravel	
313.73	0.10	0.33		
313.63	0.20	0.66	Fill – black charred material and	Sample EW–1
313.53	0.30	0.98	some red oxidized slag	
313.43	0.40	1.31	Fill – silt, black with black staining	Sample EW–2
313.33	0.50	1.64	Medium to fine sand, brown till	Sample EW–3
313.23	0.60	1.97	with pebbles, cobbles, and boulders	
313.13	0.70	2.30		End of test pit – 0.7 m
313.03	0.80	2.62		
312.93	0.90	2.95		
312.83	1.00	3.28		
312.73	1.10	3.61		
312.63	1.20	3.94		
312.53	1.30	4.26		
312.43	1.40	4.59		
312.33	1.50	4.92		
312.23	1.60	5.25		
312.13	1.70	5.58		
312.03	1.80	5.90		
311.93	1.90	6.23		
311.83	2.00	6.56		
311.73	2.10	6.89		
311.63	2.20	7.22		
311.53	2.30	7.54		
311.43	2.40	7.87		
311.33	2.50	8.20		
311.23	2.60	8.53		
311.13	2.70	8.86		
311.03	2.80	9.18		
310.93	2.90	9.51		
310.83	3.00	9.84		
310.73	3.10	10.17		
310.63	3.20	10.50		
310.53	3.30	10.82		
310.43	3.40	11.15		
310.33	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT ESW 8

EO:	90K26	Date:	January 22, 1991
Project:	IMICO, Guelph, Ontario	Field Supervisor:	J.P. Francois
Location:	See Figure 5	Elevation of Ground Surface:	313.83

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
313.83	0.00	0.00		
313.73	0.10	0.33	Gravel, yellow	
313.63	0.20	0.66	Fill – brown soil on south	
313.53	0.30	0.98	face with intermixed	
313.43	0.40	1.31	slag on north face	Sample ESW–1 at 0.4 m
313.33	0.50	1.64		
313.23	0.60	1.97		Sample ESW–2 at 0.7 m
313.13	0.70	2.30		End of test pit – 0.7 m
313.03	0.80	2.62		
312.93	0.90	2.95		
312.83	1.00	3.28		
312.73	1.10	3.61		
312.63	1.20	3.94		
312.53	1.30	4.26		
312.43	1.40	4.59		
312.33	1.50	4.92		
312.23	1.60	5.25		
312.13	1.70	5.58		
312.03	1.80	5.90		
311.93	1.90	6.23		
311.83	2.00	6.56		
311.73	2.10	6.89		
311.63	2.20	7.22		
311.53	2.30	7.54		
311.43	2.40	7.87		
311.33	2.50	8.20		
311.23	2.60	8.53		
311.13	2.70	8.86		
311.03	2.80	9.18		
310.93	2.90	9.51		
310.83	3.00	9.84		
310.73	3.10	10.17		
310.63	3.20	10.50		
310.53	3.30	10.82		
310.43	3.40	11.15		
310.33	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT H

EO:	90K26	Date:	January 22, 1991
Project:	IMICO, Guelph, Ontario	Field Supervisor:	J.P. Francois
Location:	See Figure 5	Elevation of Ground Surface:	313.75

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
313.75	0.00	0.00	Fill – sandy topsoil with	Sample H–1
313.65	0.10	0.33	iron debris	
313.55	0.20	0.66		
313.45	0.30	0.98		
313.35	0.40	1.31	Fill – silt, brown	
313.25	0.50	1.64	Sand – medium to fine, brown	Sample H–2
313.15	0.60	1.97	till with pebbles, cobbles,	
313.05	0.70	2.30	and boulders	
312.95	0.80	2.62	Bedrock	End of test pit – 0.8 m
312.85	0.90	2.95		
312.75	1.00	3.28		
312.65	1.10	3.61		
312.55	1.20	3.94		
312.45	1.30	4.26		
312.35	1.40	4.59		
312.25	1.50	4.92		
312.15	1.60	5.25		
312.05	1.70	5.58		
311.95	1.80	5.90		
311.85	1.90	6.23		
311.75	2.00	6.56		
311.65	2.10	6.89		
311.55	2.20	7.22		
311.45	2.30	7.54		
311.35	2.40	7.87		
311.25	2.50	8.20		
311.15	2.60	8.53		
311.05	2.70	8.86		
310.95	2.80	9.18		
310.85	2.90	9.51		
310.75	3.00	9.84		
310.65	3.10	10.17		
310.55	3.20	10.50		
310.45	3.30	10.82		
310.35	3.40	11.15		
310.25	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT HW16

EO:	90K26	Date:	January 22, 1991
Project:	IMICO, Guelph, Ontario	Field Supervisor:	J.P. Francois
Location:	See Figure 5	Elevation of Ground Surface:	314.94

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
314.94	0.00	0.00	Topsoil – sand dark brown	Sample HW16–1
314.84	0.10	0.33	Sand, medium to fine brown	Sample HW16–2
314.74	0.20	0.66	till with pebbles, cobbles	
314.64	0.30	0.98	and boulders	
314.54	0.40	1.31		
314.44	0.50	1.64		End of test pit – 0.5 m
314.34	0.60	1.97		
314.24	0.70	2.30		
314.14	0.80	2.62		
314.04	0.90	2.95		
313.94	1.00	3.28		
313.84	1.10	3.61		
313.74	1.20	3.94		
313.64	1.30	4.26		
313.54	1.40	4.59		
313.44	1.50	4.92		
313.34	1.60	5.25		
313.24	1.70	5.58		
313.14	1.80	5.90		
313.04	1.90	6.23		
312.94	2.00	6.56		
312.84	2.10	6.89		
312.74	2.20	7.22		
312.64	2.30	7.54		
312.54	2.40	7.87		
312.44	2.50	8.20		
312.34	2.60	8.53		
312.24	2.70	8.86		
312.14	2.80	9.18		
312.04	2.90	9.51		
311.94	3.00	9.84		
311.84	3.10	10.17		
311.74	3.20	10.50		
311.64	3.30	10.82		
311.54	3.40	11.15		
311.44	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT HNE19

EO: 90K26
Project: IMICO, Guelph, Ontario
Location: See Figure 5

Date: January 22, 1991
Field Supervisor: J.P. Francois
Elevation of Ground Surface: 314.12

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
314.12	0.00	0.00	Topsoil – brown granular	
314.02	0.10	0.33		
313.92	0.20	0.66	Fill – granular, dark brown with red stained sand	
313.82	0.30	0.98		
313.72	0.40	1.31		Sample HNE19–1 at 0.4 m
313.62	0.50	1.64		
313.52	0.60	1.97		
313.42	0.70	2.30		Sample HNE 19–2 at 0.8 m
313.32	0.80	2.62		End of test pit – 0.8 m
313.22	0.90	2.95		
313.12	1.00	3.28		
313.02	1.10	3.61		
312.92	1.20	3.94		
312.82	1.30	4.26		
312.72	1.40	4.59		
312.62	1.50	4.92		
312.52	1.60	5.25		
312.42	1.70	5.58		
312.32	1.80	5.90		
312.22	1.90	6.23		
312.12	2.00	6.56		
312.02	2.10	6.89		
311.92	2.20	7.22		
311.82	2.30	7.54		
311.72	2.40	7.87		
311.62	2.50	8.20		
311.52	2.60	8.53		
311.42	2.70	8.86		
311.32	2.80	9.18		
311.22	2.90	9.51		
311.12	3.00	9.84		
311.02	3.10	10.17		
310.92	3.20	10.50		
310.82	3.30	10.82		
310.72	3.40	11.15		
310.62	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT I

EO:	90K26	Date:	January 22, 1991
Project:	IMICO, Guelph, Ontario	Field Supervisor:	J.P. Francois
Location:	See Figure 5	Elevation of Ground Surface:	315.00

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
315.00	0.00	0.00	Concrete	
314.90	0.10	0.33		
314.80	0.20	0.66	Sandy gravel	
314.70	0.30	0.98	Fill – mixed sand with bricks and	
314.60	0.40	1.31	metal debris	
314.50	0.50	1.64		Sample I–1, grab at 0.5 m
314.40	0.60	1.97		
314.30	0.70	2.30		Sample I–2, grab at 0.7 m
314.20	0.80	2.62		
314.10	0.90	2.95	Dark silty soil	Sample I–3
314.00	1.00	3.28	Sand, brown till with	Sample 1–4
313.90	1.10	3.61	cobbles and boulders	
313.80	1.20	3.94		
313.70	1.30	4.26		
313.60	1.40	4.59		
313.50	1.50	4.92	Sand, coarse grey till with	
313.40	1.60	5.25	cobbles and boulders	
313.30	1.70	5.58		
313.20	1.80	5.90	Bedrock	End of test pit – 1.8 m
313.10	1.90	6.23		
313.00	2.00	6.56		
312.90	2.10	6.89		
312.80	2.20	7.22		
312.70	2.30	7.54		
312.60	2.40	7.87		
312.50	2.50	8.20		
312.40	2.60	8.53		
312.30	2.70	8.86		
312.20	2.80	9.18		
312.10	2.90	9.51		
312.00	3.00	9.84		
311.90	3.10	10.17		
311.80	3.20	10.50		
311.70	3.30	10.82		
311.60	3.40	11.15		
311.50	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT INE 15

EO: 90K26
Project: IMICO, Guelph, Ontario
Location: See Figure 5

Date: January 22, 1991
Field Supervisor: J.P. Francois
Elevation of Ground Surface: 315.65

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
315.65	0.00	0.00	Concrete and gravel	
315.55	0.10	0.33		
315.45	0.20	0.66		
315.35	0.30	0.98	Fill – mixed sand, stained red to black containing bricks and metal rods	Sample INE–1
315.25	0.40	1.31		
315.15	0.50	1.64		
315.05	0.60	1.97		
314.95	0.70	2.30		
314.85	0.80	2.62		
314.75	0.90	2.95		
314.65	1.00	3.28	Sand, red with small pebbles and cobbles	Sample INE–2
314.55	1.10	3.61		
314.45	1.20	3.94		
314.35	1.30	4.26	Silt, brown to black	Sample INE –3
314.25	1.40	4.59	Sand, brown till with boulders	Sample INE–4
314.15	1.50	4.92		End of test pit – 1.5 m
314.05	1.60	5.25		
313.95	1.70	5.58		
313.85	1.80	5.90		
313.75	1.90	6.23		
313.65	2.00	6.56		
313.55	2.10	6.89		
313.45	2.20	7.22		
313.35	2.30	7.54		
313.25	2.40	7.87		
313.15	2.50	8.20		
313.05	2.60	8.53		
312.95	2.70	8.86		
312.85	2.80	9.18		
312.75	2.90	9.51		
312.65	3.00	9.84		
312.55	3.10	10.17		
312.45	3.20	10.50		
312.35	3.30	10.82		
312.25	3.40	11.15		
312.15	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT IE15

EO:	90K26	Date:	January 22, 1991
Project:	IMICO, Guelph, Ontario	Field Supervisor:	J.P. Francois
Location:	See Figure 5	Elevation of Ground Surface:	315.42

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
315.42	0.00	0.00	Gravel	
315.32	0.10	0.33		
315.22	0.20	0.66		
315.12	0.30	0.98	Fill – medium sand, stained black to green with red blotches and metal debris	Sample IE15–1
315.02	0.40	1.31		
314.92	0.50	1.64		
314.82	0.60	1.97		
314.72	0.70	2.30		
314.62	0.80	2.62	Fill – granular, grey and black	Sample IE15–2
314.52	0.90	2.95	Sand, brown till with cobbles and boulders	Sample IE15–3
314.42	1.00	3.28		
314.32	1.10	3.61		
314.22	1.20	3.94		
314.12	1.30	4.26		End of test pit – 1.3 m
314.02	1.40	4.59		
313.92	1.50	4.92		
313.82	1.60	5.25		
313.72	1.70	5.58		
313.62	1.80	5.90		
313.52	1.90	6.23		
313.42	2.00	6.56		
313.32	2.10	6.89		
313.22	2.20	7.22		
313.12	2.30	7.54		
313.02	2.40	7.87		
312.92	2.50	8.20		
312.82	2.60	8.53		
312.72	2.70	8.86		
312.62	2.80	9.18		
312.52	2.90	9.51		
312.42	3.00	9.84		
312.32	3.10	10.17		
312.22	3.20	10.50		
312.12	3.30	10.82		
312.02	3.40	11.15		
311.92	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT JE15

EO:	90K26	Date:	January 22, 1991
Project:	IMICO, Guelph, Ontario	Field Supervisor:	J.P. Francois
Location:	See Figure 5	Elevation of Ground Surface:	315.36

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
315.36	0.00	0.00	Topsoil – silty, stained black	Sample IE15–1
315.26	0.10	0.33	Fill – sand, brown to green with bricks and slag	Sample JE15–2
315.16	0.20	0.66		
315.06	0.30	0.98		
314.96	0.40	1.31		
314.86	0.50	1.64		
314.76	0.60	1.97	Fill – coarse sand, grey with gravel	Sample JE15–3
314.66	0.70	2.30	Sand – brown, orange, till with cobbles	Sample JE 15–4
314.56	0.80	2.62		
314.46	0.90	2.95		
314.36	1.00	3.28		End of test pit – 1.0 m
314.26	1.10	3.61		
314.16	1.20	3.94		
314.06	1.30	4.26		
313.96	1.40	4.59		
313.86	1.50	4.92		
313.76	1.60	5.25		
313.66	1.70	5.58		
313.56	1.80	5.90		
313.46	1.90	6.23		
313.36	2.00	6.56		
313.26	2.10	6.89		
313.16	2.20	7.22		
313.06	2.30	7.54		
312.96	2.40	7.87		
312.86	2.50	8.20		
312.76	2.60	8.53		
312.66	2.70	8.86		
312.56	2.80	9.18		
312.46	2.90	9.51		
312.36	3.00	9.84		
312.26	3.10	10.17		
312.16	3.20	10.50		
312.06	3.30	10.82		
311.96	3.40	11.15		
311.86	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT JS15

EO:	90K26	Date:	January 22, 1991
Project:	IMICO, Guelph, Ontario	Field Supervisor:	J.P. Francois
Location:	See Figure 5	Elevation of Ground Surface:	314.49

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
314.49	0.00	0.00	Fill – sand, black	
314.39	0.10	0.33	Fill – sand, red with metal debris	Sample JS15–1
314.29	0.20	0.66	Fill – fine sand, black to brown	Sample JS15–2
314.19	0.30	0.98	Fill – sand with slag and brick	Sample JS15–3
314.09	0.40	1.31		
313.99	0.50	1.64		
313.89	0.60	1.97		
313.79	0.70	2.30	Fill – silt, black to brown	Sample JS15–4
313.69	0.80	2.62	Sand, till, brown with	Sample JS15–5
313.59	0.90	2.95	cobbles and boulders	
313.49	1.00	3.28		
313.39	1.10	3.61		
313.29	1.20	3.94		
313.19	1.30	4.26		
313.09	1.40	4.59		End of test pit – 1.4 m
312.99	1.50	4.92		
312.89	1.60	5.25		
312.79	1.70	5.58		
312.69	1.80	5.90		
312.59	1.90	6.23		
312.49	2.00	6.56		
312.39	2.10	6.89		
312.29	2.20	7.22		
312.19	2.30	7.54		
312.09	2.40	7.87		
311.99	2.50	8.20		
311.89	2.60	8.53		
311.79	2.70	8.86		
311.69	2.80	9.18		
311.59	2.90	9.51		
311.49	3.00	9.84		
311.39	3.10	10.17		
311.29	3.20	10.50		
311.19	3.30	10.82		
311.09	3.40	11.15		
310.99	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT K

EO:	90K26	Date:	January 22, 1991
Project:	IMICO, Guelph, Ontario	Field Supervisor:	J.P. Francois
Location:	See Figure 5	Elevation of Ground Surface:	315.81

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
315.81	0.00	0.00	Fill – granular, brown to red	Sample K–1
315.71	0.10	0.33		
315.61	0.20	0.66		
315.51	0.30	0.98		
315.41	0.40	1.31		
315.31	0.50	1.64		
315.21	0.60	1.97		
315.11	0.70	2.30		End of test pit – 0.7 m
315.01	0.80	2.62		
314.91	0.90	2.95		
314.81	1.00	3.28		
314.71	1.10	3.61		
314.61	1.20	3.94		
314.51	1.30	4.26		
314.41	1.40	4.59		
314.31	1.50	4.92		
314.21	1.60	5.25		
314.11	1.70	5.58		
314.01	1.80	5.90		
313.91	1.90	6.23		
313.81	2.00	6.56		
313.71	2.10	6.89		
313.61	2.20	7.22		
313.51	2.30	7.54		
313.41	2.40	7.87		
313.31	2.50	8.20		
313.21	2.60	8.53		
313.11	2.70	8.86		
313.01	2.80	9.18		
312.91	2.90	9.51		
312.81	3.00	9.84		
312.71	3.10	10.17		
312.61	3.20	10.50		
312.51	3.30	10.82		
312.41	3.40	11.15		
312.31	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT KNW10

EO: 90K26
Project: IMICO, Guelph, Ontario
Location: See Figure 5

Date: January 22, 1991
Field Supervisor: J.P. Francois
Elevation of Ground Surface: 316.20

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
316.20	0.00	0.00	Concrete	
316.10	0.10	0.33	Fill – hard silty matrix with wood, plastic, brick, and slag debris. This material pinches under brown sand and gravel to the west of the pit.	Sample KNW10–1
316.00	0.20	0.66		
315.90	0.30	0.98		
315.80	0.40	1.31		
315.70	0.50	1.64		
315.60	0.60	1.97		
315.50	0.70	2.30	Sand till, brown with cobbles and boulders	Sample KNW10–2
315.40	0.80	2.62		
315.30	0.90	2.95		
315.20	1.00	3.28		
315.10	1.10	3.61		End of test pit – 1.1m
315.00	1.20	3.94		
314.90	1.30	4.26		
314.80	1.40	4.59		
314.70	1.50	4.92		
314.60	1.60	5.25		
314.50	1.70	5.58		
314.40	1.80	5.90		
314.30	1.90	6.23		
314.20	2.00	6.56		
314.10	2.10	6.89		
314.00	2.20	7.22		
313.90	2.30	7.54		
313.80	2.40	7.87		
313.70	2.50	8.20		
313.60	2.60	8.53		
313.50	2.70	8.86		
313.40	2.80	9.18		
313.30	2.90	9.51		
313.20	3.00	9.84		
313.10	3.10	10.17		
313.00	3.20	10.50		
312.90	3.30	10.82		
312.80	3.40	11.15		
312.70	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT KE13

EO:	90K26	Date:	January 22, 1991
Project:	IMICO, Guelph, Ontario	Field Supervisor:	J.P. Francois
Location:	See Figure 5	Elevation of Ground Surface:	316.09

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
316.09	0.00	0.00	Gravel	
315.99	0.10	0.33	Fill – sand, dark brown to red	Sample KE13–1
315.89	0.20	0.66	with slag, brick and wood fragments	
315.79	0.30	0.98		
315.69	0.40	1.31		
315.59	0.50	1.64		
315.49	0.60	1.97		
315.39	0.70	2.30	Fill – coarse sand, red	Sample KE13–2
315.29	0.80	2.62		
315.19	0.90	2.95	Silt, brown to yellow	Sample KE13–3
315.09	1.00	3.28	Sand fill, brown with cobbles	
314.99	1.10	3.61		
314.89	1.20	3.94		
314.79	1.30	4.26		
314.69	1.40	4.59	Coarse sand till, grey with cobbles	Sample KE13–5
314.59	1.50	4.92		Strong petroleum odour
314.49	1.60	5.25		throughout seepage at 1.7 m,
314.39	1.70	5.58	PID (KE13–5) = 300 ppm	sheen visible
314.29	1.80	5.90	Bedrock	End of test pit – 1.8 m
314.19	1.90	6.23		
314.09	2.00	6.56		
313.99	2.10	6.89		
313.89	2.20	7.22		
313.79	2.30	7.54		
313.69	2.40	7.87		
313.59	2.50	8.20		
313.49	2.60	8.53		
313.39	2.70	8.86		
313.29	2.80	9.18		
313.19	2.90	9.51		
313.09	3.00	9.84		
312.99	3.10	10.17		
312.89	3.20	10.50		
312.79	3.30	10.82		
312.69	3.40	11.15		
312.59	3.50	11.48		

Comments: Groundwater in test pit upon completion
Test pit backfilled January 22, 1991
PID = Photoionization detector used to measure headspace concentration of volatile organics

LOG OF TEST PIT KW32

EO: 90K26
Project: IMICO, Guelph, Ontario
Location: See Figure 5

Date: January 22, 1991
Field Supervisor: J.P. Francois
Elevation of Ground Surface: 316.25

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
316.25	0.00	0.00	Asphalt	
316.15	0.10	0.33		
316.05	0.20	0.66	Fill – sand with slag and brick	Sample KW32-1
315.95	0.30	0.98		
315.85	0.40	1.31		
315.75	0.50	1.64		
315.65	0.60	1.97		
315.55	0.70	2.30		
315.45	0.80	2.62		
315.35	0.90	2.95		
315.25	1.00	3.28	Coarse sand till, brown with cobbles	Sample KW32-2
315.15	1.10	3.61		
315.05	1.20	3.94		End of test pit – 1.2 m
314.95	1.30	4.26		
314.85	1.40	4.59		
314.75	1.50	4.92		
314.65	1.60	5.25		
314.55	1.70	5.58		
314.45	1.80	5.90		
314.35	1.90	6.23		
314.25	2.00	6.56		
314.15	2.10	6.89		
314.05	2.20	7.22		
313.95	2.30	7.54		
313.85	2.40	7.87		
313.75	2.50	8.20		
313.65	2.60	8.53		
313.55	2.70	8.86		
313.45	2.80	9.18		
313.35	2.90	9.51		
313.25	3.00	9.84		
313.15	3.10	10.17		
313.05	3.20	10.50		
312.95	3.30	10.82		
312.85	3.40	11.15		
312.75	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT L

EO:	90K26	Date:	January 22, 1991
Project:	IMICO, Guelph, Ontario	Field Supervisor:	J.P. Francois
Location:	See Figure 1	Elevation of Ground Surface:	317.30

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
317.30	0.00	0.00		
317.20	0.10	0.33	Fill – granular, brown	Sample L–1
317.10	0.20	0.66		
317.00	0.30	0.98	Fill – granular dark brown to red with foundry sands	Sample L–2
316.90	0.40	1.31		
316.80	0.50	1.64		
316.70	0.60	1.97		
316.60	0.70	2.30		
316.50	0.80	2.62	Silt, red to brown	Sample L–3
316.40	0.90	2.95		
316.30	1.00	3.28	Sand till, brown with pebbles, cobbles and boulders	Sample L–4
316.20	1.10	3.61		
316.10	1.20	3.94		
316.00	1.30	4.26		End of test pit – 1.3m
315.90	1.40	4.59		
315.80	1.50	4.92		
315.70	1.60	5.25		
315.60	1.70	5.58		
315.50	1.80	5.90		
315.40	1.90	6.23		
315.30	2.00	6.56		
315.20	2.10	6.89		
315.10	2.20	7.22		
315.00	2.30	7.54		
314.90	2.40	7.87		
314.80	2.50	8.20		
314.70	2.60	8.53		
314.60	2.70	8.86		
314.50	2.80	9.18		
314.40	2.90	9.51		
314.30	3.00	9.84		
314.20	3.10	10.17		
314.10	3.20	10.50		
314.00	3.30	10.82		
313.90	3.40	11.15		
313.80	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT LN2

EO:	90K26	Date:	January 22, 1991
Project:	IMICO, Guelph, Ontario	Field Supervisor:	J.P. Francois
Location:	See Figure 1	Elevation of Ground Surface:	317.30

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
317.30	0.00	0.00	Topsoil – sandy, dark brown	Sample LN2–1
317.20	0.10	0.33	Fill – foundry sands	Sample LN2–2
317.10	0.20	0.66		
317.00	0.30	0.98		
316.90	0.40	1.31		
316.80	0.50	1.64		End of Test Pits – 0.5m
316.70	0.60	1.97		
316.60	0.70	2.30		
316.50	0.80	2.62		
316.40	0.90	2.95		
316.30	1.00	3.28		
316.20	1.10	3.61		
316.10	1.20	3.94		
316.00	1.30	4.26		
315.90	1.40	4.59		
315.80	1.50	4.92		
315.70	1.60	5.25		
315.60	1.70	5.58		
315.50	1.80	5.90		
315.40	1.90	6.23		
315.30	2.00	6.56		
315.20	2.10	6.89		
315.10	2.20	7.22		
315.00	2.30	7.54		
314.90	2.40	7.87		
314.80	2.50	8.20		
314.70	2.60	8.53		
314.60	2.70	8.86		
314.50	2.80	9.18		
314.40	2.90	9.51		
314.30	3.00	9.84		
314.20	3.10	10.17		
314.10	3.20	10.50		
314.00	3.30	10.82		
313.90	3.40	11.15		
313.80	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT LW23

EO:	90K26	Date:	January 22, 1991
Project:	IMICO, Guelph, Ontario	Field Supervisor:	J.P. Francois
Location:	See Figure 5	Elevation of Ground Surface:	317.3

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
317.30	0.00	0.00	Gravel	
317.20	0.10	0.33	Fill – hard granular, brown to red with brick and slag	Sample LW23–1
317.10	0.20	0.66		
317.00	0.30	0.98	Fill – sandy with some purple staining	Sample LW23–2
316.90	0.40	1.31		
316.80	0.50	1.64		
316.70	0.60	1.97		
316.60	0.70	2.30		
316.50	0.80	2.62		
316.40	0.90	2.95		
316.30	1.00	3.28		
316.20	1.10	3.61	Silty brown to black soil	Sample LW23–3
316.10	1.20	3.94		
316.00	1.30	4.26	Sand till, brown with cobbles and boulders	Sample LW23–4 and LW23–(P PID (LW23–4) = 61 ppm
315.90	1.40	4.59		
315.80	1.50	4.92		
315.70	1.60	5.25		
315.60	1.70	5.58		
315.50	1.80	5.90	Coarse sand till, grey with boulders and cobbles	Samples LOrg, LW23–5 and L Hydrocarbon odour and green staining throughout, seepage at 2.2m PID (LW23(Org)) = 61 ppm
315.40	1.90	6.23		
315.30	2.00	6.56		
315.20	2.10	6.89		
315.10	2.20	7.22		
315.00	2.30	7.54	Bedrock	End of Test Pit – 2.3m
314.90	2.40	7.87		
314.80	2.50	8.20		
314.70	2.60	8.53		
314.60	2.70	8.86		
314.50	2.80	9.18		
314.40	2.90	9.51		
314.30	3.00	9.84		
314.20	3.10	10.17		
314.10	3.20	10.50		
314.00	3.30	10.82		
313.90	3.40	11.15		
313.80	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991
PID = Photoionization detector used to measure headspace concentration of volatile organics

LOG OF TEST PIT 1

EO:	90K26	Date:	January 22, 1991
Project:	IMICO, Guelph, Ontario	Field Supervisor:	J.P. Francois
Location:	See Figure 5	Elevation of Ground Surface:	314.88

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
314.88	0.00	0.00	Asphalt and Gravel	Frozen
314.78	0.10	0.33		
314.68	0.20	0.66		
314.58	0.30	0.98	Fill – sand matrix, intermixed slag, clay pipe and brick	Sample 1–1, composite of 0.3–1.0m
314.48	0.40	1.31		
314.38	0.50	1.64		
314.28	0.60	1.97		
314.18	0.70	2.30		
314.08	0.80	2.62		
313.98	0.90	2.95		
313.88	1.00	3.28	Sand till, medium to fine, brown to yellow with pebbles, cobbles and boulders	Sample 1–2, composite of 1.0–1.2m
313.78	1.10	3.61		
313.68	1.20	3.94		
313.58	1.30	4.26		
313.48	1.40	4.59		
313.38	1.50	4.92	Sand till, coarse, brown to grey with pebbles, cobbles & boulders	Sample 1–3
313.28	1.60	5.25		
313.18	1.70	5.58		End of Test Pit – 1.7m
313.08	1.80	5.90		
312.98	1.90	6.23		
312.88	2.00	6.56		
312.78	2.10	6.89		
312.68	2.20	7.22		
312.58	2.30	7.54		
312.48	2.40	7.87		
312.38	2.50	8.20		
312.28	2.60	8.53		
312.18	2.70	8.86		
312.08	2.80	9.18		
311.98	2.90	9.51		
311.88	3.00	9.84		
311.78	3.10	10.17		
311.68	3.20	10.50		
311.58	3.30	10.82		
311.48	3.40	11.15		
311.38	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT 2

EO:	90K26	Date:	January 22, 1991
Project:	IMICO, Guelph, Ontario	Field Supervisor:	J.P. Francois
Location:	See Figure 5	Elevation of Ground Surface:	315.41

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
315.41	0.00	0.00	Topsoil – sandy	
315.31	0.10	0.33		
315.21	0.20	0.66	Fill – sand, red stained and gravel	Sample 2–1
315.11	0.30	0.98		
315.01	0.40	1.31		
314.91	0.50	1.64	Fine sand and silt	Sample 2–2
314.81	0.60	1.97		
314.71	0.70	2.30		End of Test Pit – 0.7m
314.61	0.80	2.62		
314.51	0.90	2.95		
314.41	1.00	3.28		
314.31	1.10	3.61		
314.21	1.20	3.94		
314.11	1.30	4.26		
314.01	1.40	4.59		
313.91	1.50	4.92		
313.81	1.60	5.25		
313.71	1.70	5.58		
313.61	1.80	5.90		
313.51	1.90	6.23		
313.41	2.00	6.56		
313.31	2.10	6.89		
313.21	2.20	7.22		
313.11	2.30	7.54		
313.01	2.40	7.87		
312.91	2.50	8.20		
312.81	2.60	8.53		
312.71	2.70	8.86		
312.61	2.80	9.18		
312.51	2.90	9.51		
312.41	3.00	9.84		
312.31	3.10	10.17		
312.21	3.20	10.50		
312.11	3.30	10.82		
312.01	3.40	11.15		
311.91	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT 3

EO: 90K26
Project: IMICO, Guelph, Ontario
Location: See Figure 5

Date: January 22, 1991
Field Supervisor: J.P. Francois
Elevation of Ground Surface: 314.45

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
314.45	0.00	0.00	Asphalt and Gravel	
314.35	0.10	0.33		
314.25	0.20	0.66		
314.15	0.30	0.98	Fill – sand, red stained matrix with brick and slag	Sample 3–1, grab at 0.3m
314.05	0.40	1.31		
313.95	0.50	1.64		
313.85	0.60	1.97		
313.75	0.70	2.30		
313.65	0.80	2.62		Sample 3–2, grab at 0.8m
313.55	0.90	2.95	Sand till, brown with cobbles	Sample 3–3
313.45	1.00	3.28		
313.35	1.10	3.61		
313.25	1.20	3.94		
313.15	1.30	4.26		
313.05	1.40	4.59	Coarse sand till, grey with boulders	
312.95	1.50	4.92		
312.85	1.60	5.25		End of Test Pit – 1.6m
312.75	1.70	5.58		
312.65	1.80	5.90		
312.55	1.90	6.23		
312.45	2.00	6.56		
312.35	2.10	6.89		
312.25	2.20	7.22		
312.15	2.30	7.54		
312.05	2.40	7.87		
311.95	2.50	8.20		
311.85	2.60	8.53		
311.75	2.70	8.86		
311.65	2.80	9.18		
311.55	2.90	9.51		
311.45	3.00	9.84		
311.35	3.10	10.17		
311.25	3.20	10.50		
311.15	3.30	10.82		
311.05	3.40	11.15		
310.95	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT 4

EO:	90K26	Date:	January 22, 1991
Project:	IMICO, Guelph, Ontario	Field Supervisor:	J.P. Francois
Location:	See Figure 5	Elevation of Ground Surface:	314.46

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
314.46	0.00	0.00	Fill – sandy black stained matrix with metal rods and brick	Sample 4–1
314.36	0.10	0.33		
314.26	0.20	0.66		
314.16	0.30	0.98		
314.06	0.40	1.31		
313.96	0.50	1.64		
313.86	0.60	1.97		
313.76	0.70	2.30		
313.66	0.80	2.62	Silt, brown to black	Sample 4–2
313.56	0.90	2.95	Sand till, brown with cobbles and boulders	Sample 4–3
313.46	1.00	3.28		
313.36	1.10	3.61		
313.26	1.20	3.94		End of test pit – 1.2 m
313.16	1.30	4.26		
313.06	1.40	4.59		
312.96	1.50	4.92		
312.86	1.60	5.25		
312.76	1.70	5.58		
312.66	1.80	5.90		
312.56	1.90	6.23		
312.46	2.00	6.56		
312.36	2.10	6.89		
312.26	2.20	7.22		
312.16	2.30	7.54		
312.06	2.40	7.87		
311.96	2.50	8.20		
311.86	2.60	8.53		
311.76	2.70	8.86		
311.66	2.80	9.18		
311.56	2.90	9.51		
311.46	3.00	9.84		
311.36	3.10	10.17		
311.26	3.20	10.50		
311.16	3.30	10.82		
311.06	3.40	11.15		
310.96	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT 5

EO: 90K26
Project: IMICO, Guelph, Ontario
Location: See Figure 5

Date: January 22, 1991
Field Supervisor: J.P. Francois
Elevation of Ground Surface: 314.78

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
314.78	0.00	0.00	Asphalt and gravel	
314.68	0.10	0.33		
314.58	0.20	0.66		
314.48	0.30	0.98		
314.38	0.40	1.31	Sand – dark stained with some clean red and brown lenses	Sample 5–1
314.28	0.50	1.64		
314.18	0.60	1.97		
314.08	0.70	2.30		
313.98	0.80	2.62		
313.88	0.90	2.95		
313.78	1.00	3.28		
313.68	1.10	3.61	Silt, black stained	Sample 5–2
313.58	1.20	3.94	Sand till, brown with cobbles and boulders. Clay tile intersected at 1.2 m from north to west face of pit	Sample 5–3
313.48	1.30	4.26		
313.38	1.40	4.59		
313.28	1.50	4.92		End of test pit – 1.2 m
313.18	1.60	5.25		
313.08	1.70	5.58		
312.98	1.80	5.90		
312.88	1.90	6.23		
312.78	2.00	6.56		
312.68	2.10	6.89		
312.58	2.20	7.22		
312.48	2.30	7.54		
312.38	2.40	7.87		
312.28	2.50	8.20		
312.18	2.60	8.53		
312.08	2.70	8.86		
311.98	2.80	9.18		
311.88	2.90	9.51		
311.78	3.00	9.84		
311.68	3.10	10.17		
311.58	3.20	10.50		
311.48	3.30	10.82		
311.38	3.40	11.15		
311.28	3.50	11.48		

Comments: Test pit dry upon completion
Clay tile at 1.2 m is probably connected to nearby storm drain
Test pit backfilled January 22, 1991

LOG OF TEST PIT 6

EO:	90K26	Date:	January 22, 1991
Project:	IMICO, Guelph, Ontario	Field Supervisor:	J.P. Francois
Location:	See Figure 5	Elevation of Ground Surface:	315.07

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
315.07	0.00	0.00	Asphalt and gravel	
314.97	0.10	0.33		
314.87	0.20	0.66	Fill – sandy matrix stained red	Sample 6–1
314.77	0.30	0.98	to black with metal, wood	
314.67	0.40	1.31	and brick debris	
314.57	0.50	1.64		
314.47	0.60	1.97		
314.37	0.70	2.30		
314.27	0.80	2.62		
314.17	0.90	2.95	Silt	Sample 6–2
314.07	1.00	3.28		
313.97	1.10	3.61	Sand till, brown with cobbles	
313.87	1.20	3.94	and boulders	
313.77	1.30	4.26		End of test pit – 1.3 m
313.67	1.40	4.59		
313.57	1.50	4.92		
313.47	1.60	5.25		
313.37	1.70	5.58		
313.27	1.80	5.90		
313.17	1.90	6.23		
313.07	2.00	6.56		
312.97	2.10	6.89		
312.87	2.20	7.22		
312.77	2.30	7.54		
312.67	2.40	7.87		
312.57	2.50	8.20		
312.47	2.60	8.53		
312.37	2.70	8.86		
312.27	2.80	9.18		
312.17	2.90	9.51		
312.07	3.00	9.84		
311.97	3.10	10.17		
311.87	3.20	10.50		
311.77	3.30	10.82		
311.67	3.40	11.15		
311.57	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT 7

EO: 90K26
Project: IMICO, Guelph, Ontario
Location: See Figure 5

Date: January 22, 1991
Field Supervisor: J.P. Francois
Elevation of Ground Surface: 316.17

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
316.17	0.00	0.00	Fill – sandy soil, brown with gravel and wood chips	Sample 7–1
316.07	0.10	0.33		
315.97	0.20	0.66		
315.87	0.30	0.98		
315.77	0.40	1.31	Fill – sandy gravel matrix with bits of brick, red to purple staining tapering to the north	Samples 7–2
315.67	0.50	1.64		
315.57	0.60	1.97		
315.47	0.70	2.30		
315.37	0.80	2.62		
315.27	0.90	2.95	Silt, black stained	Samples 7–3
315.17	1.00	3.28	Sand, brown with cobbles and boulders	Samples 7–4
315.07	1.10	3.61		
314.97	1.20	3.94		End of test pit – 1.2 m
314.87	1.30	4.26		
314.77	1.40	4.59		
314.67	1.50	4.92		
314.57	1.60	5.25		
314.47	1.70	5.58		
314.37	1.80	5.90		
314.27	1.90	6.23		
314.17	2.00	6.56		
314.07	2.10	6.89		
313.97	2.20	7.22		
313.87	2.30	7.54		
313.77	2.40	7.87		
313.67	2.50	8.20		
313.57	2.60	8.53		
313.47	2.70	8.86		
313.37	2.80	9.18		
313.27	2.90	9.51		
313.17	3.00	9.84		
313.07	3.10	10.17		
312.97	3.20	10.50		
312.87	3.30	10.82		
312.77	3.40	11.15		
312.67	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT 8

EO:	90K26	Date:	January 22, 1991
Project:	IMICO, Guelph, Ontario	Field Supervisor:	J.P. Francois
Location:	See Figure 5	Elevation of Ground Surface:	316.17

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
316.17	0.00	0.00	Fill – silty, black, sooty	Sample 8–1
316.07	0.10	0.33		
315.97	0.20	0.66	Fill – sand, brown with slag, brick and black to red staining	Sample 8–2
315.87	0.30	0.98		
315.77	0.40	1.31		
315.67	0.50	1.64		
315.57	0.60	1.97		
315.47	0.70	2.30		
315.37	0.80	2.62		
315.27	0.90	2.95		
315.17	1.00	3.28	Silty clay, black stained	Sample 8–3
315.07	1.10	3.61		Seepage at 1.1 m
314.97	1.20	3.94	Sand till, brown with cobbles and boulders	Sample 8.4, composite of 1.2–1.3 m
314.87	1.30	4.26		
314.77	1.40	4.59		End of test pit – 1.3 m
314.67	1.50	4.92		
314.57	1.60	5.25		
314.47	1.70	5.58		
314.37	1.80	5.90		
314.27	1.90	6.23		
314.17	2.00	6.56		
314.07	2.10	6.89		
313.97	2.20	7.22		
313.87	2.30	7.54		
313.77	2.40	7.87		
313.67	2.50	8.20		
313.57	2.60	8.53		
313.47	2.70	8.86		
313.37	2.80	9.18		
313.27	2.90	9.51		
313.17	3.00	9.84		
313.07	3.10	10.17		
312.97	3.20	10.50		
312.87	3.30	10.82		
312.77	3.40	11.15		
312.67	3.50	11.48		

Comments: Test pit wet upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT 9

EO:	90K26	Date:	January 22, 1991
Project:	IMICO, Guelph, Ontario	Field Supervisor:	J.P. Francois
Location:	See Figure 5	Elevation of Ground Surface:	315.12

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
315.12	0.00	0.00	Topsoil – sandy with gravel	
315.02	0.10	0.33		
314.92	0.20	0.66		
314.82	0.30	0.98	Fill – sandy black – red stained with	Sample 9–1
314.72	0.40	1.31	intermixed metal, slag and	
314.62	0.50	1.64	brick debris	
314.52	0.60	1.97	- -	- - - - - - - - - - - - - - - - - -
314.42	0.70	2.30	Silt, brown	Sample 9–2
314.32	0.80	2.62	Sand till, brown with	Sample 9–3
314.22	0.90	2.95	cobbles and boulders	
314.12	1.00	3.28		
314.02	1.10	3.61		
313.92	1.20	3.94		
313.82	1.30	4.26		
313.72	1.40	4.59	Sand till, coarse, grey	Sample 9–4
313.62	1.50	4.92	with cobbles and boulders	
313.52	1.60	5.25		
313.42	1.70	5.58		End of test pit – 1.7 m
313.32	1.80	5.90		
313.22	1.90	6.23		
313.12	2.00	6.56		
313.02	2.10	6.89		
312.92	2.20	7.22		
312.82	2.30	7.54		
312.72	2.40	7.87		
312.62	2.50	8.20		
312.52	2.60	8.53		
312.42	2.70	8.86		
312.32	2.80	9.18		
312.22	2.90	9.51		
312.12	3.00	9.84		
312.02	3.10	10.17		
311.92	3.20	10.50		
311.82	3.30	10.82		
311.72	3.40	11.15		
311.62	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT 10

EO: 90K26
Project: IMICO, Guelph, Ontario
Location: See Figure 5

Date: January 22, 1991
Field Supervisor: J.P. Francois
Elevation of Ground Surface: 315.03

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
315.03	0.00	0.00	Topsoil – sandy, dark brown	Sample 10–1
314.93	0.10	0.33	with gravel	
314.83	0.20	0.66	Fill – sand with brick and clay	Sample 10–2
314.73	0.30	0.98		
314.63	0.40	1.31		
314.53	0.50	1.64		
314.43	0.60	1.97		
314.33	0.70	2.30		
314.23	0.80	2.62		
314.13	0.90	2.95		
314.03	1.00	3.28	Silt – brown	Sample 10–3
313.93	1.10	3.61		
313.83	1.20	3.94		
313.73	1.30	4.26	Sand till, brown with cobbles	
313.63	1.40	4.59	and boulders	
313.53	1.50	4.92		
313.43	1.60	5.25	Bedrock	End of Test Pit – 1.6m
313.33	1.70	5.58		
313.23	1.80	5.90		
313.13	1.90	6.23		
313.03	2.00	6.56		
312.93	2.10	6.89		
312.83	2.20	7.22		
312.73	2.30	7.54		
312.63	2.40	7.87		
312.53	2.50	8.20		
312.43	2.60	8.53		
312.33	2.70	8.86		
312.23	2.80	9.18		
312.13	2.90	9.51		
312.03	3.00	9.84		
311.93	3.10	10.17		
311.83	3.20	10.50		
311.73	3.30	10.82		
311.63	3.40	11.15		
311.53	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT 11

EO: 90K26
Project: IMICO, Guelph, Ontario
Location: See Figure 5

Date: January 22, 1991
Field Supervisor: J.P. Francois
Elevation of Ground Surface: 315.30

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
315.30	0.00	0.00	Sand and gravel, brown	
315.20	0.10	0.33		
315.10	0.20	0.66	Fill – sand, hard, yellow to red to black with slag and bricks	
315.00	0.30	0.98		
314.90	0.40	1.31		
314.80	0.50	1.64		Sample 11–1 at 0.5 m
314.70	0.60	1.97		
314.60	0.70	2.30		
314.50	0.80	2.62		
314.40	0.90	2.95		
314.30	1.00	3.28		Sample 11–2 grab at 1.0 m
314.20	1.10	3.61		
314.10	1.20	3.94	Silt, brown to black	Sample 11–3
314.00	1.30	4.26	Sand till, brown with cobbles and boulders	Sample 11–4
313.90	1.40	4.59		
313.80	1.50	4.92		
313.70	1.60	5.25		
313.60	1.70	5.58		
313.50	1.80	5.90	Bedrock	End of Test Pit – 1.8 m
313.40	1.90	6.23		
313.30	2.00	6.56		
313.20	2.10	6.89		
313.10	2.20	7.22		
313.00	2.30	7.54		
312.90	2.40	7.87		
312.80	2.50	8.20		
312.70	2.60	8.53		
312.60	2.70	8.86		
312.50	2.80	9.18		
312.40	2.90	9.51		
312.30	3.00	9.84		
312.20	3.10	10.17		
312.10	3.20	10.50		
312.00	3.30	10.82		
311.90	3.40	11.15		
311.80	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT 12

EO: 90K26
Project: IMICO, Guelph, Ontario
Location: See Figure 5

Date: January 22, 1991
Field Supervisor: J.P. Francois
Elevation of Ground Surface: 315.42

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
315.42	0.00	0.00	Concrete	
315.32	0.10	0.33		
315.22	0.20	0.66	Fill – fine sand, sooty	Sample 12 (P1) and 12–1
315.12	0.30	0.98		
315.02	0.40	1.31	Fill – sand stained red to green	Sample 12–2
314.92	0.50	1.64		
314.82	0.60	1.97		
314.72	0.70	2.30		
314.62	0.80	2.62		
314.52	0.90	2.95		
314.42	1.00	3.28	Coarse sand till, brown to grey with cobbles and boulders	
314.32	1.10	3.61		
314.22	1.20	3.94	Coarse sand	Sample 12–3
314.12	1.30	4.26	Silt, brown to black	Sample 12–4
314.02	1.40	4.59	Sand till, brown	Sample 12–5
313.92	1.50	4.92	Bedrock	End of test pit – 1.5m
313.82	1.60	5.25		
313.72	1.70	5.58		
313.62	1.80	5.90		
313.52	1.90	6.23		
313.42	2.00	6.56		
313.32	2.10	6.89		
313.22	2.20	7.22		
313.12	2.30	7.54		
313.02	2.40	7.87		
312.92	2.50	8.20		
312.82	2.60	8.53		
312.72	2.70	8.86		
312.62	2.80	9.18		
312.52	2.90	9.51		
312.42	3.00	9.84		
312.32	3.10	10.17		
312.22	3.20	10.50		
312.12	3.30	10.82		
312.02	3.40	11.15		
311.92	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

LOG OF TEST PIT 12SE10

EO:	90K26	Date:	January 22, 1991
Project:	IMICO, Guelph, Ontario	Field Supervisor:	J.P. Francois
Location:	See Figure 5	Elevation of Ground Surface:	315.01

Elevation MASL	Depth Metres	Depth Feet	Soil Description	Remarks
315.01	0.00	0.00	Topsoil – sand dark brown	
314.91	0.10	0.33		
314.81	0.20	0.66	Fill – Gravel	
314.71	0.30	0.98	Fill – Silt, black	Sample 12SE10–1
314.61	0.40	1.31	Fill – Sand, red to black with gravel	Sample 12SE10–2
314.51	0.50	1.64		
314.41	0.60	1.97		
314.31	0.70	2.30		
314.21	0.80	2.62		
314.11	0.90	2.95		
314.01	1.00	3.28		
313.91	1.10	3.61		
313.81	1.20	3.94		
313.71	1.30	4.26		
313.61	1.40	4.59	Silt, brown	
313.51	1.50	4.92	Sand till, brown with cobbles	Sample 12SE10–3
313.41	1.60	5.25	and boulders	
313.31	1.70	5.58	Bedrock	End of Test Pit – 1.7m
313.21	1.80	5.90		
313.11	1.90	6.23		
313.01	2.00	6.56		
312.91	2.10	6.89		
312.81	2.20	7.22		
312.71	2.30	7.54		
312.61	2.40	7.87		
312.51	2.50	8.20		
312.41	2.60	8.53		
312.31	2.70	8.86		
312.21	2.80	9.18		
312.11	2.90	9.51		
312.01	3.00	9.84		
311.91	3.10	10.17		
311.81	3.20	10.50		
311.71	3.30	10.82		
311.61	3.40	11.15		
311.51	3.50	11.48		

Comments: Test pit dry upon completion
Test pit backfilled January 22, 1991

TEST PIT LOG

PROJECT: 98-393

TEST PIT: TP1

FORMER IMICO FOUNDRY SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 1 September 1998
GEOLOGIST HTM
ELEVATION 316.0 m ASL

DEPTH (m)	STRATIGRAPHY	SOILS DESCRIPTION	MONITOR DETAILS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE ANALYSED	COMMENTS
		FILL Backfill					PID = 0 ppm
0.3		**SANDY SILT** Sandy silt with gravel and cobbles, poorly sorted. Cobbles increasing in size with depth.		T 1-1			PID = 0 ppm Sample interval between 0.4-0.5 m.
1		-Cobble diameter up to 0.31 m.		T 1-2			Sample interval between 1.3-1.4 m.
2.0		Test pit terminated at 1.98 m in sandy silt.					

Printed: 26 NOV 98

Gartner Lee Limited

TEST PIT LOG

PROJECT: 98-393

TEST PIT: TP2

FORMER IMICO FOUNDRY SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 1 September 1998
GEOLOGIST HTM
ELEVATION 315.6 m ASL

DEPTH (m)	STRATIGRAPHY	SOILS DESCRIPTION	MONITOR DETAILS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE ANALYSED	COMMENTS
0.3		**FILL** Greyish brown fill					PID = 0 ppm
		SILTY SAND Dark grey silty sand with some gravel, some rootlets, poorly sorted.		T 2-1			Sample interval between 0.3m to 0.4 m. PID = 0 ppm
1		-Becoming a brown sandy silt with cobbles, gravel, rootlets, poorly sorted at 0.91 m.					PID = 0 ppm
				T 2-2			Sample interval between 1.4m to 1.5m. PID = 0 ppm
2 2.1							
		Test pit terminated at 2.13 m in sandy silt.					

Printed: 26 NOV 98

Gartner Lee Limited

TEST PIT LOG

PROJECT: 98-393

TEST PIT: TP3

FORMER IMICO FOUNDRY SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 1 September 1998
GEOLOGIST HTM
ELEVATION 315.7 m ASL

DEPTH (m)	STRATIGRAPHY	SOILS DESCRIPTION	MONITOR DETAILS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE ANALYSED	COMMENTS
		FILL Dark brown fine sand-silt fill, cobbles and gravel, poorly sorted.		T 3-1			Sample interval between 0.3m to 0.4 m.
1							
		-Becoming a coarse sand with iron slag, cobbles and gravel at 1.52 m.		T 3-2			Sample interval between 1.5m to 1.6m.
2							
2.1		Test pit terminated at 2.13 m in fill.					

Printed: 26 NOV 98

Gartner Lee Limited

TEST PIT LOG

PROJECT: 98-393

TEST PIT: TP4

FORMER IMICO FOUNDRY SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 1 September 1998
GEOLOGIST HTM
ELEVATION 316.0 m ASL

DEPTH (m)	STRATIGRAPHY	SOILS DESCRIPTION	MONITOR DETAILS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE ANALYSED	COMMENTS
		SAND AND GRAVEL Coarse sand and gravel, cobbles.					PID = 0 ppm
1							PID = 0 ppm
				T 4-1			Sample interval between 1.5m to 1.6m.
2 2.1							
		Test pit terminated at 2.13 m at top of bedrock.					

Printed: 26 NOV 98

Gartner Lee Limited

TEST PIT LOG

PROJECT: 98-393

TEST PIT: TP5

FORMER IMICO FOUNDRY SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 1 September 1998
GEOLOGIST HTM
ELEVATION 315.7 m ASL

DEPTH (m)	STRATIGRAPHY	SOILS DESCRIPTION	MONITOR DETAILS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE ANALYSED	COMMENTS
		FILL Brown clay fill.		T5-1			Sample interval between 0.3m to 0.4m.
0.8		**CLAY** Black stained clay, gravel, oily sheen.					PID= 250 ppm Sample interval between 0.76m to 0.86m.
1							
1.5		**SAND** Grey coarse sand with cobbles, poorly sorted, black oil with a very strong odour.					PID= 254 ppm
2							
2.1		Test pit terminated at 2.13 m at top of bedrock.					Sample interval between 2.0m to 2.1m.

Printed: 26 NOV 98

Gartner Lee Limited

TEST PIT LOG

PROJECT: 98-393

TEST PIT: TP6

FORMER IMICO FOUNDRY SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 1 September 1998
GEOLOGIST HTM
ELEVATION 315.6 m ASL

DEPTH (m)	STRATIGRAPHY	SOILS DESCRIPTION	MONITOR DETAILS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE ANALYSED	COMMENTS
		FILL Yellow poorly sorted fill.					
0.3		**CLAY** Brownish black stained clay.		T 6-1			Sample interval between 0.3m to 0.4m.
				T 6-2			Sample interval between 0.6m to 0.61m.
0.9		**SAND** Brown black poorly sorted sand, large cobbles, oil smell.					
1							
2							
2.4				T 6-3			Sample interval between 2.33m to 2.43m.
		Test pit terminated at 2.43 m at top of bedrock.					

Printed: 26 NOV 98

Gartner Lee Limited

TEST PIT LOG

PROJECT: 98-393

TEST PIT: TP7

FORMER IMICO FOUNDRY SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 2 September 1998
GEOLOGIST HTM
ELEVATION 315.7 m ASL

DEPTH (m)	STRATIGRAPHY	SOILS DESCRIPTION	MONITOR DETAILS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE ANALYSED	COMMENTS
		FILL Brown sand with yellow lenses (backfill), gravel.					
0.3		**SAND** Brown sand with black lenses with oily smell, poorly sorted, cobbles.		T 7-1			Sample interval between 0.3m to 0.4m.
1				T 7-2			Sample interval between 0.9m to 1.0m. PID= 7.4 ppm
							PID= 284 ppm
1.8		Test pit terminated at 1.83 m at top of bedrock.		T 7-3			Sample interval between 1.7m to 1.8m.

Printed: 26 NOV 98

Gartner Lee Limited

TEST PIT LOG

PROJECT: 98-393

TEST PIT: TP8

FORMER IMICO FOUNDRY SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 2 September 1998
GEOLOGIST HTM
ELEVATION 315.4 m ASL

DEPTH (m)	STRATIGRAPHY	SOILS DESCRIPTION	MONITOR DETAILS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE ANALYSED	COMMENTS
		FILL Backfill					
0.3		**SAND** Yellow sand, poorly sorted. -Becoming yellow brown, poorly sorted with cobbles and gravel at 0.61 m.					Sample interval between 0.3m to 0.4m.
1							Sample interval between 0.9m to 1.0m.
2		-Becoming grey at 2.13 m.					
2.6		Test pit terminated at 2.59 m at top of bedrock.					Sample interval between 2.49m to 2.59m.

Printed: 26 NOV 98

Gartner Lee Limited

TEST PIT LOG

PROJECT: 98-393

TEST PIT: TP9

FORMER IMICO FOUNDRY SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 2 September 1998
GEOLOGIST HTM
ELEVATION 315.6 m ASL

DEPTH (m)	STRATIGRAPHY	SOILS DESCRIPTION	MONITOR DETAILS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE ANALYSED	COMMENTS
		SANDY CLAY Orange brown sandy clay, poorly sorted. -Gravel found at 0.31 m.		T 9-1			Sample interval between 0.3m to 0.4m.
0.6		**SANDY SILT** Brown sandy silt, poorly sorted, gravel and cobbles.					PID= 250 ppm
1		-Black staining and oil odour at 1.22 m.		T 9-2			Sample interval between 1.2m to 1.3m.
		-Becoming grey at 1.52 m.					
2							PID= 236 ppm
2.4				T 9-3			Sample interval between 2.3m to 2.4m.
		Test pit terminated at 2.44 m at top of bedrock.					

Printed: 26 NOV 98

Gartner Lee Limited

TEST PIT LOG

PROJECT: 98-393

TEST PIT: TP10

FORMER IMICO FOUNDRY SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 2 September 1998
GEOLOGIST HTM
ELEVATION 315.1 m ASL

DEPTH (m)	STRATIGRAPHY	SOILS DESCRIPTION	MONITOR DETAILS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE ANALYSED	COMMENTS
		CLAYEY SAND Orange brown clayey sand and gravel. -Grey seams of coarse material mixed with brown clayey sand at 0.31 m.					PID= 0 ppm
0.6		**SAND** Dark brown-black, golden coloured sand, gravel and cobbles. -Becoming a grey coarse sand, gravel and cobbles, moist, oil stained at 0.91 m.		T 10-1			Sample interval between 0.6m to 0.7m.
1				T 10-2			Sample interval between 1.2m to 1.3m.
		-Strong odour detected at 1.83 m.					
2							PID= 17 ppm
2.4		Test pit terminated at 2.44 m at top of bedrock.		T 10-3			Sample interval between 2.3m to 2.4m.

Printed: 26 NOV 98

Gartner Lee Limited

TEST PIT LOG

PROJECT: 98-393

TEST PIT: TP11

FORMER IMICO FOUNDRY SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 2 September 1998
GEOLOGIST HTM
ELEVATION 315.7 m ASL

DEPTH (m)	STRATIGRAPHY	SOILS DESCRIPTION	MONITOR DETAILS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE ANALYSED	COMMENTS
0.2		**CONCRETE**					
0.8		**FILL** Brick fill					
		Test pit terminated at 0.81 m at top of concrete.					

Printed: 26 NOV 98

Gartner Lee Limited

TEST PIT LOG

PROJECT: 98-393

TEST PIT: TP12

FORMER IMICO FOUNDRY SITE
GUELPH, ONTARIO
FOR: CITY OF GUELPH

DATE: 2 September 1998
GEOLOGIST HTM
ELEVATION 315.2 m ASL

DEPTH (m)	STRATIGRAPHY	SOILS DESCRIPTION	MONITOR DETAILS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE ANALYSED	COMMENTS
		FILL Brown sandy clayey fill, gravel and cobbles. -Layer of slag from 0.31 to 0.61 m.					
0.6		**SAND** Yellow brown sand, gravel, cobbles.		T 12-1			Sample interval between 0.6m to 0.7m. PID= 0 ppm
1		-Becoming a grey coarse sand, gravel and cobbles at 1.22 m.		T 12-2			Sample interval between 1.2m to 1.3m.
		-Becoming moist at 1.83 m.					PID= 0 ppm
2 2.1				T 12-3			Sample interval between 2.0m to 2.1m.
		Test pit terminated at 2.13 m at top of bedrock.					

Printed: 26 NOV 98

Gartner Lee Limited

Project: **IMICO - Guelph** Contract No: **701996**

Excavation date: **02/12/2013** Supervised by: **M. McCormick**

Test Pit Location: **IMICO - Guelph**

Contractor: **Fred E. Prior Excavating**

Excavation Method: **Rubber tired backhoe**

Test Pit: **TP1**

Monitoring Well: **n/a**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface Elevation: 315.05m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
	314.95	**ASPHALT** - 100 mm thick								
	0.10	**DEBRIS (FILL)** , brick, nails, dark brown staining				TP1-5"		N	⊕	Sample analyzed for PCBs, PAHs, PHC (F1-F4), VOCs, Metals and Inorganics.
	314.75									
	0.30	**GRAVEL (FILL)** , brown								
	314.44									
	0.61	**COBBLES, SAND and SILT (NATIVE)** , grey				TP1-3'		N	⊕	
1										
	313.45									
	1.60	**END of TESTPIT @ 1.60 m** Refusal on bedrock @ 1.60 m.								

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **D. Arnaud**

Checked by: **S. Prior**

Date: **07/01/14**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **IMICO - Guelph** Contract No: **701996**

Excavation date: **02/12/2013** Supervised by: **M. McCormick**

Test Pit Location: **IMICO - Guelph**

Contractor: **Fred E. Prior Excavating**

Excavation Method: **Rubber tired backhoe**

Test Pit: **TP2**

Monitoring Well: **n/a**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface Elevation: 315.27m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
	315.17	**TOPSOIL** , some roots								
	0.10	**DEBRIS (FILL)**				TP2-5"		N	⊕	
	314.97									
	0.30	**COBBLES and GRAVEL (FILL)** , brown								
	314.51									
	0.76	**COBBLES (NATIVE)** , grey								
1						TP2-4'		N	⊕	Sample analyzed for PAHs, PHC (F1-F4), VOCs, Metals and Inorganics.
	313.59									
	1.68	**END of TESTPIT @ 1.68 m** Refusal on bedrock @ 1.68 m.								

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **D. Arnaud**

Checked by: **S. Prior**

Date: **07/01/14**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **IMICO - Guelph** Contract No: **701996**

Excavation date: **02/12/2013** Supervised by: **M. McCormick**

Test Pit Location: **IMICO - Guelph**

Contractor: **Fred E. Prior Excavating**

Excavation Method: **Rubber tired backhoe**

Test Pit: **TP3**

Monitoring Well: **n/a**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface Elevation: 315.68m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
	315.58	**TOPSOIL** , some roots								
	0.10	**DEBRIS (FILL)** , mottled				TP3-6"		N	⊕	Sample analyzed for PCBs, PAHs, PHC (F1-F4), VOCs, Metals and Inorganics.
	315.07									
	0.61	**COBBLES and SAND (NATIVE)** , brown				TP3-3'		N	⊕	
1										
	313.85									
	1.83	**END of TESTPIT @ 1.83 m** Refusal on bedrock @ 1.83 m.								

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **D. Arnaud**

Checked by: **S. Prior**

Date: **07/01/14**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **IMICO - Guelph** Contract No: **701996**

Excavation date: **02/12/2013** Supervised by: **M. McCormick**

Test Pit Location: **IMICO - Guelph**

Contractor: **Fred E. Prior Excavating**

Excavation Method: **Rubber tired backhoe**

Test Pit: **TP4**

Monitoring Well: **n/a**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface Elevation: 315.34m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
	315.24	**TOPSOIL** , some roots								
	0.10	**DEBRIS (FILL)** , red rusty klinker				TP4-6"		N ⊕		Sample analyzed for PCBs, PAHs, PHC (F1-F4), VOCs, Metals and Inorganics.
	315.04									
	0.30	**COBBLES and SAND (NATIVE)** , grey								
1						TP4-4'		N ⊕		
	313.81									
	1.53	**END of TESTPIT @ 1.53 m** Refusal on bedrock @ 1.53 m.								

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **D. Arnaud**

Checked by: **S. Prior**

Date: **07/01/14**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **IMICO - Guelph** Contract No: **701996**

Excavation date: **02/12/2013** Supervised by: **M. McCormick**

Test Pit Location: **IMICO - Guelph**

Contractor: **Fred E. Prior Excavating**

Excavation Method: **Rubber tired backhoe**

Test Pit: **TP5**

Monitoring Well: **n/a**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface Elevation: 315.54m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		GRAVEL (FILL) , grey limestone				TP5-5"		N ⊕		
1						TP5-4'		N ⊕		Sample analyzed for PAHs, PHC (F1-F4), VOCs, Metals and Inorganics.
		- water encountered @ 1.53 m.								
	313.71 1.83	**END of TESTPIT @ 1.83 m** Refusal on bedrock @ 1.83 m.								

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **D. Arnaud**

Checked by: **S. Prior**

Date: **07/01/14**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **IMICO - Guelph** Contract No: **701996**

Excavation date: **02/12/2013** Supervised by: **M. McCormick**

Test Pit Location: **IMICO - Guelph**

Contractor: **Fred E. Prior Excavating**

Excavation Method: **Rubber tired backhoe**

Test Pit: **TP6**

Monitoring Well: **n/a**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface Elevation: 315.49m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		GRAVEL (FILL) , grey limestone				TP6-4"		N ⊕		Sample analyzed for PAHs, PHC (F1-F4), VOCs, Metals and Inorganics.
1						TP6-5'		N ⊕		
	313.66 / 1.83	**END of TESTPIT @ 1.83 m** Refusal on bedrock @ 1.83 m.								

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **D. Arnaud**

Checked by: **S. Prior**

Date: **07/01/14**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **IMICO - Guelph** Contract No: **701996**

Excavation date: **03/12/2013** Supervised by: **M. McCormick**

Test Pit Location: **IMICO - Guelph**

Contractor: **Fred E. Prior Excavating**

Excavation Method: **Rubber tired backhoe**

Test Pit: **TP8**

Monitoring Well: **n/a**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface Elevation: 315.35m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
	315.25	**TOPSOIL** , some roots								
	0.10	**GRAVEL (FILL)** , brown, some brick and cobbles				TP8-4"		N ⊕		Sample and duplicate analyzed for PAHs, PHC (F1-F4), VOCs, Metals and Inorganics.
1						TP8-5'		N ⊕		
	313.52									
	1.83	**END of TESTPIT @ 1.83 m** Refusal on bedrock @ 1.83 m.								

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **D. Arnaud**

Checked by: **S. Prior**

Date: **07/01/14**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **IMICO - Guelph** Contract No: **701996**

Excavation date: **03/12/2013** Supervised by: **M. McCormick**

Test Pit Location: **IMICO - Guelph**

Contractor: **Fred E. Prior Excavating**

Excavation Method: **Rubber tired backhoe**

Test Pit: **TP9**

Monitoring Well: **n/a**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface Elevation: 316.16m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		TOPSOIL , some roots								
	316.01 / 0.15	**COBBLES, SAND and GRAVEL (FILL)** , brown				TP9-1'		N	⊕	Sample analyzed for PAHs, PHC (F1-F4), VOCs, Metals and Inorganics.
1						TP9-4'		N	⊕	
	314.63 / 1.53	**END of TESTPIT @ 1.53 m** Refusal on bedrock @ 1.53 m.								

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **D. Arnaud**

Checked by: **S. Prior**

Date: **07/01/14**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **IMICO - Guelph** Contract No: **701996**

Excavation date: **03/12/2013** Supervised by: **M. McCormick**

Test Pit Location: **IMICO - Guelph**

Contractor: **Fred E. Prior Excavating**

Excavation Method: **Rubber tired backhoe**

Test Pit: **TP10**

Monitoring Well: **n/a**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface Elevation: 315.85m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
	315.75	**ASPHALT** - 100 mm thick								
	0.10	**SANDY SILT (FILL)** , grey, mottled				TP10-8"		N	⊕	
	315.39									
	0.46	**COBBLES and SAND (NATIVE)** , brown								
1						TP10-4"		N	⊕	Sample analyzed for PAHs, PHC (F1-F4), VOCs, Metals and Inorganics.
	314.17									
	1.68	**END of TESTPIT @ 1.68 m** Refusal on bedrock @ 1.68 m.								

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **D. Arnaud**

Checked by: **S. Prior**

Date: **07/01/14**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **IMICO - Guelph** Contract No: **701996**

Excavation date: **03/12/2013** Supervised by: **M. McCormick**

Test Pit Location: **IMICO - Guelph**

Contractor: **Fred E. Prior Excavating**

Excavation Method: **Rubber tired backhoe**

Test Pit: **TP11**

Monitoring Well: **n/a**

Sheet 1 of 1

Scale (m)	Elev. (m) / Depth (m)	Stratigraphy: Description (Ground Surface Elevation: 315.60m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
	315.50 / 0.10	**TOPSOIL**								
	315.14 / 0.46	**COBBLES, BRICK and SAND (FILL)** , brown				TP11-6'		N	⊕	Sample and duplicate analyzed for PAHs, PHC (F1-F4), VOCs, Metals and Inorganics.
1		**COBBLES and SAND (NATIVE)** , grey				TP11-5'		N	⊕	
	313.77 / 1.83	**END of TESTPIT @ 1.83 m** Refusal on bedrock @ 1.83 m.								

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **D. Arnaud**

Checked by: **S. Prior**

Date: **07/01/14**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

RECORD OF BOREHOLE: BH17-200

CLIENT: City of Guelph
DATE DRILLED: October 10, 2017
DRILLER: ATCOST
NORTHING: 4822281.8

LOCATION: 200 Beverley St., Guelph
LOGGED BY: M. Shiry
DRILL RIG: CME 850 Rotary Power
EASTING: 562191.7

PROJECT NUMBER: 694757
DRILL METHOD: 108 mm HSA
GROUND ELEVATION: 315.41 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
					CONCRETE:		315.26	Soil cuttings	
					FILL: Slag, black to dark brown, dry to moist, trace sand/silt and fine gravel.		0.15	Bentonite seal	
	72	SS1	9						6.6
1	75	SS2	3	Metals & Inorg. SVOCs (16:06) (0.91-1.07) PHCs & BTEX VOCs (16:06) (1.07-1.22) Metals & Inorg. SVOCs (16:16) (1.22-1.83) PHCs & BTEX VOCs (16:29) (1.83-1.98)	**PEAT:** Black, moist to very moist, some silt, trace rootlets and woody stalk.		314.50 / 0.91		1.5
					SANDY SILT: Brown, moist, medium plasticity, fine grain sand, trace clay, trace gravel.		314.34 / 1.07		
	58	SS3	50+		**SAND AND GRAVEL WITH COBBLES:** Brownish/light grey, moist, fine to coarse sand and gravel, trace silt and clay (pockets on coarse gravel).		314.19 / 1.22		18.0
2	88	SS4	50/ 5cm		- Increased moisture below 1.83 mbgs.		313.49 / 1.92		2.2
					GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE: Buff.		313.38 / 2.03		
					Bottom of borehole at 2.03 mbgs				
3									
4									
5									
6									
7									

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS

CH2M HILL Canada Limited

IMICO_BH_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 4/16/19

RECORD OF BOREHOLE: BH17-201

CLIENT: City of Guelph
DATE DRILLED: October 10, 2017
DRILLER: ATCOST
NORTHING: 4822296.8

LOCATION: 200 Beverley St., Guelph
LOGGED BY: M. Shiry
DRILL RIG: CME 850 Rotary Power
EASTING: 562218.7

PROJECT NUMBER: 694757
DRILL METHOD: 108 mm HSA
GROUND ELEVATION: 315.39 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
	79	SS1	28	PCBs (17:10) (0.00-0.30) Metals & Inorg. PAHs PHCs & BTEX (17:10) (0.00-0.61) Metals & Inorg. PHCs & BTEX PAHs (17:25) (0.61-0.91)	**FILL:** Gravel with Sand and Silt, black, moist, fine grained sand and gravel, trace brick and rootlets.		315.09 / 0.30	Soil cuttings; Bentonite seal	2.5
					Sandy Silt, light to dark brown, dry to moist, fine grained sand, trace gravel, trace brick, trace rootlets.		314.78 / 0.61		
	41	SS2	50/ 13cm		**SAND AND GRAVEL WITH COBBLES:** Brownish light grey, moist, fine to coarse sand and gravel, some silt.		314.50 / 0.89		28.0
1					- Attempt second borehole, refusal at same depth on suspected bedrock. Bottom of borehole at 0.89 mbgs				
2									
3									
4									
5									
6									
7									

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS

CH2M HILL Canada Limited

IMICO_BH_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 4/16/19

RECORD OF BOREHOLE: BH17-202

CLIENT: City of Guelph
DATE DRILLED: October 10, 2017
DRILLER: ATCOST
NORTHING: 4822314.7

LOCATION: 200 Beverley St., Guelph
LOGGED BY: M. Shiry
DRILL RIG: CME 850 Rotary Power
EASTING: 562299.9

PROJECT NUMBER: 694757
DRILL METHOD: 108 mm HSA
GROUND ELEVATION: 315.55 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
					CONCRETE:		315.40 / 0.15	Soil cuttings; Bentonite seal	
	100	SS1	15	Metal & Inorg. PAHs (14:22) (0.15-0.61)	**FILL:** Sand, black, moist, fine grained, trace silt. - Brown trace slag below 0.30 mbgs. - 5 cm seam gravel at 0.45 mbgs, followed by increased silt and Fe staining.		315.07 / 0.48		3.7
1	54	SS2	10	PHCs & BTEX VOCs (14:30) (0.61-1.22)	Sandy Silt, brown, dry to moist, low plasticity, fine sand, trace black and Fe staining, trace slag and rootlets. - 15 cm seam of fine sand at 0.66 mbgs.				92.0
	100	SS3	50+	Metals & Inorg. PAHs (14:40) (1.22-1.83)	**SILTY SAND AND GRAVEL:** Dry to moist, grey/brown, fine sand, trace medium and coarse sand, fine to coarse gravel, some cobbles.		314.10 / 1.45		1.2
2	83	SS4	70/ 15cm	PHCs & BTEX VOCs (15:12) (1.83-2.44)	- Increased moisture below 2.08 mbgs. - Refusal on suspected bedrock. Bottom of borehole at 2.13 mbgs		313.42 / 2.13		0.6
3									
4									
5									
6									
7									

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS

CH2M HILL Canada Limited

IMICO_BH_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 4/16/19

RECORD OF BOREHOLE: BH17-203

CLIENT: City of Guelph
DATE DRILLED: October 11, 2017
DRILLER: ATCOST
NORTHING: 4822397.1

LOCATION: 200 Beverley St., Guelph
LOGGED BY: M. Shiry
DRILL RIG: CME 850 Rotary Power
EASTING: 562335.1

PROJECT NUMBER: 694757
DRILL METHOD: 108 mm HSA
GROUND ELEVATION: 316.39 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
					CONCRETE:		316.24	Soil cuttings	
	61	SS1	11	PHCs & BTEX VOCs (10:06) (0.15-0.61)	**FILL:** Silty sand, dark brown, moist, fine grained, trace, slag.		0.15	Bentonite seal	12.6
1	46	SS2	10		Silt and slag, dark orange/brown, moist, trace fine sand and gravel, trace metallic fragments.		315.70 / 0.69		1.2
	79	SS3	50+		**SAND AND GRAVEL WITH COBBLES:** Brown to light grey, dry to moist, fine to coarse sand and gravel, some silt top 10 cm then trace, trace rootlets.		315.17 / 1.22		2.6
2	79	SS4	50+	TOC (10:42) (1.83-2.44)					2.4
					- Refusal on suspected bedrock. Bottom of borehole at 2.39 mbgs		314.00 / 2.39		
3									
4									
5									
6									
7									

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS

CH2M HILL Canada Limited

IMICO_BH_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 4/16/19

RECORD OF BOREHOLE: BH17-204

CLIENT: City of Guelph
DATE DRILLED: October 13, 2017
DRILLER: ATCOST
NORTHING: 4822347.0

LOCATION: 200 Beverley St., Guelph
LOGGED BY: M. Shiry
DRILL RIG: CME 850 Rotary Power
EASTING: 562290.9

PROJECT NUMBER: 694757
DRILL METHOD: 108 mm HSA
GROUND ELEVATION: 315.24 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
					CONCRETE:		315.04	Soil cuttings	
					FILL: Silty sand and slag, black, moist, fine grained.		0.20	Bentonite seal	
	72	SS1	7	Metals & Inorg. SVOCs PHCs & BTEX VOCs (12:48) (0.15-0.61)			314.78		10.3
					Sand, gravel, slag and concrete, black to light grey, moist, fine sand and gravel, trace Fe staining.		0.46		
	8	SS2	50/ 10cm				314.53		
					CONCRETE:		0.71		
1							314.02		
					- Auger refusal in concrete, multiple attempts made to advance boring, all met with refusal in concrete.		1.22		
					Bottom of borehole at 1.22 mbgs				
2									
3									
4									
5									
6									
7									

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS

CH2M HILL Canada Limited

IMICO_BH_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 4/16/19

RECORD OF BOREHOLE: BH18-204

CLIENT: City of Guelph
DATE DRILLED: July 23, 2018
DRILLER: Aardvark Drilling
NORTHING: 4822414.4
LOCATION: 200 Beverley St., Guelph
LOGGED BY: L. Ribeiro
DRILL RIG: CME 75 Power Auger
EASTING: 562362.4
PROJECT NUMBER: 694757
DRILL METHOD: 159 mm HSA
GROUND ELEVATION: 316.42 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
					CONCRETE:		316.27	Soil cuttings	
					FILL: Sand, dark brown and grey, dry, fine to coarse, some gravel, medium dense.		0.15	Bentonite seal	
	33	SS1	12						1.7
1	50	SS2	25						2.4
							314.90		
				VOCs (09:10) (1.52-2.13)	**SILTY SAND AND GRAVEL WITH COBBLES:** Dark brown transitioning to light grey, dry, medium to very dense.		1.52		
2	71	SS3	50+						3.3
					- Slight hydrocarbon like odour below 2.29 mbgs increasing with depth.				
	17	SS4	18						2.9
3	33	SS5	75/ 20cm	VOCs (09:30) (3.05-3.40)	- Dark grey, wet below 3.05 mbgs.				4.7
							313.02		
					- Refusal on suspected bedrock. Bottom of borehole at 3.40 mbgs		3.40		
4									
5									
6									
7									

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_BH_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF BOREHOLE: BH18-205

CLIENT: City of Guelph
DATE DRILLED: July 20, 2018
DRILLER: Aardvark Drilling
NORTHING: 4822412.8

LOCATION: 200 Beverley St., Guelph
LOGGED BY: L. Ribeiro
DRILL RIG: CME 75 Power Auger
EASTING: 562388.6

PROJECT NUMBER: 694757
DRILL METHOD: 159 mm HSA
GROUND ELEVATION: 316.46 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
					CONCRETE:		316.31	Soil cuttings	
					FILL: Sand, dark to light brown and grey, dry, fine to coarse, some concrete, medium dense.		0.15	Bentonite seal	
	67	SS1	21						2.4
					SAND AND GRAVEL WITH COBBLES: Dark brown, dry, fine to coarse sand, very dense.		315.70 / 0.76		
1	58	SS2	50+	VOCs (09:40) (0.76-1.37)					6.4
	100	SS3	50/ 5cm	PHCs & BTEX VOCs (09:50) (1.52-1.57)	Light brown, moist below 1.52 mbgs .		314.88 / 1.58		2.0
					- Refusal on suspected boulder. Bottom of borehole at 1.58 mbgs				
2									
3									
4									
5									
6									
7									

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_BH_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF BOREHOLE: BH18-206

CLIENT: City of Guelph
DATE DRILLED: July 23, 2018
DRILLER: Aardvark Drilling
NORTHING: 4822360.3
LOCATION: 200 Beverley St., Guelph
LOGGED BY: L. Ribeiro
DRILL RIG: CME 75 Power Auger
EASTING: 562310.6
PROJECT NUMBER: 694757
DRILL METHOD: 159 mm HSA
GROUND ELEVATION: 315.29 masl

DEPTH (mbgs)	SAMPLES Recovery (%)	TYPE	SPT (N-value)	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
	13	SS1	16		**FILL:** Sand with silt, grey to light grey, dry, fine, some gravel, medium dense.			Soil cuttings; Bentonite seal	0.4
				Metals & Inorg. (15:10) (0.76-1.37)	Sand, dark brown to grey, dry, fine to coarse, some gravel, dense.		314.53 / 0.76		
1	71	SS2	42						0.4
				PHCs & BTEX (15:30) (1.52-1.96)	**SAND AND GRAVEL WITH COBBLES:** Brown, dry, fine sand, very dense.		313.77 / 1.52		
	58	SS3	83/ 28cm						0.0
2	8	SS4	50/ 0cm		- Refusal on suspected bedrock. Bottom of borehole at 2.29 mbgs		313.00 / 2.29		
3									
4									
5									
6									
7									

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_BH_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF BOREHOLE: BH18-207

CLIENT: City of Guelph
DATE DRILLED: July 20, 2018
DRILLER: Aardvark Drilling
NORTHING: 4822397.6

LOCATION: 200 Beverley St., Guelph
LOGGED BY: L. Ribeiro
DRILL RIG: CME 75 Power Auger
EASTING: 562377.6

PROJECT NUMBER: 694757
DRILL METHOD: 159 mm HSA
GROUND ELEVATION: 316.46 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
					CONCRETE:		316.31	Soil cuttings	
				Metals (10:40) (0.15-0.61)	**FILL:** Sand, dark to light brown, dry, fine to coarse, some concrete, very dense.		0.15	Bentonite seal	
	50	SS1	50+						1.7
	100	SS2	50/ 10cm	Metals PHCs & BTEX (11:00) (0.76-0.89)	**SAND AND GRAVEL WITH COBBLES:** Dark brown, dry, fine to coarse sand, very dense.		315.70 / 0.76		1.3
1									
	0	SS3	50/ 8cm						
2							314.17 / 2.29		
					- Auger refusal on suspected bedrock. Bottom of borehole at 2.29 mbgs				
3									
4									
5									
6									
7									

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_BH_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF BOREHOLE: BH18-207i

CLIENT: City of Guelph
DATE DRILLED: February 21, 2020
DRILLER: Aardvark Drilling
NORTHING: 4822395.7

LOCATION: 200 Beverley St., Guelph
LOGGED BY: V. Peters
DRILL RIG: CME 75 Power Auger
EASTING: 562378.4

PROJECT NUMBER: 694757
DRILL METHOD: 83 mm HSA
GROUND ELEVATION: 316.45 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
					CONCRETE:		316.30	Bentonite seal	
	8	SS1		PAHs VOCs (09:55) (0.15-0.76)	**FILL:** Sand, dark brown, some concrete and gravel.		0.15		
1	29	SS2							1.6
							314.93		
	83	SS3		Metals VOCs (10:20) (1.52-2.13)	**SAND AND GRAVEL:** With cobbles.		1.52		3.2
2									
	49	SS4		Metals VOCs (10:40) (2.29-2.90)	- Fe staining below 2.28 mbgs.				1.9
3	100	SS5					313.40		
					GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:		3.05 313.38		
					Bottom of borehole at 3.07 mbgs		3.07		
4									
5									
6									
7									

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: KJ

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_BH_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF BOREHOLE: BH18-208

CLIENT: City of Guelph
DATE DRILLED: July 23, 2018
DRILLER: Aardvark Drilling
NORTHING: 4822386.6

LOCATION: 200 Beverley St., Guelph
LOGGED BY: L. Ribeiro
DRILL RIG: CME 75 Power Auger
EASTING: 562257.8

PROJECT NUMBER: 694757
DRILL METHOD: 159 mm HSA
GROUND ELEVATION: 315.56 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
					CONCRETE:		315.41	Soil cuttings	
					FILL: Sand with, dark brown, dry, coarse, loose to very dense.		0.15	Bentonite seal	
	42	SS1	46	Metals PAHs (16:30) (0.76-1.37)					2.2
							314.80		
1	67	SS2	14		**SAND AND GRAVEL WITH COBBLES:** Dark brown to light grey, dry, fine to coarse sand, medium dense.		0.76		0.7
	17	SS3	18						0.1
2							313.50		
					- Refusal on suspected bedrock. Bottom of borehole at 2.06 mbgs		2.06		
3									
4									
5									
6									
7									

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_BH_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF BOREHOLE: BH19-209

CLIENT: City of Guelph
DATE DRILLED: April 16, 2019
DRILLER: Aardvark Drilling
NORTHING: 4822423.8

LOCATION: 200 Beverley St., Guelph
LOGGED BY: J. Gowing
DRILL RIG: CME 45 Rotary Power
EASTING: 562365.7

PROJECT NUMBER: 694757
DRILL METHOD: 108 mm HSA
GROUND ELEVATION: 316.44 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	ELEV. (masl) / DEPTH (mbgs)	BOREHOLE COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID
					CONCRETE:	316.36 / 0.08	Bentonite seal	
	25	SS1	8		**FILL:** Silty Sand and Gravel, dark to medium brown, moist, loose to medium dense, fine to coarse sand and gravel, trace clay, trace brick.			1.0
1	25	SS2	26	VOCs (11:50) (0.76-0.76)	- Increased gravel and cobbles below 0.91 mbgs.			0.8
					SAND AND GRAVEL WITH COBBLES: Light brown to grey, dry to moist, very dense, fine sand and gravel, trace silt.	315.22 / 1.22		
	50	SS3	32					3.4
2	69	SS4	39	VOCs (12:00) (2.13-2.13)				1.2
	54	SS5	50+					1.2
				VOCs (12:10) (2.90-2.90)	- Moist to wet below 2.73 mbgs.	313.54 / 2.90		
3					Bottom of borehole at 2.90 mbgs - Refusal on suspected bedrock.			
4								
5								
6								
7								

ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID: 100 200 300 400

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_BH_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF BOREHOLE: BH19-210

CLIENT: City of Guelph
DATE DRILLED: April 16, 2019
DRILLER: Aardvark Drilling
NORTHING: 4822408.0

LOCATION: 200 Beverley St., Guelph
LOGGED BY: J. Gowing
DRILL RIG: CME 45 Rotary Power
EASTING: 562363.1

PROJECT NUMBER: 694757
DRILL METHOD: 108 mm HSA
GROUND ELEVATION: 316.37 masl

DEPTH (mbgs)	SAMPLES Recovery (%)	TYPE	SPT (N-value)	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
					CONCRETE:		316.29 / 0.08	Bentonite seal	
	17	SS1	6		**FILL:** Silty Sand and Gravel, dark to medium brown, moist, medium dense, fine to coarse sand and gravel, trace clay, trace brick.				0.4
1	25	SS2	18	VOCs (12:40) (0.76-0.76)					0.8
	67	SS3	21						1.0
					- Increased gravel and cobbles, very dense below 1.67 mbgs.				
2	63	SS4	50+	VOCs (12:50) (1.83-1.83)					1.7
				VOCs (13:00) (2.29-2.29)			313.78 / 2.59		
	67	SS5	50+		**SAND AND GRAVEL WITH COBBLES:** Light brown to grey, dry to moist, very dense, fine sand and gravel, trace silt.				1.0
3				VOCs (13:05) (2.90-2.90)	Bottom of borehole at 2.97 mbgs - Refusal on suspected bedrock.		313.40 / 2.97		
4									
5									
6									
7									

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_BH_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF BOREHOLE: BH19-211

CLIENT: City of Guelph
DATE DRILLED: April 16, 2019
DRILLER: Aardvark Drilling
NORTHING: 4822403.8

LOCATION: 200 Beverley St., Guelph
LOGGED BY: J. Gowing
DRILL RIG: CME 45 Rotary Power
EASTING: 562384.6

PROJECT NUMBER: 694757
DRILL METHOD: 108 mm HSA
GROUND ELEVATION: 316.46 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
					CONCRETE:		316.38	Bentonite seal	
					FILL: Silty Sand and Gravel, light to medium brown, moist, very dense, fine to coarse sand and gravel, trace clay, trace brick.		0.08		
	17	SS1	37						1.3
	40	SS2	50+/ 23cm	VOCs (13:30) (0.76-0.76)					1.9
1							315.39		
					SAND AND GRAVEL WITH COBBLES: Light brown to grey, dry to moist, very dense, fine sand and gravel, trace silt.		1.07		
				VOCs (13:40) (1.22-1.22)					
	67	SS3	50+						2.6
2	83	SS4	50+						3.7
	58	SS5	50+						2.1
3				VOCs (13:50) (3.05-3.05)			313.41		
					Bottom of borehole at 3.05 mbgs - Refusal on suspected bedrock.		3.05		
4									
5									
6									
7									

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_BH_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF BOREHOLE: BH20-212

CLIENT: City of Guelph
DATE DRILLED: February 21, 2020
DRILLER: Aardvark Drilling
NORTHING: 4822378.4
LOCATION: 200 Beverley St., Guelph
LOGGED BY: V. Peters
DRILL RIG: CME 75 Power Auger
EASTING: 562279.9
PROJECT NUMBER: 694757
DRILL METHOD: 83 mm HSA
GROUND ELEVATION: 315.65 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
					CONCRETE:		315.50	Bentonite seal	
	42	SS1		Metals & Inorg. PHCs VOCs (12:15) (0.15-0.76)	**FILL:** Silt and Sand, dark brown, some gravel, moist.		0.15		0.7
					FILL: Slag.		314.95 0.70		
1	33	SS2			**CLAYEY SILT:** Medium brown, medium plasticity, trace sand and gravel increasing with depth, trace cobbles, Fe staining, upper contact dark brown with rootlets.		314.89 0.76		0.8
					- Dark brown below 1.52 mbgs.				
	75	SS3			**SILTY SAND AND GRAVEL:** Moist, light brown, trace cobbles, fine to coarse sand and gravel.		313.95 1.70		0.9
2	100	SS4			**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:**		313.36 2.29		
					Bottom of borehole at 2.31 mbgs		313.34 2.31		
3									
4									
5									
6									
7									

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: KJ

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_BH_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF BOREHOLE: BH20-213

CLIENT: City of Guelph
DATE DRILLED: February 21, 2020
DRILLER: Aardvark Drilling
NORTHING: 4822295.8

LOCATION: 200 Beverley St., Guelph
LOGGED BY: V. Peters
DRILL RIG: CME 75 Power Auger
EASTING: 562196.6

PROJECT NUMBER: 694757
DRILL METHOD: 83 mm HSA
GROUND ELEVATION: 315.34 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
					CONCRETE:		315.19	Bentonite seal	
	46	SS1		SVOCs Metals & Inorg. (14:30) (0.15-0.76)	**FILL:** Silty sand with slag, dark brown and black, moist, pockets of silt with heavy Fe staining, trace gravel.		0.15		105.2
							314.58		
1	58	SS2			**SILT AND CLAY:** Dark brown, some fine sand, medium plasicity, moist, trace fine gravel and small cobbles, few rootlets.		0.76		1.6
							314.12		
					SAND: Medium brown, moist, some silt and fine gravel.		1.22		
					SILTY SAND: Medium brown, some gravel and cobbles, dry to moist, some Fe staining.		313.97 1.37		
2	50	SS3							1.4
							313.21		
					Bottom of borehole at 2.13 mbgs - Refusal on suspected bedrock at 2.13 mbgs.		2.13		

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: KJ

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_BH_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF BOREHOLE: BH20-214

CLIENT: City of Guelph
DATE DRILLED: February 21, 2020
DRILLER: Aardvark Drilling
NORTHING: 4822403.3
LOCATION: 200 Beverley St., Guelph
LOGGED BY: V. Peters
DRILL RIG: CME 75 Power Auger
EASTING: 562251.5
PROJECT NUMBER: 694757
DRILL METHOD: 83 mm HSA
GROUND ELEVATION: 315.52 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
					CONCRETE:		315.37	Bentonite seal	
	75	SS1		Metals & Inorg. PHCs VOCs PAHs (13:30) (0.15-0.30)	**FILL:** Slag, some coal.		0.15		1.4
					CLAY: Reddish brown, stiff, sand and fine gravel.		314.91 / 0.61		
1	13	SS2		Metals & Inorg. PHCs VOCs PAHs (13:45) (0.76-0.91)					1.6
	100	SS3					313.69		
2					Bottom of borehole at 1.83 mbgs - Refusal on suspected bedrock at 1.83 mbgs.		1.83		
3									
4									
5									
6									
7									

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: KJ

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_BH_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW17-100S

CLIENT: City of Guelph	DATE DRILLED: October 13, 2017	GROUND ELEVATION: 315.56 masl	NORTHING: 4822361.0	Page 1 of 1
LOCATION: 200 Beverley St., Guelph	DRILLER: Atcost Drilling	TOP OF PIPE: 316.22 masl	EASTING: 562267.1	
PROJECT NUMBER: 694757	DRILL RIG: CME 850 Rotary Power	WATER ELEVATION: 312.97 masl	MOE WELL TAG#: A202490	
LOGGED BY: M. Shiry	DRILL METHOD: 108 mm HSA, HQ water core	WATER LEVEL DATE: October 31, 2017		

DEPTH (mbgs)	Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)
	54	SS1	10			Metals & Inorg. PHCs & BTEX (11:33) (0.30-0.46)
1	54	SS2	4			
	75	SS3	50+			Metals & Inorg. (12:14) (1.37-1.83)
2	50	SS4	50+/ 20cm			PHCs & BTEX VOCs (12:25) (1.83-2.13)
					10+	
3	93	Run1		0	7	
					3	
					6	
					5	
4	100	Run2		22	4	
					6	
					3	
5						
6						
7						

LITHOLOGY & REMARKS

(masl) ELEV. / DEPTH (mbgs)	(masl) ELEV. / DEPTH (mbgs)	
	315.56 / 0.00	**CONCRETE:**
315.36 / 0.20	315.26 / 0.30	**FILL:** Sand and Gravel, dark brown, moist, fine to coarse sand and gravel, trace silt.
315.31 / 0.25		Silty Sand, brown, moist, fine grained, trace slag.
315.20 / 0.36		Slag.
314.49 / 1.07		**SILT:** Brown top 10 cm then grey, dry to moist, medium plasticity, trace fine sand, high organic content, trace rootlets and orange mottling, trace clay.
314.19 / 1.37		- Trace fine gravel below 1.22 mbgs.
		SAND AND GRAVEL WITH COBBLES: Light grey, dry to moist, fine to coarse sand and gravel, trace silt increasing with depth.
		- Sampler refusal on suspected bedrock at 2.18 mbgs, ream HW casing to 2.95 mbgs, HQ coring begins at 2.67 mbgs.
312.92 / 2.64	312.92 / 2.64	**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light brown, fossiliferous, fine grained, medium strong, slightly weathered, very close to close fracture spacing, medium to thinly bedded, moderately fractured core, frequent (<30 mm) vugs.
	312.36 / 3.20	- Fissile shaley bedding partings between 3.10 and 3.81 mbgs, easily fractured, localized weathering common at fractures.
	312.18 / 3.38	- Weathered and Fe stained fractures at 3.12, 3.28, and 3.45 to 3.79 mbgs.
		- Below 4.11 mbgs greyish brown, vugs smaller (<10 mm) and more frequent, dark grey bedding planes.
310.66 / 4.90	310.66 / 4.90	Bottom of corehole at 4.90 mbgs

BOREHOLE/COREHOLE COMPLETION DETAILS

0.66 m stick up

Monument casing secured in concrete

210 mm borehole

96 mm corehole

#3 silica sand filter pack

50 mm diameter SCH 40 PVC pipe

#10-slot well screen

ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID

100 200 300 400

18.6

9.0

29.7

29.6

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS/ML

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 5/26/20

RECORD OF MONITORING WELL: MW17-101D

CLIENT: City of Guelph	DATE DRILLED: Oct 20 to Oct 24, 2017	GROUND ELEVATION: 315.25 masl	NORTHING: 4822375.8
LOCATION: 200 Beverley St., Guelph	DRILLER: Atcost Drilling	TOP OF PIPE: 316.01 masl	EASTING: 562327.3
PROJECT NUMBER: 694757	DRILL RIG: CME 850 Rotary Power	WATER ELEVATION: 312.55 masl	MOE WELL TAG#: A202490
LOGGED BY: M. Shiry	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: November 1, 2017	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)
1						
2						
3						
4						
5					0	
					4	
					3	
	85	Run3		60		
					2	
6						
					1	
					2	
					4	
7						
					3	
	93	Run4		77		
					1	
					2	

LITHOLOGY & REMARKS

CONCRETE:

FILL: Sand and Gravel, brown, moist, fine to coarse sand and gravel, trace silt.

Silt, Sand and Gravel, brown, moist, fine to coarse sand and gravel, trace dark brown and Fe staining, trace brick.

SAND AND GRAVEL: Light grey, dry to moist, fine to coarse sand and gravel, trace silt.

GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE: Greyish light brown, fosiliferous, fine grained, medium strong, slightly weathered, very close to close joint spacing, thinly to medium bedded, slightly to moderately fractured core. Frequent small vugs (<5 mm), dark grey bedding planes.
- Hydrocarbon like odour, black staining and sheen within fractures below 2.44 mbgs, decreasing below 3.43 mbgs and not present below 4.19 mbgs.
- Vertical fracture from 2.44 to 2.84 mbgs

- Core water return loss below 3.20 mbgs, due to large fractures between 3.20 and 3.28 mbgs.

- Greyish dark brown, fine grained, strong, slightly weathered, close joint spacing, thinly bedded, moderately fractured to sound core. Vugs become less frequent but larger (<50 mm) with calcite lining below 4.04 mbgs.

- Lithology to 4.88 mbgs inferred from MW17-101S, MW17-101D HSA to top of bedrock, ream PW casing to 2.29 mbgs and PQ core to 4.90 mbgs, HW casing reamed to 5.26 mbgs, HQ core logging resumes at 4.88 mbgs.
- 23 cm core loss from top of Run 3

-Fossils present below 5.49 mbgs.

ERAMOSA FORMATION / REFORMATORY QUARRY MEMBER DOLOSTONE: Greyish dark brown, fine grained, strong, slightly weathered, close joint spacing, thinly bedded, moderately fractured to sound core, fossils. Some vugs (<50 mm) with calcite lining.

- Close joint spacing and sound core below 6.40 mbgs.
- Core water return loss below 6.48 mbgs, large fractures 6.48 to 6.93 mbgs.

STRATA PLOT

ELEV. (masl)	DEPTH (mbgs)
315.10	0.15
314.69	0.56
314.28	0.97
313.35	1.91
309.76	5.49
307.33	

BOREHOLE/COREHOLE COMPLETION DETAILS

ELEV. (masl)	DEPTH (mbgs)	
315.25	0.00	0.76 m stick up
314.95	0.30	Monument casing secured in concrete; 210 mm borehole Bentonite seal
313.27	1.98	123 mm corehole
310.35	4.90	96 mm corehole
309.15	6.10	#3 silica sand filter pack
308.95	6.30	50 mm diameter SCH 40 PVC pipe #10-slot well screen
307.43	7.82	Core loss
307.33		

ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID

100 200 300 400

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS/ML

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 5/26/20

RECORD OF MONITORING WELL: MW17-101D

CLIENT: City of Guelph
LOCATION: 200 Beverley St., Guelph
PROJECT NUMBER: 694757
LOGGED BY: M. Shiry

DATE DRILLED: Oct 20 to Oct 24, 2017
DRILLER: Atcost Drilling
DRILL RIG: CME 850 Rotary Power
DRILL METHOD: 108 mm HSA, PQ, HQ water core

GROUND ELEVATION: 315.25 masl
TOP OF PIPE: 316.01 masl
WATER ELEVATION: 312.55 masl
WATER LEVEL DATE: November 1, 2017

NORTHING: 4822375.8
EASTING: 562327.3
MOE WELL TAG#: A202490

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID: 100 200 300 400
							Bottom of corehole at 7.92 mbgs		7.92	7.92		
9												
10												
11												
12												
13												
14												
15												

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS/ML

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 5/26/20

RECORD OF MONITORING WELL: MW17-101S

CLIENT: City of Guelph	DATE DRILLED: October 20, 2017	GROUND ELEVATION: 315.24 masl	NORTHING: 4822374.3
LOCATION: 200 Beverley St., Guelph	DRILLER: Atcost Drilling	TOP OF PIPE: 316.13 masl	EASTING: 562326.6
PROJECT NUMBER: 694757	DRILL RIG: CME 850 Rotary Power	WATER ELEVATION: 312.62 masl	MOE WELL TAG#: A202490
LOGGED BY: M. Shiry	DRILL METHOD: 108 mm HSA, HQ water core	WATER LEVEL DATE: November 1, 2017	

DEPTH (mbgs)	Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID
									0.89 m stick up	100 200 300 400
							CONCRETE:	315.09 / 0.15	315.24 / 0.00 — Monument casing secured in concrete	
	61	SS1	47			PCBs (08:47) (0.15-0.46)	**FILL:** Sand and Gravel, brown, moist, fine to coarse sand and gravel, trace silt.	314.68 / 0.56	314.94 / 0.30 — Bentonite seal 210 mm borehole	6.8
	75	SS2	34			Metals & Inorg. SVOCs (09:08) (0.61-0.91)	Silt, Sand and Gravel, brown, moist, fine to coarse sand and gravel, trace dark brown and Fe staining, trace brick.	314.27 / 0.97		8.4
1	21	SS3	50/ 13cm			Metals & Inorg. SVOCs PHCs & BTEX VOCs 1 4-Dioxane (10:01) (1.22-1.68)	**SAND AND GRAVEL:** Light grey, dry to moist, fine to coarse sand and gravel, trace silt.	313.34 / 1.91	314.17 / 1.07; 314.02 / 1.22 — #3 silica sand filter pack; 50 mm diameter SCH 40 PVC pipe; #10-slot well screen	11.9
							- Auger refusal at 1.65 mbgs, ream HW casing to 2.59 mbgs, HQ coring from 1.91 mbgs.		313.34 / 1.91 — 96 mm corehole	
2					10		**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Greyish light brown, fosiliferous, fine grained, medium strong, slightly weathered, very close to close joint spacing, thinly to medium bedded, slightly to moderately fractured core. Frequent small vugs (<5 mm), dark grey bedding planes.			
					3					
	95	Run1		30	2		- Hydrocarbon like odour, black staining and sheen within fractures below 2.44 mbgs, decreasing below 3.43 mbgs and not present below 4.19 mbgs.			
					1		- Vertical fracture from 2.44 to 2.84 mbgs			
3					3		- Core water return loss below 3.20 mbgs, due to large fractures between 3.20 and 3.28 mbgs.			
					2					
					3					
4	98	Run2		25	3		- Greyish dark brown, fine grained, strong, slightly weathered, close joint spacing, thinly bedded, moderately fractured to sound core. Vugs become less frequent but larger (<50 mm) with calcite lining below 4.04 mbgs.		310.97 / 4.27; 310.82 / 4.42 — Bentonite seal	
					2					
					2					
5							Bottom of corehole at 4.98 mbgs	310.26 / 4.98	310.26 / 4.98	
6										
7										

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS/ML

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 5/26/20

RECORD OF MONITORING WELL: MW17-102D

CLIENT: City of Guelph	DATE DRILLED: Oct 26 to Oct 30, 2017	GROUND ELEVATION: 315.41 masl	NORTHING: 4822260.9
LOCATION: 200 Beverley St., Guelph	DRILLER: Atcost Drilling	TOP OF PIPE: 316.21 masl	EASTING: 562245.1
PROJECT NUMBER: 694757	DRILL RIG: CME 850 Rotary Power	WATER ELEVATION: 312.71 masl	MOE WELL TAG#: A202490
LOGGED BY: M. Shiry	DRILL METHOD: 108 mm HSA, PQ, HQ, NQ water core	WATER LEVEL DATE: November 3, 2017	

DEPTH (mbgs)	Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID
							CONCRETE:	315.26 / 0.15	315.41 / 0.00 — 0.80 m stick up; Monument casing secured in concrete	
	.67	SS1	22			SVOCs (17:42) (0.15-1.22) PHCs & BTEX VOCs (17:42) (0.15-0.30)	**FILL:** Sand and Gravel, brown, moist, fine to coarse sand and gravel, trace silt.	315.18 / 0.23	315.11 / 0.30 — 210 mm borehole	0.4
1	33	SS2	23				Silt, Sand and Gravel, light to dark brown, fine to coarse sand and gravel, trace slag.			0.7
	46	SS3	7			Metals & Inorg. (18:02) (1.22-1.68)	- Trace black sand below 1.30 mbgs.			0.7
2	64	SS4	50/ 20cm			Metals & Inorg. PAHs PHCs & BTEX VOCs (18:12) (1.83-2.13)	**SILTY SAND AND GRAVEL WITH COBBLES:** Light grey to light brown, moist, fine to coarse sand and gravel.	313.68 / 1.73		2.0
					4		- Sampler refusal at 2.18 mbgs, ream PW casing to 2.59 mbgs, PQ coring from 2.26 mbgs.	313.15 / 2.26	313.12 / 2.29 — 123 mm corehole	
					2		**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light brown, fosiliferous, fine grained, medium strong, slightly weathered, very close to close fracture spacing, thinly bedded, slightly to moderately fractured core, some vugs (<15 mm).			
	100	Run1		29	1		- Fe staining in 75% of fractures from 2.69 to 4.80 mbgs.			
3							- Water return loss observed below 3.17 mbgs, continues for remainder of corehole.			
					4		- Highly weathered partly open to open fractures at 3.18, 3.28, 3.48 and 3.65 mbgs; potentially water bearing.			
					3		- Light greyish brown, frequent large vugs (<60 mm), moderately decomposed, increased weathering below 3.71 mbgs.			
4					+10					
	100	Run2		40			- Fracture zone 4.14 to 4.80 mbgs.			
					+10					
					+10					
									310.53 / 4.88 — 96 mm corehole	
5					4		- Vugs less frequent below 4.90 mbgs, trace fossils <5 mm.			
					2		- 85 mm vug at 5.13 mbgs, mineral carbonate lining and Fe staining.			
	98	Run3		80	0		- Highly weathered open fracture (up to 6 cm from fracture), potentially water bearing, at 5.49 mbgs.			
					3		- 10 cm long, very tight vertical fracture at 5.74 mbgs.	309.49 / 5.92		
6					1		**ERAMOSA FORMATION / REFORMATORY QUARRY MEMBER DOLOSTONE:** Light to dark greyish brown, strong, fresh to slightly weathered, close fracture spacing, sound core. Bedding planes more evident, trace fossils <5 mm, some vugs < 15 mm.			
					3		- PQ core to 6.43 mbgs, ream HW casing to 6.63 mbgs, HQ coring from 6.40 mbgs.			
					2		- Increased frequency of vugs 6.71 to 7.01 mbgs.			
7					1					
	100	Run4		70			- Very tight vertical fracture 7.24 to 7.44 mbgs.			
					4					
					1		- 7.62 to 7.92 mbgs frequent vugs (<30 mm), increased weathering, decreased strength from 7.75 mbgs.			
					2					

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS/ML

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 5/26/20

RECORD OF MONITORING WELL: MW17-102D

CLIENT: City of Guelph	DATE DRILLED: Oct 26 to Oct 30, 2017	GROUND ELEVATION: 315.41 masl	NORTHING: 4822260.9
LOCATION: 200 Beverley St., Guelph	DRILLER: Atcost Drilling	TOP OF PIPE: 316.21 masl	EASTING: 562245.1
PROJECT NUMBER: 694757	DRILL RIG: CME 850 Rotary Power	WATER ELEVATION: 312.71 masl	MOE WELL TAG#: A202490
LOGGED BY: M. Shiry	DRILL METHOD: 108 mm HSA, PQ, HQ, NQ water core	WATER LEVEL DATE: November 3, 2017	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID 100 200 300 400
					4		- Trace vugs (<5 mm) below 7.92 mbgs.					
	94	Run5		64			- Vugs and localized weathering at 8.36 mbgs.					
					2		- Vugs and increased weathering at 8.66 mbgs.					
					1		- 5 cm core loss from bottom of Run 5.			306.57 / 8.84	76 mm corehole	
9	84	Run6		0			- Extremely poor rock quality 8.81 to 9.30 mbgs. - HQ core to 8.84 mbgs, ream NW casing to 9.30 mbgs, NQ coring from 8.81 mbgs.					
					2							
					3		- Dark greyish brown, fine crystalline, strong, fresh to slightly weathered, close fracture spacing, thinly bedded, slightly fractured to sound core. Frequent to some fossils <5 mm, seams of high fossil deposition, trace vugs <5 mm, bedding planes evident, frequent shale partings below 8.84 mbgs.					
					5		- Core loss (10 cm) from Run 7, location of loss not evident. Driller remark: Seems like voids in rock, hard slow coring then quick drop in core string.					
10	93	Run7		65	1		- At 9.50 and 9.53 mbgs, shale parting fractures, weak rock with localized weathering, potentially water bearing.					
					2							
					1							
					1							
11												
					3							
					3		- Increasing dark brown colouration below 11.28 mbgs. - 6 cm weak fractured rock zone, coinciding with 15 cm very tight vertical fracture at 11.30 mbgs.					
	100	Run8		77								
					3							
12					1		- 3 cm very tight vertical fracture at 12.04 mbgs.					
					1							
					4							
13	100	Run9		53	2							
					2							
					3		- 5 cm very tight vertical fracture at 13.64 mbgs. - Very tight weathered fracture, potentially water bearing, at 13.69 mbgs.			301.79 / 13.62	#3 silica sand filter pack	
										301.64 / 13.77	32 mm diameter SCH 40 PVC pipe #10-slot well screen	
14					5		- 4 cm vertical very tight joint at 13.98 mbgs.					
					1		- 3 cm vertical very tight joint at 14.15 mbgs.					
					2		- 6 cm very tight vertical fracture at 14.45 mbgs. - Dark greyish brown below 14.53 mbgs. - Vuggy (20 mm diameter) at 14.55 mbgs.					
	92	Run 10		73								
					2							
15												
					1							
									300.11 / 15.30	300.12 / 15.29	Core loss	
							ERAMOSA FORMATION / VINEMOUNT MEMBER **SHALY DOLOSTONE:** Dark greyish brown, fine crystalline, strong, fresh to slightly weathered, close fracture spacing, thinly bedded, slightly fractured to sound core.		300.02 / 15.39	300.02 / 15.39		
							Bottom of corehole at 15.39 mbgs					

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS/ML

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 5/26/20

RECORD OF MONITORING WELL: MW17-103D

CLIENT: City of Guelph	DATE DRILLED: October 26, 2017	GROUND ELEVATION: 315.54 masl	NORTHING: 4822329.3
LOCATION: 200 Beverley St., Guelph	DRILLER: Atcost Drilling	TOP OF PIPE: 316.31 masl	EASTING: 562231.0
PROJECT NUMBER: 694757	DRILL RIG: CME 850 Rotary Power	WATER ELEVATION: 312.64 masl	MOE WELL TAG#: A202490
LOGGED BY: M. Shiry	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: November 2, 2017	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	Completion details	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
							FILL: Silty Sand, dark brown to black, moist, fine grained, trace brick and fine gravel.	315.34	315.54 / 0.00	0.77 m stick up; Monument casing secured in concrete	
							Brick rubble.	315.26 / 0.20	315.24 / 0.30	210 mm borehole; Bentonite seal	
							Sand, black, moist, fine grained, trace slag.	315.08 / 0.28			
							Sand and slag, brown to black, dry to moist, trace coal.	314.73 / 0.46			
1							**SILT:** Dark to light brown, moist, low plasticity, high organic content, trace rootlets and fine gravel. - Deceased organic content, transitioning to lower contact below 1.07 mbgs.	314.32 / 0.81			
							SILTY SAND AND GRAVEL WITH COBBLES: Light grey to dark brown, trace olive grey (silt), dry to moist, fine to coarse sand and gravel.	313.64 / 1.22	313.64 / 1.91		
2							**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light brown, fossiliferous, fine grained, medium strong, slightly weathered, very close to close fracture spacing, medium to thinly bedded, slightly to moderately fractured core, occasional (<40 mm) vugs. - 15 cm core loss from top of Run 1. - Fe staining in fractures from 2.26 to 2.90 mbgs. - 4 cm very tight vertical fracture at 2.34. - 5 cm weak rock at 2.36 mbgs, potentially water bearing. - 50 mm vug at 2.64 mbgs, mineral carbonate lining, increased localized weathering, potentially water bearing.	313.64 / 1.91		123 mm corehole	
3							- Highly weathered partly open fracture, potentially water bearing, at 3.18 mbgs. - Highly weathered open fracture, potentially water bearing, at 3.22, very tight vertical fracture below. - Below 3.33 mbgs light greyish brown, fine grained, medium strong, slightly weathered, very close to close fracture spacing, thinly bedded, slightly to moderately fractured core, dark grey bedding planes, frequent small vugs (<5 mm) with trace large vugs 25 to 65 mm.				
4							- Fe staining in fracture at 4.32 mbgs.				
5							- 25 mm vug with localized increased weathering, partial filled with carbonate minerals at 4.72 mbgs. - Highly weathered partly open to open fractures, potentially water bearing, at 4.75 and 4.80 mbgs.				
							- Highly weathered partly open to open fractures with weak rock, potentially water bearing, at 5.39, 5.61 and 5.64 mbgs.		309.90 / 5.64	96 mm corehole	
6							- 40 mm vug with localized increased weathering, carbonate mineral lining at 5.87 mbgs. - Light to dark greyish brown below 5.94 mbgs. - 65 mm vug at 6.10 mbgs, penetrates core, carbonate mineral lining, some localized increased weathering				
							ERAMOSA FORMATION / REFORMATORY QUARRY MEMBER DOLOSTONE: Light to dark greyish brown. - Lithology to 6.43 mbgs inferred from MW17-103S, MW17-103D HSA to top of bedrock, ream PW casing to 2.29 mbgs and PQ core to 5.64 mbgs, HW casing reamed to 5.79 mbgs, HQ core logging resumes at 6.55 mbgs.	309.11 / 6.43			
7	98	Run4		77	2, 2, 2, 2, 2		- 10 cm of increased weathering with frequent vugs at 7.09 mbgs.		308.38 / 7.16; 308.22 / 7.32	#3 silica sand filter pack; 50 mm diameter SCH 40 PVC pipe; #10-slot well screen	
							- Below 7.62 mbgs trace small (<5 mm) fossils, shale partings in fractures common, rock strong, fresh to slightly weathered, close fracture spacing and moderately fractured to sound core, occasional high fossil content bedding seams.				

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS/ML

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 5/26/20

RECORD OF MONITORING WELL: MW17-103D

CLIENT: City of Guelph	DATE DRILLED: October 26, 2017	GROUND ELEVATION: 315.54 masl	NORTHING: 4822329.3
LOCATION: 200 Beverley St., Guelph	DRILLER: Atcost Drilling	TOP OF PIPE: 316.31 masl	EASTING: 562231.0
PROJECT NUMBER: 694757	DRILL RIG: CME 850 Rotary Power	WATER ELEVATION: 312.64 masl	MOE WELL TAG#: A202490
LOGGED BY: M. Shiry	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: November 2, 2017	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
					2		- 15 cm weak, fractured (mechanical) rock at 7.92 mbgs.					
					2		- Some vugs 5 to 25 mm from 8.38 to 8.66 mbgs.					
					1		- Highly weathered, partly open, fracture with weak rock, potentially water bearing, at 8.56 mbgs.					
	100	Run5		85			- Dark greyish brown, finely crystalline, strong, fresh to slightly weathered, close fracture spacing, thinly bedded, slightly fractured to sound core. Trace vugs (<25 mm) with carbonate mineral lining, some fossils <5 mm diameter below 8.63 mbgs.			306.70 / 8.84		
9					1					306.55 / 8.99	Bentonite seal	
					1							
									305.94 / 9.60	305.94 / 9.60		
							Bottom of corehole at 9.60 mbgs					
10												
11												
12												
13												
14												
15												

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS/ML

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 5/26/20

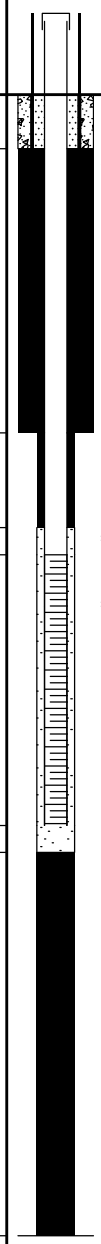
RECORD OF MONITORING WELL: MW17-103S

CLIENT: City of Guelph	DATE DRILLED: Oct 25 to Oct 26, 2017	GROUND ELEVATION: 315.54 masl	NORTHING: 4822330.7
LOCATION: 200 Beverley St., Guelph	DRILLER: Atcost Drilling	TOP OF PIPE: 316.30 masl	EASTING: 562233.2
PROJECT NUMBER: 694757	DRILL RIG: CME 850 Rotary Power	WATER ELEVATION: 312.70 masl	MOE WELL TAG#: A202490
LOGGED BY: M. Shiry	DRILL METHOD: 108 mm HSA, HQ water core	WATER LEVEL DATE: November 2, 2017	

SAMPLES						
Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID
92	SS1	17			Metals & Inorg. SVOCs (15:23) (0.30-0.46) TOC (15:23) (0.31-0.91) PHCs & BTEX VOCs (15:27) (0.61-0.91) Metals & Inorg. SVOCs PHCs & BTEX VOCs TOC (15:37) (1.22-1.83)	20.6
63	SS2	16				60.0
71	SS3	50+				56.3
0	SS4	50/ 3cm		2		
90	Run1		53	4, 3, 1, 4, 3, 4		
100	Run2		53	3, 1, 3, 1, 3		
100	Run3		80	2, 2, 3		

LITHOLOGY & REMARKS	ELEV. (masl) / DEPTH (mbgs)
FILL: Silty Sand, dark brown to black, moist, fine grained, trace brick and fine gravel.	315.54 / 0.00
Brick rubble.	315.34 / 0.20
Sand, black, moist, fine grained, trace slag.	315.26 / 0.28
Sand and slag, brown to black, dry to moist, trace coal.	315.24 / 0.30
SILT: Dark to light brown, moist, low plasticity, high organic content, trace rootlets and fine gravel.	315.08 / 0.46
- Deceased organic content, transitioning to lower contact below 1.07 mbgs.	314.73 / 0.81
SILTY SAND AND GRAVEL WITH COBBLES: Light grey to dark brown, trace olive grey (silt), dry to moist, fine to coarse sand and gravel.	314.32 / 1.22
- Sampler refusal at 1.91 mbgs, ream HW casing to 2.24 mbgs, HQ coring begins at 1.91 mbgs.	313.64 / 1.91
GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE: Light brown, fossiliferous, fine grained, medium strong, slightly weathered, very close to close fracture spacing, medium to thinly bedded, slightly to moderately fractured core, occasional (<40 mm) vugs.	313.64 / 1.91
- 15 cm core loss from top of Run 1.	313.10 / 2.44
- Fe staining in fractures from 2.26 to 2.90 mbgs.	312.95 / 2.59
- 4 cm very tight vertical fracture at 2.34.	
- 5 cm weak rock at 2.36 mbgs, potentially water bearing.	
- 50 mm vug at 2.64 mbgs, mineral carbonate lining, increased localized weathering, potentially water bearing.	
- Highly weathered partly open fracture, potentially water bearing, at 3.18 mbgs.	
- Highly weathered open fracture, potentially water bearing, at 3.22, very tight vertical fracture below.	
- Below 3.33 mbgs light greyish brown, fine grained, medium strong, slightly weathered, very close to close fracture spacing, thinly bedded, slightly to moderately fractured core, dark grey bedding planes, frequent small vugs (<5 mm) with trace large vugs 25 to 65 mm.	
- Fe staining in fracture at 4.32 mbgs.	311.43 / 4.11
- 25 mm vug with localized increased weathering, partial filled with carbonate minerals at 4.72 mbgs.	311.27 / 4.27
- Highly weathered partly open to open fractures, potentially water bearing, at 4.75 and 4.80 mbgs.	
- Highly weathered partly open to open fractures with weak rock, potentially water bearing, at 5.39, 5.61 and 5.64 mbgs.	
- 40 mm vug with localized increased weathering, carbonate mineral lining at 5.87 mbgs.	
- Light to dark greyish brown below 5.94.	
- 65 mm vug at 6.10 mbgs, penetrates core, carbonate mineral lining, some localized increased weathering	
Bottom of corehole at 6.43 mbgs	309.11 / 6.43

BOREHOLE/COREHOLE COMPLETION DETAILS



- 0.76 m stick up
- Monument casing secured in concrete
- 210 mm borehole
- Bentonite seal
- 96 mm corehole
- #3 silica sand filter pack
- 50 mm diameter SCH 40 PVC pipe
- #10-slot well screen
- Bentonite seal

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS/ML

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 5/26/20

RECORD OF MONITORING WELL: MW17-104D

CLIENT: City of Guelph	DATE DRILLED: October 17, 2017	GROUND ELEVATION: 315.60 masl	NORTHING: 4822392.2	Page 1 of 2
LOCATION: 200 Beverley St., Guelph	DRILLER: Atcost Drilling	TOP OF PIPE: 316.40 masl	EASTING: 562296.9	
PROJECT NUMBER: 694757	DRILL RIG: CME 850 Rotary Power	WATER ELEVATION: 312.92 masl	MOE WELL TAG#: A202490	
LOGGED BY: M. Shiry	DRILL METHOD: 108 mm HSA, HQ water core	WATER LEVEL DATE: November 1, 2017		

DEPTH (mbgs)	Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)
1	67	SS1	22			
	50	SS2	25			Metals & Inorg. SVOCs (10:08) (0.61-1.22)
	71	SS3	50+			PHCs & BTEX VOCs (10:18) (1.22-1.83)
2	100	SS4	50/5cm		10+	
3	100	Run1		35	5, 3, 3, 5, 5	
4	100	Run2		23	4, 4, 4, 2, 6	
5	100	Run3		63	1, 2, 3, 4, 3	
6	100	Run4		48	4, 4, 3, 5	
7						

LITHOLOGY & REMARKS

CONCRETE: (ELEV. 315.45, DEPTH 0.15)

FILL: Silt, Sand and Gravel, brown to grey, moist, fine to coarse sand, fine gravel, trace brick. (ELEV. 315.14, DEPTH 0.46)

CLAYEY SILT: Dark brown, moist, high plasticity, trace sand and fine gravel, trace rootlets.

- Increased sand and fine to coarse gravel below 0.91 mbgs.

(ELEV. 314.28, DEPTH 1.32)

SILTY SAND AND GRAVEL WITH COBBLES: Light brown/grey, dry to moist, fine to coarse sand and gravel.

- Sampler refusal at 1.88 mbgs, ream HW casing to 2.08 mbgs, HQ coring begins at 1.96 mbgs.

(ELEV. 313.49, DEPTH 2.11)

GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE: Light brown, fossiliferous, fine grained, medium strong, slightly weathered, very close to close fracture spacing, medium to thinly bedded, slightly to moderately fractured core, occasional (<35 mm) vugs.
- Hydrocarbon like odour 2.11 to 7.90 mbgs, sheen observed in fractures to 2.77 mbgs.
- 2.39 to 2.90 mbgs, more frequent vugs with weathering, some carbonate mineral lining.
- Below 3.99 mbgs light greyish brown, fine grained, strong, slightly weathered, close fracture spacing, thinly bedded, sightly to moderately fractured core, dark grey bedding planes, frequent small vugs (<5 mm).
- 15 cm vertical fracture at 4.14 mbgs, very tight.
- 8 cm vertical fracture at 4.62 mbgs, very tight.
- 45 mm vug at 5.11 mbgs, increased localized weathering, and some carbonate mineral lining.
- 45 mm vug at 5.87 mbgs, 80% filled with carbonate minerals.
- 65 mm vug at 6.27 mbgs, penetrates core, some carbonate mineral lining.
- 23 cm of increased weathering below 6.58 mbgs.
- Very widely open fracture, carbonate mineral lining, potentially water bearing at 7.19 mbgs.
- Large (135 mm) vertically orientated vug, penetrates core, carbonate mineral lining below 7.75 mbgs.

BOREHOLE/COREHOLE COMPLETION DETAILS

(masl) ELEV. / DEPTH (mbgs)	
315.60 / 0.00	0.80 m stick up
315.30 / 0.30	Monument casing secured in concrete
	210 mm borehole Bentonite seal
313.64 / 1.96	96 mm corehole
309.81 / 5.79	#3 silica sand filter pack
309.50 / 6.10	50 mm diameter SCH 40 PVC pipe #10-slot well screen
307.98 / 7.62	
307.68	

ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID — 100 200 300 400

8.3, 12.2, 18.6

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS/ML

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IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 5/26/20

RECORD OF MONITORING WELL: MW17-104D

CLIENT: City of Guelph	DATE DRILLED: October 17, 2017	GROUND ELEVATION: 315.60 masl	NORTHING: 4822392.2
LOCATION: 200 Beverley St., Guelph	DRILLER: Atcost Drilling	TOP OF PIPE: 316.40 masl	EASTING: 562296.9
PROJECT NUMBER: 694757	DRILL RIG: CME 850 Rotary Power	WATER ELEVATION: 312.92 masl	MOE WELL TAG#: A202490
LOGGED BY: M. Shiry	DRILL METHOD: 108 mm HSA, HQ water core	WATER LEVEL DATE: November 1, 2017	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID 100 200 300 400
										7.92	Bentonite seal	
	100	Run5		78	3		**ERAMOSA FORMATION / REFORMATORY QUARRY MEMBER DOLOSTONE:** Dark greyish brown, fine grained, strong, fresh to slightly weathered, close fracture spacing, thinly bedded, sound core. Trace vugs (<20 mm) with carbonate mineral lining.					
					2		- 8.05 to 8.15 mbgs, no core water return observed, 4 fractures with apertures of 0.5 to 2.5 mm.					
					1		- 20 cm seam frequent small vugs (<5 mm) at 8.13 mbgs.					
9					1		- 20 mm vug in seam of weathered rock, 50% filled with carbonate minerals.					
									306.18	306.18		
							Bottom of corehole at 9.42 mbgs		9.42	9.42		
10												
11												
12												
13												
14												
15												

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS/ML

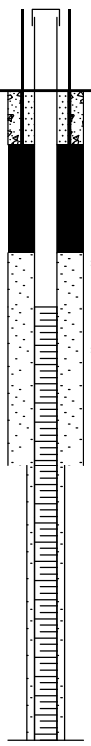
CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 5/26/20

RECORD OF MONITORING WELL: MW17-104S

CLIENT: City of Guelph	DATE DRILLED: October 18, 2017	GROUND ELEVATION: 315.61 masl	NORTHING: 4822393.7	Page 1 of 1
LOCATION: 200 Beverley St., Guelph	DRILLER: Atcost Drilling	TOP OF PIPE: 316.39 masl	EASTING: 562296.1	
PROJECT NUMBER: 694757	DRILL RIG: CME 850 Rotary Power	WATER ELEVATION: 313.18 masl	MOE WELL TAG#: A202490	
LOGGED BY: M. Shiry	DRILL METHOD: 108 mm HSA, HQ water core	WATER LEVEL DATE: November 1, 2017		

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID 100 200 300 400
							CONCRETE:		315.46	315.61 / 0.00	
							FILL: Silt, Sand and Gravel, brown to grey, moist, fine to coarse sand, fine gravel, trace brick.		0.15 / 315.15	315.31 / 0.30	
							CLAYEY SILT: Dark brown, moist, high plasticity, trace sand and fine gravel, trace rootlets.		0.46	314.70	
1							- Increased sand and fine to coarse gravel below 0.91 mbgs.			0.91 / 314.39	
							SILTY SAND AND GRAVEL WITH COBBLES: Light brown/grey, dry to moist, fine to coarse sand and gravel.		314.29 / 1.32	1.22	
2							- Sampler refusal at 1.88 mbgs, ream HW casing to 2.08 mbgs, HQ coring begins at 1.96 mbgs.		313.50 / 2.11	313.50 / 2.11	
3							**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light brown, fossiliferous, fine grained, medium strong, slightly weathered, very close to close fracture spacing, medium to thinly bedded, slightly to moderately fractured core, occasional (<35 mm) vugs.		311.95 / 3.66	311.95 / 3.66	
							- Lithology inferred from adjacent MW17-104D. Bottom of corehole at 3.66 mbgs				
4											
5											
6											
7											



Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS/ML

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 5/26/20

RECORD OF MONITORING WELL: MW17-105D

CLIENT: City of Guelph	DATE DRILLED: Oct 24 to Oct 25, 2017	GROUND ELEVATION: 316.02 masl	NORTHING: 4822354.9
LOCATION: 200 Beverley St., Guelph	DRILLER: Atcost Drilling	TOP OF PIPE: 316.80 masl	EASTING: 562351.1
PROJECT NUMBER: 694757	DRILL RIG: CME 850 Rotary Power	WATER ELEVATION: 312.54 masl	MOE WELL TAG#: A202490
LOGGED BY: M. Shiry	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: October 31, 2017	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID 100 200 300 400
						Metals & Inorg. (11:48) (0.00-0.09) SVOCs (12:00) (0.15-0.46)	**FILL:** Sand and Gravel, dark brown, moist, fine to coarse sand and gravel, trace rootlets and organics, trace brick and asphalt, trace silt.		315.87 / 0.15	316.02 / 0.00	0.78 m stick up; Monument casing secured in concrete
							Foundry Sand and Slag, black, fine sand, dry to moist.		315.56 / 0.46	315.72 / 0.30	210 mm borehole Bentonite seal
							Sand and Gravel, brown, dry to moist, fine to coarse sand and gravel, trace silt.				
1						Metals & Inorg. PHCs & BTEX VOCs TOC SVOCs (12:12) (1.22-1.83) PHCs & BTEX VOCs (12:32) (1.83-2.06)	**SAND AND GRAVEL WITH COBBLES:** Light brown to grey, dry to moist, fine to coarse sand and gravel, trace silt.		314.70 / 1.32		
2									313.35 / 2.67	313.35 / 2.67	123 mm corehole
3							**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light greyish brown, fine grained, strong, slightly weathered, very close to close fracture spacing, thinly bedded, sightly to moderately fractured core, some vugs (<40 mm). - Fe staining in fracture at 2.84 mbgs. - Fe staining in fracture at 2.90 mbgs. - Light to dark greyish brown below 3.43 mbgs - 18 cm vertical fracture at 3.73 mbgs, tight.				
4							- No coring water return observed below 3.86 mbgs, loss potentially from fractures between 3.68 to 3.89 mbgs. - Large vugs (30 - 50 mm) with localized increased weathering and carbonate mineral lining from 4.01 to 4.06 mbgs. - Light-end hydrocarbon like odour from 4.04 to 4.09 mbgs.		311.60 / 4.42		
5							**ERAMOSA FORMATION / REFORMATORY QUARRY MEMBER DOLOSTONE:** Light greyish brown, fine grained, strong, slightly weathered, very close to close fracture spacing, thinly bedded, sightly to moderately fractured core, some vugs (<40 mm). - Vugs (10 - 25 mm) with localized increased weathering, some carbonate mineral lining at 5.00 mbgs. - Dark greyish brown, fresh to slightly weathered, close fracture spacing, slightly fractured to sound core. Trace vugs with localized increased weathering and carbonate mineral lining , frequent small (<5 mm) fossils below 5.00 mbgs			310.23 / 5.79	96 mm corehole
6							- At 6.58 mbgs, vug (50 mm) weak weathered rock. - Lithology to 6.60 mbgs inferred from adjacent MW17-105S, MW17-105D HSA to top of bedrock, ream PW casing to 2.29 mbgs and PQ core to 5.79 mbgs, HW casing reamed to 6.12 mbgs, HQ core logging resumes at 6.63 mbgs. - Large (100 mm), partially healed vertically orientated vug, some carbonate mineral lining at 6.63 mbgs.			309.24 / 6.78	#3 silica sand filter pack 50 mm diameter SCH 40 PVC pipe #10-slot well screen
7	100	Run4		56	2, 4, 3, 1, 1					309.09 / 6.93	

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS/ML

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 5/26/20

RECORD OF MONITORING WELL: MW17-105D

CLIENT: City of Guelph	DATE DRILLED: Oct 24 to Oct 25, 2017	GROUND ELEVATION: 316.02 masl	NORTHING: 4822354.9
LOCATION: 200 Beverley St., Guelph	DRILLER: Atcost Drilling	TOP OF PIPE: 316.80 masl	EASTING: 562351.1
PROJECT NUMBER: 694757	DRILL RIG: CME 850 Rotary Power	WATER ELEVATION: 312.54 masl	MOE WELL TAG#: A202490
LOGGED BY: M. Shiry	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: October 31, 2017	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID 100 200 300 400
	108	Run5		58	2		- Between 7.95 to 8.36 mbgs, disconnected vertical fractures with apertures <0.1 mm.		307.56 / 8.46	307.56 / 8.46	
							Bottom of corehole at 8.46 mbgs Driller Remark: Feels as if there are small voids within Eramosa Formation / Reformatory Quarry Member at some fractures as coring will become hard and slow followed by sudden drop of coring string.				
9											
10											
11											
12											
13											
14											
15											

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS/ML

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 5/26/20

JACOBS

RECORD OF MONITORING WELL: MW17-105S

CLIENT: City of Guelph	DATE DRILLED: October 24, 2017	GROUND ELEVATION: 316.06 masl	NORTHING: 4822353.5
LOCATION: 200 Beverley St., Guelph	DRILLER: Atcost Drilling	TOP OF PIPE: 316.84 masl	EASTING: 562353.3
PROJECT NUMBER: 694757	DRILL RIG: CME 850 Rotary Power	WATER ELEVATION: 312.59 masl	MOE WELL TAG#: A202490
LOGGED BY: M. Shiry	DRILL METHOD: 108 mm HSA, HQ water core	WATER LEVEL DATE: October 31, 2017	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)
	46	SS1	15			
1	58	SS2	28			
	100	SS3	50+			
2	78	SS4	50/ 8cm			
3	91	Run1		49	4, 2, 1	
4	100	Run2		57	3, 4, 2, 4, 1	
5	98	Run3		88	2, 2, 2, 2, 1	
6						
7						

LITHOLOGY & REMARKS

FILL: Sand and Gravel, dark brown, moist, fine to coarse sand and gravel, trace rootlets and organics, trace brick and asphalt, trace silt.

Foundry Sand and Slag, black, fine sand, dry to moist.

Sand and Gravel, brown, dry to moist, fine to coarse sand and gravel, trace silt.

SAND AND GRAVEL WITH COBBLES: Light brown to grey, dry to moist, fine to coarse sand and gravel, trace silt.

GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE: Light greyish brown, fine grained, strong, slightly weathered, very close to close fracture spacing, thinly bedded, sightly to moderately fractured core, some vugs (<40 mm).
- Fe staining in fracture at 2.84 mbgs.
- Fe staining in fracture at 2.90 mbgs.

- Light to dark greyish brown below 3.43 mbgs

- 18 cm vertical fracture at 3.73 mbgs, tight.

- No coring water return observed below 3.86 mbgs, loss potentially from fractures between 3.68 to 3.89 mbgs.
- Large vugs (30 - 50 mm) with localized increased weathering and carbonate mineral lining from 4.01 to 4.06 mbgs.
- Light-end hydrocarbon like odour from 4.04 to 4.09 mbgs.

ERAMOSA FORMATION / REFORMATORY QUARRY MEMBER DOLOSTONE: Light greyish brown, fine grained, strong, slightly weathered, very close to close fracture spacing, thinly bedded, sightly to moderately fractured core, some vugs (<40 mm).

- Vugs (10 - 25 mm) with localized increased weathering, some carbonate mineral lining at 5.00 mbgs.
- Dark greyish brown, fresh to slightly weathered, close fracture spacing, slightly fractured to sound core. Trace vugs with localized increased weathering and carbonate mineral lining , frequent small (<5 mm) fossils below 5.00 mbgs

- Bottom of Run 3 at 6.58 mbgs, vug (50 mm) weak weathered rock.

Bottom of corehole at 6.58 mbgs

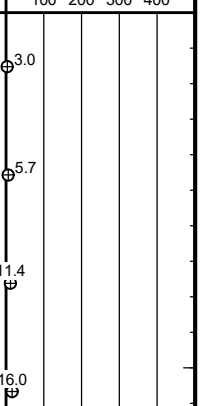
STRATA PLOT / ELEVATIONS

(masl) ELEV. / DEPTH (mbgs)
315.91 / 0.15
315.60 / 0.46
314.74 / 1.32
313.39 / 2.67
311.64 / 4.42
309.48 / 6.58

BOREHOLE/COREHOLE COMPLETION DETAILS

(masl) ELEV. / DEPTH (mbgs)	
316.06 / 0.00	0.78 m stick up
315.76 / 0.30	Monument casing secured in concrete
	210 mm borehole
313.39 / 2.67	96 mm corehole
313.01 / 3.05	#3 silica sand filter pack
312.86 / 3.20	50 mm diameter SCH 40 PVC pipe
	#10-slot well screen
311.34 / 4.72	
311.18 / 4.88	Bentonite seal
309.48 / 6.58	

ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID



Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS/ML

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 5/26/20

RECORD OF MONITORING WELL: MW17-106D

CLIENT: City of Guelph	DATE DRILLED: October 19, 2017	GROUND ELEVATION: 315.40 masl	NORTHING: 4822342.7
LOCATION: 200 Beverley St., Guelph	DRILLER: Atcost Drilling	TOP OF PIPE: 316.34 masl	EASTING: 562287.5
PROJECT NUMBER: 694757	DRILL RIG: CME 850 Rotary Power	WATER ELEVATION: 312.75 masl	MOE WELL TAG#: A202490
LOGGED BY: M. Shiry	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: November 1, 2017	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	0.94 m stick up	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID 100 200 300 400
							FILL: Sand and Gravel, brown, moist, fine to coarse sand and gravel, trace silt.			315.40 / 0.00	Monument casing secured in concrete	
										315.10 / 0.30	210 mm borehole Bentonite seal	
1							- Trace brick and slag below 0.58 mbgs.					
							CONCRETE: Concrete floor of suspected pit.		313.60 / 1.80			
2									313.09 / 2.31	313.09 / 2.31	123 mm corehole	
3							**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light brown, fossiliferous, fine grained, medium strong, slightly weathered, close fracture spacing, medium to thinly bedded, sightly to moderately fractured core, some small (<10 mm) vugs. - Top 18 cm of rock frequent small vugs and fossils (<5 mm), increased weathering and decreased strength, potentially water bearing fractures with apertures 0.5 to 2.5 mm. - Fracture with Fe staining at 2.62 mbgs. - Fracture with Fe staining at 2.82 mbgs. - 2.95 to 3.71 mbgs, rock becomes more weathered, frequency and size of vugs increased (<25 mm). - Large vug (55 mm) with localized increased weathering at 3.23 mbgs.					
4							- No core water return observed at fractures at 3.68 and 3.71 mbgs, lower fracture has Fe staining. - Below 3.71 mbgs rock transitioning to greyish brown with dark grey bedding planes, some vugs have carbonate minerals. - Potential water bearing partly open fracture, localized weathering at 3.84 mbgs. - Potential water bearing tight fracture and vug (60 mm), localized weathering at 4.14 mbgs. - Potential water bearing open fracture, and vug (65 mm) localized weathering, at 4.55 mbgs.					
5										309.46 / 5.94	96 mm corehole	
6							- Below 5.94 mbgs rock becomes light brown, and more competent, close fracture spacing, slightly fractured to sound core. - Large vug (35 mm) with some carbonate minerals at 6.27 mbgs. - Large vug (60 mm) with some carbonate minerals at 6.43 mbgs. - Lithology to 6.48 mbgs inferred from adjacent MW17-106S, MW17-106D HSA to top of concrete slab, ream PW casing to 2.34 mbgs and PQ core to 5.94 mbgs, HW casing reamed to 6.22 mbgs, HQ core logging resumes at 6.48 mbgs. - Below 6.71 mbgs, greyish brown with some dark grey bedding planes. - Between 7.32 and 7.90 mbgs large frequent vugs (25 to 65 mm) with localized weathering, potential water bearing zone.			308.54 / 6.86		
7	98	Run4		68	3, 0, 2, 4, 1					308.39 / 7.01	#3 silica sand filter pack 50 mm diameter SCH 40 PVC pipe #10-slot well screen	
							ERAMOSA FORMATION / REFORMATORY QUARRY		307.51 / 7.89			

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS/ML

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 5/26/20

RECORD OF MONITORING WELL: MW17-106D

CLIENT: City of Guelph	DATE DRILLED: October 19, 2017	GROUND ELEVATION: 315.40 masl	NORTHING: 4822342.7
LOCATION: 200 Beverley St., Guelph	DRILLER: Atcost Drilling	TOP OF PIPE: 316.34 masl	EASTING: 562287.5
PROJECT NUMBER: 694757	DRILL RIG: CME 850 Rotary Power	WATER ELEVATION: 312.75 masl	MOE WELL TAG#: A202490
LOGGED BY: M. Shiry	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: November 1, 2017	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID 100 200 300 400
	97	Run5		75	0 2 3 3 1		**MEMBER DOLOSTONE:** Light brown, close fracture spacing, slightly fractured to sound core, some small (<10 mm) vugs. - 8.08 to 8.41 mbgs some carbonate mineral vertical filling fractures and vugs. - Brownish dark grey to grey, some large (<45 mm) vugs with some carbonate mineral, trace fossils (<5 mm) below 8.76 mbgs. - 5 cm very tight vertical fracture at 9.09 mbgs. - 4 cm seam increased weathering and weak rock at 9.14 mbgs.			306.87 8.53 306.71 8.69	Bentonite seal	
									305.88 9.53	305.88 9.53		
							Bottom of corehole at 9.53 mbgs					

9 10 11 12 13 14 15

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS/ML

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 5/26/20

JACOBS

RECORD OF MONITORING WELL: MW17-106S

CLIENT: City of Guelph	DATE DRILLED: October 18, 2017	GROUND ELEVATION: 315.43 masl	NORTHING: 4822343.1
LOCATION: 200 Beverley St., Guelph	DRILLER: Atcost Drilling	TOP OF PIPE: 316.30 masl	EASTING: 562285.8
PROJECT NUMBER: 694757	DRILL RIG: CME 850 Rotary Power	WATER ELEVATION: 312.86 masl	MOE WELL TAG#: A202490
LOGGED BY: M. Shiry	DRILL METHOD: 108 mm HSA, HQ water core	WATER LEVEL DATE: November 1, 2017	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)
	63	SS1	20			
1	83	SS2	13			
	82	SS3	17			
2						
					3	
					2	
3	100	Run1		52	4	
					3	
					2	
4					4	
	100	Run2		45	4	
					2	
					3	
5					2	
					3	
	98	Run3		77	3	
6					0	
					2	
7						

LITHOLOGY & REMARKS

FILL: Sand and Gravel, brown, moist, fine to coarse sand and gravel, trace silt.

- Trace brick and slag below 0.58 mbgs.

CONCRETE: Concrete floor of suspected pit.

GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE: Light brown, fossiliferous, fine grained, medium strong, slightly weathered, close fracture spacing, medium to thinly bedded, sightly to moderately fractured core, some small (<10 mm) vugs.
- Top 18 cm of rock frequent small vugs and fossils (<5 mm), increased weathering and decreased strength, potentially water bearing fractures with apertures 0.5 to 2.5 mm.
- Fracture with Fe staining at 2.62 mbgs.
- Fracture with Fe staining at 2.82 mbgs.
- 2.95 to 3.71 mbgs, rock becomes more weathered, frequency and size of vugs increased (<25 mm).
- Large vug (55 mm) with localized increased weathering at 3.23 mbgs.
- No core water return observed at fractures at 3.68 and 3.71 mbgs, lower fracture has Fe staining.
- Below 3.71 mbgs rock transitioning to greyish brown with dark grey bedding planes, some vugs have carbonate minerals.
- Potential water bearing partly open fracture, localized weathering at 3.84 mbgs.
- Potential water bearing tight fracture and vug (60 mm), localized weathering at 4.14 mbgs.
- Potential water bearing open fracture, and vug (65 mm) localized weathering, at 4.55 mbgs.
- Below 5.94 mbgs rock becomes light brown, and more competent, close fracture spacing, slightly fractured to sound core.
- Large vug (35 mm) with some carbonate minerals at 6.27 mbgs.
- Large vug (60 mm) with some carbonate minerals at 6.43 mbgs.

Bottom of corehole at 6.55 mbgs

STRATA PLOT

(masl) ELEV. / DEPTH (mbgs)	(masl) ELEV. / DEPTH (mbgs)
	315.43 / 0.00
	315.13 / 0.30
313.63 / 1.80	
313.12 / 2.31	313.12 / 2.31
	312.69 / 2.74
	312.38 / 3.05
	310.86 / 4.57
	310.71 / 4.72
308.88 / 6.55	308.88 / 6.55

BOREHOLE/COREHOLE COMPLETION DETAILS

0.87 m stick up

Monument casing secured in concrete

210 mm borehole Bentonite seal

96 mm corehole

#3 silica sand filter pack

50 mm diameter SCH 40 PVC pipe #10-slot well screen

Bentonite seal

ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID

100 200 300 400

10.2

8.0

2.5

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS/ML

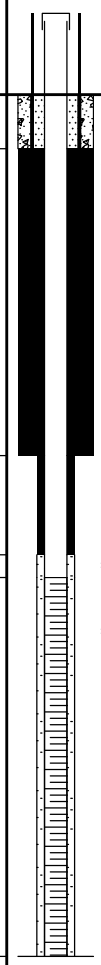
CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 5/26/20

RECORD OF MONITORING WELL: MW17-107S

CLIENT: City of Guelph	DATE DRILLED: October 12, 2017	GROUND ELEVATION: 315.30 masl	NORTHING: 4822254.3
LOCATION: 200 Beverley St., Guelph	DRILLER: Atcost Drilling	TOP OF PIPE: 316.05 masl	EASTING: 562197.3
PROJECT NUMBER: 694757	DRILL RIG: CME 850 Rotary Power	WATER ELEVATION: 312.66 masl	MOE WELL TAG#: A202490
LOGGED BY: M. Shiry	DRILL METHOD: 108 mm HSA, HQ water core	WATER LEVEL DATE: November 1, 2017	

DEPTH (mbgs)	Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID
							CONCRETE:	315.15 / 0.15	315.30 / 0.00; 315.00 / 0.30	
	61	SS1	10			Metals & Inorg. SVOCs PHCs & BTEX VOCs (09:40) (0.15-0.61)	**FILL:** Silty Sand, dark brown, moist, trace wood debris, trace slag. - 8 cm seam yellow brick rubble, then some slag at 0.45 mbgs.			47.2
1	42	SS2	12				**SANDY SILT:** Brown to light brown, moist, medium plasticity, fine grained sand, trace clay, trace fine gravel, trace orange mottling.	314.59 / 0.71		14.2
	54	SS3	50/ 28cm			Metals & Inorg. SVOCs PHCs & BTEX VOCs (10:01) (1.37-1.68)	**SILTY SAND AND GRAVEL WITH COBBLES:** Light brownish grey, moist, medium sand with trace fine and coarse, fine to coarse gravel, trace clay.	313.88 / 1.42		14.5
	50	SS4	50/ 5cm				- Sampler refusal at 1.88 mbgs, set HW casing to 2.18 mbgs, HQ coring begins at 2.03 mbgs.	313.27 / 2.03	313.27 / 2.03	
2					6		**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light brown, fossiliferous, fine grained, strong, slightly weathered, very close to close fracture spacing, medium to thinly bedded, moderately fractured core. Frequent small (<5 mm) vugs, trace fossils <10 mm.			
					5					
	96	Run1		7	10+		- Fracture zone 2.69 to 2.82 mbgs.		312.71 / 2.59; 312.58 / 2.72	
3					10+					
					1		- 3 cm weak and weathered rock at 3.18 mbgs. - Fracture zone 3.18 to 3.28 mbgs.			
					10+		- Below 3.40 mbgs grey brown, core appears to have little tensile strength and is highly fractured from coring to 3.86 mbgs.			
					10+		- Fracture zone 3.63 to 3.76 mbgs.			
4	100	Run2		28	7					
					4		**ERAMOSA FORMATION / REFORMATORY QUARRY MEMBER DOLOSTONE:** Light to dark greyish brown, shale fracture partings. Vugs are less frequent but slightly larger (<15mm).	310.96 / 4.34		
					7					
5							Bottom of corehole at 4.85 mbgs	310.45 / 4.85	310.45 / 4.85	
6										
7										



Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS/ML

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 5/26/20

RECORD OF MONITORING WELL: MW17-108S

CLIENT: City of Guelph	DATE DRILLED: October 11, 2017	GROUND ELEVATION: 316.36 masl	NORTHING: 4822390.8
LOCATION: 200 Beverley St., Guelph	DRILLER: Atcost Drilling	TOP OF PIPE: 317.10 masl	EASTING: 562370.7
PROJECT NUMBER: 694757	DRILL RIG: CME 850 Rotary Power	WATER ELEVATION: 312.61 masl	MOE WELL TAG#: A202490
LOGGED BY: M. Shiry	DRILL METHOD: 108 mm HSA, HQ water core	WATER LEVEL DATE: October 31, 2017	

DEPTH (mbgs)	Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)
	88	SS1	50+/ 28cm			TOC (11:08) (0.00-0.30) Grain Size (11:08) (0.30-0.91) Metals & Inorg. SVOCs (11:15) (0.61-0.91)
	82	SS2	60/ 13cm			
1	75	SS3	50/ 10cm			
	100	SS4	50/ 5cm			
2						
	89	SS5	50/ 8cm			Metals & Inorg. (12:04) (2.44-2.67)
	83	SS6	50/ 15cm			PHCs & BTEX VOCs 1 4-Dioxane (12:20) (2.74-2.90)
3	80	SS7	62/ 13cm			
	40	Run1		0	3	PHCs & BTEX VOCs 1 4-Dioxane PAHs (12:32) (3.05-3.20)
					5	
					4	
4	100	Run2		60	3	
					2	
					4	
5						
6						
7						

LITHOLOGY & REMARKS

FILL: Silty Sand, dark brown, moist, fine grained sand, organics and rootlets, trace brick and fine gravel.
- Black, increased gravel content below 0.13 mbgs.

Sand, Gravel and Cobbles with Silt, light grey, moist to dry, trace clay.
- Heavy dark orange staining at 0.36 mbgs.
- Trace slag and rootlets at 0.61 mbgs.

SILTY SAND AND GRAVEL WITH COBBLES: Brown/grey, fine sand, dry to moist.

- Very moist, black staining below 2.73 mbgs, hydrocarbon like odour 2.73 to 2.90 mbgs.

- Increased silt below 3.05 mbgs.
- Auger and sampler refusal at 3.18 mbgs, ream HW casing to 3.35 mbgs, HQ coring begins at 2.95 mbgs.

GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE: Light brown, fossiliferous, fine grained, strong, slightly weathered, very close to moderately fracture spacing, medium to thinly bedded, moderately fractured core. Frequent small (<10 mm) vugs.
- Black staining, sheen and hydrocarbon like odour in fractures from 3.25 to 3.51 mbgs, potentially water bearing apertures 0.1 to 2.5 mm.
- Vug (30 mm) at 3.68 mbgs, localized increased weathering.

- Black staining in open fracture at 4.60 mbgs, potentially water bearing.

Bottom of corehole at 4.98 mbgs

STRATA PLOT

(masl) ELEV. / DEPTH (mbgs)	(masl) ELEV. / DEPTH (mbgs)
316.36 / 0.00	
316.11 / 0.25	316.06 / 0.30
	314.74 / 1.62
	314.43 / 1.93
313.92 / 2.44	
313.11 / 3.25	313.11 / 3.25
311.38 / 4.98	311.38 / 4.98

BOREHOLE/COREHOLE COMPLETION DETAILS

0.74 m stick up

Monument casing secured in concrete

210 mm borehole

#3 silica sand filter pack

50 mm diameter SCH 40 PVC pipe #10-slot well screen

96 mm corehole

ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID

100 200 300 400

3.8, 6.3, 10.8, 2.7, 4.2, 9.2, 2.7

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS/ML

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 5/26/20

RECORD OF MONITORING WELL: MW17-109S

CLIENT: City of Guelph	DATE DRILLED: October 16, 2017	GROUND ELEVATION: 315.47 masl	NORTHING: 4822426.3
LOCATION: 200 Beverley St., Guelph	DRILLER: Atcost Drilling	TOP OF PIPE: 316.26 masl	EASTING: 562305.8
PROJECT NUMBER: 694757	DRILL RIG: CME 850 Rotary Power	WATER ELEVATION: 313.25 masl	MOE WELL TAG#: A202490
LOGGED BY: M. Shiry	DRILL METHOD: 108 mm HSA, HQ water core	WATER LEVEL DATE: November 2, 2017	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
										315.47 / 0.00 — 0.79 m stick up	
	67	SS1	21			PCBs (09:38) (0.00-0.30) Metals & Inorg. (09:38) (0.00-0.61)	**FILL:** Sand and Gravel, light brown, moist, fine to coarse, trace silt, top 10 cm silty, dark brown, organics and rootlets, very moist at lower contact.			315.17 / 0.30 — Monument casing secured in concrete; 210 mm borehole	17.3
							Sand and Gravel, grey, moist to very moist, fine to coarse sand, fine grained gravel, trace coarse gravel, trace silt.		314.84 / 0.63		
1	75	SS2	16								54.2
	50	SS3	50/15cm			PHCs & BTEX VOCs Metals & Inorg. (09:56) (1.22-1.52)	- Grey and brown below 1.37 mbgs.				61.8
	0	Run1		0			- Sampler refusal on suspected bedrock at 1.52 mbgs, ream HW casing to 2.01 mbgs, HQ coring begins at 1.68 mbgs. - No core recovery from Run 1 (1.68 to 1.88 mbgs).		313.59 / 1.88	313.59 / 1.88 — 96 mm corehole	
2					10+		**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light brown to greyish light brown, fine grained, medium strong, slightly weathered, close fracture spacing, thinly bedded, extremely to moderately fractured core. Trace amounts of thin dark grey bedding planes. Frequent small (<10 mm) vugs.				
					10+		- Poor core recovery from Run 2 (1.88 to 3.40 mbgs), core loss too great to accurately determine depths of core loss. Upper portion of recovered core (approximately 45 cm) completed fractured from coring.			313.03 / 2.44 — #3 silica sand filter pack	
	60	Run2		0	10+					312.67 / 2.80 — 50 mm diameter SCH 40 PVC pipe #10-slot well screen	
3					10+						
					10+		- Slight hydrocarbon like odour from 3.28 to 4.32 mbgs.				
					3						
	100	Run3		61	4		- Sheen observed in fractures between 3.73 to 4.06 mbgs.				
4					2						
							Bottom of corehole at 4.32 mbgs		311.15 / 4.32	311.15 / 4.32	
5											
6											
7											

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS/ML

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IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 5/26/20

RECORD OF MONITORING WELL: MW17-110S

CLIENT: City of Guelph	DATE DRILLED: October 16, 2017	GROUND ELEVATION: 315.70 masl	NORTHING: 4822401.4
LOCATION: 200 Beverley St., Guelph	DRILLER: Atcost Drilling	TOP OF PIPE: 316.49 masl	EASTING: 562264.1
PROJECT NUMBER: 694757	DRILL RIG: CME 850 Rotary Power	WATER ELEVATION: 313.21 masl	MOE WELL TAG#: A202490
LOGGED BY: M. Shiry	DRILL METHOD: 108 mm HSA, HQ water core	WATER LEVEL DATE: November 2, 2017	

DEPTH (mbgs)	Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID
								315.60 / 0.10	315.70 / 0.00	
	83	SS1	10			Metals & Inorg. SVOCs TOC Grain Size (15:38) (0.00-0.61)	**FILL:** Silty Sand, dark brown, moist, trace medium and coarse sand, trace brick, trace rootlets and organics. Sand, black, dry to moist, fine grained, trace clay, trace coal, trace slag. - 5 cm seam slag at 0.56 mbgs.		315.40 / 0.30	8.3
1	67	SS2	9					314.56 / 1.14		24.9
	71	SS3	42			PHCs & BTEX VOCs PAHs TOC Metals & Inorg. (15:54) (1.22-1.83)	**SILT:** Brown to dark brown, dry to moist, medium plasticity, trace fine to coarse sand and fine gravel, trace orange mottling. **SILTY SAND AND GRAVEL WITH COBBLES:** Dark brown and light grey, dry to moist, fine to coarse sand and gravel. - Sampler refusal at 1.80 mbgs, ream HW casing to 2.01 mbgs, HQ coring begins at 1.98 mbgs.	314.43 / 1.27		53.7
2					10+			313.59 / 2.11	313.72 / 1.98	
					5		**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light brown, fine grained, medium strong, slightly weathered, very close to close fracture spacing, thinly laminated, moderately fractured core. Frequent small (<10 mm) vugs, trace large (<65 mm) vugs.			
	100	Run1		10	3		- Fe staining in 78% of fractures 2.11 to 2.79 mbgs. - Large vug (55 mm), carbonate mineral lining and moderately weathered at 2.49 mbgs.		312.96 / 2.74	
3					6		- Large vug (45 mm), carbonate mineral lining and moderately weathered at 2.57 mbgs.		312.70 / 3.00	
					3		- 5 cm weak rock at 2.74 mbgs. - Large vug (65 mm) carbonate mineral lining and moderately weathered at 3.07 mbgs.			
					5		- 5 cm weak rock and Fe staining at 3.23 mbgs. - Vertical fracture, very tight 3.30 to 3.42 mbgs. - 13 cm core loss from top of Run 2 (3.45 mbgs).			
					3		- Below 3.58 mbgs, greyish light brown, vugs become more frequent and smaller (<5 mm), dark grey bedding planes. - Vertical fracture, very tight, 3.68 to 4.27 mbgs.			
4	74	Run2		29	6		- 2.5 cm core loss at 3.99 mbgs.			
							Bottom of corehole at 4.52 mbgs	311.18 / 4.52	311.18 / 4.52	
5										
6										
7										

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS/ML

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 5/26/20

RECORD OF MONITORING WELL: MW17-111S

CLIENT: City of Guelph	DATE DRILLED: Oct 12 to Oct 13, 2017	GROUND ELEVATION: 315.42 masl	NORTHING: 4822235.8
LOCATION: 200 Beverley St., Guelph	DRILLER: Atcost Drilling	TOP OF PIPE: 316.31 masl	EASTING: 562141.7
PROJECT NUMBER: 694757	DRILL RIG: CME 850 Rotary Power	WATER ELEVATION: 312.69 masl	MOE WELL TAG#: A202490
LOGGED BY: M. Shiry	DRILL METHOD: 108 mm HSA, HQ water core	WATER LEVEL DATE: November 2, 2017	

DEPTH (mbgs)	Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID
										315.42 / 0.00	0.89 m stick up	
	92	SS1	15			Metals & Inorg. (15:09) (0.00-0.61) PCB (14:55) (0.00-0.30)	**FILL:** Silty Sand, black top 10 cm, then dark brown 15 cm, then orange/brown 10 cm, then grey, dry to moist, fine grained, trace slag and coal, rootlets upper 15 cm.			315.12 / 0.30	Monument casing secured in concrete; 210 mm borehole	26.3
									314.86 / 0.56			
1	67	SS2	24			PHCs & BTEX VOCs (15:22) (0.61-1.22)	Silt, dark to light brown, dry to moist, medium plasticity, trace clay, trace fine gravel, trace black staining.					27.7
									314.15 / 1.27			
	71	SS3	50+				**SILTY SAND AND GRAVEL WITH COBBLES:** Light brown to light grey, dry to moist, fine sand, fine to coarse gravel, trace clay.					25.2
2	46	SS4	50+/ 17cm			VOCs (15:35) (1.83-2.13)	- Sampler refusal on suspected bedrock at 2.18 mbgs, ream HW casing to 2.72 mbgs, HQ coring begins at 2.41 mbgs.					22.2
									313.01 / 2.41	313.01 / 2.41	96 mm corehole	
					9		**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light brown, fossiliferous, fine grained, strong, slightly weathered, very close to close fracture spacing, medium to thinly bedded, extremely to moderately fractured. Some large vugs (<30 mm).					
					10+							
3	92	Run1		13								
					4		- 8 cm core loss from top of Run 1.			312.30 / 3.12	#3 silica sand filter pack	
							- 10 cm weak, weathered rock at 2.84 mbgs.					
							- 5 cm weak, weathered rock at 3.18 mbgs.					
							- Greyish brown below 3.20 mbgs.					
					2		- 5 cm weak, weathered rock at 3.18 mbgs, tight vertical fracture.			311.99 / 3.43	50 mm diameter SCH 40 PVC pipe #10-slot well screen	
					4							
							- Fossil (20 mm) at 3.58 mbgs.					
					3							
4							- 8 cm calcite filled vertical fracture at 3.96 mbgs.					
					3							
	100	Run2		40					311.15 / 4.27			
					7		**ERAMOSA FORMATION / REFORMATORY QUARRY MEMBER DOLOSTONE:** Brownish grey to dark greyish brown, with shale partings, vugs less frequent.					
							- Fossil (35 mm) at 4.45 mbgs.					
					4		- 5 cm tight vertical fracture at 4.55 mbgs.					
5							- Frequent small (<5 mm) vugs and fossils at 4.85 mbgs, weathered and weak rock.		310.47 / 4.95	310.47 / 4.95		
							Bottom of corehole at 4.95 mbgs					
6												
7												

Notes:
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Prepared by: AB/MS

Reviewed by: DS/ML

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IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 5/26/20

RECORD OF MONITORING WELL: MW18-105G

CLIENT: City of Guelph	DATE DRILLED: Nov 20 to Nov 21, 2018	GROUND ELEVATION: 315.91 masl	NORTHING: 4822355.6
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.76 masl	EASTING: 562349.2
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.62 masl	MOE WELL TAG#: A252554
LOGGED BY: A. Casey	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: December 18, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	0.85 m stick up	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID 100 200 300 400
							FILL: Sand and Gravel, dark brown, moist, fine to coarse sand and gravel, trace rootlets and organics, trace brick and asphalt, trace silt.		315.76 / 0.15	315.91 / 0.00	Monument casing secured in concrete	
							Foundry Sand and Slag, black, fine sand, dry to moist.		315.45 / 0.46	315.61 / 0.30	210 mm borehole Bentonite grout seal	
							Sand and Gravel, brown, dry to moist, fine to coarse sand and gravel, trace silt.					
1												
							SAND AND GRAVEL WITH COBBLES: Light brown to grey, dry to moist, fine to coarse sand and gravel, trace silt.		314.59 / 1.32			
2												
							GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE: Light greyish brown, fine grained, strong, slightly weathered, very close to close fracture spacing, thinly bedded, sightly to moderately fractured core, some vugs (<40 mm).		313.24 / 2.67	313.24 / 2.67	123 mm corehole	
3							- Fe staining in fracture at 2.84 mbgs. - Fe staining in fracture at 2.90 mbgs.				▼	
							- Light to dark greyish brown below 3.43 mbgs					
							- 18 cm vertical fracture at 3.73 mbgs, tight.					
4							- Large vugs (30 - 50 mm) with localized increased weathering and carbonate mineral lining from 4.01 to 4.06 mbgs. - Light-end hydrocarbon like odour from 4.04 to 4.09 mbgs.		311.49 / 4.42			
							ERAMOSA FORMATION / REFORMATORY QUARRY MEMBER DOLOSTONE: Light greyish brown, fine grained, strong, slightly weathered, very close to close fracture spacing, thinly bedded, sightly to moderately fractured core, some vugs (<40 mm).					
5							- Vugs (10 - 25 mm) with localized increased weathering, some carbonate mineral lining at 5.00 mbgs. - Dark greyish brown, fresh to slightly weathered, close fracture spacing, slightly fractured to sound core. Trace vugs with localized increased weathering and carbonate mineral lining , frequent small (<5 mm) fossils below 5.00 mbgs					
6							- Large (100 mm), partially healed vertically orientated vug, some carbonate mineral lining at 6.63 mbgs.					
7												
					4		- Lithology to 7.62 mbgs inferred from adjacent MW17-105S and MW17-105D, HSA to top of bedrock, ream PW casing and PQ core, logging resumes at 7.62 mbgs.					
					2							

Notes:
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Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-105G

CLIENT: City of Guelph	DATE DRILLED: Nov 20 to Nov 21, 2018	GROUND ELEVATION: 315.91 masl	NORTHING: 4822355.6
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.76 masl	EASTING: 562349.2
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.62 masl	MOE WELL TAG#: A252554
LOGGED BY: A. Casey	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: December 18, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
					2		- Fossil (80 mm) at 8.08 mbgs.					
	100	Run3		77								
					2		- 13 cm healed vertical fracture at 8.46 mbgs.					
					1							
9												
					3							
					1							
					1							
	100	Run4		93								
10												
					1							
					2							
					1							
11												
					1							
	100	Run5		100								
					1							
					1							
12												
										303.72 / 12.19		
	87	Run6		100	1		- Ream HW casing, HQ coring below 12.19 mbgs.				96 mm corehole	
					2							
					3		- Weak rock at 12.65 and 12.85 mbgs.					
13												
					2		- Two 10 cm veins at 13.01 mbgs.					
	100	Run7		80			- 15 cm healed vertical fracture at 13.23 mbgs.					
					3							
					1		- 13 cm vein at 13.54 mbgs.					
									301.98 / 13.93			
14					1		**ERAMOSA FORMATION / VINEMOUNT MEMBER** **SHALY DOLOSTONE:** Dark grey, strong, moderately fractured.					
					1							
					1							
	100	Run8		88								
					2							
15												
					1							
					1							
					1							

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Reviewed by: ET

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IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-105G

CLIENT: City of Guelph	DATE DRILLED: Nov 20 to Nov 21, 2018	GROUND ELEVATION: 315.91 masl	NORTHING: 4822355.6
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.76 masl	EASTING: 562349.2
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.62 masl	MOE WELL TAG#: A252554
LOGGED BY: A. Casey	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: December 18, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
	100	Run9		100	1					299.70 / 16.21	Bentonite pellet seal	
					1		- 13 cm vertical fracture infilled with carbonate mineralization at 16.33 mbgs.					
					0					299.09 / 16.82	#2 silica sand filter pack	
17					2					298.94 / 16.97	50 mm diameter SCH 40 PVC pipe	
					3		- Weak rock at 17.30, 17.50 and 17.91 mbgs.				#10-slot well screen	
	100	Run 10		60	3							
18					2							
					1							
							Bottom of corehole at 18.49 mbgs		297.42 / 18.49	297.42 / 18.49		
19												
20												
21												
22												
23												

Notes:
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Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-107D

CLIENT: City of Guelph	DATE DRILLED: Jun 22 to Jul 17, 2018	GROUND ELEVATION: 315.39 masl	NORTHING: 4822252.0
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.44 masl	EASTING: 562201.1
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.60 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, PQ, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	1.05 m stick up	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID 100 200 300 400
							CONCRETE:	315.24	315.39 / 0.00	Monument casing secured in concrete	
							FILL: Silty Sand, dark brown, moist, trace wood debris, trace slag. - 8 cm seam yellow brick then some slag at 0.45 mbgs.	0.15	315.09 / 0.30	100 mm diameter steel casing set with portland & bentonite grout	
							SANDY SILT: Brown to light brown, moist, medium plasticity, fine grained sand, trace clay, trace fine gravel, trace orange mottling.	314.68 / 0.71		267 mm borehole Bentonite grout seal	
1							**SILTY SAND AND GRAVEL WITH COBBLES:** Light brownish grey, moist, medium sand with trace fine and coarse, fine to coarse gravel, trace clay.	313.97 / 1.42			
2							**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light brown, vuggy, manganese and iron staining on fractures, vugs and bedding plane partings, biostromal fossils, medium to coarse crystalline, high vug intensity (1 to 45 mm). - Lithology to 2.59 mbgs inferred from MW17-107S, HSA to 2.59 mbgs, PQ coring below 2.59 mbgs.	313.36 / 2.03	312.80 / 2.59	123 mm corehole	
					5						
3	55	Run1		8	4		- Weak rock/possible fracture zone 3.12 to 3.20 mbgs.				
					3						
					3						
					4						
4											
	100	Run2		35	3		- Manganese rich shaley layer at 4.17 mbgs. - Weak rock/possible fracture zone 4.29 to 4.37 mbgs.				
					2						
					6		- Grey to light grey, vuggy with biostromal fossils, medium to fine crystalline, medium vug intensity (1 to 10 mm) below 4.57 mbgs. - Manganese rich shaley layer at 4.60 mbgs.				
5					3						
					5						
					2		**ERAMOSA FORMATION / REFORMATORY QUARRY MEMBER DOLOSTONE:** Grey to light grey, vuggy with biostromal fossils, medium to fine crystalline, medium vug intensity (1 to 10 mm). - Infilled vugs with calcite/dolomite, crinoid fossil at 5.64 mbgs.	309.90 / 5.49			
	100	Run3		53	4						
6					4						
					4						
7					3		- Low vug intensity (1 to 45 mm) below 7.01 mbgs.				
	100	Run4		38	3		- Light to dark grey, with brachiopods and shell fragments fossil assembly, bioturbated and traction layers, fine crystalline, low vug intensity (<1 mm) below 7.44 mbgs.				
					4						
					5						

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-107D

CLIENT: City of Guelph	DATE DRILLED: Jun 22 to Jul 17, 2018	GROUND ELEVATION: 315.39 masl	NORTHING: 4822252.0
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.44 masl	EASTING: 562201.1
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.60 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, PQ, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
					3						
					3						
					2						
9	100	Run5		72	4						
					3						
					2						
10					3						
	100	Run6		70	3						
					3						
11					1						
					1						
					2		- Dark grey, decreasing fossil content with depth below 11.58 mbgs.				
12	95	Run7		90	1						
					1						
					1						
					2						
13					1						
	100	Run8		67	1						
					1		- Weathered shale at 13.72 to 13.82 mbgs.				
14					1						
							- Fossil content nearly absent below 14.07 mbgs.		301.25 / 14.14	301.16 / 14.23	
					1		**ERAMOSA FORMATION / VINEMOUNT MEMBER**				96 mm corehole
					2		**SHALEY DOLOSTONE:** Dark grey, fossils nearly absent, fine crystalline, low vug intensity (<1 mm). - PQ core to 14.22 mbgs, set 10 cm diameter steel casing with portland and bentonite grout seal, HQ coring below 14.23 mbgs.				
15	100	Run9		78	1		- Water return loss observed below 14.76 mbgs, continues for remainder of corehole.				
					3						
					2						
					1		- Very dark grey below 15.60 mbgs.				
					3						

Notes:
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IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-107D

CLIENT: City of Guelph
LOCATION: 200 Beverley St., Guelph
PROJECT NUMBER: 694757
LOGGED BY: L. Ribeiro

DATE DRILLED: Jun 22 to Jul 17, 2018
DRILLER: Aardvark Drilling
DRILL RIG: CME 75 Power Auger
DRILL METHOD: 159 mm HSA, PQ, HQ water core

GROUND ELEVATION: 315.39 masl
TOP OF PIPE: 316.44 masl
WATER ELEVATION: 312.60 masl
WATER LEVEL DATE: August 20, 2018

NORTHING: 4822252.0
EASTING: 562201.1
MOE WELL TAG#: A243494

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)
	95	Run 10		80	1, 1, 2, 1, 0	
17						
	100	Run 11		100	1, 1, 2, 1, 1	
18						
19						
	100	Run 12		78	1, 1, 2, 4	
20						
21						
22						
23						

LITHOLOGY & REMARKS

- Weak shaley rock 17.02 to 17.07 mbgs.

Bottom of corehole at 20.17 mbgs

STRATA PLOT

(masl) ELEV. / DEPTH (mbgs)
295.22 / 20.17

BOREHOLE/COREHOLE COMPLETION DETAILS

(masl) ELEV. / DEPTH (mbgs)	
298.32 / 17.07	Bentonite pellet seal
297.41 / 17.98	#3 silica sand filter pack
296.80 / 18.59	50 mm diameter SCH 40 PVC pipe #10-slot well screen
295.27 / 20.12	
295.22 / 20.17	

ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID: 100 200 300 400

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS
Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-112D

CLIENT: City of Guelph	DATE DRILLED: July 24, 2018	GROUND ELEVATION: 315.00 masl	NORTHING: 4822375.6
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 315.95 masl	EASTING: 562145.2
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.63 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	ELEV. (masl) / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: ELEV. (masl) / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID
										315.00 / 0.00	0.95 m stick up	
	50	SS1	6				**FILL:** Silty Sand, dark brown to black, dry, trace rootlets, loose.			314.70 / 0.30	Monument casing secured in concrete 267 mm borehole Bentonite chip seal	1.4
									314.24 / 0.76			
1	50	SS2	6				**SILTY SAND:** Dark to light brown, dry, fine, loose.					0.6
	33	SS3	55/ 23cm				- Fragments of dolostone below 1.52 mbgs. - Sampler refusal at 1.91 mbgs, HSA refusal at 1.98 mbgs, HQ coring below 1.98 mbgs.					0.7
2					3		**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light brown to beige, Mn and Fe staining on fractures and vugs, biostromal fossils, medium to coarse crystalline, high vug intensity (1 to 40 mm).		313.02 / 1.98	313.02 / 1.98	96 mm corehole	
					5							
	92	Run1		0	6		- Stromatoporoid fossil at 2.59 mbgs.					
3					7							
					6		- Shaley at 3.15 mbgs.					
					5		- Grey to brown, sparse biostromal fossils, medium to fine crystalline, medium vug intensity (1 to 50 mm) below 3.28 mbgs. - Shaley at 3.29 mbgs.					
					9							
4	90	Run2		8	6							
					4							
					6							
5					10+		- Weak rock/possible fracture zone 4.90 to 5.03 mbgs.					
					10+		- Weak rock/possible fracture zone 5.21 to 5.38 mbgs.					
	100	Run3		48	4					309.21 / 5.79	#3 silica sand filter pack	
6					4		- Coralloid fossil at 5.82 mbgs.					
					3		- Bioturbated at 6.17 mbgs.		308.69 / 6.31	308.60 / 6.40		
					3		**ERAMOSA FORMATION / REFORMATORY QUARRY MEMBER DOLOSTONE:** Light to dark grey, with brachiopods and shell fragments fossil assembly, bioturbated and traction layers, fine crystalline, low vug intensity (1 to 50 mm).				50 mm diameter SCH 40 PVC pipe #10-slot well screen	
					2							
7	95	Run4		57	3							
					5							
					4				307.08	307.08		

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-112D

CLIENT: City of Guelph	DATE DRILLED: July 24, 2018	GROUND ELEVATION: 315.00 masl	NORTHING: 4822375.6
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 315.95 masl	EASTING: 562145.2
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.63 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID: 100 200 300 400
							Bottom of corehole at 7.92 mbgs		7.92	7.92		
9												
10												
11												
12												
13												
14												
15												

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

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IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-112G

CLIENT: City of Guelph	DATE DRILLED: Nov 13 to Nov 15, 2018	GROUND ELEVATION: 315.00 masl	NORTHING: 4822374.9	Page 1 of 4
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 315.80 masl	EASTING: 562147.1	
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.80 masl	MOE WELL TAG#: A252554	
LOGGED BY: A. Casey	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: December 18, 2018		

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	0.80 m stick up	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID 100 200 300 400
							FILL: Silty Sand, dark brown to black, dry, trace rootlets, loose.			315.00 / 0.00	Monument casing secured in concrete	
										314.70 / 0.30	210 mm borehole Bentonite grout seal	
									314.24 / 0.76			
1							**SILTY SAND:** Dark to light brown, dry, fine, loose.					
							- Fragments of dolostone below 1.52 mbgs.					
2									313.02 / 1.98			
							GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE: Light brown to beige, Mn and Fe staining on fractures and vugs, biostromal fossils, medium to coarse crystalline, high vug intensity (1 to 40 mm).					
										312.46 / 2.54	123 mm corehole	
							- Stromatoporoid fossil at 2.59 mbgs.					
3							- Shaley at 3.15 mbgs.					
							- Grey to brown, sparse biostromal fossils, medium to fine crystalline, medium vug intensity (1 to 50 mm) below 3.28 mbgs.					
							- Shaley at 3.29 mbgs.					
4												
5							- Weak rock/possible fracture zone 4.90 to 5.03 mbgs.					
							- Weak rock/possible fracture zone 5.21 to 5.38 mbgs.					
							- Coralloid fossil at 5.82 mbgs.					
6							- Bioturbated at 6.17 mbgs.					
									308.69 / 6.31			
							ERAMOSA FORMATION / REFORMATORY QUARRY MEMBER DOLOSTONE: Light to dark grey, with brachiopods and shell fragments fossil assembly, bioturbated and traction layers, fine crystalline, low vug intensity (1 to 50 mm).					
7												
					0		- Lithology to 7.62 mbgs inferred from adjacent MW18-112D, HSA to top of bedrock, ream PW casing and PQ core, logging begins at 7.62 mbgs.					
					2							

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

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IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-112G

CLIENT: City of Guelph	DATE DRILLED: Nov 13 to Nov 15, 2018	GROUND ELEVATION: 315.00 masl	NORTHING: 4822374.9
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 315.80 masl	EASTING: 562147.1
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.80 masl	MOE WELL TAG#: A252554
LOGGED BY: A. Casey	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: December 18, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
					3		- 10 cm vertical fracture at 8.25 mbgs.					
	100	Run5		88	0		- 8 cm healed vertical fracture at 8.66 mbgs.					
9					0							
					3		- 8 cm weak rock at 9.30 mbgs.					
					1		- 23 cm vertical fracture at 9.53 mbgs.					
10	100	Run6		70	0							
					0							
					0							
11					1		- Medium to dark grey, strong, fresh, moderately close joint spacing, fine crystalline, sound, frequent fossils (1 to 3 mm), occasional vugs (1 to 3 mm) below 10.67 mbgs.					
					2							
	100	Run7		85	0							
					1							
12					2							
					4		- 15 cm vertical fracture at 12.50 mbgs.					
					1							
13	100	Run8		83	1							
					1							
					0		- 8 cm vein at 13.72 mbgs.					
14					2		- Occasional fossils (2 to 5 mm), few vugs below 13.82 mbgs.					
					0							
	100	Run9		100	1		- 36 cm vein at 14.55 mbgs.					
					1							
15					1							
	100	Run 10		100	0		- Ream HW casing to 15.39 mbgs, HQ coring below 15.29 mbgs.			299.71 / 15.29	96 mm corehole	
					1		**ERAMOSA FORMATION / VINEMOUNT MEMBER**		299.42 / 15.58			
					3		**SHALY DOLOSTONE:** Light to medium to grey, strong, fresh, close joint spacing, fine crystalline, slightly fractured, frequent fossils (1 to 5 mm).					

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-112G

CLIENT: City of Guelph	DATE DRILLED: Nov 13 to Nov 15, 2018	GROUND ELEVATION: 315.00 masl	NORTHING: 4822374.9
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 315.80 masl	EASTING: 562147.1
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.80 masl	MOE WELL TAG#: A252554
LOGGED BY: A. Casey	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: December 18, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
	100	Run 11		87	1, 1, 2		- 13 cm vertical vein at 15.77 mbgs. - 10 cm vertical fracture at 15.87 mbgs.					
17					2, 1		- Weak rock at 17.43 mbgs.					
	100	Run 12		93	1, 0, 2					296.71 / 18.29	Bentonite pellet seal	
18					2, 1					296.10 / 18.90	#2 silica sand filter pack	
19	100	Run 13		98	2, 0, 1		- Weak rock at 19.89 mbgs.			295.65 / 19.35	50 mm diameter SCH 40 PVC pipe #10-slot well screen	
20					0, 0, 0		- Medium to dark grey, wide joint spacing, occasional fossils (1 to 5 mm) below 20.09 mbgs.					
21	100	Run 14		95	0, 2, 1		- Weak rock at 21.10 mbgs.			294.12 / 20.88 293.97 / 21.03	Bentonite chip seal	
22	100	Run 15		98	1, 1, 3, 0		**GOAT ISLAND/ANCASTER MEMBER:** Light grey, strong, fresh, close to moderately close joint spacing, slightly fractured. - Very frequent vugs (1 to 10 mm) at 22.10 mbgs.		293.02 / 21.98			
23	100	Run		97	0, 2, 1		- Light grey and light brown, mudstone, medium to fine grained, few vugs (1 to 5 mm), fossiliferous, undulating stratification below 23.14 mbgs.					

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-112G

CLIENT: City of Guelph
LOCATION: 200 Beverley St., Guelph
PROJECT NUMBER: 694757
LOGGED BY: A. Casey

DATE DRILLED: Nov 13 to Nov 15, 2018
DRILLER: Aardvark Drilling
DRILL RIG: CME 75 Power Auger
DRILL METHOD: 108 mm HSA, PQ, HQ water core

GROUND ELEVATION: 315.00 masl
TOP OF PIPE: 315.80 masl
WATER ELEVATION: 312.80 masl
WATER LEVEL DATE: December 18, 2018

NORTHING: 4822374.9
EASTING: 562147.1
MOE WELL TAG#: A252554

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
		16			2						
					0						
					0						
25					2						
	100	Run 17		75	1		- Large vug with calcite crystalline at 25.43 mbgs.				
					2						
26					1				288.81 / 26.19	288.81 / 26.19	
							Bottom of corehole at 26.19 mbgs				
27											
28											
29											
30											
31											

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-112S

CLIENT: City of Guelph	DATE DRILLED: July 25, 2018	GROUND ELEVATION: 314.98 masl	NORTHING: 4822373.7
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 315.90 masl	EASTING: 562145.4
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.59 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
							FILL: Silty Sand, dark brown to black, dry, trace rootlets, loose.		314.98 / 0.00; 314.68 / 0.30	Monument casing secured in concrete; 267 mm borehole; Bentonite chip seal; 0.92 m stick up
								314.22 / 0.76		
1							**SILTY SAND:** Dark to light brown, dry, fine, loose.			
2							- Lithology to 2.13 mbgs inferred from MW18-112D, HSA to 2.13 mbgs, set HW casing, HQ coring below 2.13 mbgs.	312.85 / 2.13	312.85 / 2.13	96 mm corehole
					3		**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light brown to beige, vuggy, Mn and Fe staining on fractures and vugs, biostromal fossils, coarse crystalline, high vug intensity (1 to 30 mm).			
					6					
	100	Run1		8	8					
3									311.93 / 3.05	#3 silica sand filter pack
					10+		- Grey to brown, sparse fossils, medium to fine crystalline, medium vug intensity (1 to 40 mm) below 3.12 mbgs.			
					10+		- Weak rock/possible fracture zone 3.14 to 3.66 mbgs. - Shaley beds at 3.15 mbgs.		311.55 / 3.43	50 mm diameter SCH 40 PVC pipe #10-slot well screen
					5					
4					6					
	80	Run2		0						
					6					
					6		- Weak rock/possible fracture zone 4.55 to 4.67 mbgs.			
5							Bottom of corehole at 4.95 mbgs	310.03 / 4.95	310.03 / 4.95	
6										
7										

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

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IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-113D

CLIENT: City of Guelph	DATE DRILLED: Dec 3 to Dec 4, 2018	GROUND ELEVATION: 315.10 masl	NORTHING: 4822355.0	Page 1 of 3
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 315.90 masl	EASTING: 562110.6	
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.78 masl	MOE WELL TAG#: A252554	
LOGGED BY: A. Casey	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: December 18, 2018		

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	0.80 m stick up	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID 100 200 300 400
							FILL: Silty Sand, dark brown, dry, fine to medium, loose, trace rootlets.			315.10 / 0.00; 314.80 / 0.30	Monument casing secured in concrete; 210 mm borehole; Bentonite grout seal	
									314.19 / 0.91			
1							**SILTY SAND:** Dark brown, dry, fine to medium, some fine gravel, loose.					
									313.40 / 1.70	313.40 / 1.70	123 mm corehole	
2							**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light brown to beige, vuggy, Mn and Fe staining on fractures and vugs, biostromal fossils, medium to coarse crystalline, high vug intensity (1 to 20 mm).					
							- Weak rock/possible fracture zone 2.51 to 2.64 mbgs.					
3							- Grey to light grey, stromatoporoid fossils, medium crystalline, medium vug intensity (1 to 30 mm) below 2.79 mbgs.					
							- Weak rock/possible fracture zone 3.33 to 4.04 mbgs.					
4							- Shaley beds 4.17 to 4.32 mbgs. - Weak rock/possible fracture zone 4.27 to 4.32 mbgs.					
5							- Lithology to 4.90 mbgs inferred from adjacent MW18-113S, HSA to top of bedrock, ream PW casing and PQ core, logging resumes at 6.10 mbgs.					
6									309.00 / 6.10			
					1		**ERAMOSA FORMATION / REFORMATORY QUARRY MEMBER DOLOSTONE:** Medium grey, strong, thinly bedded, slightly weathered, fossiliferous.					
					3		- Fossil (30 mm) at 6.43 mbgs.					
	100	Run4		68	3							
7					3		- Large vug (50 mm) with calcite crystallization at 7.06 mbgs.					
					3							
					1							
					1							

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-113D

CLIENT: City of Guelph	DATE DRILLED: Dec 3 to Dec 4, 2018	GROUND ELEVATION: 315.10 masl	NORTHING: 4822355.0
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 315.90 masl	EASTING: 562110.6
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.78 masl	MOE WELL TAG#: A252554
LOGGED BY: A. Casey	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: December 18, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
	100	Run5		95	2		- Weak rock at 8.41 mbgs.					
					2							
					1							
9					1							
					1							
					1							
	100	Run6		93	1		- Weak rock at 9.93 mbgs.					
10					2							
					1							
					1							
11					1		- 10 cm vein at 10.87 mbgs.					
	100	Run7		100	2							
					1							
12					1							
					0		- 15 cm vein at 12.14 mbgs.		302.91 / 12.19			
							ERAMOSA FORMATION / VINEMOUNT MEMBER **SHALY DOLOSTONE:** Dark grey, strong, moderately fractured, thinly bedded, fossiliferous.					
					1							
13	100	Run8		100	0							
					1							
					1							
					1							
14					0							
	100	Run9		100	0							
					1							
15					1					299.86 / 15.24		
	100	Run 10		100	0		- Ream HW casing, HQ coring below 15.24 mbgs.				96 mm corehole	
					1		- Trace fossils (1 to 3 mm) below 15.24 mbgs.					
					2							

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-113D

CLIENT: City of Guelph	DATE DRILLED: Dec 3 to Dec 4, 2018	GROUND ELEVATION: 315.10 masl	NORTHING: 4822355.0
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 315.90 masl	EASTING: 562110.6
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.78 masl	MOE WELL TAG#: A252554
LOGGED BY: A. Casey	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: December 18, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)
	100	Run 11		93	0	
					0	
					0	
17					0	
					2	
	100	Run 12		100	2	
18					1	
					0	
					0	
					0	
19					2	
	100	Run 13		100	1	
					0	
20						
21						
22						
23						

LITHOLOGY & REMARKS: Bottom of corehole at 19.96 mbgs

STRATA PLOT

(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS (masl) ELEV. / DEPTH (mbgs)	
	297.57 / 17.53	Bentonite pellet seal
	296.96 / 18.14	#2 silica sand filter pack 50 mm diameter SCH 40 PVC pipe #10-slot well screen
	296.81 / 18.29	
	295.29 / 19.81	
295.14 / 19.96	295.14 / 19.96	

ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID: 100 200 300 400

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-113S

CLIENT: City of Guelph	DATE DRILLED: July 26, 2018	GROUND ELEVATION: 315.12 masl	NORTHING: 4822354.8
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.09 masl	EASTING: 562108.6
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.64 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID
									315.12 / 0.00 — 0.97 m stick up	
	58	SS1	7				**FILL:** Silty Sand, dark brown, dry, fine to medium, loose, trace rootlets.		314.82 / 0.30 — Monument casing secured in concrete; 267 mm borehole; Bentonite chip seal	0.8
								314.21 / 0.91		
1	58	SS2	10				**SILTY SAND:** Dark brown, dry, fine to medium, some fine gravel, loose.			1.7
							- Sampler refusal at 1.68 mbgs, HSA refusal at 1.70 mbgs, set HW casing, HQ coring below 1.70 mbgs.			
	21	SS3	50/15cm					313.42 / 1.70	313.42 / 1.70 — 96 mm corehole	1.8
					8		**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light brown to beige, vuggy, Mn and Fe staining on fractures and vugs, biostromal fossils, medium to coarse crystalline, high vug intensity (1 to 20 mm).			
2					9					
					8					
	100	Run1		0			- Weak rock/possible fracture zone 2.51 to 2.64 mbgs.			
					4					
							- Grey to light grey, stromatoporoid fossils, medium crystalline, medium vug intensity (1 to 30 mm) below 2.79 mbgs.			
3					9				312.07 / 3.05 — #3 silica sand filter pack	
					10+		- Weak rock/possible fracture zone 3.33 to 4.04 mbgs.		311.74 / 3.38 — 50 mm diameter SCH 40 PVC pipe; #10-slot well screen	
					10+					
					10+					
4	100	Run2		0						
					7		- Shaley beds 4.17 to 4.32 mbgs. - Weak rock/possible fracture zone 4.27 to 4.32 mbgs.			
					6					
								310.22 / 4.90	310.22 / 4.90	
5							Bottom of corehole at 4.90 mbgs			
6										
7										

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-114D

CLIENT: City of Guelph	DATE DRILLED: Dec 4 to Dec 5, 2018	GROUND ELEVATION: 315.13 masl	NORTHING: 4822357.4
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 315.89 masl	EASTING: 562156.1
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.79 masl	MOE WELL TAG#: A252554
LOGGED BY: A. Casey	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: December 18, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
							FILL: Sand, dark brown, dry, fine to coarse, loose, trace rootlets.	314.37 / 0.76	315.13 / 0.00; 314.83 / 0.30	
1							**SILTY SAND:** Dark brown, dry, some fine gravel, medium dense.	313.91 / 1.22	313.91 / 1.22	
							GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE: Light brown to beige, vuggy, Mn and Fe staining on fractures and vugs, biostromal fossils, coarse crystalline, high vug intensity (1 to 30 mm), weathered to 1.68 mbgs. - Weak rock/possible fracture zone 1.37 to 11.47 mbgs.			
2										
3							- Shaley bed at 3.11 mbgs. - Grey to brown, sparse fossils, medium to fine crystalline medium vug intensity (1 to 40 mm) below 3.12 mbgs. - Weak rock/possible fracture zone 3.20 to 3.38 mbgs.			
							- Weak rock/possible fracture zone 3.76 to 3.89 mbgs.			
4							- Weak rock/possible fracture zone 4.14 to 4.24 mbgs.			
5							- Lithology to 4.90 mbgs inferred from adjacent MW18-114S, HSA to top of bedrock, ream PW casing and PQ core, logging resumes at 6.10 mbgs.			
6					2			308.88 / 6.25		
					1		**ERAMOSA FORMATION / REFORMATORY QUARRY MEMBER DOLOSTONE:** Medium to dark grey, strong, thinly bedded, slightly weathered, fossiliferous. - Vug (40 mm) with calcite crystallization at 6.48 mbgs.			
	100	Run4		78	3					
7					2		- 15 cm vertical fracture at 6.83 mbgs.			
					2		- Weathered rock at 7.32 mbgs. - Vug (40 mm) with calcite crystallization at 7.42 mbgs.			
					1					
					3		- 5 cm healed vertical fracture at 7.87 mbgs.			

BOREHOLE/COREHOLE COMPLETION DETAILS:
- 0.76 m stick up
- Monument casing secured in concrete
- 210 mm borehole Bentonite grout seal
- 123 mm corehole

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-114D

CLIENT: City of Guelph	DATE DRILLED: Dec 4 to Dec 5, 2018	GROUND ELEVATION: 315.13 masl	NORTHING: 4822357.4
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 315.89 masl	EASTING: 562156.1
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.79 masl	MOE WELL TAG#: A252554
LOGGED BY: A. Casey	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: December 18, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
	100	Run5		60	2		- 10 cm healed vertical fracture at 8.21 mbgs.					
					3							
9					2		- Weak rock at 8.86 mbgs.					
					2							
					2		- Fossil (25 mm) at 9.39 mbgs.					
	100	Run6		90	1							
10					3							
					0							
					4		- 15 cm vertical fracture at 10.74 mbgs.					
11					2							
	100	Run7		82	2		- Weak rock at 11.48 mbgs.					
					1							
12					1							
					2							
					2							
13	100	Run8		97	1							
					0							
					1							
					2		- Weak rock at 13.69 mbgs.		301.26 / 13.87			
14					1		**ERAMOSA FORMATION / VINEMOUNT MEMBER** **SHALY DOLOSTONE:** Dark grey, strong, thinly bedded, moderately fractured, fossiliferous. - Weak rock at 13.87 mbgs.					
	100	Run9		93	2							
					1							
15					2		- Weak rock at 14.94 mbgs.			299.89 / 15.24		
	100	Run 10		78	1		- Ream HW casing, HQ coring below 15.24 mbgs. - Weak rock at 15.42 mbgs.				96 mm corehole	
					1							
					3							

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-114D

CLIENT: City of Guelph	DATE DRILLED: Dec 4 to Dec 5, 2018	GROUND ELEVATION: 315.13 masl	NORTHING: 4822357.4
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 315.89 masl	EASTING: 562156.1
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.79 masl	MOE WELL TAG#: A252554
LOGGED BY: A. Casey	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: December 18, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
	100	Run 11		93	2		- Fossil (25 mm) at 16.25 mbgs.					
					2							
					1							
17					1		- Weak rock at 17.09 mbgs.					
					4		- Weak rock at 17.32 mbgs. - 5 cm vertical fracture at 17.37 mbgs.					
	100	Run 12		83	1		- 8 cm healed vertical fracture at 17.78 mbgs.					
18					2		- Fossil (25 mm) at 17.96 mbgs.					
					2					296.69 18.44	Bentonite pellet seal	
					2							
					0							
19					2		- Weak rock at 19.15 mbgs.			296.08 19.05 295.93 19.20	#2 silica sand filter pack 50 mm diameter SCH 40 PVC pipe #10-slot well screen	
	100	Run 13		73	3							
					2							
20					2							
	100	Run 14		89	2							
					1					294.40 20.73		
21							Bottom of corehole at 20.96 mbgs		294.18 20.96	294.18 20.96		
22												
23												

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

JACOBS

RECORD OF MONITORING WELL: MW18-114S

CLIENT: City of Guelph
LOCATION: 200 Beverley St., Guelph
PROJECT NUMBER: 694757
LOGGED BY: L. Ribeiro

DATE DRILLED: July 25, 2018
DRILLER: Aardvark Drilling
DRILL RIG: CME 75 Power Auger
DRILL METHOD: 159 mm HSA, HQ water core

GROUND ELEVATION: 315.15 masl
TOP OF PIPE: 316.19 masl
WATER ELEVATION: 312.60 masl
WATER LEVEL DATE: August 20, 2018

NORTHING: 4822355.5
EASTING: 562156.6
MOE WELL TAG#: A243494

DEPTH (mbgs)	Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID
									1.04 m stick up	100 200 300 400
	50	SS1	5			PHC (10:45) (0.00-0.61)	**FILL:** Sand, dark brown, dry, fine to coarse, loose, trace rootlets.		315.15 / 0.00; 314.85 / 0.30	Monument casing secured in concrete; 267 mm borehole; Bentonite chip seal; 0.6
1	46	SS2	68/ 23cm			PHC (10:55) (0.76-1.68)	**SILTY SAND:** Dark brown, dry, some fine gravel, medium dense. - Sampler refusal at 1.12 mbgs, Set HW casing, HQ coring below 1.22 mbgs.	314.39 / 0.76		1.2
					10+		**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light brown to beige, vuggy, Mn and Fe staining on fractures and vugs, biostromal fossils, coarse crystalline, high vug intensity (1 to 30 mm), weathered to 1.68 mbgs. - Weak rock/possible fracture zone 1.37 to 11.47 mbgs.	313.93 / 1.22	313.93 / 1.22	96 mm corehole
	100	Run1		16	4					
2					4					
					6					
	100	Run2		8	7					
					6					
3					10+		- Shaley bed at 3.11 mbgs. - Grey to brown, sparse fossils, medium to fine crystalline, medium vug intensity (1 to 40 mm) below 3.12 mbgs. - Weak rock/possible fracture zone 3.20 to 3.38 mbgs.		312.10 / 3.05; 311.77 / 3.38	#3 silica sand filter pack; 50 mm diameter SCH 40 PVC pipe #10-slot well screen
					5					
					10+		- Weak rock/possible fracture zone 3.76 to 3.89 mbgs.			
4	100	Run3		16	10+		- Weak rock/possible fracture zone 4.14 to 4.24 mbgs.			
					4					
					7			310.25 / 4.90	310.25 / 4.90	
5							Bottom of corehole at 4.90 mbgs			
6										
7										

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

JACOBS

RECORD OF MONITORING WELL: MW18-115D

CLIENT: City of Guelph	DATE DRILLED: December 6, 2018	GROUND ELEVATION: 315.17 masl	NORTHING: 4822388.9
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 315.98 masl	EASTING: 562188.5
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.59 masl	MOE WELL TAG#: A252554
LOGGED BY: A. Casey	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: December 18, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
							FILL: Silty Sand, dark brown, dry, fine to medium, some rootlets and organic matter, trace gravel, loose.			315.17 / 0.00; 314.87 / 0.30	
							SAND: Dark brown, dry, fine, some organics, some fine gravel, loose.		314.41 / 0.76		
1											
2									312.88 / 2.29	312.88 / 2.29	
							GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE: Light brown to beige, vuggy, Mn staining on fractures, biostromal fossils, medium to coarse crystalline, high vug intensity (1 to 30 mm), weathered to 2.29 mbgs. - Stromatoporoid fossil at 2.51 mbgs.				
3							- Manganese rich shaley bedding at 2.90 mbgs.				
							- Greyish brown, sparse stromatoporoid fossils, medium to fine crystalline, medium vug intensity (1 to 25 mm) below 3.18 mbgs. - Weak rock/possible fracture zone 3.30 to 3.43 mbgs.				
4							- Manganese rich shaley bedding at 4.09 mbgs.				
5							- Lithology to 4.72 mbgs inferred from adjacent MW18-115S, HSA to top of bedrock, ream PW casing and PQ core, logging resumes at 6.10 mbgs.				
6					3						
					3						
	100	Run5		77	1		- 13 cm healed vertical fracture at 6.73 mbgs.				
7					1						
					1				307.55 / 7.62		
							ERAMOSA FORMATION / REFORMATORY QUARRY MEMBER DOLOSTONE: Medium grey, strong, fresh, thinly bedded, frequent vugs.				

BOREHOLE/COREHOLE COMPLETION DETAILS:
- 0.76 m stick up
- Monument casing secured in concrete
- 210 mm borehole Bentonite grout seal
- 123 mm corehole

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-115D

CLIENT: City of Guelph	DATE DRILLED: December 6, 2018	GROUND ELEVATION: 315.17 masl	NORTHING: 4822388.9
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 315.98 masl	EASTING: 562188.5
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.59 masl	MOE WELL TAG#: A252554
LOGGED BY: A. Casey	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: December 18, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
	100	Run6										
9					0		- Few vugs below 9.14 mbgs. - 8 cm healed fracture at 9.22 mbgs.					
					1							
	100	Run7		100	1							
10					2							
					1							
					0							
11					2							
	100	Run8		80	4		- Medium to dark grey, moderately fractured, trace vugs (3 to 15 mm), frequent fossils (1 to 15 mm) below 11.28 mbgs.					
					1							
12					1							
					0							
					1							
	100	Run9		100	1							
13					1							
					1							
					0							
14					0							
	100	Run 10		100	1				300.54 / 14.63			
					1		**ERAMOSA FORMATION / VINEMOUNT MEMBER** **SHALY DOLOSTONE:** Dark grey, strong, fresh, moderately fractured, trace vugs (3 to 15 mm), few fossils (1 to 5 mm).					
15					1							
	100	Run 11		100	0		- Ream HW casing, HQ coring below 15.24 mbgs.			299.93 / 15.24	96 mm corehole	
					0							
					0							

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-115D

CLIENT: City of Guelph	DATE DRILLED: December 6, 2018	GROUND ELEVATION: 315.17 masl	NORTHING: 4822388.9
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 315.98 masl	EASTING: 562188.5
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.59 masl	MOE WELL TAG#: A252554
LOGGED BY: A. Casey	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: December 18, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)
	93	Run 12		100	1, 1, 0	
17					1, 1, 1	
	100	Run 13		100	1, 1, 0	
18					1, 0	
19	100	Run 14		100	1, 1, 1, 1	
20					1	
	100	Run 15		91	0, 1	
21						
22						
23						

LITHOLOGY & REMARKS:

- Slightly weathered fracture at 16.89 mbgs.
- Trace fossils below 16.97 mbgs.

Bottom of corehole at 20.88 mbgs

STRATA PLOT

(masl) ELEV. / DEPTH (mbgs)	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS
	296.73 / 18.44	Bentonite pellet seal
	296.12 / 19.05	#2 silica sand filter pack
	295.97 / 19.20	50 mm diameter SCH 40 PVC pipe; #10-slot well screen
	294.44 / 20.73	
294.29 / 20.88	294.29 / 20.88	

ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID: 100 200 300 400

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

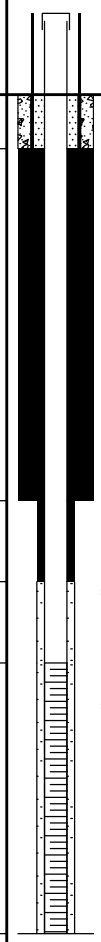
CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-115S

CLIENT: City of Guelph	DATE DRILLED: July 24, 2018	GROUND ELEVATION: 315.26 masl	NORTHING: 4822387.7
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.25 masl	EASTING: 562187.3
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.84 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID
	63	SS1	12				**FILL:** Silty Sand, dark brown, dry, fine to medium, some rootlets and organic matter, trace gravel, loose.		314.50 / 0.76	315.26 / 0.00; 314.96 / 0.30	1.8
1	50	SS2	3				**SAND:** Dark brown, dry, fine, some organics, some fine gravel, loose.				1.4
	42	SS3	17								1.1
2							- Sampler refusal at 2.06 mbgs, HSA refusal at 2.29 mbgs, HQ coring below 2.29 mbgs.		312.97 / 2.29	312.97 / 2.29	
					4		**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light brown to beige, vuggy, Mn staining on fractures, biostromal fossils, medium to coarse crystalline, high vug intensity (1 to 30 mm), weathered to 2.29 mbgs.				
	92	Run1		0	5		- Stromatoporoid fossil at 2.51 mbgs.			312.52 / 2.74	
3					8		- Manganese rich shaley bedding at 2.90 mbgs.				
					10+		- Greyish brown, sparse stromatoporoid fossils, medium to fine crystalline, medium vug intensity (1 to 25 mm) below 3.18 mbgs.			312.06 / 3.20	
					5		- Weak rock/possible fracture zone 3.30 to 3.43 mbgs.				
					4						
4	100	Run2		15							
					5		- Manganese rich shaley bedding at 4.09 mbgs.				
					6						
							Bottom of corehole at 4.72 mbgs		310.54 / 4.72	310.54 / 4.72	
5											
6											
7											



Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-116D

CLIENT: City of Guelph	DATE DRILLED: July 27, 2018	GROUND ELEVATION: 315.45 masl	NORTHING: 4822310.8
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.51 masl	EASTING: 562196.1
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.57 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID 100 200 300 400
							FILL: Sand, cream to light brown, dry, fine to medium, loose, trace gravel, some organic matter and rootlets.			315.45 / 0.00; 315.15 / 0.30; 1.06 m stick up; Monument casing secured in concrete; 267 mm borehole; Bentonite chip seal	
							SAND, GRAVEL AND COBBLES: Light brown, dry, fine to medium sand, very dense. - Lithology to 1.65 mbgs inferred from MW18-116S, HSA to 1.65 mbgs, HQ coring below 1.65 mbgs.		314.84 / 0.61		
1							**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light brown to beige, Mn and Fe staining on fractures and vugs, biostromal fossils, medium to coarse crystalline, high vug intensity (1 to 30 mm).		314.44 / 1.01	313.80 / 1.65; 96 mm corehole	
	100	Run1		0	10+		- Weak rock/possible fracture zone 1.73 to 1.88 mbgs.				
2					10+		- Weak rock/possible fracture zone 2.03 to 2.41 mbgs.				
					10+						
	100	Run2		0	10+		- Weak rock/possible fracture zone 2.54 to 2.69 mbgs.				
3					10+		- Weak rock/possible fracture zone 2.82 to 2.87 mbgs. - Water return loss observed below 2.87 mbgs, continues for remainder of corehole.				
					8		- Weak rock/possible fracture zone 3.00 to 3.02 mbgs.				
					10+						
					10+		- Weak rock/possible fracture zone 3.61 to 3.91 mbgs.				
4					6		- Grey to light grey, stromatoporoid fossils, medium to fine crystalline, medium vug intensity (1 to 50 mm) below 3.91 mbgs.				
	100	Run3		7	5		- Weak rock/possible fracture zone 4.14 to 4.19 mbgs.				
					6						
5					10+						
					5		- 60 mm vug infilled with calcite crystal at 5.44 mbgs.				
	100	Run4		15	4		- Shaley at 5.64 mbgs.				
6					5					309.53 / 5.92; #3 silica sand filter pack	
					7						
					3					308.95 / 6.50; 50 mm diameter SCH 40 PVC pipe #10-slot well screen	
					2						
7							- Shaley at 7.01 mbgs.				
	90	Run5		66	4		- Bioturbated at 7.14 mbgs.		308.29 / 7.16		
					2		**ERAMOSA FORMATION / REFORMATORY QUARRY MEMBER DOLOSTONE:** Light to dark grey, brachiopods and shell fragments fossil assembly, bioturbated and traction layers, fine crystalline, low vug intensity (1 to 3 mm).				
					4		- Weak rock/possible fracture zone 7.82 to 7.87 mbgs.				

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

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IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-116D

CLIENT: City of Guelph	DATE DRILLED: July 27, 2018	GROUND ELEVATION: 315.45 masl	NORTHING: 4822310.8
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.51 masl	EASTING: 562196.1
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.57 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID: 100 200 300 400
							Bottom of corehole at 8.03 mbgs		307.42 / 8.03	307.42 / 8.03		
9												
10												
11												
12												
13												
14												
15												

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

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RECORD OF MONITORING WELL: MW18-116S

CLIENT: City of Guelph	DATE DRILLED: Jul 27 to Jul 30, 2018	GROUND ELEVATION: 315.45 masl	NORTHING: 4822312.3
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.51 masl	EASTING: 562198.3
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.56 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)
	58	SS1	13			
	50	SS2	84/15cm			
1					6	
	100	Run1		0	6	
					6	
2					6	
					6	
	100	Run2		17		
					4	
3					6	
					10+	
	100	Run3		0	10+	
					3	
4						
5						
6						
7						

LITHOLOGY & REMARKS

FILL: Sand, cream to light brown, dry, fine to medium, loose, trace gravel, some organic matter and rootlets.

SAND, GRAVEL AND COBBLES: Light brown, dry, fine to medium sand, very dense.
- Sampler refusal at 1.07 mbgs, HQ coring below 1.02 mbgs.

GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE: Light brown to beige, Mn and Fe staining on fractures, medium to coarse crystalline, high vug intensity (1 to 10 mm), weathered to 1.68 mbgs.

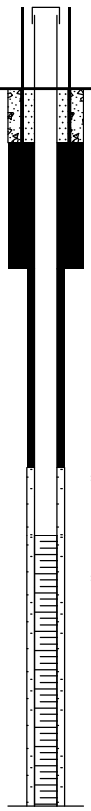
- Weak rock/possible fracture zone 3.38 to 3.66 mbgs.

- Grey to light grey, stromatoporoid fossils, medium to fine crystalline below 3.38 mbgs.
- Stromatoporoid fossil at 3.66 mbgs.

Bottom of corehole at 4.04 mbgs

STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	(masl) ELEV. / DEPTH (mbgs)
		315.45 / 0.00
		315.15 / 0.30
	314.84 / 0.61	
	314.44 / 1.01	314.44 / 1.01
		313.32 / 2.13
		312.94 / 2.51
	311.41 / 4.04	311.41 / 4.04

BOREHOLE/COREHOLE COMPLETION DETAILS



- 1.06 m stick up
- Monument casing secured in concrete
- 267 mm borehole
- Bentonite chip seal
- 96 mm corehole
- #3 silica sand filter pack
- 50 mm diameter SCH 40 PVC pipe #10-slot well screen

ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID

100 200 300 400

2.7

3.8

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

JACOBS

RECORD OF MONITORING WELL: MW18-117S

CLIENT: City of Guelph	DATE DRILLED: July 25, 2018	GROUND ELEVATION: 315.36 masl	NORTHING: 4822317.7
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.36 masl	EASTING: 562136.1
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.62 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
						PHCs & BTEX (14:00) (0.00-0.61)	**FILL:** Sand, dark brown, dry, fine to medium, some silt, trace gravel, medium dense, trace rootlets, trace glass.			315.36 / 0.00	1.00 m stick up; Monument casing secured in concrete
	71	SS1	11							315.06 / 0.30	267 mm borehole; Bentonite chip seal; 0.1
						Metals (14:20) (0.76-1.68)					
1	54	SS2	15				- Fine to coarse, some clay and silt, trace slag below 0.91 mbgs.				0.0
		SS3	50+/ 20cm				**SILTY SAND:** Dark to light brown, dry, some gravel, medium dense.		313.68 / 1.68		
					4		- Sampler refusal at 1.88 mbgs, HQ coring below 1.83 mbgs.		313.53 / 1.83	313.53 / 1.83	96 mm corehole
2					6		**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light brown, Mn and Fe staining on fractures and vugs, biostromal fossils, medium to coarse crystalline, high vug intensity (1 to 10 mm), weathered to 2.29 mbgs.				
	100	Run1		6	6						
					6						
3					6					312.31 / 3.05	#3 silica sand filter pack
					10+		- Weak rock/possible fracture zone 3.38 to 3.68 mbgs.			312.01 / 3.35	50 mm diameter SCH 40 PVC pipe #10-slot well screen
					8						
4	100	Run2		0	7		- Shaley bed at 4.01 mbgs. - Brownish grey, stromatoporoid fossils, medium to fine crystalline, medium vug intensity (1 to 50 mm) below 4.04 mbgs.				
					6						
					10+						
							- Weak rock/possible fracture zone 4.75 to 4.88 mbgs.		310.48 / 4.88	310.48 / 4.88	
5							Bottom of corehole at 4.88 mbgs				
6											
7											

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-118S

CLIENT: City of Guelph	DATE DRILLED: July 30, 2018	GROUND ELEVATION: 315.65 masl	NORTHING: 4822335.6	Page 1 of 1
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.66 masl	EASTING: 562185.3	
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.58 masl	MOE WELL TAG#: A243494	
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, HQ water core	WATER LEVEL DATE: August 20, 2018		

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
							FILL: Sand, dark brown, dry, fine to medium, some slag, very loose to loose.			315.65 / 0.00; 315.35 / 0.30 — 1.01 m stick up; Monument casing secured in concrete; 267 mm borehole; Bentonite chip seal	
	0	SS1	2								
1	67	SS2	8								0.1
									314.13 / 1.52		
							CLAYEY SILT: Dark brown, dry, some sand and gravel, medium dense.				
	67	SS3	28								19.7
2							- Sampler refusal at 2.06 mbgs, HSA refusal at 2.13 mbgs, HQ coring below 2.16 mbgs.				
									313.49 / 2.16	313.49 / 2.16	
					10+		**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light brown to beige, Mn staining on fractures, biostromal fossils, medium to coarse crystalline, high vug intensity (1 to 20 mm).			96 mm corehole	
					10+		- Weak rock/possible fracture zone 2.24 to 2.31 mbgs.				
	100	Run1		0			- Weak rock/possible fracture zone 2.57 to 2.69 mbgs.			312.91 / 2.74	
					5					#3 silica sand filter pack	
3											
					5						
										312.40 / 3.25	
					5					50 mm diameter SCH 40 PVC pipe #10-slot well screen	
					4						
					10+						
4	100	Run2		0			- Shaley bed at 3.99 mbgs.				
					10+		- Weak rock/possible fracture zone 4.09 to 4.14 mbgs. - Grey to light grey, stromatoporoid fossils, medium to fine crystalline, medium vug intensity (1 to 30 mm) below 4.14 mbgs.				
					9		- Weak rock/possible fracture zone 4.19 to 4.34 mbgs.				
									310.87 / 4.78	310.87 / 4.78	
							Bottom of corehole at 4.78 mbgs				
5											
6											
7											

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-119D

CLIENT: City of Guelph	DATE DRILLED: Dec 2 to Dec 3, 2018	GROUND ELEVATION: 315.58 masl	NORTHING: 4822278.0	Page 1 of 3
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.47 masl	EASTING: 562166.7	
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.77 masl	MOE WELL TAG#: A252554	
LOGGED BY: A. Casey	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: December 18, 2018		

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
							FILL: Silty Sand, dark brown to black, dry, loose, some organic matter, trace glass.			315.58 / 0.00; 315.28 / 0.30	
1									314.06 / 1.52		
							SAND: Light brown, dry, fine to medium, trace gravel, dense.				
2									313.24 / 2.34	313.32 / 2.26	
							GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE: Light brown to beige, Mn staining, biostromal fossils, medium to coarse crystalline, high vug intensity (1 to 10 mm). - Weak rock/possible fracture zone 2.34 to 2.59 mbgs. - Weak rock/possible fracture zone 2.64 to 3.71 mbgs.				
3											
4							- Weak rock/possible fracture zone 3.99 to 4.17 mbgs. - Weak rock/possible fracture zone 4.24 to 4.37 mbgs. - Grey to brown, biostromal fossils, medium to fine crystalline, medium vug intensity (1 to 40 mm) below 4.37 mbgs.				
5							- Lithology to 4.98 mbgs inferred from adjacent MW18-119S, HSA to top of bedrock, ream PW casing and PQ core, logging resumes at 6.10 mbgs.				
6					1						
					2						
					3		- Weak rock at 6.68 mbgs.		308.81 / 6.77		
7	100	Run5		92	4		**ERAMOSA FORMATION / REFORMATORY QUARRY MEMBER DOLOSTONE:** Light to medium grey, strong, fresh, fine crystalline, low vug intensity (1 to 15 mm).				
					1		- Weak rock at 7.29 mbgs.				
					3		- Vug (50 mm) at 7.52 mbgs. - Medium to dark grey, occasional fossils (1 to 5 mm) below 7.62 mbgs. - Slightly weathered fracture at 7.70 mbgs.				
					2						

BOREHOLE/COREHOLE COMPLETION DETAILS:
- 0.89 m stick up
- Monument casing secured in concrete
- 210 mm borehole Bentonite grout seal
- 123 mm corehole

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

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IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-119D

CLIENT: City of Guelph	DATE DRILLED: Dec 2 to Dec 3, 2018	GROUND ELEVATION: 315.58 masl	NORTHING: 4822278.0
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.47 masl	EASTING: 562166.7
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.77 masl	MOE WELL TAG#: A252554
LOGGED BY: A. Casey	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: December 18, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID 100 200 300 400
	100	Run6		80	3							
					2		- Trace vugs (1 to 5 mm) below 8.53 mbgs.					
					4							
9										306.44 / 9.14	96 mm corehole	
	100	Run7		72	2		- Ream HW casing, HQ coring below 9.14 mbgs.					
					2							
					2							
10							- Frequent fossils (1 to 5 mm) below 9.93 mbgs.					
	97	Run8		97	2							
					3							
					1							
11					2							
					2		- Occasional fossils (1 to 5 mm) below 11.28 mbgs.					
	100	Run9		93	1							
12					2							
					1							
					2							
					2							
13												
	100	Run 10		90	1							
					2							
					1							
14					2		**ERAMOSA FORMATION / VINEMOUNT MEMBER** **SHALY DOLOSTONE:** Medium to dark grey, strong, fresh, fine crystalline, thinly bedded.		301.56 / 14.02			
					1							
					3							
	100	Run 11		97								
15					0							
					1		- Few fossils (1 to 10 mm) below 15.24 mbgs.					
					3		- 20 cm vertical fracture at 15.62 mbgs.					
					1					299.58		

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-119D

CLIENT: City of Guelph	DATE DRILLED: Dec 2 to Dec 3, 2018	GROUND ELEVATION: 315.58 masl	NORTHING: 4822278.0
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.47 masl	EASTING: 562166.7
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.77 masl	MOE WELL TAG#: A252554
LOGGED BY: A. Casey	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: December 18, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
	100	Run 12		87	1					16.00	Bentonite pellet seal	
					2					298.97 / 16.61	#2 silica sand filter pack	
					0					298.66 / 16.92	50 mm diameter SCH 40 PVC pipe #10-slot well screen	
17					1							
					1							
	100	Run 13		100	2							
18					0							
					1					297.14 / 18.44		
							Bottom of corehole at 18.57 mbgs		297.01 / 18.57	297.01 / 18.57		
19												
20												
21												
22												
23												

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

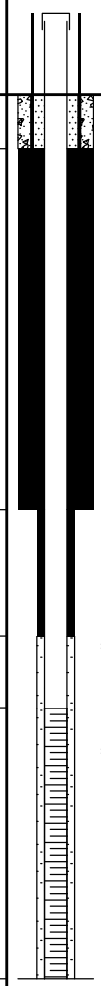
CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-119S

CLIENT: City of Guelph	DATE DRILLED: July 30, 2018	GROUND ELEVATION: 315.61 masl	NORTHING: 4822276.9	Page 1 of 1
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.57 masl	EASTING: 562168.3	
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.59 masl	MOE WELL TAG#: A243494	
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, HQ water core	WATER LEVEL DATE: August 20, 2018		

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
							FILL: Silty Sand, dark brown to black, dry, loose, some organic matter, trace glass.			315.61 / 0.00	
	58	SS1	2							315.31 / 0.30	
1	29	SS2	6								
									314.09 / 1.52		
	38	SS3	33				**SAND:** Light brown, dry, fine to medium, trace gravel, dense.				
2							- Sampler refusal at 2.03 mbgs, HSA refusal at 2.29 mbgs, HQ coring below at 2.34 mbgs.				
									313.27 / 2.34	313.27 / 2.34	
					4		**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light brown to beige, Mn staining, biostromal fossils, medium to coarse crystalline, high vug intensity (1 to 10 mm).				
					10+		- Weak rock/possible fracture zone 2.34 to 2.59 mbgs.				
	100	Run1		0			- Weak rock/possible fracture zone 2.64 to 3.71 mbgs.				
3					10+					312.56 / 3.05	
					10+					312.16 / 3.45	
					6						
4							- Weak rock/possible fracture zone 3.99 to 4.17 mbgs.				
					10+						
	100	Run2		0			- Weak rock/possible fracture zone 4.24 to 4.37 mbgs.				
					3		- Grey to brown, biostromal fossils, medium to fine crystalline, medium vug intensity (1 to 40 mm) below 4.37 mbgs.				
					6						
5							Bottom of corehole at 4.98 mbgs		310.63 / 4.98	310.63 / 4.98	
6											
7											



Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

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IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-120D

CLIENT: City of Guelph	DATE DRILLED: Jun 21 to Jul 16, 2018	GROUND ELEVATION: 315.55 masl	NORTHING: 4822210.3
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.50 masl	EASTING: 562154.8
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.62 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, PQ, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	0.95 m stick up	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
							CONCRETE:	315.40	315.55 / 0.00	Monument casing secured in concrete	
	42	SS1	21				**FILL:** Sand, light brown, dry, fine, some gravel, medium density.	0.15	315.25 / 0.30	100 mm diameter steel casing set with portland & bentonite grout	0.2
						Metals (16:30) (0.76-1.37)	**SAND AND GRAVEL:** Light brown to cream, dry, coarse sand to coarse gravel, medium to very dense.	314.79 / 0.76		267 mm borehole Bentonite grout seal	
1	38	SS2	18								0.2
	67	SS3	50+								16.0
2											
	38	SS4	50/ 3cm								9.0
							- Sampler refusal at 2.46 mbgs, HSA refusal at 2.84, PQ coring below 2.84 mbgs.	312.71 / 2.84	312.71 / 2.84	123 mm corehole	
3					7		**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light to dark brown, vuggy, Mn and Fe staining on fractures, vugs and bedding plane partings, stromatoporoid biostromal fossils, medium crystalline, high vug intensity (1 to 30 mm).				
	100	Run1		31	2						
					1						
					4						
4					1						
	100	Run2		70	1						
					10+		- Weak rock/possible fracture zone 4.57 to 4.72 mbgs.				
					1		- Grey to light grey, vuggy, biostromal fossils, medium to fine crystalline, medium vug intensity (1 to 10 mm) below 4.75 mbgs.				
5					5						
					3						
					3						
	98	Run3		68							
6					2						
					1			309.12 / 6.43			
					2		**ERAMOSA FORMATION / REFORMATORY QUARRY MEMBER DOLOSTONE:** Grey to light grey, vuggy, biostromal fossils, medium to fine crystalline, medium vug intensity (1 to 10 mm).				
7					2						
	100	Run4		48	4		- Light to dark grey, brachiopods and shell fragments fossil assembly, bioturbated and traction layers, fine crystalline, low vug intensity (1-5 mm) below 7.04 mbgs.				
					2						
					3						

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

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IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-120D

CLIENT: City of Guelph	DATE DRILLED: Jun 21 to Jul 16, 2018	GROUND ELEVATION: 315.55 masl	NORTHING: 4822210.3
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.50 masl	EASTING: 562154.8
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.62 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, PQ, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
					2							
					4							
	100	Run5		60	3							
9					2							
					2							
					1							
10					3							
	100	Run6		87	2							
					2							
					4							
11					1							
					2							
	100	Run7		97	2							
12					2							
					1		- Infilled vugs with sulfides (pyrite, sphalerite, galena) at 12.5 mbgs.					
					2							
13					2							
	100	Run8		88	2		- Dark grey, vugs (<1 mm), decreasing fossil content with depth below 13.41 mbgs.					
					2							
					1							
14										301.40 / 14.15	96 mm corehole	
					1		- PQ core to 14.15 mbgs, set 10 cm diameter steel casing with portland and bentonite grout seal, continue coring with HQ.					
					1		- Vugs (1 to 2 mm) below 14.17 mbgs.					
	100	Run9		73	4							
15					2							
					1							
					1							
					2		**ERAMOSA FORMATION / VINEMOUNT MEMBER**		299.67 / 15.88			

Notes:
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IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-120D

CLIENT: City of Guelph	DATE DRILLED: Jun 21 to Jul 16, 2018	GROUND ELEVATION: 315.55 masl	NORTHING: 4822210.3
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.50 masl	EASTING: 562154.8
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.62 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, PQ, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)
	100	Run 10		90	1, 4, 1	
17					1, 1, 1	
	100	Run 11		100	1, 1, 1, 0	
18						
19					1, 1, 2, 1	
	100	Run 12		97		
20						
21						
22						
23						

LITHOLOGY & REMARKS

SHALEY DOLOSTONE: Dark grey, fine crystalline, trace fossils, low vug intensity (1 to 2 mm).

- Vugs absent below 17.09 mbgs.

Bottom of corehole at 20.14 mbgs

STRATA PLOT

(masl) ELEV. / DEPTH (mbgs)	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS
	298.18 / 17.37	Bentonite pellet seal
	297.57 / 17.98	#3 silica sand filter pack
	296.96 / 18.59	50 mm diameter SCH 40 PVC pipe #10-slot well screen
295.41 / 20.14	295.43 / 20.12	
	295.41 / 20.14	

ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID: 100 200 300 400

Notes:
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Reviewed by: ET

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RECORD OF MONITORING WELL: MW18-121D

CLIENT: City of Guelph	DATE DRILLED: Jun 28 to Jul 17, 2018	GROUND ELEVATION: 315.38 masl	NORTHING: 4822231.9
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.40 masl	EASTING: 562214.0
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.58 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, PQ, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID 100 200 300 400
							FILL: Silty Sand, dark brown to black, dry, fine to medium, some organics, trace rootlets.	315.38 / 0.00	315.08 / 0.30 — 1.02 m stick up; Monument casing secured in concrete; 100 mm diameter steel casing set with portland & bentonite grout; 267 mm borehole; Bentonite grout seal	
							Sand, dark to light brown, dry, fine to coarse, trace gravel, loose.	314.62 / 0.76		
1							**SILTY SAND:** Dark to light brown, dry, some fine gravel.	314.16 / 1.22		
2							**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Dark brown, vuggy, Mn and Fe staining on fractures, vugs and bedding plane partings, manganese rich beds, biostromal fossils, medium crystalline, high vug intensity (5 mm).	313.09 / 2.29	313.09 / 2.29 — 123 mm corehole	
3										
4										
					5		- Lithology to 4.27 mbgs inferred from MW18-121S, HSA to 4.27 mbgs, set PW casing, PQ coring thereafter.			
					2		- Weak rock/possible fracture zone 4.52 to 4.83 mbgs.			
	100	Run1		0			- Manganese rich shaley layer at 4.67 mbgs.			
5					3		- Grey to light grey, vuggy, biostromal fossils, medium to fine crystalline, medium vug intensity (10 to 50 mm) below 4.98 mbgs.			
					4					
					3					
					4					
6	100	Run2		60						
					4		- Shaley layer at 6.20 mbgs.			
					2			308.86 / 6.52		
					2		**ERAMOSA FORMATION / REFORMATORY QUARRY MEMBER DOLOSTONE:** Grey to light grey, vuggy, biostromal fossils, medium to fine crystalline, medium vug intensity (10 to 50 mm).			
7					1					
	95	Run3		53	4					
					2		- Weak rock/possible fracture zone 7.77 to 7.90 mbgs.			
					4					

Notes:
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Prepared by: MS

Reviewed by: ET

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RECORD OF MONITORING WELL: MW18-121D

CLIENT: City of Guelph	DATE DRILLED: Jun 28 to Jul 17, 2018	GROUND ELEVATION: 315.38 masl	NORTHING: 4822231.9
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.40 masl	EASTING: 562214.0
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.58 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, PQ, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID 100 200 300 400
					3		- Light to dark grey, brachiopods and shell fragments fossil assembly, bioturbated and traction layers, fine crystalline, low vug intensity, <3 mm below 8.03 mbgs.					
					4							
9	100	Run4		66	2							
					3							
					3							
					1							
10					3							
	98	Run5		70	2		- Less bioturbated, abundant fossils 10.24 to 10.67 mbgs.					
					4							
11					4							
					3							
					3		- Decreasing fossil content below 11.58 mbgs.					
12	97	Run6		72	2							
					2							
					3							
					1							
13					1							
							- Fossils nearly absent below 13.11 mbgs.					
	100	Run7		95	2							
					2		- Vug partially infilled with pyrite at 13.61 mbgs.					
									301.51 / 13.87			
14					3		**ERAMOSA FORMATION / VINEMOUNT MEMBER** **SHALEY DOLOSTONE:** Light to dark grey, nearly absent brachiopods and shell fragments fossil assembly, bioturbated and traction layers, fine crystalline, low vug intensity (<3 mm). - Dark grey below 14.15 mbgs. - PQ core to 14.15 mbgs, set 10 cm diameter steel casing with portland and bentonite grout seal, continue coring with HQ.			301.23 / 14.15	96 mm corehole	
					1							
					1							
					2							
15	100	Run8		100			- Subvertical non-planar (dendritic) vein at 14.96 mbgs.			300.37 / 15.01	Bentonite pellet seal	
					1		- Shaley bed at 15.16 mbgs.					
					1							
					2		- Subvertical non-planar (dendritic) veins, carbonate minerals infilling vugs associated with veins at 15.62 mbgs. - Very dark grey below 15.65 mbgs. - Subvertical non-planar (dendritic) vein at 15.90 mbgs.			299.76 / 15.62	#3 silica sand filter pack	

Notes:
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Prepared by: MS

Reviewed by: ET

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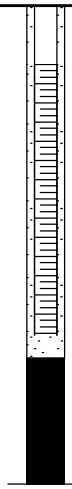
RECORD OF MONITORING WELL: MW18-121D

CLIENT: City of Guelph	DATE DRILLED: Jun 28 to Jul 17, 2018	GROUND ELEVATION: 315.38 masl	NORTHING: 4822231.9
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.40 masl	EASTING: 562214.0
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.58 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, PQ, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
	100	Run9		90	1, 3, 2, 1, 1, 2, 1, 1, 1		- Very dark beds below 16.43 mbgs.			299.05 / 16.33	
17											
18	100	Run 10		93			- Water return loss observed below 18.06 mbgs, continues for remainder of corehole.			297.52 / 17.86; 297.40 / 17.98	
							Bottom of corehole at 18.69 mbgs		296.69 / 18.69	296.69 / 18.69	
19											
20											
21											
22											
23											



50 mm diameter SCH 40 PVC pipe #10-slot well screen

Notes:
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RECORD OF MONITORING WELL: MW18-121S

CLIENT: City of Guelph	DATE DRILLED: July 27, 2018	GROUND ELEVATION: 315.37 masl	NORTHING: 4822232.3
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.34 masl	EASTING: 562211.7
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.61 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID
									315.37 / 0.00	0.97 m stick up
	50	SS1	5				**FILL:** Silty Sand, dark brown to black, dry, fine to medium, some organics, trace rootlets.		315.07 / 0.30	Monument casing secured in concrete; 267 mm borehole; Bentonite chip seal; 2.4
						Metals (10:25) (0.76-1.37)	Sand, dark to light brown, dry, fine to coarse, trace gravel, loose.	314.61 / 0.76		
1	58	SS2	11							1.6
							SILTY SAND: Dark to light brown, dry, some fine gravel.	314.15 / 1.22		
	58	SS3	50+							4.5
2							- Sampler refusal at 2.06 mbgs, HSA refusal at 2.26 mbgs, HQ coring below 2.26 mbgs.			
					4		**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light brown to cream, Mn and Fe staining on vugs and fractures, stromatoporoid biostromal fossils, medium to coarse crystalline, high vug intensity (1 to 20 mm).	313.11 / 2.26	313.11 / 2.26	96 mm corehole
					10					
	95	Run1		11					312.63 / 2.74	#3 silica sand filter pack
3					9					
									312.25 / 3.12	50 mm diameter SCH 40 PVC pipe #10-slot well screen
					7					
					10+					
							- Weak rock/possible fracture zone 3.76 to 3.99 mbgs.			
4	100	Run2		8	10+					
					7					
					8					
							- Weak rock/possible fracture zone 4.57 to 4.65 mbgs.	310.72 / 4.65	310.72 / 4.65	
							Bottom of corehole at 4.65 mbgs			
5										
6										
7										

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

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JACOBS

RECORD OF MONITORING WELL: MW18-122D

CLIENT: City of Guelph	DATE DRILLED: Jul 26 to Jul 27, 2018	GROUND ELEVATION: 315.36 masl	NORTHING: 4822188.1
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.33 masl	EASTING: 562191.0
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.71 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)
	42	SS1	1			
1	50	SS2	20			PAHs Metals & Inorg. (13:30) (0.76-1.37)
2	29	SS3	21			
	17	SS4	50/10cm		4	
	100	Run1		0	5	
3					2	
					6	
					5	
4	100	Run2		7	4	
					5	
					5	
5					4	
					6	
	100	Run3		60	3	
					4	
6					4	
					5	
					3	
7	100	Run4		52	4	
					4	
					3	
					2	

LITHOLOGY & REMARKS

FILL: Sand, dark brown, dry, fine to medium, very loose to medium dense, some rootlets and organic matter.

SILTY SAND: Dark to pale brown, dry to moist, fine to medium, some gravel, medium dense.

- Sampler refusal at 2.39 mbgs, set HW casing, HQ coring below 2.34 mbgs.

GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE: Light brown to beige, Mn and Fe staining on fractures and vugs, stromatoporoid biostromal fossils, medium to coarse crystalline, high vug intensity (5 to 20 mm).

- Weak rock/possible fracture zone 3.84 to 4.04 mbgs.

- Shaley layer at 4.13 mbgs.
- Grey to light grey, sparse biostromal fossils, medium crystalline, medium vug intensity (1 to 50 mm) below 4.14 mbgs.

ERAMOSA FORMATION / REFORMATORY QUARRY MEMBER DOLOSTONE: Grey to light grey, sparse biostromal fossils, medium crystalline, medium vug intensity (1 to 50 mm).

STRATA PLOT

(masl) ELEV. / DEPTH (mbgs)
313.84 / 1.52
313.02 / 2.34
307.89 / 7.47

BOREHOLE/COREHOLE COMPLETION DETAILS

(masl) ELEV. / DEPTH (mbgs)	
315.36 / 0.00	1.11 m stick up
315.06 / 0.30	Monument casing secured in concrete; 267 mm borehole; Bentonite chip seal
313.02 / 2.34	96 mm corehole

ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID

100 200 300 400

333.0 ⊕
344.0 ⊕
170.0 ⊕
153.0 ⊕

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-122D

CLIENT: City of Guelph	DATE DRILLED: Jul 26 to Jul 27, 2018	GROUND ELEVATION: 315.36 masl	NORTHING: 4822188.1
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.33 masl	EASTING: 562191.0
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.71 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	ELEV. (masl) / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: ELEV. (masl) / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
					3						
	92	Run5		46	5		- Light to dark grey, brachiopods and shell fragments fossil assembly, fine crystalline, low vug intensity (<1 mm) below 8.51 mbgs. - Bioturbated at 8.52 mbgs.				
					5						
9					3						
					1						
					2						
10	100	Run6		86	2						
					2						
					4						
					1						
11					3						
	100	Run7		95	2						
					2					303.47 / 11.89	#3 silica sand filter pack
12					3						
					0					302.92 / 12.44	50 mm diameter SCH 40 PVC pipe #10-slot well screen
					1						
13	100	Run8		93	3						
					2						
					3				301.49 / 13.87		
14							**ERAMOSA FORMATION / VINEMOUNT MEMBER** **SHALEY DOLOSTONE:** Light to dark grey, brachiopods and shell fragments fossil assembly, fine crystalline, low vug intensity (<1 mm). Bottom of corehole at 13.97 mbgs		301.39 / 13.97	301.39 / 13.97	
15											

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-122G

CLIENT: City of Guelph	DATE DRILLED: Nov 28 to Nov 29, 2018	GROUND ELEVATION: 315.36 masl	NORTHING: 4822188.9
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.14 masl	EASTING: 562192.2
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.77 masl	MOE WELL TAG#: A252554
LOGGED BY: A. Casey	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: December 18, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	0.78 m stick up	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID 100 200 300 400
							FILL: Sand, dark brown, dry, fine to medium, very loose to medium dense, some rootlets and organic matter.			315.36 / 0.00	Monument casing secured in concrete	
										315.06 / 0.30	210 mm borehole Bentonite grout seal	
1									313.84 / 1.52			
							SILTY SAND: Dark to pale brown, dry to moist, fine to medium, some gravel, medium dense.					
2									313.02 / 2.34	313.02 / 2.34	123 mm corehole	
							GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE: Light brown to beige, Mn and Fe staining on fractures and vugs, stromatoporoid biostromal fossils, medium to coarse crystalline, high vug intensity (5 to 20 mm).					
3												
							- Weak rock/possible fracture zone 3.84 to 4.04 mbgs.					
4							- Shaley layer at 4.13 mbgs. - Grey to light grey, sparse biostromal fossils, medium crystalline, medium vug intensity (1 to 50 mm) below 4.14 mbgs.					
5												
6												
7									307.89 / 7.47			
							ERAMOSA FORMATION / REFORMATORY QUARRY MEMBER DOLOSTONE: Grey to light grey, sparse biostromal fossils, medium crystalline, medium vug intensity (1 to 50 mm).					

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

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RECORD OF MONITORING WELL: MW18-122G

CLIENT: City of Guelph	DATE DRILLED: Nov 28 to Nov 29, 2018	GROUND ELEVATION: 315.36 masl	NORTHING: 4822188.9
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.14 masl	EASTING: 562192.2
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.77 masl	MOE WELL TAG#: A252554
LOGGED BY: A. Casey	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: December 18, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID 100 200 300 400
9							- Light to dark grey, brachiopods and shell fragments fossil assembly, fine crystalline, low vug intensity (<1 mm) below 8.51 mbgs. - Bioturbated at 8.52 mbgs.				
10											
11											
12											
13											
14	93	Run1		90	2 1 1 1 1 1 3 2		- Lithology to 13.97 mbgs inferred from adjacent MW18-122D, HSA to top of bedrock, ream PW casing and PQ core, logging resumes at 13.97 mbgs. **ERAMOSA FORMATION / VINEMOUNT MEMBER** **SHALEY DOLOSTONE:** Medium to dark grey, brachiopods and shell fragments fossil assembly, fine crystalline, low vug intensity (<1 mm).		301.49 13.87		
15											

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

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RECORD OF MONITORING WELL: MW18-122G

CLIENT: City of Guelph	DATE DRILLED: Nov 28 to Nov 29, 2018	GROUND ELEVATION: 315.36 masl	NORTHING: 4822188.9
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.14 masl	EASTING: 562192.2
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.77 masl	MOE WELL TAG#: A252554
LOGGED BY: A. Casey	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: December 18, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
	97	Run2		90	1							
					1							
					1							
17					3							
	100	Run3		43	1		- 20 cm vertical fracture at 17.32 mbgs.					
					1		- 41 cm vertical fracture at 17.68 mbgs.					
18					0		- 23 cm vertical fracture at 18.01 mbgs.					
	100	Run4		100	0		- Ream HW casing, HQ coring below 18.29 mbgs.			297.07 / 18.29	96 mm corehole	
					0							
					1					296.61 / 18.75	Bentonite pellet seal	
19					0							
	100	Run5		33	2					296.01 / 19.35	#2 silica sand filter pack	
							- 102 cm vertical fracture at 19.41 mbgs.			295.85 / 19.51	50 mm diameter SCH 40 PVC pipe #10-slot well screen	
					0							
20					0		- Light to medium grey below 19.91 mbgs.					
					1							
	100	Run6		100	2							
21					1		**GOAT ISLAND/ANCASTER MEMBER:** Light to medium grey, strong, fresh, occasional fossils (<5 mm), trace vugs (<3 mm), fossiliferous, undulating stratification.		294.39 / 20.97	294.33 / 21.03		
					0					294.18 / 21.18	Bentonite chip seal	
					1							
					2							
22					0							
	93	Run7		93	1							
					2							
23					0		- 25 mm fossil at 22.91 mbgs. - Brownish below 22.96 mbgs.					
					1							
	100	Run8		100	2							
					1							

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

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IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-122G

CLIENT: City of Guelph
LOCATION: 200 Beverley St., Guelph
PROJECT NUMBER: 694757
LOGGED BY: A. Casey

DATE DRILLED: Nov 28 to Nov 29, 2018
DRILLER: Aardvark Drilling
DRILL RIG: CME 75 Power Auger
DRILL METHOD: 108 mm HSA, PQ, HQ water core

GROUND ELEVATION: 315.36 masl
TOP OF PIPE: 316.14 masl
WATER ELEVATION: 312.77 masl
WATER LEVEL DATE: December 18, 2018

NORTHING: 4822188.9
EASTING: 562192.2
MOE WELL TAG#: A252554

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID 100 200 300 400
					1		- Weak rock at 27.43 mbgs.				
							Bottom of corehole at 24.48 mbgs		290.88 / 24.48	290.88 / 24.48	
25											
26											
27											
28											
29											
30											
31											

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

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RECORD OF MONITORING WELL: MW18-123D

CLIENT: City of Guelph	DATE DRILLED: Jun 27 to Jun 28, 2018	GROUND ELEVATION: 315.60 masl	NORTHING: 4822282.6
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.58 masl	EASTING: 562288.0
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.55 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, PQ, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	0.98 m stick up	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
						Metals & Inorg. (13:30) (0.00-0.60)	**ASPHALT:**	315.52	315.60	Monument casing secured in concrete	
							FILL: Silty Sand, dark brown, dry, fine, loose to dense, mottled colour.	0.08	0.00 / 315.30		
	71	SS1	9						0.30	100 mm diameter steel casing set with portland & bentonite grout	4.2
						VOCs PAHs (13:45) (0.76-1.37)				267 mm borehole Bentonite grout seal	
1	79	SS2	35								5.0
								314.08			
	33	SS3	50/ 8cm				**SAND:** Pale white to dark brown, dry, fine sand, very dense, some gravel.	1.52			5.1
2							- Sampler refusal at 1.75 mbgs, HSA refusal at 2.44 mbgs, set PW casing, PQ coring below 2.44 mbgs.				
								313.16	313.16		
					0		**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light brown, vuggy, Fe staining on fractures and vugs, biostromal fossils, medium to coarse crystalline, high vug intensity (1 to 40 mm).	2.44	2.44	123 mm corehole	
					6						
3	64	Run1		18	5						
					3						
					5						
					6						
4							- Weak rock/possible fracture zone 3.94 to 3.99 mbgs.				
					4						
	100	Run2		20							
					4		- Manganese rich shaley layer at 4.39 mbgs.				
					5		- Grey to brownish grey, vuggy, biostromal fossils, medium to fine crystalline, medium vug intensity (1 to 50 mm) below 4.60 mbgs.				
5							- Weak rock/possible fracture zone 4.90 to 5.08 mbgs.				
					5		- Vug size increases to >50 mm, vug intensity decreases with depth below 5.18 mbgs.				
					4						
					3						
	100	Run3		38							
6					2		- Manganese rich shaley layer 6.02 to 6.25 mbgs.				
					5						
					2		**ERAMOSA FORMATION / REFORMATORY QUARRY MEMBER DOLOSTONE:** Grey to brownish grey, vuggy, biostromal fossils, medium to fine crystalline, medium vug intensity (1 to 50 mm).	308.92 / 6.68			
7					2		- Abundant fossils at 6.88 mbgs.				
					4						
	100	Run4		45			- Manganese rich shaley layer at 7.42 mbgs.				
					5						
					4						

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

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IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-123D

CLIENT: City of Guelph	DATE DRILLED: Jun 27 to Jun 28, 2018	GROUND ELEVATION: 315.60 masl	NORTHING: 4822282.6
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.58 masl	EASTING: 562288.0
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.55 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, PQ, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
					2		- Erosional feature/strata at 7.92 mbgs. - Dark grey, brachiopods and shell fragments fossil assembly, bioturbated and traction layers, fine crystalline, low vug intensity (1-25 mm) below 7.95 mbgs.					
					2							
					2							
9	93	Run5		63	3							
					5		- Water return loss observed below 9.27 mbgs, continues for remainder of corehole.					
					2							
10					4							
	100	Run6		82	3							
					4							
11					2							
					1							
					2		- Vugs (<1 mm) below 11.58 mbgs.					
12	98	Run7		82	2							
					2							
					3							
					2		- Vugs nearly absent below 12.80 mbgs.					
13					2							
	98	Run8		68	2							
					1		- Fossil content decreasing with depth below 13.77 mbgs.					
14					3					301.37 / 14.23	96 mm corehole	
					3		- Vugs absent below 14.23 mbgs. - PQ core to 14.23 mbgs, set 10 cm diameter steel casing with portland and bentonite grout seal, continue coring with HQ.					
					2							
15	95	Run9		77	1							
					1		- Shaley rich layer at 15.24 mbgs.		300.21 / 15.39			
					3		**ERAMOSA FORMATION / VINEMOUNT MEMBER** **SHALEY DOLOSTONE:** Dark grey, brachiopods and shell fragments fossil assembly, bioturbated and traction layers, fine crystalline.					
					2							

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-123D

CLIENT: City of Guelph
LOCATION: 200 Beverley St., Guelph
PROJECT NUMBER: 694757
LOGGED BY: L. Ribeiro

DATE DRILLED: Jun 27 to Jun 28, 2018
DRILLER: Aardvark Drilling
DRILL RIG: CME 75 Power Auger
DRILL METHOD: 159 mm HSA, PQ, HQ water core

GROUND ELEVATION: 315.60 masl
TOP OF PIPE: 316.58 masl
WATER ELEVATION: 312.55 masl
WATER LEVEL DATE: August 20, 2018

NORTHING: 4822282.6
EASTING: 562288.0
MOE WELL TAG#: A243494

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)
	100	Run 10		98	1, 1, 0, 3, 1, 1	
	97	Run 11		80	2, 3, 3	
	100	Run 12		100	1, 1, 1, 1, 2	

LITHOLOGY & REMARKS

- Shaley rich layers 16.28 to 16.41 mbgs.
- Very dark grey bed at 16.99 mbgs.
- Amigdala filled with [Ca,Mg]CO3 at 17.60 mbgs.
- Non-planar veins at 18.08 mbgs.
- Presence of sulfide minerals, fossils nearly absent below 18.77 mbgs.
- Sulfide minerals at 19.71 mbgs.
- Amigdala filled with [Ca,Mg]CO3 at 20.02 mbgs.

Bottom of corehole at 20.32 mbgs

STRATA PLOT

(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS
298.66 / 16.94	Bentonite pellet seal
297.74 / 17.86	#3 silica sand filter pack
296.80 / 18.80	50 mm diameter SCH 40 PVC pipe #10-slot well screen
295.28 / 20.32	

ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID: 100 200 300 400

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS
Reviewed by: ET

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IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-123S

CLIENT: City of Guelph	DATE DRILLED: August 1, 2018	GROUND ELEVATION: 315.69 masl	NORTHING: 4822287.1
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.62 masl	EASTING: 562283.4
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.58 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)
	100	Run1		0	4, 5, 4, 2	
	100	Run2		23	2, 6, 3, 4, 6	

LITHOLOGY & REMARKS

(masl) ELEV. / DEPTH (mbgs)	
315.61 / 0.08	**ASPHALT:**
	FILL: Silty Sand, dark brown, dry, fine, loose to dense, mottled colour.
314.17 / 1.52	**SAND:** Pale white to dark brown, dry, fine sand, very dense, some gravel.
	- Lithology to 2.16 mbgs inferred from MW18-123D, HSA to 2.44 mbgs, HQ coring below 2.44 mbgs.
313.25 / 2.44	**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light brown to beige, biostromal fossils, medium to coarse crystalline, high vug intensity (1 to 20 mm).
	- Shaley layer at 4.69 mbgs.
	- Grey to brownish grey, medium to fine crystalline, medium vug intensity below 4.70 mbgs.
310.76 / 4.93	Bottom of corehole at 4.93 mbgs

BOREHOLE/COREHOLE COMPLETION DETAILS

(masl) ELEV. / DEPTH (mbgs)	
315.69 / 0.00	0.93 m stick up
315.39 / 0.30	Monument casing secured in concrete; 267 mm borehole; Bentonite chip seal
313.53 / 2.16	96 mm corehole
312.95 / 2.74	#3 silica sand filter pack
312.29 / 3.40	50 mm diameter SCH 40 PVC pipe; #10-slot well screen
310.76 / 4.93	

ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID: 100 200 300 400

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

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RECORD OF MONITORING WELL: MW18-124S

CLIENT: City of Guelph	DATE DRILLED: July 24, 2018	GROUND ELEVATION: 315.68 masl	NORTHING: 4822374.7	Page 1 of 1
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.67 masl	EASTING: 562219.5	
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 313.04 masl	MOE WELL TAG#: A243494	
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, HQ water core	WATER LEVEL DATE: August 20, 2018		

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
										315.68 / 0.00	0.99 m stick up	
	17	SS1	14				**FILL:** Sand, brown to dark brown, dry, fine to coarse, some silt and clay, trace rootlets, medium dense.			315.38 / 0.30	Monument casing secured in concrete 267 mm borehole Bentonite chip seal	2.3
1	54	SS2	15			Metals PAHs (08:30) (0.76-1.37)	- No silt, clay or rootlets, trace gravel below 0.76 mbgs.					2.3
						PAHs (08:45) (1.52-2.13)	**SILTY SAND:** Upper contact dark brown and organic, moist, transitioning to pale white, some gravel, medium dense.		314.16 / 1.52			
2	63	SS3	18				- Sampler refusal at 2.36 mbgs in bedrock, set HW casing, HQ coring below 2.29 mbgs.					2.1
	21	SS4	50/ 8cm				**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light brown, vuggy, Mn staining on bedding plane partings, biostromal fossils, medium to coarse crystalline, high vug intensity (1 to 15 mm). - Weak rock/possible fracture zone 2.44 to 2.67 mbgs.		313.39 / 2.29	313.39 / 2.29	96 mm corehole	2.5
					3							
3	85	Run1		0	8					312.63 / 3.05	#3 silica sand filter pack	
					7							
					7					312.23 / 3.45	50 mm diameter SCH 40 PVC pipe #10-slot well screen	
					6		- Weak rock/possible fracture zone, moderate odour 3.81 to 3.87 mbgs. - Grey to light grey, sparse biostromal fossils, medium to fine crystalline, medium vug intensity (1 to 40 mm) below 3.86 mbgs.					
4	100	Run2		15	6							
					4							
					4							
5							Bottom of corehole at 4.98 mbgs		310.70 / 4.98	310.70 / 4.98		
6												
7												

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-125S

CLIENT: City of Guelph	DATE DRILLED: July 31, 2018	GROUND ELEVATION: 315.33 masl	NORTHING: 4822298.1
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.29 masl	EASTING: 562245.3
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.56 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID
									315.33 / 0.00	0.96 m stick up
	42	SS1	8			PCBs (11:05) (0.00-0.60)	**FILL:** Sand, dark brown, dry, fine to coarse, some gravel, dark mottling, loose to very dense.		315.03 / 0.30	Monument casing secured in concrete; 267 mm borehole; Bentonite chip seal; 0.4
1	58	SS2	50+			PHCs & BTEX Metals (11:15) (0.76-1.37)				0.2
								313.81 / 1.52		
2	63	SS3	50+			PCBs PAHs (11:30) (1.52-2.13)	**SAND:** Light brown, dry, fine to medium, some gravel, very dense.			0.6
							- Sampler refusal at 2.39 mbgs in bedrock, set HW casing, HQ coring below 2.29 mbgs.	313.04 / 2.29	313.04 / 2.29	96 mm corehole; 0.2
	17	SS4	50/10cm		5		**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light brown to beige, Mn and Fe staining on fractures and vugs, biostromal fossils, medium to coarse crystalline high vug intensity (1 to 20 mm).			
3	100	Run1		0	6					
					10+					
					6		- Weak rock/possible fracture zone 3.25 to 3.33 mbgs.			
					4				311.52 / 3.81	#3 silica sand filter pack
4	100	Run2		13	5					
					5				311.06 / 4.27	50 mm diameter SCH 40 PVC pipe #10-slot well screen
					7		- Shaley bed at 4.74 mbgs.			
5					7		- Grey to brown, medium crystalline, medium vug intensity (1 to 40 mm) below 4.75 mbgs. - Weak rock/possible fracture zone 4.76 to 4.78 mbgs. - Weak rock/possible fracture zone 4.93 to 4.95 mbgs.			
	100	Run3		0	5					
					5			309.54 / 5.79	309.54 / 5.79	
6							Bottom of corehole at 5.79 mbgs			
7										

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

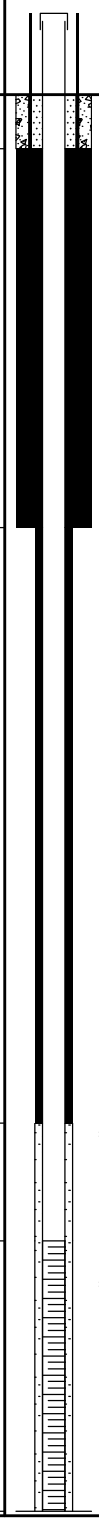
CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-126D

CLIENT: City of Guelph	DATE DRILLED: July 31, 2018	GROUND ELEVATION: 315.30 masl	NORTHING: 4822291.8
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.28 masl	EASTING: 562254.9
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.54 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID
	58	SS1	56/ 15cm			PAHs Metals (14:20) (0.00-0.30)	**FILL:** Silty Sand, dark brown, dry, fine to medium, medium dense, trace gravel and iron fragments.		315.30 / 0.00; 315.00 / 0.30	0.4
1	50	SS2	7			PHCs & BTEX VOCs (14:30) (0.76-1.37)	Sand, dark brown to beige, dry, fine to medium, dense.	314.08 / 1.22		0.0
	0	SS3	35			PCBs (14:40) (1.52-2.13)				0.0
2							- HSA refusal at 2.44 mbgs, Set HW casing, HQ coring below 2.44 mbgs.	312.86 / 2.44	312.86 / 2.44	
3	100	Run1		0	10+; 6; 8; 3		**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light brown to beige, medium to coarse crystalline, high vug intensity (1 to 10 mm). - Weak rock/possible fracture zone 2.44 to 2.64 mbgs. - Weak rock/possible fracture zone, dark brown staining and moderate odour 2.92 to 3.07 mbgs. - Weak rock/possible fracture zone, dark brown staining and moderate odour 3.23 to 3.30 mbgs.			
4	100	Run2		8	6; 8; 5; 7		- Weak rock/possible fracture zone 3.78 to 3.89 mbgs.			
5					6; 6; 7		- Shaley bed at 4.67 mbgs. - Grey to brown, medium to fine crystalline, medium vug intensity (1 to 50 mm), below 4.70 mbgs. - Weak rock/possible fracture zone 5.38 to 5.46 mbgs.			
6	93	Run3		30	10+; 10+; 3		- Weak rock/possible fracture zone 5.66 to 5.87 mbgs.		309.51 / 5.79; 308.85 / 6.45	
7	100	Run4		62	4; 4; 4; 3; 2		- Weak rock/possible fracture zone 7.04 to 7.11 mbgs. **ERAMOSA FORMATION / REFORMATORY QUARRY MEMBER DOLOSTONE:** Grey to brown, medium to fine crystalline, medium vug intensity (1 to 50 mm). - Shaley bed at 7.57 mbgs. - Light to dark grey, brachiopods and shell fragments fossil assembly, bioturbated and traction layers, fine crystalline, low vug intensity (1-20 mm) below 7.59 mbgs.	308.14 / 7.16; 307.32	307.32	



Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

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RECORD OF MONITORING WELL: MW18-126D

CLIENT: City of Guelph	DATE DRILLED: July 31, 2018	GROUND ELEVATION: 315.30 masl	NORTHING: 4822291.8
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.28 masl	EASTING: 562254.9
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.54 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID: 100 200 300 400
							Bioturbated, fragments of shells at 7.80 mbgs. Bottom of corehole at 7.98 mbgs		7.98	7.98		
9												
10												
11												
12												
13												
14												
15												

Notes:
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Prepared by: MS

Reviewed by: ET

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RECORD OF MONITORING WELL: MW18-127S

JACOBS

CLIENT: City of Guelph	DATE DRILLED: July 31, 2018	GROUND ELEVATION: 315.33 masl	NORTHING: 4822319.4	Page 1 of 1
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.37 masl	EASTING: 562262.8	
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.72 masl	MOE WELL TAG#: A243494	
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, HQ water core	WATER LEVEL DATE: August 20, 2018		

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
							FILL: Silty Sand, dark brown, dry, fine, loose, organic matter.		315.33 / 0.00; 315.03 / 0.30	1.04 m stick up; Monument casing secured in concrete; 267 mm borehole; Bentonite chip seal
	8	SS1	7							1.1
							Sand, dark brown, dry, fine to coarse, dense, some gravel.	314.57 / 0.76		
1	75	SS2	44							0.3
							SAND: Dark brown, dry, fine to medium, some gravel and cobbles, dense to very dense.	314.11 / 1.22		
2	50	SS3	34							1.0
	21	SS4	50+/ 18cm				- Sampler refusal at 2.62 mbgs, HSA refusal at 2.74 mbgs, set HW casing, HQ coring below 2.74 mbgs.			1.2
								312.59 / 2.74	312.59 / 2.74	96 mm corehole
3	89	Run1		22	2; 6; 1; 5; 6		**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light brown to beige, Mn and Fe staining on fractures and vugs, biostromal fossils, medium to coarse crystalline, high vug intensity (1 to 20 mm).		312.28 / 3.05; 311.90 / 3.43	#3 silica sand filter pack; 50 mm diameter SCH 40 PVC pipe #10-slot well screen
4	100	Run2		8	7; 4; 4					
							- Shaley bed at 4.80 mbgs. - Brownish grey, medium crystalline, medium vug intensity (1 to 10 mm) below 4.83 mbgs.	310.38 / 4.95	310.38 / 4.95	
5							Bottom of corehole at 4.95 mbgs			
6										
7										

Notes:
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Prepared by: MS

Reviewed by: ET

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RECORD OF MONITORING WELL: MW18-128D

CLIENT: City of Guelph	DATE DRILLED: Jun 26 to Jun 27, 2018	GROUND ELEVATION: 316.46 masl	NORTHING: 4822401.2
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 317.49 masl	EASTING: 562358.0
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.52 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, PQ, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)
1	58	SS1	22			
	63	SS2	45			
2	42	SS3	40			
3						
4						
	100	Run1		0	6, 4, 1	
5					2, 4	
	100	Run2		82	1, 2	
6					3, 2	
7	100	Run3		63	2, 3, 2, 4	

LITHOLOGY & REMARKS

CONCRETE: (316.31 masl, 0.00 mbgs; 0.15 mbgs)

FILL: Silty Sand, light brown, dry, medium dense.

SAND, GRAVEL AND COBBLES: Light to dark brown, dry, fine to medium, dense. (314.94 masl, 1.52 mbgs)

GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE: Light to dark brown, vuggy, biostromal fossils, medium to coarse crystalline, medium to high vug intensity (1 to 40 mm). (313.49 masl, 2.97 mbgs)

- Difficult drilling below 2.13 mbgs no samples collected due to cobbles, HSA refusal at 4.27 mbgs, set PW casing, PQ coring below 4.27 mbgs.
- Weak rock/possible fracture zone 4.57 to 4.67 mbgs.
- Water return loss observed at 4.62 mbgs.
- Manganese rich shaley layer at 5.54 mbgs.
- Shaley layer at 5.77 mbgs. (310.67 masl, 5.79 mbgs)

ERAMOSA FORMATION / REFORMATORY QUARRY MEMBER DOLOSTONE: Grey to light grey, vuggy, sparse biostromal fossils, medium to fine crystalline, medium vug intensity (1 to 20 mm).

- Stromatoporiod fossil at 7.26 mbgs.

BOREHOLE/COREHOLE COMPLETION DETAILS

(masl) ELEV. / DEPTH (mbgs)	Detail
316.46 / 0.00	1.03 m stick up
316.16 / 0.30	Monument casing secured in concrete; 100 mm diameter steel casing set with portland & bentonite grout; 267 mm borehole; Bentonite grout seal
312.19 / 4.27	123 mm corehole

ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID

100 200 300 400

17.5 6.9 7.0

Notes:
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RECORD OF MONITORING WELL: MW18-128D

CLIENT: City of Guelph	DATE DRILLED: Jun 26 to Jun 27, 2018	GROUND ELEVATION: 316.46 masl	NORTHING: 4822401.2
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 317.49 masl	EASTING: 562358.0
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.52 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, PQ, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID 100 200 300 400
					2						
					1						
					2						
	100	Run4		87							
9					3						
					2		- Light to dark grey, brachiopods and shell fragments fossil assembly, bioturbated and traction layers, fine crystalline, low vug intensity (<1 mm) below 9.04 mbgs.				
					3						
					2						
10											
					2						
	98	Run5		73			- Water return loss observed at 10.36 mbgs.				
					2						
					3						
11											
					0						
					4						
							- Fossil abundance decreasing below 11.58 mbgs.				
					3						
	100	Run6		52							
12					3		- 3 cm seam weathered shale at 11.96 mbgs.				
					3						
					1						
							- Vugs nearly absent below 12.80 mbgs.				
13					2						
					2						
	98	Run7		82					302.90 / 13.56		
					2		**ERAMOSA FORMATION / VINEMOUNT MEMBER** **SHALEY DOLOSTONE:** Light to dark grey, brachiopods and shell fragments fossil assembly, bioturbated and traction layers, fine crystalline, very low vug intensity (<1 mm).				
					3						
14										302.31 / 14.15	
					1		- Vugs absent below 14.15 mbgs. - PQ core to 14.15 mbgs, set 10 cm diameter steel casing with portland and bentonite grout seal, continue coring with HQ.			96 mm corehole	
					3						
							- Water return loss observed at 14.63 mbgs.				
					2						
	98	Run8		90							
15							- Shaley layer at 14.91 mbgs.				
					2						
					1						
					1						

Notes:
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Prepared by: MS

Reviewed by: ET

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IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-128D

CLIENT: City of Guelph	DATE DRILLED: Jun 26 to Jun 27, 2018	GROUND ELEVATION: 316.46 masl	NORTHING: 4822401.2
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 317.49 masl	EASTING: 562358.0
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.52 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, PQ, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
					5		- Weak rock/possible fracture zone 15.98 to 16.10 mbgs.					
	100	Run9		80	1							
					2							
							- Sulfide infilling and [Ca,Mg]CO3 of amigdala at 16.79 mbgs.					
17					4							
					4		- Increasing frequency of shaley beds below 17.20 mbgs.					
					2					298.78 / 17.68	Bentonite pellet seal	
					1							
18	100	Run 10		78								
					4					298.17 / 18.29	#3 silica sand filter pack	
					2							
					5					297.71 / 18.75	50 mm diameter SCH 40 PVC pipe #10-slot well screen	
19					2							
	100	Run 11		73	2							
					2							
20					1							
							Bottom of corehole at 20.27 mbgs		296.19 / 20.27	296.19 / 20.27		
21												
22												
23												

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Reviewed by: ET

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RECORD OF MONITORING WELL: MW18-129D

CLIENT: City of Guelph	DATE DRILLED: July 23, 2018	GROUND ELEVATION: 316.31 masl	NORTHING: 4822361.5
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 317.27 masl	EASTING: 562369.0
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.51 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	0.96 m stick up	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
							FILL: Sand, dark to light brown, dry, fine to coarse, medium dense to dense, trace rootlets near ground surface.		316.31 / 0.00	Monument casing secured in concrete	
	50	SS1	14						316.01 / 0.30	267 mm borehole Bentonite chip seal	0.6
1	54	SS2	46			Metals & Inorg. (10:40) (0.76-1.37)					
								314.79 / 1.52			
	67	SS3	50+			PAHs (11:00) (1.68-2.13)	**SILTY SAND:** Dark brown, fine to coarse, moist, very dense, some gravel and cobbles.				
2	79	SS4	50+/ 3cm			PHCs & BTEX (11:30) (2.29-2.57)					
3	4	~~SS5~~	50/ 3cm				- Sampler refusal at 3.07 mbgs, HSA refusal at 3.35 mbgs, set HW casing, HQ coring below 3.35 mbgs.				
								312.96 / 3.35	312.96 / 3.35	96 mm corehole	
					4		**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light to dark brown, vuggy, Fe staining, biostromal fossils, medium to coarse crystalline, high vug intensity (1 to 30 mm).				
					4		- Weak rock/possible fracture zone 3.53 to 3.61 mbgs.				
4	100	Run1		50	2						
					3						
					4		- Weak rock/possible fracture zone 4.67 to 4.72 mbgs. - Water return loss observed below 4.70 mbgs, continues for remainder of corehole.				
5					7		- Shaley bed at 4.72 mbgs.				
					4		- Grey to light grey, sparse biostromal fossils, medium to fine crystalline, medium vug intensity (1 to 65 mm) below 5.31 mbgs.				
	100	Run2		47	10+		- Weak rock/possible fracture zone 5.33 to 5.36 mbgs. - Weak rock/possible fracture zone at 5.72 mbgs.				
6					3						
					3						
					2			309.60 / 6.71			
					2		**ERAMOSA FORMATION / REFORMATORY QUARRY MEMBER DOLOSTONE:** Grey to light grey, sparse biostromal fossils, medium to fine crystalline, medium vug intensity (1 to 65 mm).				
7	100	Run3		85	2						
					1				308.74 / 7.57	#3 silica sand filter pack	
					5		- Vug at 7.62 mbgs.		308.33		

Notes:
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RECORD OF MONITORING WELL: MW18-129D

CLIENT: City of Guelph	DATE DRILLED: July 23, 2018	GROUND ELEVATION: 316.31 masl	NORTHING: 4822361.5
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 317.27 masl	EASTING: 562369.0
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.51 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID 100 200 300 400
					2					7.98	50 mm diameter SCH 40 PVC pipe #10-slot well screen	
					2							
	100	Run4		85	2							
9					2		- Coralloid stromatoporoid fossils at 8.89 mbgs.					
					3		- Bioturbated bed at 9.14 mbgs. - Light to dark grey, brachiopods and shell fragments fossil assembly, bioturbated and traction layers, fine crystalline, low vug intensity (1-20 mm) below 9.22 mbgs.		306.81	306.81		
							Bottom of corehole at 9.50 mbgs		9.50	9.50		
10												
11												
12												
13												
14												
15												

Notes:
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Prepared by: MS

Reviewed by: ET

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RECORD OF MONITORING WELL: MW18-130D

CLIENT: City of Guelph	DATE DRILLED: Jul 19 to Jul 20, 2018	GROUND ELEVATION: 316.44 masl	NORTHING: 4822439.9
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 317.52 masl	EASTING: 562358.9
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.54 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	1.08 m stick up	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
							FILL: Sand, dark brown, dry, fine, loose, trace gravel.		316.44 / 0.00	Monument casing secured in concrete	
	71	SS1	4						316.14 / 0.30	267 mm borehole Bentonite chip seal	2.1
1	63	SS2	4								2.4
								314.92 / 1.52			
							SILTY SAND: Dark brown, fine to coarse, moist, some gravel, medium dense.				
	29	SS3	36								2.8
2											
	63	SS4	50+								2.0
							- Sampler refusal at 2.74 mbgs, HSA refusal at 2.90 mbgs, set HW casing, HQ coring below 2.90 mbgs.	313.54 / 2.90	313.54 / 2.90	96 mm corehole	
3	100	Run1		44	2		**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light to dark brown, vuggy, biostromal fossils, medium to coarse crystalline, medium vug intensity (1 to 10 mm).				
					5						
					3		- Water return loss observed below 3.33 mbgs, continues for remainder of corehole.				
					6						
							- Moderate hydrocarbon like odour at 3.84 mbgs.				
4	100	Run2		25	4						
					3		- 50 mm vug at 4.27 mbgs.				
					7		- Weak rock/possible fracture zone 4.57 to 4.65 mbgs.				
5					8						
							- Grey to light grey, sparse biostromal fossils, medium to fine crystalline, medium vug intensity (1 to 50 mm) below 5.05 mbgs.				
					5						
	100	Run3		35	4						
					5				310.50 / 5.94		
6							- 50 mm vug at 5.99 mbgs.			#3 silica sand filter pack	
					2				310.04 / 6.40		
					2			309.95 / 6.49		50 mm diameter SCH 40 PVC pipe #10-slot well screen	
							ERAMOSA FORMATION / REFORMATORY QUARRY MEMBER DOLOSTONE: Grey to light grey, sparse biostromal fossils, medium to fine crystalline, medium vug intensity (1 to 50 mm).				
					2						
7											
	100	Run4		70	3		- Bioturbated, fragments of shells at 7.11 mbgs. - Stromatoporoid fossil at 7.19 mbgs.				
					2						
					4			308.52	308.52		

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-130D

CLIENT: City of Guelph	DATE DRILLED: Jul 19 to Jul 20, 2018	GROUND ELEVATION: 316.44 masl	NORTHING: 4822439.9
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 317.52 masl	EASTING: 562358.9
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.54 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID: 100 200 300 400
							Bottom of corehole at 7.92 mbgs		7.92	7.92		
9												
10												
11												
12												
13												
14												
15												

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

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JACOBS

RECORD OF MONITORING WELL: MW18-131S

CLIENT: City of Guelph	DATE DRILLED: July 19, 2018	GROUND ELEVATION: 315.47 masl	NORTHING: 4822441.8
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.49 masl	EASTING: 562323.0
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.80 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
							FILL: Sand and Gravel with Silt, dark brown to grey, dry, fine to coarse, medium dense.			315.47 / 0.00; 315.17 / 0.30 — Monument casing secured in concrete; 267 mm borehole; Bentonite chip seal; 1.02 m stick up	
	63	SS1	23								6.3
1	22	SS2	31								5.2
	13	SS3	30								3.2
2							- HSA refusal at 2.13 mbgs, set HW casing, HQ coring below at 2.13 mbgs.		313.34 / 2.13	313.34 / 2.13 — 96 mm corehole	
					4		**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light brown, vuggy, biostromal fossils, medium to coarse crystalline, high vug intensity (1 to 10 mm).				
					7						
	100	Run1		17			- Slight hydrocarbon like odour at 2.67 mbgs.				
					6					312.55 / 2.92 — #3 silica sand filter pack	
3					3					312.27 / 3.20 — 50 mm diameter SCH 40 PVC pipe #10-slot well screen	
					5		- Vug on biostromal fossil at 3.30 mbgs.				
					6		- Manganese stylolite at 3.66 mbgs.				
					6						
4	100	Run2		15			- Vug partially infilled with carbonate mineral at 3.96 mbgs. - Grey to light grey, sparse biostromal fossils, medium to fine crystalline, medium vug intensity (1 to 50 mm) below 4.01 mbgs.				
					7						
					4				310.75 / 4.72	310.75 / 4.72	
							Bottom of corehole at 4.72 mbgs				
5											
6											
7											

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

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IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-132D

CLIENT: City of Guelph	DATE DRILLED: July 20, 2018	GROUND ELEVATION: 316.44 masl	NORTHING: 4822427.9
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 317.49 masl	EASTING: 562362.5
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.52 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
									316.44 / 0.00	1.05 m stick up
	42	SS1	13				**FILL:** Dark brown to black with light yellow, dry, loose, trace gravel.		316.14 / 0.30	Monument casing secured in concrete; 267 mm borehole; Bentonite chip seal; 0.5
1	50	SS2	16				Sand, dark brown, fine to coarse, some clay and silt, moist, some slag.	315.68 / 0.76		0.7
2	71	SS3	50+				**SILTY SAND:** Dark brown, fine to coarse, moist, some gravel, very dense.	314.92 / 1.52		1.6
	25	SS4	50/ 8cm							1.1
							- Sampler refusal at 3.10 mbgs, set HW casing, HQ coring below 3.10 mbgs.			
3	8	SS5	50/ 5cm					313.39 / 3.05	313.34 / 3.10	1.0
	73	Run1		29	3		**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light to dark brown, vuggy, biostromal fossils, medium to coarse crystalline, high vug intensity (1 to 50 mm).			96 mm corehole
					3		- Weak rock/possible fracture zone 3.56 to 3.58 mbgs.			
					4					
4	100	Run2		40	5		- Slight odour at 4.06 mbgs.			
					2					
					5					
5					5					
					8		- Shaley layer at 5.33 mbgs.			
	100	Run3		7	7		- Grey to light grey, sparse biostromal fossils, medium to fine crystalline, medium vug intensity (1 to 60 mm) below 5.36 mbgs.			
6					4					
					5					
					2					
					4					
7	100	Run4		82	2		- Weak rock/possible fracture zone 7.01 to 7.09 mbgs.	309.34 / 7.10		
					3		- Infilled carbonate orange color [Ca, Mg]CO3 at 7.04 mbgs. **ERAMOSA FORMATION / REFORMATORY QUARRY MEMBER DOLOSTONE:** Grey to light grey, sparse biostromal fossils, medium to fine crystalline, medium vug intensity (1 to 60 mm).		308.90 / 7.54	#3 silica sand filter pack
					3				308.46	

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

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IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-132D

CLIENT: City of Guelph	DATE DRILLED: July 20, 2018	GROUND ELEVATION: 316.44 masl	NORTHING: 4822427.9
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 317.49 masl	EASTING: 562362.5
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.52 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID 100 200 300 400
					2					7.98	50 mm diameter SCH 40 PVC pipe #10-slot well screen	
					3							
	100	Run5		90	2							
9					2		- Coralloid fossils at 8.97 mbgs. - Bioturbated bed at 9.04 mbgs - Light to dark grey, brachiopods and shell fragments fossil assembly, bioturbated and traction layers, fine crystalline, low vug intensity (1-20 mm) below 9.07 mbgs.					
					5				306.94	306.94		
							Bottom of corehole at 9.50 mbgs		9.50	9.50		
10												
11												
12												
13												
14												
15												

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

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RECORD OF MONITORING WELL: MW18-133D

CLIENT: City of Guelph	DATE DRILLED: Jun 25 to Jul 19, 2018	GROUND ELEVATION: 315.41 masl	NORTHING: 4822436.2
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.50 masl	EASTING: 562331.5
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.57 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, PQ, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	1.09 m stick up	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID 100 200 300 400
							FILL: Sand and Gravel with Silt, dark brown to grey, dry, fine to coarse, medium dense.			315.41 / 0.00; 315.11 / 0.30	Monument casing secured in concrete; 100 mm diameter steel casing set with portland & bentonite grout; 267 mm borehole; Bentonite grout seal	
1												
2							- Lithology to 2.13 mbgs inferred from MW18-131S, HSA to 2.13 mbgs, set HW casing, HQ coring below 2.13 mbgs.		313.28 / 2.13	313.28 / 2.13	123 mm corehole	
					7		**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Light brown, vuggy, Mn staining on fractures, vugs and bedding plane partings, biostromal fossils, medium to coarse crystalline, high vug intensity (1 to 20 mm).					
	70	Run1		0	5							
					3							
3	100	Run2		17	7		- Slight odour at 3.05 mbgs.					
					4							
					4							
4					1							
	100	Run3		50	2		- Weak rock/possible fracture zone 4.19 to 4.34 mbgs.					
					6		- Grey to light grey, vuggy, sparse biostromal fossils, medium to fine crystalline, low to medium vug intensity (1 to 50 mm) below 4.50 mbgs.					
5					2							
					2							
					3		- 50 mm vug with calcite/dolomite infilling at 5.59 mbgs.					
	97	Run4		63								
6					3							
					4							
					2							
					4							
7					3							
	100	Run5		73								
					2		- Coralloid fossil at 7.42 mbgs.		307.88 / 7.53			
					4		**ERAMOSA FORMATION / REFORMATORY QUARRY MEMBER DOLOSTONE:** Light to dark grey, brachiopods and shell fragments fossil assembly, bioturbated and traction layers, fine crystalline, low vug intensity (<1 mm).					

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-133D

CLIENT: City of Guelph	DATE DRILLED: Jun 25 to Jul 19, 2018	GROUND ELEVATION: 315.41 masl	NORTHING: 4822436.2
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.50 masl	EASTING: 562331.5
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.57 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, PQ, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
					2							
					3							
	100	Run6		87	2							
9					2							
					3							
					1							
10					1							
	100	Run7		78	3		- Vugs nearly absent below 10.36 mbgs.					
					2							
					4							
11					2							
							- Fossil content decreasing with depth below 11.28 mbgs.					
					2							
	100	Run8		42	4							
12					2							
					4		- Weathered shale at 12.45 to 12.55 mbgs.					
							- Fossils nearly absent below 12.57 mbgs.			302.79 / 12.62	96 mm corehole	
					1		- PQ core to 12.62 mbgs, set 10 cm diameter steel casing with portland and bentonite grout seal, continue coring with HQ.					
13					2							
	100	Run9		90	3							
					1							
					2							
14					1							
					2							
					2							
	100	Run 10		87								
15					2		- Increased interbedded shale content below 14.96 mbgs.					
					2		- Infilling minerals (sulfide, carbonate) at 15.39 mbgs.		299.94 / 15.47	299.87 / 15.54	Bentonite pellet seal	
					3		**ERAMOSA FORMATION / VINEMOUNT MEMBER** **SHALEY DOLOSTONE:** Dark to very dark grey, fossil and vugs nearly absent. fine crystalline. - Amigdala infilled with [Ca,Mg]CO3 below 15.62 mbgs.					

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-133D

CLIENT: City of Guelph	DATE DRILLED: Jun 25 to Jul 19, 2018	GROUND ELEVATION: 315.41 masl	NORTHING: 4822436.2
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.50 masl	EASTING: 562331.5
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.57 masl	MOE WELL TAG#: A243494
LOGGED BY: L. Ribeiro	DRILL METHOD: 159 mm HSA, PQ, HQ water core	WATER LEVEL DATE: August 20, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
	100	Run 11		85	0, 3, 0, 6, 10+, 1					298.95 / 16.46	#3 silica sand filter pack	
17							- Dendritic pyrite infilling 16.84 to 16.87 mbgs. - Slight odour at 17.07 mbgs. - Increased shale content 17.09 to 17.12 mbgs. - Weak rock/possible fracture zone 17.15 to 17.22 mbgs.			298.24 / 17.17	50 mm diameter SCH 40 PVC pipe #10-slot well screen	
18	100	Run 12		100	1, 0, 2				296.72 / 18.69	296.72 / 18.69		
							Bottom of corehole at 18.69 mbgs					
19												
20												
21												
22												
23												

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

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RECORD OF MONITORING WELL: MW18-134D

CLIENT: City of Guelph	DATE DRILLED: Nov 21 to Nov 22, 2018	GROUND ELEVATION: 315.45 masl	NORTHING: 4822342.8
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.28 masl	EASTING: 562323.2
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.67 masl	MOE WELL TAG#: A252554
LOGGED BY: A. Casey	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: December 18, 2018	

DEPTH (mbgs)	Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	ELEV. (masl) / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: ELEV. (masl) / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID 100 200 300 400
							FILL: Silty Clay, brown, medium dense, dry, some sand, trace rootlets			315.45 / 0.00; 315.15 / 0.30	0.80 m stick up; Monument casing secured in concrete; 210 mm borehole; Bentonite chip seal	
							SAND: Dark brown, medium dense, dry, coarse, some silty clay, trace gravel.		314.78 / 0.67			
1												
							GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE: Buff, medium strong, slightly weathered, moderately fractured, vuggy (<10 mm).		313.65 / 1.80		
2										312.88 / 2.57	Bentonite pellet seal; 96 mm corehole	
					5							
							- Weathered fracture at 2.72 mbgs.					
3	100	Run1		0	4							
							- 25 mm vug at 3.05 mbgs.					
					2							
					3		- Greyish medium brown, vugs (<30 mm) less frequent with calcite crystallization below 3.30 mbgs.					
					4							
4	97	Run2		50	3		- Weak rock at 3.99 mbgs.					
					4							
							- 25 mm vug at 4.34 mbgs. - Calcite crystallization filled fracture at 4.42 mbgs.					
					2		- Weak rock and highly weathered at 4.60 mbgs.					
					2		- No coring water return observed below 4.82 mbgs.					
5												
					4							
	100	Run3		82	3							
					2							
6										309.35 / 6.10	#2 silica sand filter pack	
					2		- 8 cm vertical fracture at 6.27 mbgs.			309.05 / 6.40	50 mm diameter SCH 40 PVC pipe; #10-slot well screen	
					2							
					4							
7	100	Run4		73	5		- 5 cm vertical fracture at 7.01 mbgs.					
					2							
					3		**ERAMOSA FORMATION / REFORMATORY QUARRY MEMBER DOLOSTONE:** Dark grey, low intensity of vugs (<2 mm), pyrite and sulfides infilling of vugs and fractures.		307.98 / 7.47			
					2					307.53		

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

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IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-134D

CLIENT: City of Guelph
LOCATION: 200 Beverley St., Guelph
PROJECT NUMBER: 694757
LOGGED BY: A. Casey

DATE DRILLED: Nov 21 to Nov 22, 2018
DRILLER: Aardvark Drilling
DRILL RIG: CME 75 Power Auger
DRILL METHOD: 108 mm HSA, PQ, HQ water core

GROUND ELEVATION: 315.45 masl
TOP OF PIPE: 316.28 masl
WATER ELEVATION: 312.67 masl
WATER LEVEL DATE: December 18, 2018

NORTHING: 4822342.8
EASTING: 562323.2
MOE WELL TAG#: A252554

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID 100 200 300 400
										7.92 / 307.47 / 7.98	Bentonite chip seal	
					3							
	100	Run5		65	3							
					4		- 13 cm vertical fracture at 8.84 mbgs.					
9					7							
									306.05 / 9.40	306.05 / 9.40		
							Bottom of corehole at 9.40 mbgs					
10												
11												
12												
13												
14												
15												

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-134S

CLIENT: City of Guelph	DATE DRILLED: November 23, 2018	GROUND ELEVATION: 315.41 masl	NORTHING: 4822340.9
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.24 masl	EASTING: 562322.3
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.78 masl	MOE WELL TAG#: A252554
LOGGED BY: A. Casey	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: December 18, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)
	38	SS1	27			
1	67	SS2	28			
	54	SS3	50/13cm			

LITHOLOGY & REMARKS

FILL: Silty Clay, brown, medium dense, dry, some sand, trace rootlets.

SAND: Dark brown, medium dense, dry, coarse, some silty clay, trace gravel.

GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE: Buff, medium strong, slightly weathered, moderately fractured, vuggy (<10 mm).

- Weathered fracture at 2.72 mbgs.
- 25 mm vug at 3.05 mbgs.
- Greyish medium brown, vugs less frequent (<30 mm) with calcite crystallization below 3.30 mbgs.
- Weak rock at 3.99 mbgs.
- 25 mm vug at 4.34 mbgs.
- Calcite crystallization filled fracture at 4.42 mbgs.

Bottom of corehole at 4.42 mbgs
Lithology inferred from adjacent borehole MW18-134D.

STRATA PLOT

(masl) ELEV. / DEPTH (mbgs)
314.74 / 0.67
313.61 / 1.80
310.99 / 4.42

BOREHOLE/COREHOLE COMPLETION DETAILS

(masl) ELEV. / DEPTH (mbgs)	
315.41 / 0.00	0.83 m stick up
315.11 / 0.30	Monument casing secured in concrete; 210 mm borehole; Bentonite chip seal
312.82 / 2.59	#2 silica sand filter pack
312.51 / 2.90	50 mm diameter SCH 40 PVC pipe; #10-slot well screen
310.99 / 4.42	

ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID: 100 200 300 400

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-135D

CLIENT: City of Guelph	DATE DRILLED: Nov 16 to Nov 17, 2018	GROUND ELEVATION: 316.44 masl	NORTHING: 4822405.0
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 317.24 masl	EASTING: 562332.6
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.65 masl	MOE WELL TAG#: A252554
LOGGED BY: A. Casey	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: December 18, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	(masl) ELEV. / DEPTH (mbgs)
		SS1					**FILL:** Sandy Silt, dark brown, some gravel, organics.	
								315.68 / 0.76
1		SS2					**SILTY SAND:** Dark brown, coarse grained, trace gravel.	
								314.92 / 1.52
		SS3					**SAND:** Dark brown, coarse grained, some gravel.	
2								
		SS4						
3								313.39 / 3.05
		SS5					**GUELPH FORMATION AND ERAMOSA FORMATION/STONE ROAD MEMBER DOLOSTONE:** Buff, slightly weathered, frequent vugs (<60 mm).	
4	44	Run1		22	3, 2, n/a			
5	100	Run2		65	3, 4, 3, 2		- Weak rock at 5.13 mbgs.	
6					2		- 12 cm vertical fracture at 5.94 mbgs.	310.44 / 6.00
							ERAMOSA/ REFORMATORY QUARRY MEMBER: Light to medium grey, fresh, occasional vugs (<5 mm).	
7	100	Run3		67	3, 3, 2, 1, 3		- 95 mm fossil at 7.52 mbgs.	
					4			

BOREHOLE/COREHOLE COMPLETION DETAILS

(masl) ELEV. / DEPTH (mbgs)	Description
316.44 / 0.00	0.80 m stick up
316.14 / 0.30	Monument casing secured in concrete
	210 mm borehole
	Bentonite grout seal
312.63 / 3.81	96 mm corehole

ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID

Depth (mbgs)	100	200	300	400
0.5				
0.4				
0.2				
0.0				
0.1				

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RECORD OF MONITORING WELL: MW18-135D

CLIENT: City of Guelph	DATE DRILLED: Nov 16 to Nov 17, 2018	GROUND ELEVATION: 316.44 masl	NORTHING: 4822405.0
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 317.24 masl	EASTING: 562332.6
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.65 masl	MOE WELL TAG#: A252554
LOGGED BY: A. Casey	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: December 18, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
					3							
					2		- 70 mm vug with crystalline infilling and 80 mm fossil at 8.36 mbgs.					
	100	Run4		23								
					2		- Pyrite at 8.69 mbgs.			307.60 / 8.84	Bentonite pellet seal	
9					2							
					3		- Dark grey, trace vugs (<5 mm), frequent fossils (<5 mm) below 9.30 mbgs.			306.99 / 9.45	#2 silica sand filter pack	
					3		- 25 cm healed vertical fracture at 9.53 mbgs.			306.69 / 9.75	50 mm diameter SCH 40 PVC pipe #10-slot well screen	
10	100	Run5		72	2		- 23 cm vertical fracture at 9.83 mbgs.					
					3							
					2							
					1		- Medium grey below 10.77 mbgs.					
11												
					3		- 25 mm fossil at 11.18 mbgs.			305.16 / 11.28		
					3					305.01 / 11.43	Bentonite chip seal	
	100	Run6		80								
					2							
12												
					3							
							Bottom of corehole at 12.34 mbgs		304.10 / 12.34	304.10 / 12.34		
13												
14												
15												

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Reviewed by: ET

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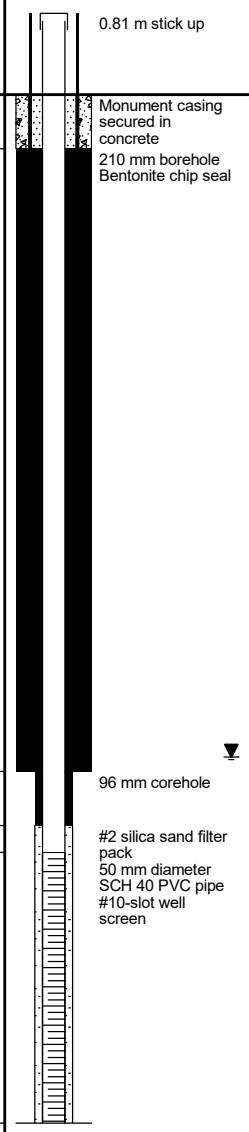
IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-135S

CLIENT: City of Guelph	DATE DRILLED: November 20, 2018	GROUND ELEVATION: 316.53 masl	NORTHING: 4822403.3
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 317.34 masl	EASTING: 562332.7
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.80 masl	MOE WELL TAG#: A252554
LOGGED BY: A. Casey	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: December 18, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
							FILL: Sandy Silt, dark brown, some gravel, organics.		315.77 / 0.76	316.53 / 0.00; 316.23 / 0.30	
1							**SILTY SAND:** Dark brown, coarse grained, trace gravel.		315.01 / 1.52		
2							**SAND:** Dark brown, coarse grained, some gravel.		313.48 / 3.05		
3							**GUELPH FORMATION AND ERAMOSA FORMATION/STONE ROAD MEMBER DOLOSTONE:** Buff, slightly weathered, frequent vugs <60 mm.			312.72 / 3.81; 312.42 / 4.11; 312.26 / 4.27	
4											
5							- Weak rock at 5.13 mbgs.		310.74 / 5.79	310.74 / 5.79	
6							Bottom of corehole at 5.79 mbgs Lithology inferred from adjacent borehole MW18-135D.				
7											



Notes:
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RECORD OF MONITORING WELL: MW18-136D

CLIENT: City of Guelph	DATE DRILLED: Nov 23 to Nov 26, 2018	GROUND ELEVATION: 315.58 masl	NORTHING: 4822312.9
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.34 masl	EASTING: 562288.1
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.70 masl	MOE WELL TAG#: A252554
LOGGED BY: A. Casey	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: December 18, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	0.76 m stick up	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID 100 200 300 400
							FILL: Silty Sand, light brown, medium dense, dry, fine to medium grained, trace slag and gravel.			315.58 / 0.00	Monument casing secured in concrete	
										315.28 / 0.30	210 mm borehole Bentonite grout seal	
							CLAYEY SILT: Light to dark brown, dry, very stiff, some gravel.		314.97 / 0.61			
1												
2												
							- Sampler refusal at 1.73 mbgs, HSA refusal at 2.59 mbgs, set PW casing, PQ coring below 2.59 mbgs.		312.99 / 2.59	312.99 / 2.59	96 mm corehole	
							GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE: Buff, coarse crystalline, high vug intensity (<5 mm).					
3							- 8 cm vertical fracture at 3.00 mbgs.					
4												
5												
6							- Greyish light brown, vugs (<60 mm) below 5.84 mbgs.					
7												
							- 105 mm vug at 7.16 mbgs and 85 mm vug at 7.24 mbgs, calcite crystallization.		308.37 / 7.21			
							ERAMOSA/ REFORMATORY QUARRY MEMBER: Brownish medium grey, strong, fresh, undulating bedding, moderately fractured, fossiliferous, frequent vugs (<40 mm_.					
							- 18 cm weak rock at 7.77 mbgs.					

Notes:
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RECORD OF MONITORING WELL: MW18-136D

CLIENT: City of Guelph	DATE DRILLED: Nov 23 to Nov 26, 2018	GROUND ELEVATION: 315.58 masl	NORTHING: 4822312.9
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.34 masl	EASTING: 562288.1
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.70 masl	MOE WELL TAG#: A252554
LOGGED BY: A. Casey	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: December 18, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
							- Low vug intensity (<15 mm) below 8.56 mbgs.					
9												
10												
										304.76 / 10.82	Bentonite pellet seal	
11												
										304.15 / 11.43	#2 silica sand filter pack 50 mm diameter SCH 40 PVC pipe #10-slot well screen	
										304.00 / 11.58		
12							- Trace vugs (<3 mm), frequent fossils (<10 mm) below 11.94 mbgs.					
13									302.47 / 13.11	302.47 / 13.11		
							Bottom of corehole at 13.11 mbgs Lithology inferred from adjacent borehole MW18-136G.					
14												
15												

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RECORD OF MONITORING WELL: MW18-136G

CLIENT: City of Guelph	DATE DRILLED: Nov 26 to Nov 27, 2018	GROUND ELEVATION: 315.56 masl	NORTHING: 4822312.6
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.36 masl	EASTING: 562286.3
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.89 masl	MOE WELL TAG#: A252554
LOGGED BY: A. Casey	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: December 18, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	0.80 m stick up	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID 100 200 300 400
	42	SS1	12				**FILL:** Silty Sand, light brown, medium dense, dry, fine to medium grained, trace slag and gravel.			315.56 / 0.00; 315.26 / 0.30	Monument casing secured in concrete; 210 mm borehole; Bentonite grout seal	
							CLAYEY SILT: Light to dark brown, dry, very stiff, some gravel.		314.95 / 0.61			
1	42	SS2	27									
	100	SS3	50/ 5cm									
2												
							- Sampler refusal at 1.73 mbgs, HSA refusal at 2.59 mbgs, set PW casing, PQ coring below 2.59 mbgs.		312.97 / 2.59	312.97 / 2.59	123 mm corehole	
	100	Run1		0	2		**GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:** Buff, coarse crystalline, high vug intensity (<5 mm).					
3					7		- 8 cm vertical fracture at 3.00 mbgs.					
					7							
	100	Run2		35	3							
					3							
4					4							
					4							
					5							
5	100	Run3		50	4							
					2							
					3							
6					2		- Greyish light brown, vugs (<60 mm) below 5.84 mbgs.					
					3							
	100	Run4		85	2							
					3							
7					2							
					2		- 105 mm vug at 7.16 mbgs and 85 mm vug at 7.24 mbgs, calcite crystallization.		308.35 / 7.21			
					1		**ERAMOSA/ REFORMATORY QUARRY MEMBER:** Brownish medium grey, strong, fresh, undulating bedding, moderately fractured, fossiliferous, frequent vugs (<40 mm).					
							- 18 cm weak rock at 7.77 mbgs.					

Notes:
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Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW18-136G

CLIENT: City of Guelph	DATE DRILLED: Nov 26 to Nov 27, 2018	GROUND ELEVATION: 315.56 masl	NORTHING: 4822312.6
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.36 masl	EASTING: 562286.3
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.89 masl	MOE WELL TAG#: A252554
LOGGED BY: A. Casey	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: December 18, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
	100	Run5		95	2, 2, 1		- Low vug intensity (<15) mm below 8.56 mbgs.				
9					1, 2, 1						
	100	Run6		100	2, 2, 4						
10											
	100	Run7		54	2, 4, 3, 2						
11											
12					2, 2, 2		- Trace vugs (<3 mm), frequent fossils (<10 mm) below 11.94 mbgs.				
	100	Run8		95	1, 0, 3						
13											
	100	Run9		90	2, 1, 2, 1				300.62 / 14.94		
14											
15					2, 1		**ERAMOSA/VINEMOUNT MEMBER:** Dark grey, strong, occasional fossils (<5 mm).				
	100	Run 10		55	1, 3		- 64 cm weak rock at 15.57 mbgs.				

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RECORD OF MONITORING WELL: MW18-136G

CLIENT: City of Guelph	DATE DRILLED: Nov 26 to Nov 27, 2018	GROUND ELEVATION: 315.56 masl	NORTHING: 4822312.6
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.36 masl	EASTING: 562286.3
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.89 masl	MOE WELL TAG#: A252554
LOGGED BY: A. Casey	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: December 18, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)		ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
					0							
					1		- 35 mm vug with calcite crystalline at 16.59 mbgs. - Medium to dark grey, few fossils (<5 mm), vugs nearly absent below 16.64 mbgs.					
17					1							
	100	Run 11		82	2							
					2		- 25 cm fracture at 17.55 mbgs.					
					1							
18										297.52 / 18.04	96 mm corehole	
	100	Run 12		75	1		- Ream HW casing, HQ coring below 18.03 mbgs.					
					1							
					2							
					2							
19	100	Run 13		88								
					1							
					0							
					2							
20					2		- 10 cm vein at 19.86 mbgs.					
					2		- 15 cm vein at 20.27 mbgs.					
	100	Run 14		93								
					1							
21					0							
					0							
					1							
					0							
22	100	Run 15		100								
					0							
					0							
					0							
23										292.57 / 22.99	Bentonite pellet seal	
					1							
					2							
	98	Run 16		93						291.96 / 23.60		
					2					291.76 / 23.80	#2 silica sand filter pack 50 mm diameter SCH 40 PVC pipe	

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RECORD OF MONITORING WELL: MW18-136G

CLIENT: City of Guelph	DATE DRILLED: Nov 26 to Nov 27, 2018	GROUND ELEVATION: 315.56 masl	NORTHING: 4822312.6
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 316.36 masl	EASTING: 562286.3
PROJECT NUMBER: 694757	DRILL RIG: CME 75 Power Auger	WATER ELEVATION: 312.89 masl	MOE WELL TAG#: A252554
LOGGED BY: A. Casey	DRILL METHOD: 108 mm HSA, PQ, HQ water core	WATER LEVEL DATE: December 18, 2018	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE/COREHOLE COMPLETION DETAILS: (masl) ELEV. / DEPTH (mbgs)	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID 100 200 300 400
					0						
					1						
					2		**GOAT ISLAND/ANCASTER MEMBER:** Light to medium grey, strong, fresh, occasional fossils (<5 mm), trace vugs (<3 mm), fossiliferous. undulating stratification.		290.99 / 24.57		
25	95	Run 17		95	1						
					0					290.24 / 25.32	
					1				289.78 / 25.78	289.78 / 25.78	
							Bottom of corehole at 25.78 mbgs				
26											
27											
28											
29											
30											
31											

#10-slot well screen

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF MONITORING WELL: MW19-137S

CLIENT: City of Guelph	DATE DRILLED: April 16, 2019	GROUND ELEVATION: 316.44 masl	NORTHING: 4822376.7
LOCATION: 200 Beverley St., Guelph	DRILLER: Aardvark Drilling	TOP OF PIPE: 317.31 masl	EASTING: 562388.0
PROJECT NUMBER: 694757	DRILL RIG: CME 45 Rotary Power	WATER ELEVATION: 313.27 masl	MOE WELL TAG#: A252527
LOGGED BY: J. Gowing	DRILL METHOD: 108 mm HSA, 98 mm tricone air core	WATER LEVEL DATE: April 17, 2019	

DEPTH (mbgs)	SAMPLES: Recovery (%)	TYPE	SPT (N-value)	RQD (%)	Fractures per 0.3 m	Parameters Analyzed (time) (sample interval mbgs)
	50	SS1	4			
1	17	SS2	11			
	67	SS3	50+			
2	72	SS4	50/ 13cm			

LITHOLOGY & REMARKS

FILL: Sand and Gravel, dark brown, moist, loose, fine to coarse sand and gravel, trace silt, trace rootlets and organics, trace brick.

- Increasing gravel below 1.07 mbgs.

SAND AND GRAVEL WITH COBBLES: Light brown to grey, dry to moist, very dense, fine sand and gravel, trace silt.

- HSA to top of bedrock, tricone with air below 2.57 mbgs.

GUELPH FORMATION AND ERAMOSA FORMATION / STONE ROAD MEMBER DOLOSTONE:

Bottom of corehole at 5.26 mbgs

(masl) ELEV. / DEPTH (mbgs)
314.91 / 1.52
313.87 / 2.57
311.18 / 5.26

BOREHOLE/COREHOLE COMPLETION DETAILS (masl) ELEV. / DEPTH (mbgs)	
316.44 / 0.00	0.88 m stick up
316.13 / 0.30	Monument casing secured in concrete; 210 mm borehole Bentonite seal
314.45 / 1.98	#3 silica sand filter pack
314.23 / 2.21	50 mm diameter SCH 40 PVC pipe #10-slot well screen; 98 mm corehole
313.87 / 2.57	
311.18 / 5.26	

ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID: 100 200 300 400

0.1, 0.2, 1.4, 0.9

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_MW_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF TEST PIT: TP17-300

CLIENT: City of Guelph
DATE EXCAVATED: October 4, 2017
CONTRACTOR: GFEI
NORTHING: 4822271.2

LOCATION: 200 Beverley St., Guelph
LOGGED BY: M. Shiry
EXCAVATOR: Kubota KX080-4
EASTING: 562096.3

PROJECT NUMBER: 694757
GROUND ELEVATION: 315.08 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	SAMPLES: TYPE	SAMPLES: Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	TEST PIT COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 10.6 eV Bulb PID (100 200 300 400)
		Grab	PCB Dioxins/Furans (14:15) (0.00-0.30) Metals & Inorg. SVOCs PHCs & BTEX VOCs (14:25) (0.20-0.46) PCB (14:20) (0.30-0.61) Metals & Inorg. SVOCs PHCs & BTEX VOCs (14:35) (0.91-1.22)	**FILL:** Sand and gravel, dark brown, dry to moist, fine to coarse, trace silt, trace rootlets at surface.			Backfilled with excavated soil	1.3
		Grab		Slag and foundry sand, black, dry, cemented.		314.88 / 0.20		1.0
		Grab		Silty sand, dark orange/brown, fine grained, cemented, trace rootlets, trace brick.		314.62 / 0.46		1.4
1		Grab		**SILTY SAND WITH COBBLES AND BOULDERS (TILL):** Brown, moist, fine grained sand, trace medium and coarse sand, trace rootlets.		314.32 / 0.76		1.4
				- Refusal on suspected bedrock. Bottom of Test Pit at 1.52 mbgs		313.56 / 1.52		
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Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS

CH2M HILL Canada Limited

IMICO_TP_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 4/16/19

RECORD OF TEST PIT: TP17-301

CLIENT: City of Guelph
DATE EXCAVATED: October 4, 2017
CONTRACTOR: GFEI
NORTHING: 4822345.4

LOCATION: 200 Beverley St., Guelph
LOGGED BY: M. Shiry
EXCAVATOR: Kubota KX080-4
EASTING: 562210.1

PROJECT NUMBER: 694757
GROUND ELEVATION: 315.45 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	SAMPLES: TYPE	SAMPLES: Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	TEST PIT COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 10.6 eV Bulb PID (100 200 300 400)
		Grab		**FILL:** Sand and Gravel, light brown, fine to coarse sand and gravel, trace silt, trace rootlets.			Backfilled with excavated soil	2.6
			TOC Grain Size Metals & Inorg. SVOCs PHCs & BTEX (13:20) (0.30-0.91)	Silt and Sand, black to dark brown, moist, fine grained, trace slag, trace brick, trace medium to coarse sand, rail tie wood debris.		315.15 / 0.30		
		Grab						3.2
1		Grab		Sand and Gravel, brown, moist, fine to coarse sand and gravel.		314.54 / 0.91		5.1
		Grab		**PEAT:** Black, moist, trace rootlets, 5 cm seam grey clay, trace silt, moist, high plasticity at lower contact.		314.38 / 1.07		4.2
		Grab	TOC Grain Size Metals & Inorg. SVOCs PHCs & BTEX (13:40) (1.22-1.52)	**SANDY GRAVEL WITH SILT (TILL):** Grey, light brown, moist, fine to coarse sand, trace clay, trace cobbles and boulders.		314.23 / 1.22		3.2
				- Refusal on suspected bedrock.		313.93 / 1.52		
				Bottom of Test Pit at 1.52 mbgs				
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Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS

CH2M HILL Canada Limited

IMICO_TP_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 4/16/19

RECORD OF TEST PIT: TP17-302

CLIENT: City of Guelph
DATE EXCAVATED: October 4, 2017
CONTRACTOR: GFEI
NORTHING: 4822396.2

LOCATION: 200 Beverley St., Guelph
LOGGED BY: M. Shiry
EXCAVATOR: Kubota KX080-4
EASTING: 562203.9

PROJECT NUMBER: 694757
GROUND ELEVATION: 315.27 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	SAMPLES: TYPE	SAMPLES: Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	TEST PIT COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 10.6 eV Bulb PID (100 200 300 400)
		Grab	Metals & Inorg. PAHs PHCs & BTEX VOCs (11:50) (0.30-0.91)	**FILL:** Silty Sand, dark brown to black, dry to moist, fine grained, trace brick and slag, rootlets at surface.			Backfilled with excavated soil	2.9
1		Grab		Slag, black, dry.		314.36 / 0.91		2.8
		Grab		**PEAT:** Black, organic, dry to moist, some rootlets.		314.05 / 1.22		2.1
		Grab	Metals & Inorg. PAHs PHCs & BTEX VOCs (12:45) (1.52-2.01)	**SANDY SILT (TILL):** Greyish light brown, moist, medium plasticity, fine to coarse sand, some gravel and cobbles.		313.75 / 1.52		2.5
2				- Refusal on suspected bedrock. Bottom of Test Pit at 2.01 mbgs		313.26 / 2.01		
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Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS

CH2M HILL Canada Limited

IMICO_TP_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 4/16/19

RECORD OF TEST PIT: TP17-303

CLIENT: City of Guelph
DATE EXCAVATED: October 4, 2017
CONTRACTOR: GFEI
NORTHING: 4822214.7

LOCATION: 200 Beverley St., Guelph
LOGGED BY: M. Shiry
EXCAVATOR: Kubota KX080-4
EASTING: 562165.0

PROJECT NUMBER: 694757
GROUND ELEVATION: 315.36 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	SAMPLES: TYPE	SAMPLES: Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	TEST PIT COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 10.6 eV Bulb PID (100 200 300 400)
		Grab	Metals & Inorg. PAHs PHCs & BTEX VOCs (0.15-0.71)	**FILL:** Sand and Gravel, brown, moist to dry, fine to coarse sand, fine gravel, trace silt, rootlets.		315.21	Backfilled with excavated soil	4.3
		Grab		Silty Sand, dark brown with black seams, moist, trace brick.		0.15		2.9
		Grab		**SILT:** Dark grey, moist, medium plasticity, high organic content, rootlets and woody plant stalk.		314.65 / 0.71		5.2
1		Grab	Metals & Inorg. PAHs PHCs & BTEX VOCs (1.22-1.52)	**SILTY SAND (TILL):** Brown, moist, fine grained, some cobbles and boulders, trace gravel, trace silt and clay pockets with orange mottling.		314.45 / 0.91		3.7
2		Grab		- Grey medium sand, trace silt, increased grain size below 2.13 mbgs.				1.8
3				- Refusal on suspected bedrock. Bottom of Test Pit at 2.74 mbgs		312.62 / 2.74		
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Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS

CH2M HILL Canada Limited

IMICO_TP_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 4/16/19

RECORD OF TEST PIT: TP17-304

CLIENT: City of Guelph
DATE EXCAVATED: October 4, 2017
CONTRACTOR: GFEI
NORTHING: 4822440.0

LOCATION: 200 Beverley St., Guelph
LOGGED BY: M. Shiry
EXCAVATOR: Kubota KX080-4
EASTING: 562317.7

PROJECT NUMBER: 694757
GROUND ELEVATION: 315.43 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	SAMPLES: TYPE	SAMPLES: Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	TEST PIT COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 10.6 eV Bulb PID (100 200 300 400)
		Grab		**FILL:** Sand and Gravel, grey, moist, fine to coarse.			Backfilled with excavated soil	2.9
1		Grab	Metals & Inorg. PHCs & BTEX VOCs (11:05) (1.00-1.30)	Sand, Gravel and Cobbles, brown, moist, fine to coarse, some silt, trace clay and clay clumps, upper contact orange with rootlets.		314.42 / 1.01		2.3
		Grab	Metals & Inorg. PHCs & BTEX VOCs (11:10) (1.80-2.00)					2.9
2				- Refusal on suspected bedrock. Bottom of Test Pit at 2.01 mbgs		313.42 / 2.01		
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Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS

CH2M HILL Canada Limited

IMICO_TP_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 4/16/19

RECORD OF TEST PIT: TP17-305

CLIENT: City of Guelph
DATE EXCAVATED: October 4, 2017
CONTRACTOR: GFEI
NORTHING: 4822442.7

LOCATION: 200 Beverley St., Guelph
LOGGED BY: M. Shiry
EXCAVATOR: Kubota KX080-4
EASTING: 562348.5

PROJECT NUMBER: 694757
GROUND ELEVATION: 315.60 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	SAMPLES: TYPE	SAMPLES: Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	TEST PIT COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 10.6 eV Bulb PID (100 200 300 400)
		Grab		**FILL:** Silty Sand, brown, dry, rootlets.		315.50	Backfilled with excavated soil	2.7
		Grab		Sand and gravel, grey, dry, fine to coarse.		0.10		1.5
		Grab		Slag, dark brown to black, trace sand and silt, trace brick, trace glass.		315.30 / 0.30		1.6
1		Grab		Silt, Sand, Gravel and Cobbles, brown, dry, fine to coarse, trace brick and rootlet, boulders top 30 cm.		314.99 / 0.61		1.7
		Grab	Metals & Inorg. PHCs & BTEX VOCs (10:30) (1.52-1.80)	- Yellow below 1.50 mbgs.				1.5
2				- Refusal on suspected bedrock. Bottom of Test Pit at 1.80 mbgs		313.80 / 1.80		
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Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS

CH2M HILL Canada Limited

IMICO_TP_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 4/16/19

RECORD OF TEST PIT: TP17-306

CLIENT: City of Guelph
DATE EXCAVATED: October 4, 2017
CONTRACTOR: GFEI
NORTHING: 4822291.5

LOCATION: 200 Beverley St., Guelph
LOGGED BY: M. Shiry
EXCAVATOR: Kubota KX080-4
EASTING: 562235.5

PROJECT NUMBER: 694757
GROUND ELEVATION: 315.38 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	SAMPLES: TYPE	SAMPLES: Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	TEST PIT COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
		Grab		**FILL:** Sand with Gravel and Cobbles, light brown, dry to moist, fine grained sand, trace silt, trace brick and concrete. Reinforced concrete wall at location of geophysical survey anomaly.			Backfilled with excavated soil	3.0
1		Grab	Metals & Inorg. PAHs PHCs & BTEX VOCs PCBs (17:05) (0.91-1.22)	- Dark brown below 0.76 mbgs.				2.5
		Grab	Metals & Inorg. PAHs (17:10) (1.52-1.83)					2.7
				- Refusal on suspected bedrock.		313.55 / 1.83		
2				Bottom of Test Pit at 1.83 mbgs				
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6								
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Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS

CH2M HILL Canada Limited

IMICO_TP_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 4/16/19

RECORD OF TEST PIT: TP17-307

CLIENT: City of Guelph
DATE EXCAVATED: October 4, 2017
CONTRACTOR: GFEI
NORTHING: 4822305.3

LOCATION: 200 Beverley St., Guelph
LOGGED BY: M. Shiry
EXCAVATOR: Kubota KX080-4
EASTING: 562238.9

PROJECT NUMBER: 694757
GROUND ELEVATION: 315.30 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	SAMPLES: TYPE	SAMPLES: Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	TEST PIT COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
				FILL: Sand, Gravel and Cobbles, brown, moist, fine to coarse.			Backfilled with excavated soil	
1								
2		Grab	PHCs & BTEX VOCs (17:50) (2.13-2.44)	- Increased moisture below 2.29 mbgs.				2.5
				- Refusal on suspected concrete floor. Bottom of Test Pit at 2.44 mbgs		312.86 / 2.44		
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Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS

CH2M HILL Canada Limited

IMICO_TP_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 4/16/19

RECORD OF TEST PIT: TP17-308

CLIENT: City of Guelph
DATE EXCAVATED: October 4, 2017
CONTRACTOR: GFEI
NORTHING: 4822299.0

LOCATION: 200 Beverley St., Guelph
LOGGED BY: M. Shiry
EXCAVATOR: Kubota KX080-4
EASTING: 562257.5

PROJECT NUMBER: 694757
GROUND ELEVATION: 315.38 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	SAMPLES: TYPE	SAMPLES: Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	TEST PIT COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
				FILL: Sand, Gravel and Cobbles, brown, moist, fine to coarse.			Backfilled with excavated soil	
1								
2								
		Grab	Metals & Inorg. (16:35) (2.44-2.59)					2.6
				Bottom of Test Pit at 2.59 mbgs Notes: - Concrete ramp along foundation wall, location of geophysical anomaly, possibly reinforced concrete. Ramp ends at 2.29 mbgs then straight drop and refusal at 2.59 mbgs on suspected concrete floor.		312.79 / 2.59		
3								
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Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: AB/MS

Reviewed by: DS

CH2M HILL Canada Limited

IMICO_TP_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 4/16/19

RECORD OF TEST PIT: TP18-309

CLIENT: City of Guelph
DATE EXCAVATED: July 5, 2018
CONTRACTOR: GFEI
NORTHING: 4822392.5
LOCATION: 200 Beverley St., Guelph
LOGGED BY: J. Gowing
EXCAVATOR: Kubota KX080-4
EASTING: 562365.7
PROJECT NUMBER: 694757
GROUND ELEVATION: 316.14 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	SAMPLES: TYPE	SAMPLES: Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	TEST PIT COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
		Grab		**FILL:** Sand and gravel, brown, dry, loose, some large cobbles, trace concrete debris.			Backfilled with excavated soil	2.1
		Grab						2.0
		Grab						2.0
1		Grab		- 20 cm seam asphalt at 0.91 mbgs.				2.2
		Grab	Metals PHCs (11:20) (1.22-1.52)	**FILL:** Sand and gravel, brown, some oxidation, some large cobbles.		314.92 / 1.22		2.2
		Grab						1.9
2		Grab		**SAND AND GRAVEL:** Brown, moist, some oxidation, some large cobbles.		314.31 / 1.83		1.8
		Grab						4.3
		Grab		- Moist to wet below 2.44 mbgs.				3.2
3		Grab	Metals (11:50) (2.74-2.90)	- Water seeping and present at 2.74 mbgs.		313.24 / 2.90		2.1
				- Refusal on suspected bedrock. Bottom of Test Pit at 2.90 mbgs				
4								
5								
6								
7								

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_TP_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF TEST PIT: TP18-310

CLIENT: City of Guelph
DATE EXCAVATED: July 5, 2018
CONTRACTOR: GFEI
NORTHING: 4822384.8

LOCATION: 200 Beverley St., Guelph
LOGGED BY: J. Gowing
EXCAVATOR: Kubota KX080-4
EASTING: 562376.5

PROJECT NUMBER: 694757
GROUND ELEVATION: 316.34 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	SAMPLES: TYPE	SAMPLES: Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	TEST PIT COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
		Grab		**FILL:** Sand and gravel, brown, dry, loose, some large cobbles, trace slag, some building debris (bricks etc.).			Backfilled with excavated soil	1.7
		Grab						1.9
		Grab						2.2
1		Grab	PHCs (09:10) (0.91-1.22)					2.4
		Grab	Metals (09:20) (1.22-1.52)	- Moist below 1.37 mbgs.				1.6
		Grab		- Some slag fragments, trace concrete pieces below 1.52 mbgs.		314.66		2.4
				SAND AND GRAVEL: Moist, loose, some large cobbles, some boulders.		1.68		
2		Grab						2.9
		Grab		- Some orange mottling, some oxidation below 2.29 mbgs.				3.1
		Grab						0.8
			Metals (10:05) (2.44-2.74)	- Refusal on suspected bedrock.		313.60		
3				Bottom of Test Pit at 2.74 mbgs		2.74		
4								
5								
6								
7								

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_TP_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF TEST PIT: TP18-311

CLIENT: City of Guelph
DATE EXCAVATED: July 6, 2018
CONTRACTOR: GFEI
NORTHING: 4822239.3

LOCATION: 200 Beverley St., Guelph
LOGGED BY: J. Gowing
EXCAVATOR: Kubota KX080-4
EASTING: 562150.9

PROJECT NUMBER: 694757
GROUND ELEVATION: 315.50 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	SAMPLES: TYPE	SAMPLES: Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	TEST PIT COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
		Grab		**FILL:** Sand and gravel, brown, dry, loose, some large cobbles, trace boulders.			Backfilled with excavated soil	0.8
		Grab	Metals (08:38) (0.30-0.61)					0.8
		Grab		**SAND AND GRAVEL:** Some sandy clay, some organics, dark brown, moist, loose, some cobbles, trace boulders.		314.89 / 0.61		0.5
1		Grab						0.4
		Grab						0.3
		Grab						0.3
		Grab	Metals (08:50) (1.83-1.98)			313.52 / 1.98		0.4
2				- Refusal on suspected bedrock. Bottom of Test Pit at 1.98 mbgs				
3								
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5								
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Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_TP_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF TEST PIT: TP18-312

CLIENT: City of Guelph
DATE EXCAVATED: July 6, 2018
CONTRACTOR: GFEI
NORTHING: 4822243.3

LOCATION: 200 Beverley St., Guelph
LOGGED BY: J. Gowing
EXCAVATOR: Kubota KX080-4
EASTING: 562134.4

PROJECT NUMBER: 694757
GROUND ELEVATION: 315.29 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	SAMPLES: TYPE	SAMPLES: Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	TEST PIT COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
		Grab		**FILL:** Sand, trace clay, dark brown to black, dry, loose, some cobbles, large slag pieces, gravel.			Backfilled with excavated soil	0.6
		Grab						0.4
		Grab	Metals (10:50) (0.61-0.91)					0.5
						314.38 / 0.91		
1		Grab		**SAND AND GRAVEL:** Some sandy clay, some organics, dark brown, moist, loose, some cobbles, trace boulders.				0.6
		Grab						0.6
		Grab	Metals (11:05) (1.52-1.83)					0.5
						313.46 / 1.83		
2				- Refusal on suspected bedrock. Bottom of Test Pit at 1.83 mbgs				
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Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_TP_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF TEST PIT: TP18-313

CLIENT: City of Guelph
DATE EXCAVATED: July 6, 2018
CONTRACTOR: GFEI
NORTHING: 4822255.6

LOCATION: 200 Beverley St., Guelph
LOGGED BY: J. Gowing
EXCAVATOR: Kubota KX080-4
EASTING: 562147.1

PROJECT NUMBER: 694757
GROUND ELEVATION: 315.49 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	SAMPLES: TYPE	SAMPLES: Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	TEST PIT COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
		Grab		**FILL:** Sand, trace clay, dark brown to black, dry, loose, some cobbles, large slag pieces, gravel.			Backfilled with excavated soil	0.6
		Grab	Metals (10:00) (0.30-0.61)					0.8
		Grab						0.8
						314.58 / 0.91		
1		Grab		**SAND AND GRAVEL:** Some sandy clay, some organics, dark brown, moist, loose, some cobbles, trace boulders.				0.3
		Grab						0.4
		Grab	Metals (10:20) (1.52-1.83)					0.4
						313.66 / 1.83		
2				- Refusal on suspected bedrock. Bottom of Test Pit at 1.83 mbgs				
3								
4								
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Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

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IMICO_TP_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF TEST PIT: TP18-314

CLIENT: City of Guelph
DATE EXCAVATED: July 6, 2018
CONTRACTOR: GFEI
NORTHING: 4822243.0

LOCATION: 200 Beverley St., Guelph
LOGGED BY: J. Gowing
EXCAVATOR: Kubota KX080-4
EASTING: 562155.8

PROJECT NUMBER: 694757
GROUND ELEVATION: 315.52 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	SAMPLES: TYPE	SAMPLES: Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	TEST PIT COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
		Grab		**FILL:** Sand and gravel, brown, dry, loose, some large cobbles, trace boulders.			Backfilled with excavated soil	0.8
		Grab	Metals (09:00) (0.30-0.61)					0.7
		Grab		**SAND AND GRAVEL:** Some sandy clay, trace organics, dark brown, moist, loose, some cobbles, trace boulders.		314.91 / 0.61		0.7
1		Grab						0.6
		Grab						0.4
		Grab	Metals (09:30) (1.52-1.83)					0.5
				- Refusal on suspected bedrock. Bottom of Test Pit at 1.83 mbgs		313.69 / 1.83		
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Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_TP_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF TEST PIT: TP18-315

CLIENT: City of Guelph
DATE EXCAVATED: July 5, 2018
CONTRACTOR: GFEI
NORTHING: 4822273.4

LOCATION: 200 Beverley St., Guelph
LOGGED BY: J. Gowing
EXCAVATOR: Kubota KX080-4
EASTING: 562251.0

PROJECT NUMBER: 694757
GROUND ELEVATION: 315.69 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	SAMPLES: TYPE	SAMPLES: Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	TEST PIT COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
		Grab	PHCs & BTEX (15:50) (0.10-0.30)	**FILL:** Sand and gravel, brown to dark brown, dry, loose, cobbles, some boulders, some debris.			Backfilled with excavated soil	1.2
		Grab	PAHs (16:00) (0.30-0.61)					2.4
		Grab						1.4
1		Grab						1.5
		Grab	PAHs (15:20) (1.22-1.32)			314.47 / 1.22		1.4
				SAND AND GRAVEL: Brown to dark brown, moist, loose, some cobbles.		314.35 / 1.34		
				- Refusal on suspected bedrock. Bottom of Test Pit at 1.34 mbgs				
2								
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4								
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Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

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IMICO_TP_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF TEST PIT: TP18-316

CLIENT: City of Guelph
DATE EXCAVATED: July 5, 2018
CONTRACTOR: GFEI
NORTHING: 4822386.6

LOCATION: 200 Beverley St., Guelph
LOGGED BY: J. Gowing
EXCAVATOR: Kubota KX080-4
EASTING: 562335.4

PROJECT NUMBER: 694757
GROUND ELEVATION: 315.72 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	SAMPLES: TYPE	SAMPLES: Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	TEST PIT COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
			PCBs (13:00) (0.20-0.30) PAHs PHCs PCBs (13:05) (0.30-0.61)	**CONCRETE:**		315.52	Backfilled with excavated soil	
		Grab		**FILL:** Sand and gravel, dark brown, dry, loose, some debris (brick and wires).		0.20		0.7
		Grab		- 30 cm seam of dark brown to black soil at 0.38 mbgs.				2.2
		Grab						3.1
1		Grab						2.5
		Grab						2.3
		Grab				314.04		1.4
				SAND AND GRAVEL: Some sandy clay, brown, moist, loose, some large cobbles.		1.68		
		Grab				313.74		1.3
2				- Refusal on suspected bedrock. Bottom of Test Pit at 1.98 mbgs		1.98		
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6								
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Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

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IMICO_TP_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF TEST PIT: TP18-317

CLIENT: City of Guelph
DATE EXCAVATED: July 6, 2018
CONTRACTOR: GFEI
NORTHING: 4822292.5

LOCATION: 200 Beverley St., Guelph
LOGGED BY: J. Gowing
EXCAVATOR: Kubota KX080-4
EASTING: 562106.2

PROJECT NUMBER: 694757
GROUND ELEVATION: 315.16 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	SAMPLES: TYPE	SAMPLES: Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	TEST PIT COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
		Grab		**FILL:** Sand and gravel, trace clay, brown to dark brown, dry to moist, loose, some large cobbles, some slag fragments, some debris (metal).			Backfilled with excavated soil	2.2
		Grab						2.3
		Grab						2.5
1		Grab	PHCs & BTEX (12:30) (1.22-1.22)			313.94 / 1.22		2.6
				- Refusal on suspected bedrock. Bottom of Test Pit at 1.22 mbgs				
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5								
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Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

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IMICO_TP_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF TEST PIT: TP18-318

CLIENT: City of Guelph
DATE EXCAVATED: July 6, 2018
CONTRACTOR: GFEI
NORTHING: 4822265.3

LOCATION: 200 Beverley St., Guelph
LOGGED BY: J. Gowing
EXCAVATOR: Kubota KX080-4
EASTING: 562112.7

PROJECT NUMBER: 694757
GROUND ELEVATION: 315.37 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	SAMPLES: TYPE	SAMPLES: Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	TEST PIT COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
		Grab	PAHs PHCs & BTEX PCBs Metals (11:28) (0.30-0.61)	**FILL:** Sand, trace clay, dark brown to black, dry, loose, some cobbles, trace slag, debris (brick, glass and metal fragments).			Backfilled with excavated soil	0.5
		Grab						0.8
		Grab		**SAND AND GRAVEL:** Some clay, trace to some organics, dark brown, moist, loose, some cobbles.		314.76 / 0.61		0.6
1		Grab						0.5
		Grab						0.6
		Grab						0.7
				- Refusal on suspected bedrock. Bottom of Test Pit at 1.83 mbgs		313.54 / 1.83		
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4								
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Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_TP_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF TEST PIT: TP18-319

CLIENT: City of Guelph
DATE EXCAVATED: July 5, 2018
CONTRACTOR: GFEI
NORTHING: 4822427.9

LOCATION: 200 Beverley St., Guelph
LOGGED BY: J. Gowing
EXCAVATOR: Kubota KX080-4
EASTING: 562268.6

PROJECT NUMBER: 694757
GROUND ELEVATION: 315.52 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	SAMPLES: TYPE	SAMPLES: Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	TEST PIT COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
		Grab		**FILL:** Sand, trace clay, brown to dark brown, moist, loose, some cobbles, some slag, trace debris.			Backfilled with excavated soil	2.6
		Grab	Metals (14:45) (0.30-0.61)					2.5
		Grab	PAHs (14:50) (0.61-0.91)					1.7
1		Grab		- 30 cm seam clayey fine sand at 0.91 mbgs.		314.30 / 1.22		2.5
		Grab		**SAND AND GRAVEL:** Trace clay, brown, moist, loose, some large cobbles.				2.7
		Grab	PAHs (15:10) (1.52-1.83)	- Wet, some large boulders below 1.80 mbgs.		313.54 / 1.98		2.5
2				- Refusal on suspected bedrock. Bottom of Test Pit at 1.98 mbgs				
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Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

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IMICO_TP_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF TEST PIT: TP20-320

CLIENT: City of Guelph
DATE EXCAVATED: February 20, 2020
CONTRACTOR: Lewis Straus Construction
NORTHING: 4822435.6

LOCATION: 200 Beverley St., Guelph
LOGGED BY: V. Peters
EXCAVATOR: Doosan DX140LCR
EASTING: 562341.7

PROJECT NUMBER: 694757
GROUND ELEVATION: 315.69 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	SAMPLES: TYPE	SAMPLES: Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	TEST PIT COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
				FILL: Silty Sand, medium brown, rootlets & organics.		315.61 / 0.08	Backfilled with excavated soil	
				FILL: Sand and gravel, greyish brown, moist, fine to coarse, trace silt.				
1		Grab	Metals & Inorg. PAHs PHCs VOCs (13:00) (0.76-0.91)					1.1
		Grab		- Traces of reddish-brown soil below 1.52 mbgs.				0.1
				Bottom of Test Pit at 1.75 mbgs - Refusal on bedrock at 1.75 mbgs.		313.94 / 1.75		
2								
3								
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Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: KJ

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_TP_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF TEST PIT: TP20-321

CLIENT: City of Guelph
DATE EXCAVATED: February 20, 2020
CONTRACTOR: Lewis Straus Construction
NORTHING: 4822412.2

LOCATION: 200 Beverley St., Guelph
LOGGED BY: V. Peters
EXCAVATOR: Doosan DX140LCR
EASTING: 562317.5

PROJECT NUMBER: 694757
GROUND ELEVATION: 315.19 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	SAMPLES: TYPE	SAMPLES: Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	TEST PIT COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
		Grab		**FILL:** Silty Sand, medium brown, rootlets & organics.		315.11 / 0.08	Backfilled with excavated soil	0.6
				FILL: Sand and Gravel, brown, moist, coarse, some cobbles, trace silt.		314.84 / 0.35		
				FILL: Gravel, grey, moist, some coarse sand, trace silt.				
1		Grab	Metals & Inorg. PAHs PHCs VOCs (12:00) (0.84-0.99)					1.3
		Grab	Metals & Inorg. PAHs PHCs VOCs (12:15) (1.37-1.52)	- Water seepage with slight sheen at 1.37 mbgs.		313.67 / 1.52		1.8
				Bottom of Test Pit at 1.52 mbgs - Refusal on bedrock at 1.52 mbgs.				
2								
3								
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Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: KJ

Reviewed by: ET

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IMICO_TP_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF TEST PIT: TP20-322

CLIENT: City of Guelph
DATE EXCAVATED: February 20, 2020
CONTRACTOR: Lewis Straus Construction
NORTHING: 4822414.0

LOCATION: 200 Beverley St., Guelph
LOGGED BY: V. Peters
EXCAVATOR: Doosan DX140LCR
EASTING: 562229.8

PROJECT NUMBER: 694757
GROUND ELEVATION: 315.56 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	SAMPLES: TYPE	SAMPLES: Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	TEST PIT COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
				FILL: Silty Sand, black, rootlets & organics.		315.48 / 0.08	Backfilled with excavated soil	
				FILL: Gravel, light brown, dry, trace fine sand.				
		Grab						0.8
				FILL: Silty Sand and Gravel, black and dark brown, moist, trace brick, glass, coal, mortar and concrete..		315.10 / 0.46		
		Grab	Metals & Inorg. PAHs PHCs VOCs (11:10) (0.61-0.76)					0.4
1								
		Grab		**SILTY SAND:** Medium brown, moist, some coarse gravel and cobbles, light brown-grey pockets		314.19 / 1.37		0.3
				Bottom of Test Pit at 1.52 mbgs - Refusal on bedrock at 1.52 mbgs.		314.04 / 1.52		
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4								
5								
6								
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Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: KJ

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_TP_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF TEST PIT: TP20-323

CLIENT: City of Guelph
DATE EXCAVATED: February 20, 2020
CONTRACTOR: Lewis Straus Construction
NORTHING: 4822366.2

LOCATION: 200 Beverley St., Guelph
LOGGED BY: V. Peters
EXCAVATOR: Doosan DX140LCR
EASTING: 562195.6

PROJECT NUMBER: 694757
GROUND ELEVATION: 315.55 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	SAMPLES: TYPE	SAMPLES: Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	TEST PIT COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
				FILL: Silty Sand, black, moist, rootlets & organics.			Backfilled with excavated soil	
						315.17 / 0.38		
				FILL: Silt, some sand, orange, moist.		315.04 / 0.51		
		Grab	Metals & Inorg. PAHs (10:07) (0.61-0.76)	**FILL:** Silty Sand and Gravel, black, trace brick, glass, coal, mortar and concrete, moist.				1.2
1								
						314.08 / 1.47		
		Grab		**SANDY SILT:** Light brown, moist, fine, some clay pockets, trace fine gravel, some cobbles.				0.6
		Grab						0.9
				Bottom of Test Pit at 1.83 mbgs - Refusal on bedrock at 1.83 mbgs.		313.72 / 1.83		
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3								
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5								
6								
7								

Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: KJ

Reviewed by: ET

CH2M HILL Canada Limited

IMICO_TP_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

RECORD OF TEST PIT: TP20-324

CLIENT: City of Guelph
DATE EXCAVATED: February 20, 2020
CONTRACTOR: Lewis Straus Construction
NORTHING: 4822230.9

LOCATION: 200 Beverley St., Guelph
LOGGED BY: V. Peters
EXCAVATOR: Doosan DX140LCR
EASTING: 562164.7

PROJECT NUMBER: 694757
GROUND ELEVATION: 315.32 masl

DEPTH (mbgs)	SAMPLES: Recovery (%)	SAMPLES: TYPE	SAMPLES: Parameters Analyzed (time) (sample interval mbgs)	LITHOLOGY & REMARKS	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	TEST PIT COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 11.7 eV Bulb PID (100 200 300 400)
		Grab	Metals & Inorg. PAHs PHCs VOCs (09:00) (0.30-0.46)	**FILL:** Sand and Gravel, light brown, moist, trace silt, some small cobbles.		314.53 / 0.79	Backfilled with excavated soil	0.6
1		Grab		**FILL:** Sand, dark brown and black, fine, some gravel, moist, trace organics, black plastic silty clay pockets, trace boulders, few cobbles.		314.02 / 1.30		0.5
		Grab		**SILTY SAND:** Brown, moist, fine grained, some cobbles, trace gravel, clay pockets.		313.70 / 1.62		0.9
2		Grab		**SAND AND GRAVEL:** Grey-brown, wet, fine to coarse, some cobbles and boulders, trace silt.		312.93 / 2.39		1.0
				Bottom of Test Pit at 2.39 mbgs - Refusal on bedrock at 2.39 mbgs.				
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Notes:
1. Information to be used for interpretation of environmental conditions only

Prepared by: KJ

Reviewed by: ET

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IMICO_TP_(FT); IMICO_UPLOAD (8).GPJ; LIBRARY.GLB; 431079 - WALLACE.GDT; 6/1/20

Appendix D
Geophysical Survey

CH2M
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Canada
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www.ch2m.com

Mr. Prasoon Adhikari
Environmental Engineer, Engineering and Capital Services
City of Guelph
1 Carden Street
Guelph, Ontario N1H 3A1

694757.01.CC.01
KWO//694757/500/530/02a/02

May 15, 2018

Subject: Results of Geophysical Logging of OW31 by Lotowater Technical Services Inc.
IMICO Site, 200 Beverley Street, Guelph, Ontario

1.0 Introduction

CH2M HILL Canada Limited (CH2M HILL) was retained by the City of Guelph (City) for Environmental Engineering Work for the Redevelopment of IMICO Site, through a consulting services agreement dated August 28, 2017 (the Agreement). Contract Change Order (CCO) No. 3 to the Agreement, dated February 24, 2018, provided for the completion of geophysical logging of Observation Well 31 (OW31). Lotowater Technical Services Inc. (Lotowater) was subcontracted by CH2M to provide the geophysical logging services. A site plan showing the location of OW31, and the stratigraphic and instrumentation log for OW31 are included in **Attachment A**.

The purpose of this letter is to summarize the scope of work completed, the results, and to provide conclusions and recommendations resulting from this work.

2.0 Objectives

The objectives of the geophysical logging were to:

i. Characterize conditions associated with OW31 with regards to casing integrity along the cased interval and fracture network along the open hole interval, checking for potential discrepancies with the existing construction log as reported by WSP (2016); and

ii. Assess potential hydraulic activity associated with OW31 to target future groundwater sampling activities.

3.0 Scope of Work

Lotowater completed borehole inspections and geophysical logging of OW31 including:

i. Downhole video camera;

ii. 3-arm Caliper;

iii. Acoustic Televiewer;

iv. Optical Televiewer;

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v. Natural gamma radiation;

vi. Full Wave-form Sonic; and

vii. Fluid temperature and electrical conductivity.

Fieldwork was completed over two (2) days, April 16 and 17, 2018.

4.0 Results

A copy of the summary report received from Lotowater is included as **Attachment B**. All logs were referenced in metric units, typically metres (m) to top of casing (TOC). The stickup casing pipe is at approximately 1.14 m above ground surface (GS). **Figures 1A through 1E** highlight key results from the geophysical logging as discussed in the following sections.

4.1 Downhole Video Camera

The downhole camera Aries/CCV BT9600 dual view water well camera was used prior to any downhole geophysical surveys to ensure the well did not have any physical obstructions as well as identify potential hazards (for example, loose borehole wall, casing constraints, etc.) that might influence borehole logging performance. The recorded video was reviewed for suspended sediment and colloid migration as an indicator of flow. Video was recorded in the down-view mode, with target side view 360 degrees records at significant features such as casing joints, casing shoe and fractures.

Features noted on the well video and their corresponding depth intervals, include:

i. From 00.0 to 29.8 mTOC: Casing joints presenting consistent spacing, and no evidence of abnormal threading. No obvious breaches or holes were seen in the casing;

ii. From 29.8 to 30.0 mTOC: Casing shoe, observed to be cut at an angle (**Attachment B**, page 2, Image 1);

iii. At 30.1 mTOC: most prominent fracture along the open hole interval (**Attachment B**, page 2, Image 2);

iv. At 31.4 mTOC: second most prominent fracture along the open hole interval (**Attachment B**, page 2, Image 3);

v. From 30.0 to 31.8 mTOC: Open hole vuggy interval moderately fractured depicting several minor fractures (**Attachment B**, page 2, Image 4); and

vi. From 31.8 to 33.5 mTOC: Open hole poorly fractured.

The video depth record marks approximately 20 cm deeper when compared to the other geophysical log depths, which was considered during data interpretation.

The video showed the well was clear and unobstructed to near its bottom depth, indicating no significant accumulation of sediments at the bottom. Minor mineral and biological staining can be seen along the casing and open hole intervals. No obvious particle movements were observed that could infer on ambient flow condition along the well.

4.2 3-Arm Caliper

The QL40-CAL-3-Arm Caliper probe records a single continuous borehole diameter log by means of three mechanically coupled arms in contact with the borehole wall. The obtained measurement indicates borehole wall roughness along cased and open hole intervals.

The resulting log presented **Attachment B** (page 4, log output labelled '3-Arm Caliper') indicates consistent spacing of casing joints, with 10 foot (ft) long casing pieces. Caliper deflection of 1 millimetre

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(mm) or less outward (increasing diameter) can be readily observed at the casing joints at depths of approximately 12.8, 15.8, 18.7, 21.7, 24.8 and 27.8 mTOC. The deflection inward (decreasing diameter) occurring from 3.8 to 4.4 mTOC potentially represents an artifact of the caliper mechanism when reaching the water surface. From 27.8 to 29.9 mTOC a caliper deflection inward of 1 – 2 mm occurred. The reason for this deflection is not known, but appears consistent from the casing joint at 27.8 mTOC to the base of the casing at approximately 30 mTOC. The above-noted deflections were not interpreted to be of concern as other geophysical techniques did not suggest inconsistences with the casing construction at these depth intervals. The borehole diameter narrows from approximately 104 (mm) (4.1 inches [”]) to 98 mm (3.9”) at the casing shoe into the open hole interval. It also registered a slight opening at approximately 31 mTOC, coinciding with natural gamma count drop and potential contact between the Ancaster Member and Niagara Falls Member of the Goat Island Formation. From 31 mTOC down, the open hole slightly narrows to 96 mm (3.8”).

4.3 Acoustic Televiewer

The Acoustic Televiewer (ATV) tool produces an acoustic pulse that travels through the borehole fluid, reaching the borehole wall and reflecting to the probe. Two major outputs are recorded: amplitude, which depicts major contrasts in rock acoustic impedance; and travel time logs, which produces a three-dimensional model of the borehole also known as acoustic caliper log. Scattering of the acoustic waves typically appears as a high contrast (low amplitude, high travel time) when a fracture intersects the borehole. The acoustic televiewer tool used was AQ40-ABI-2G, designed by Advanced Logic Technology (ALT) and produced by Mount Sopris Instruments (MSI). The performance of this tool is primarily related to the capacity of features along the borehole to scatter the acoustic signal. For instance, in-situ fractures with very small physical apertures may not register a visual response on the resulting amplitude log. Another critical procedure for the optimal performance of this tool is its centralization in the borehole. Because the OW31 diameter narrows from approximately 4.1” to 3.8” at the casing shoe, ATV log was performed using a 3” centralizer. Therefore, the ATV raw image along the cased interval was decentralized, and later processed and corrected.

The resulting image from the ATV tool, **Attachment C**, left site labelled ‘Amp Image’, was consistent with downhole video camera records, confirming the construction log provided by WSP (**Attachment A**). The resulting ATV image presented satisfactory quality, with well centralization along the open hole interval. From the casing shoe to 31.25 mTOC moderately fractured rock with abundant vugs suggests the lower portion of the Ancaster Member of the Goat Island Formation. From 31.25 down, relatively less fractured rock with some vugs suggests the transition to the upper Niagara Falls Member of the Goat Island Formation.

4.4 Optical Televiewer

The Optical Televiewer (OTV), also called Optical Borehole Imager (OBI), provides a continuous and oriented digital photograph of the borehole wall typically used to identify lithological contrasts and to distinguish actual fractures from lithological changes with low acoustic impedance (not registered in an ATV log), such as clays and unconsolidated materials. Additionally, this log allows the identification of oxidation stains as potential evidence of hydraulic activity along discontinuities depicted in the image (Williams & Johnson, 2000). Applied tool was QL40-OBI-2G, designed by ALT and produced by MSI. The performance of this tool is primarily controlled by water turbidity. **Attachment C**, right side labelled ‘Image’, depicts the results from the OTV in detail.

The resulting OTV image was consistent with downhole video camera records and ATV image (Sec.3.3), confirming the construction log provided by WSP (**Attachment A**). Spiral marks as observed at 23 mTOC, on the casing wall depict minor scratches probably developed during rock coring. The scratches do not

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seem to represent significant damage to the casing. The image from 29.82 to 29.94 mTOC indicates the casing was cut in a 32-degree angle dipping approximately to the west.

The low water turbidity allowed identification of clear lithological contrasts along the open hole interval. From the casing shoe at 29.94 to 31.25 mTOC, moderately fractured pale white colored shaley dolostone with abundant vugs suggests the lower portion of the Ancaster Member of the Goat Island Formation. From 31.25 down, relatively less fractured dark grey shaly dolostone with some vugs suggests the transition to the upper Niagara Falls Member of the Goat Island Formation.

4.5 Natural Gamma Radiation

Natural gamma logging tool measures the natural radioactivity of the formation surrounding the borehole. Sources of gamma radiation are primarily related to potassium-40 and daughter products of uranium and thorium, typically found in clay minerals, feldspars and arkose sandstones. Contrasts in natural gamma radiation can be correlated with stratigraphy and are typically applied to distinguish sedimentary rocks because of its relationship with the volume of fine grained sediment fractions such as silts and clays. The tool applied (QL40-GR) was designed by ALT and produced by MSI.

Understanding the top and bottom elevations of each lithostratigraphic unit is important for contextualization of the Site data within the regional scale lithostratigraphic framework, allowing for correlation with existing datasets beyond Site boundaries.

The obtained natural gamma log for OW31 is shown on **Figure 1A**, projected onto the geological cross section taken from WSP (2016). The natural gamma log for OW31 was also compared with an existing borehole (M21) drilled and logged by the University of Guelph (Fernandes, 2017) and located nearly 360 m west of OW31, as shown on **Figure 1B**. Three clear natural gamma maximum readings along the Vinemont Member of the Eramosa Formation allowed for correlation between M21 and OW31 logs. An updated lithostratigraphic interpretation guided by Brunton (2009) and Fomenko (2015) observations is depicted in **Figure 1C**, with an extension of the top contact of the Vinemont Member (from 298 to 304 meters above sea level) and absence of Guelph Formation. Also, this log allowed interpretation of the contact between the Ancaster Member and the Niagara Falls Member of the Goat Island Formation, representing an important lithological contrast that is correlated with the development of one of the two major subhorizontal fractures (bedding plane partings) identified in image logs Video, ATV and OTV, Sections Downhole Video Camera, Acoustic Televiewer and Optical Televiewer respectively.

4.6 Full Wave-form Sonic

The Full Wave-form sonic (FWS) tool (QL40-FWS) generates a 15 KHz pressure-wave (P-wave) which is recorded at two receivers located at fixed distances from the transmitter. Seismic energy refracts along interfaces such as fluid-rock, fluid-casing or grout-rock, travelling to the receivers in the form of a P-wave and converted in shear-wave (S-wave). These distinct waveforms provide unique information about the mechanical properties of the formation, casing condition and backfilling or grouting installed in the annular space between borehole and casing. The seismic travel time or 'slowness' (inverse of velocity) of both P and S haves can be interpreted from the waves recorded at each depth reading (Fomenko, 2015). The FWS tool used (QL40-FWS) was designed by ALT and produced by MSI.

The FWS log from OW31 as is shown on **Figure 1D**, depicts the P-wave contours as well as the calculated slowness log. Both receivers depict at least 3 major periods of contrasting amplitudes, potentially marking 3 interfaces: fluid-casing (continuous interpreted P-wave delineated in red and blue continuous lines for Receivers RX1 and RX2, respectively), grout-casing (dashed black lines) and grout-rock (dashed grey lines). **Figure 1D** indicates interpreted arrivals of contrasting amplitudes. Deviations on these contrasting amplitudes along the borehole intervals may be due to the double-cased interval of the borehole.

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4.7 Fluid Temperature and Electrical Conductivity

The applied tool measures fluid temperature as degree Celsius, and electrical conductivity (EC) as micro Siemens per centimetre (µS/cm). Fluid temperature (T) anomalies may be caused by fluid flow into the borehole. Also, stratification of waters of contrasting total dissolved solid (TDS) content may be registered in the fluid electrical conductivity (EC) log. The tool used (QL40-FTC) was designed by ALT and produced by MSI.

As observed by Pehme et al. (2013) after logging analogous Silurian dolostones, a T log can indicate two major zones: the 'heterothermic zone', defined as the shallow subsurface wherein atmospheric temporal temperature variability exists; and 'homothermic zone', for the stable temperature zone at greater depth. This zone coincides with an increasing EC with depth. The T and EC logs for OW31 are shown on **Figure 1D**. The heterothermic zone in OW31 was defined from 0 to approximately 9.7 mTOC, where both T and EC stabilize. Then T and EC transition down to the homothermic zone, potentially indicating stagnant water below 9.7 mTOC.

EC increases significantly at the casing shoe, remaining constant to the contact between the Ancaster Member and Niagara Falls Member of the Goat Island Formation, coinciding with two moderately opened fractures. Although no clear evidence of suspended particle movement was noticed in the downhole video record, this EC pattern suggests a blended water column limited by the two fractures, where one could be potentially acting as inflow and the other as outflow. Further characterization is required to confirm this hypothesis and determine whether upward or downward flow condition occurs.

The bottom water column, potentially stagnant water, indicates high EC values that suggests high TDS as a function of the high magnesium (Mg) and calcium (Ca) contents from dissolution of the carbonate rocks of the Niagara Falls Member in comparison with overlaying lithostratigraphic units.

5.0 Conclusions

The combination of a full suite of borehole geophysical logs allowed for visualization of critical aspects of OW31 construction conditions, providing updates on lithostratigraphy, and indicating fracture depths and evidences of flow. The major conclusions resulting from the geophysical logging include:

i. Overall, borehole geophysical results corroborate the reported construction design of OW31 by WSP (2016);

ii. 2 fractures were identified in the open hole interval and were associated with potential hydraulic activity as depicted by a high EC interval. Both fractures might be targeted for future groundwater sampling campaigns; and

iii. Eventual groundwater sampling campaigns must be adjusted to expected low flow rates.

6.0 Recommendations

Stratification of the water column was observed in OW31. Further groundwater sampling campaigns should avoid water mixing between the open hole interval, with the stagnant water in the cased interval. Conventional well purging may produce not only water mixing, but also excessive volumes of impacted waters that will require management as a liquid waste. Therefore, depth discrete groundwater sampling using an inflatable packer may be considered. Use of an inflatable packer would allow discrete groundwater sample collection targeting the 2 potential hydraulically active fractures, detected below the casing shoe and at the contact between the Ancaster Member and Niagara Falls Member of the Goat Island Formation, respectively.

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7.0 Limitations

This letter has been prepared in accordance with generally accepted environmental engineering practices for the exclusive use of the City. Third parties cannot rely upon the findings and conclusions presented without express written consent of CH2M and the City through an extension of reliance using a reliance letter signed by both parties. CH2M accepts no responsibility for damages, if any, incurred by any third party because of decisions made or actions based on this letter.

8.0 References

Brunton, F. R. 2009. Update of revisions to the Early Silurian stratigraphy of the Niagara Escarpment: integration of sequence stratigraphy, sedimentology and hydrogeology to delineate hydrogeologic units, in Summary of Field Work and Other Activities 2009. Ontario Geologic Survey, Open File Report 6240, p.25 – 1 to 25 – 20.

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Keys, W.S. 1990. Borehole geophysics applied to ground-water investigations: U.S. Geological Survey Techniques of Water-Resources Investigations, book 2, chap. E-2, 149 p.

Williams, J. H., & Johnson, C. D. 2000. Borehole-wall imaging with acoustic and optical televiewers for fractured-bedrock aquifer investigations. In Proceedings of the 7th Minerals and Geotechnical Logging Symposium (Vol. 53). Golden:[sn].

WSP. 2016. Vertical delineation of the extent of groundwater impacts at the former IMICO site. December 8, 2016.

9.0 Closure

We trust this letter to be complete and in order for your use. Thank you for the opportunity to be of service to the City of Guelph.

Sincerely,
CH2M HILL Canada Limited

Ed Taves, M.Sc., P.Geo. (Limited), QPESA
Project Manager

Lucas Ribeiro, M.A.Sc.
Project Geology Advisor

Figures

1A Existing Cross-Section and Natural Gamma Log Performed in April 2018
1B Existing Cross-Section and Natural Gamma Log Correlation with M21 UoG Logged Well
1C Existing Cross-Section and Natural Gamma Log Correlation with M21 UoG Logged Well, Discussing Potential Updates on Lithostatigraphy
1D Existing Cross-Section and Full Wave-Form Sonic Log Depicting Potential Indications of Double Cased Interval
1E Existing Cross-Section and Fluid Temperature and Electrical Conductivity

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Attachments

A Site Plan, and Stratigraphic and Instrumentation Log for OW31

B Letter report, Geophysical Logging and Well Video of IMICO OW31. Lotowater Technical Services Inc., Reference No. 049-043, dated April 23, 2018

C Detailed Image Logs (Acoustic and Optical Televiewer)

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Figures

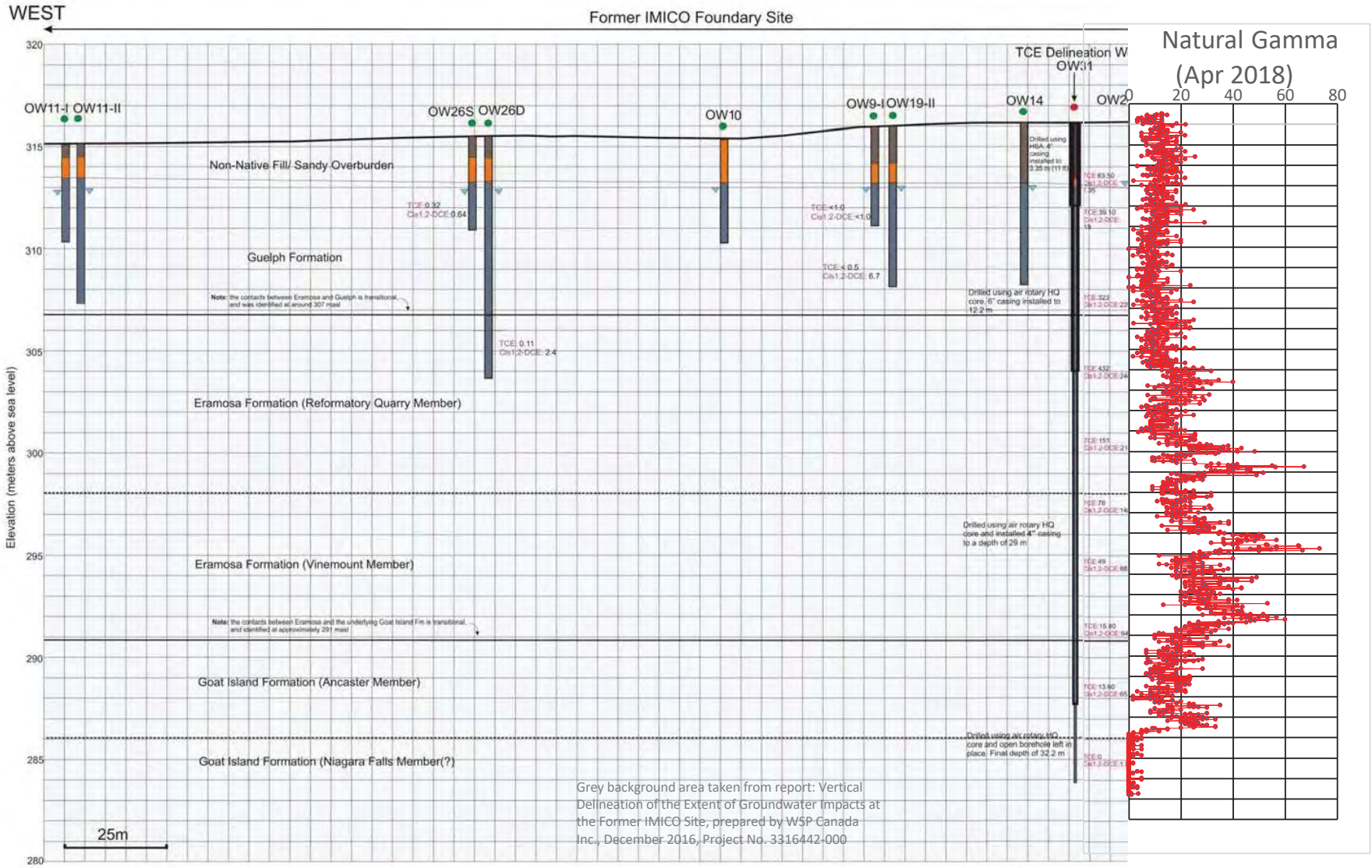

Fig 1A. Existing Cross-section and Natural Gamma Log Performed in April 2018

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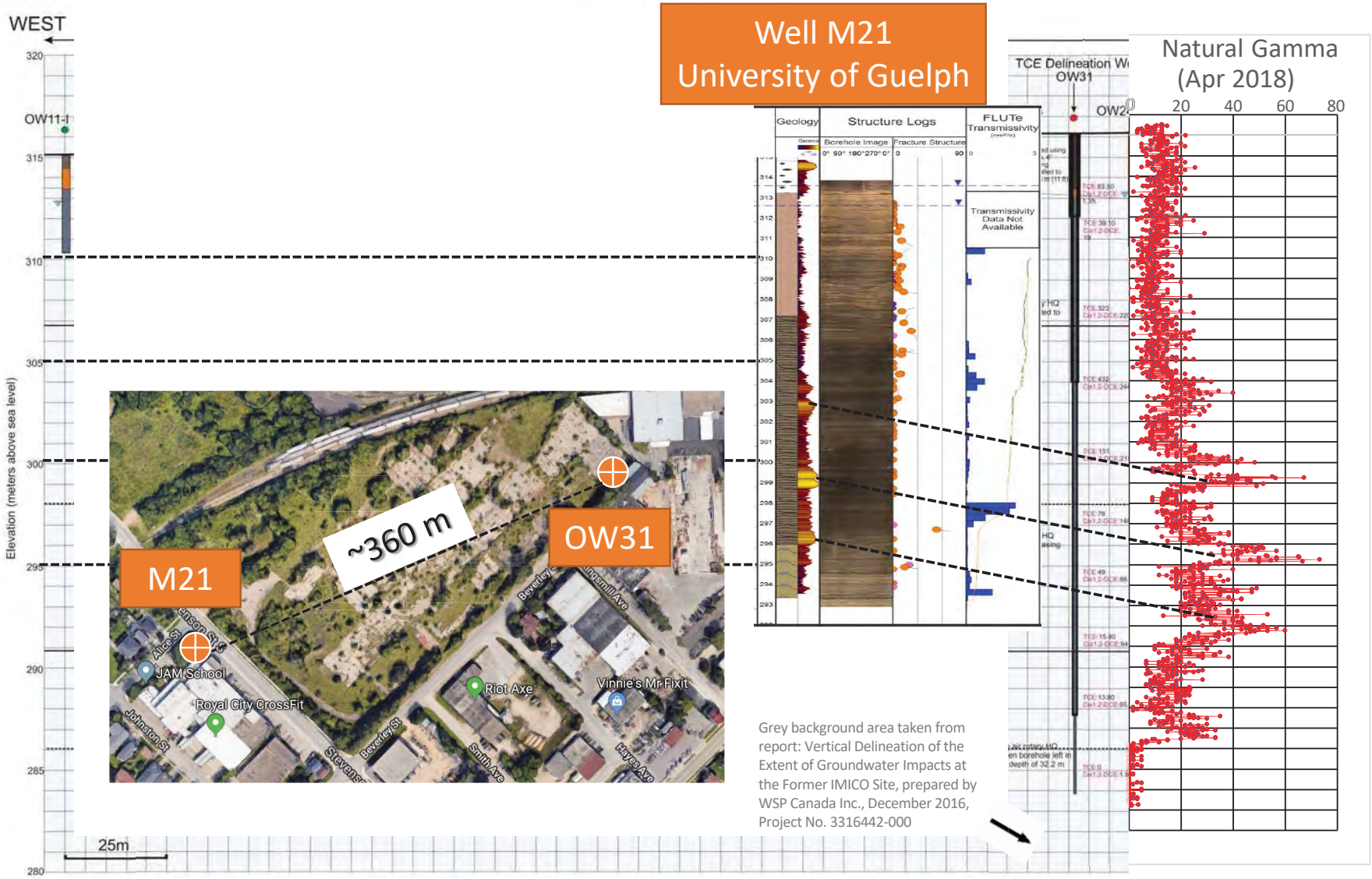

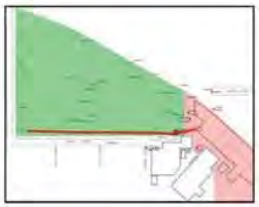

Legend

- Existing Groundwater Monitoring Well on Former IMICO Property
- Existing Groundwater Monitoring Well on 490 York Road
- Ow31 (New Well)- drilled through vertically telescoping through various units as depicted
- Non-native fill; brown to gray clay-silt till with minor gravel and sand
- Gravel and sand; glaciofluvial
- Dolostone bedrock; Guelph Fm., Eramosa Fm., Goat Island Fm.
- Static Water Level as reported from AECOM September 2015 monitoring event

TCE:1.4 TCE and cis-1,2-DCE values
Cis1,2-DCE: 25 in ug/L as reported by AECOM (2015)
TCE 0 TCE and cis-1,2-DCE values in ug/L
Cis1,2-DCE 1.88 ; collected as part of this study

Fig 1B. Existing Cross-section and Natural Gamma Log Correlation With M21 UoG Logged Well

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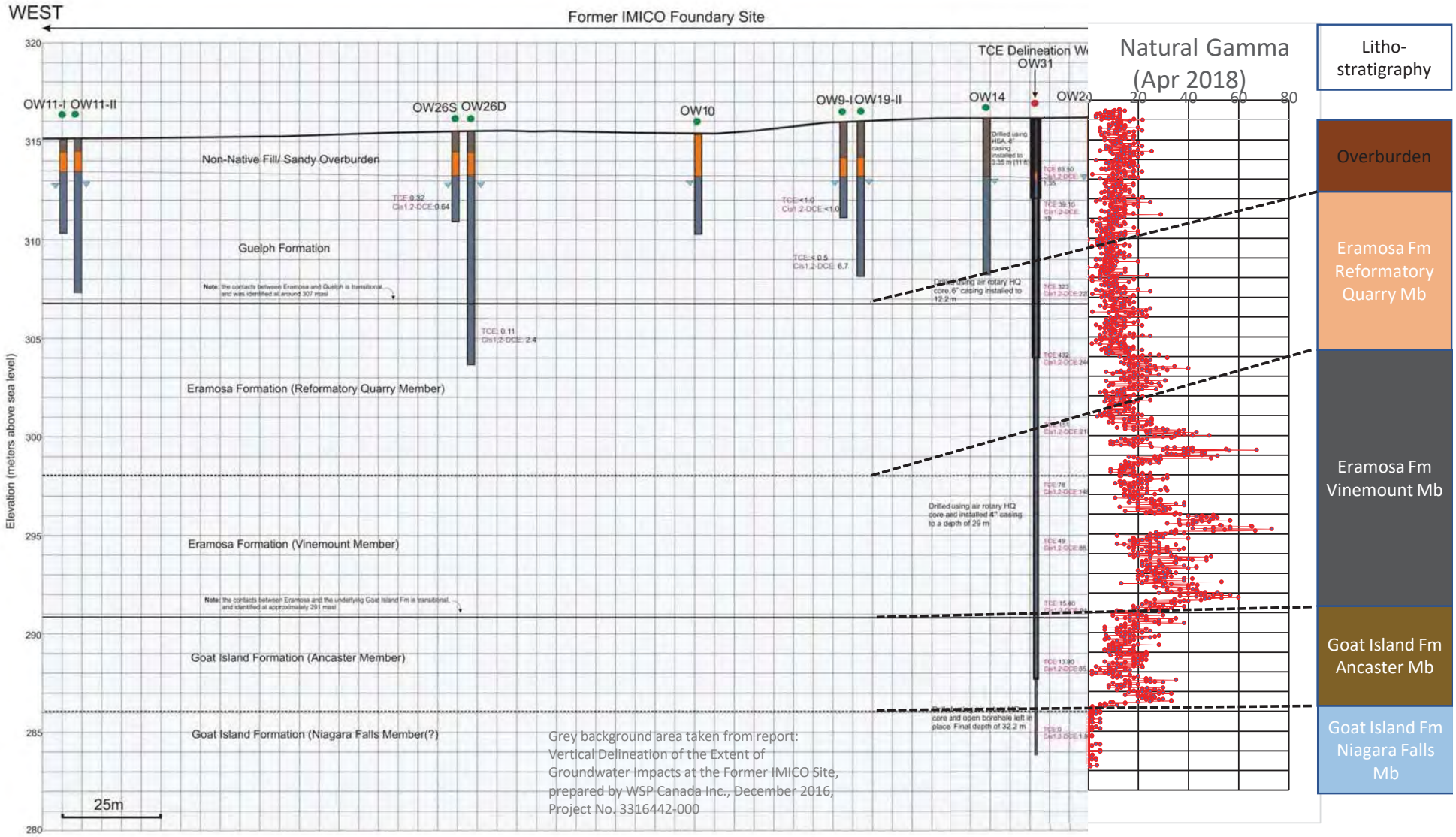

Grey background area taken from report: Vertical Delineation of the Extent of Groundwater Impacts at the Former IMICO Site, prepared by WSP Canada Inc., December 2016, Project No. 3316442-000

Legend

- Existing Groundwater Monitoring Well on Former IMICO Property
- Existing Groundwater Monitoring Well on 490 York Road
- Ow31 (New Well)- drilled through vertically telescoping through various units as depicted
- Non-native fill; brown to gray clay-silt till with minor gravel and sand
- Gravel and sand; glaciofluvial
- Dolostone bedrock; Guelph Fm., Eramosa Fm., Goat Island Fm.
- Static Water Level as reported from AECOM September 2015 monitoring event

TCE:1.4 TCE and cis-1,2-DCE values Cis1,2-DCE: 25 in ug/L as reported by AECOM (2015)
TCE:0 TCE and cis-1,2-DCE values in ug/L Cis1,2-DCE:1.88 ; collected as part of this study

Fig 1C. Existing Cross-section and Natural Gamma Log Correlation With M21 UoG Logged Well, Discussing Potential Updates on Lithostratigraphy

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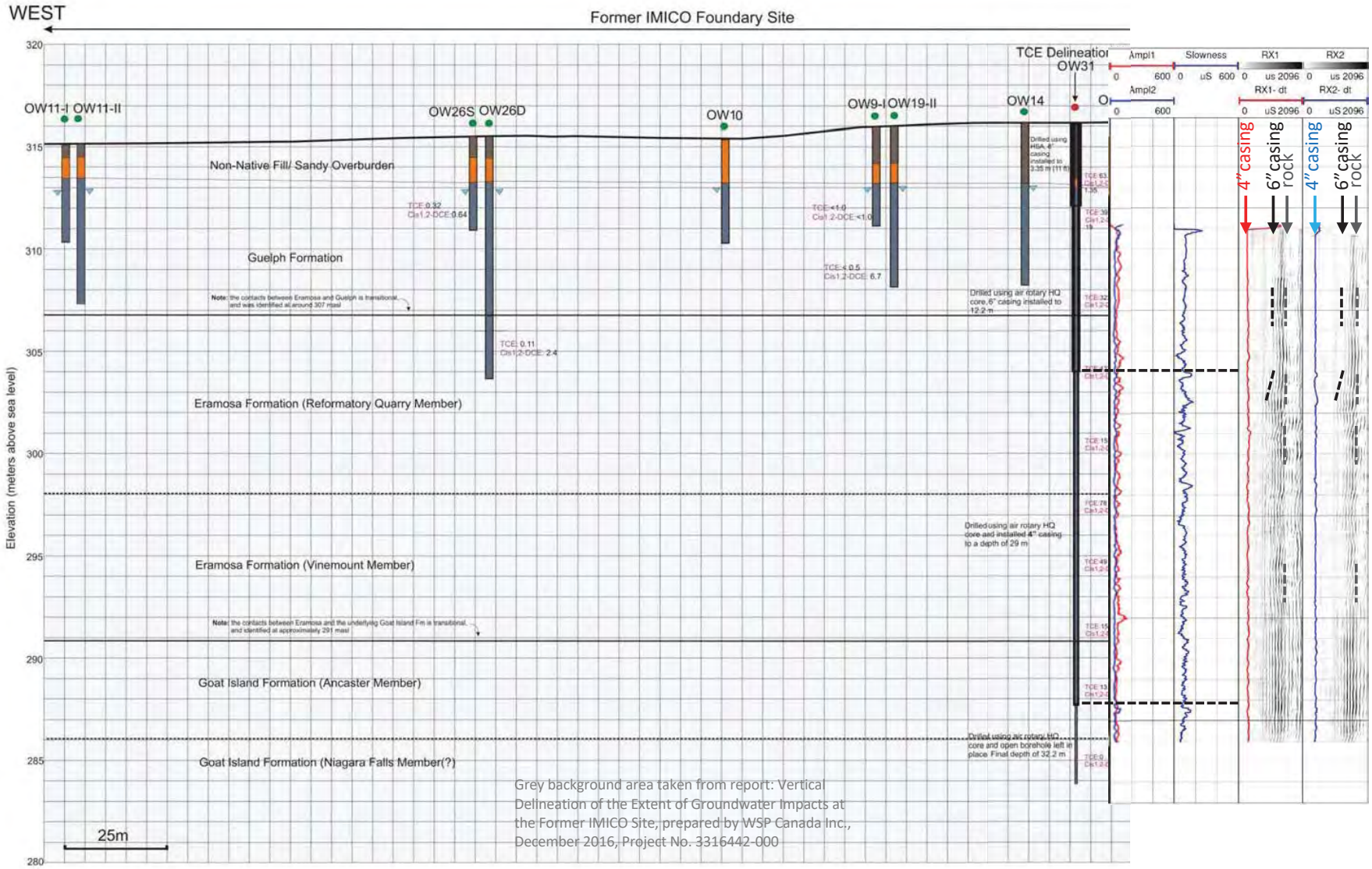

Legend

- Existing Groundwater Monitoring Well on Former IMICO Property
- Existing Groundwater Monitoring Well on 490 York Road
- Ow31 (New Well)- drilled through vertically telescoping through various units as depicted
- Non-native fill; brown to gray clay-silt till with minor gravel and sand
- Gravel and sand; glaciofluvial
- Dolostone bedrock; Guelph Fm., Eramosa Fm., Goat Island Fm.
- Static Water Level as reported from AECOM September 2015 monitoring event

TCE:1.4 TCE and cis-1,2-DCE values in ug/L as reported by AECOM (2015) Cis1,2-DCE: 25
TCE:0 TCE and cis-1,2-DCE values in ug/L Cis1,2-DCE:1.88 ; collected as part of this study

Fig 1D. Existing Cross-section and Full Wave-form Sonic Log Depicting Potential Indications of Double Cased Interval

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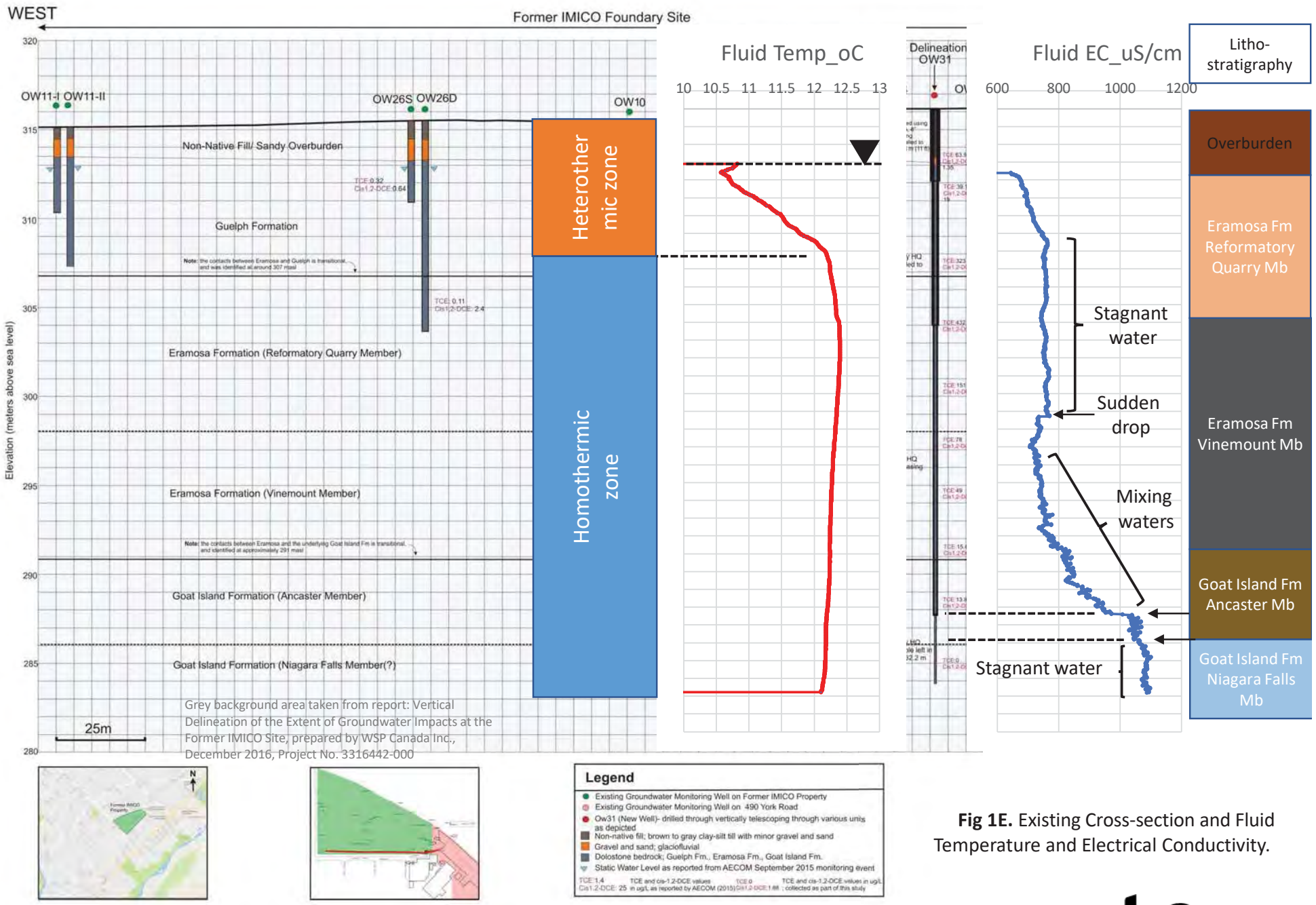

Fig 1E. Existing Cross-section and Fluid Temperature and Electrical Conductivity.

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Attachment A
Site Plan, and Stratigraphic and Instrumentation Log for OW31

N

0 10 20 30 40 50
Metres

- Existing Deep Well
- Existing Shallow Well
- Approximate Site Boundary
- Approximate Geophysical Survey Area
- Proposed Borehole
- Proposed Test Pit
- Proposed Monitoring Well (13m) (Approximate Well Depth in Metres)

Notes:
1. Source of Imagery: Esri, City of Guelph Ortho 2012.

Attachment A
Site Plan
Former IMICO Facility
Guelph, Ontario

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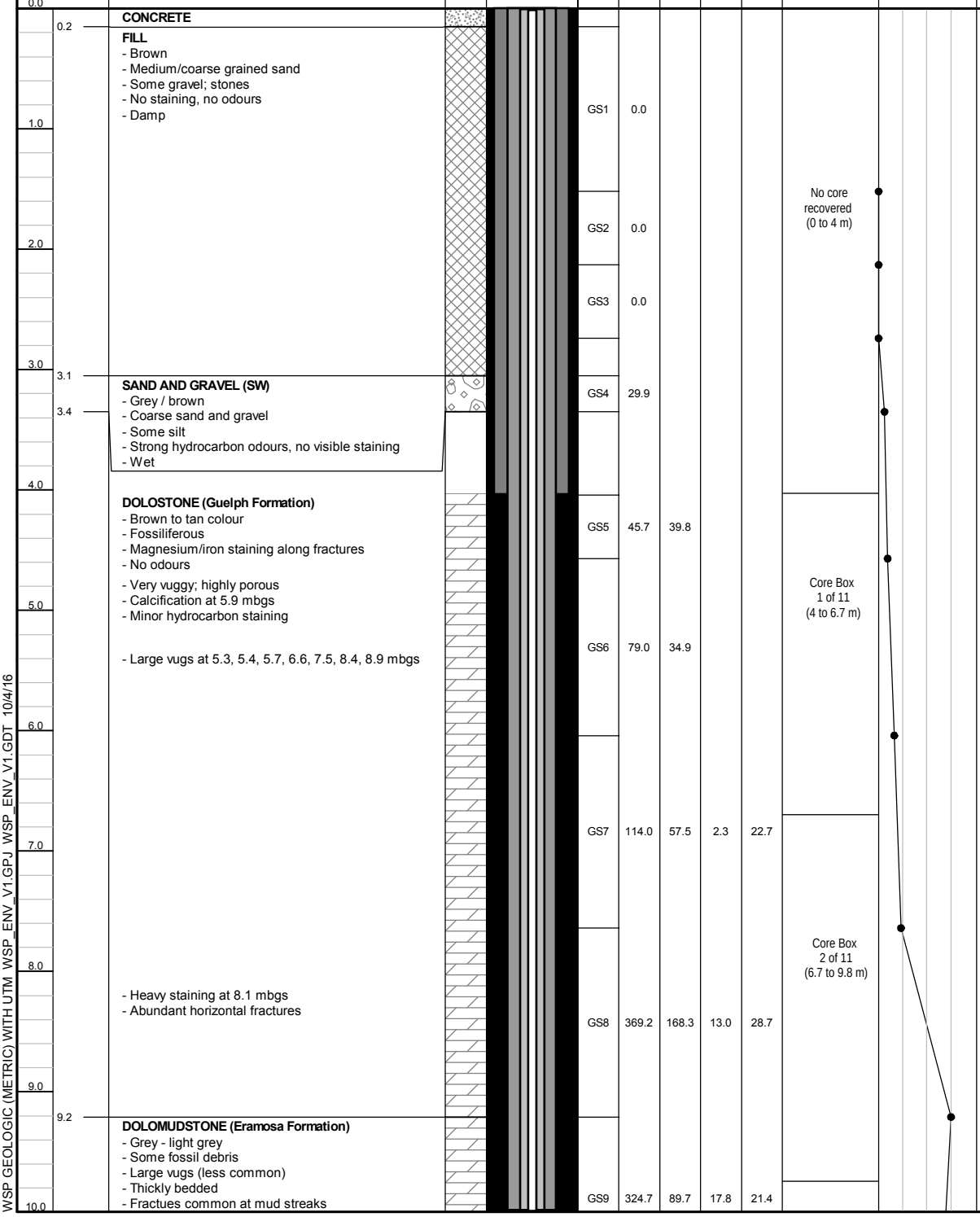
BOREHOLE NO. OW31

PROJECT NAME: IMICO TCE VERTICAL DELINEATION STUDY
PROJECT NO.: 161-09287-00 / 3316442
CLIENT: CITY OF GUELPH
DATE COMPLETED: Sep 13, 2016
BOREHOLE TYPE: CONTINUOUS CORE
SUPERVISOR: SH/BH
GROUND ELEVATION: 316.46 mASL
REVIEWER: PH

UTM CO-ORDINATES
UTM Zone: 17 NAD: 83
Easting: 562387
Northing: 4822400

DEPTH (m)	STRATIGRAPHIC DESCRIPTION	SAMPLE TYPE	TCE	cis-1,2 DCE	trans-1,2 DCE	VC	CORE PHOTOGRAPH
0.0							
0.2	**CONCRETE**						
	FILL - Brown - Medium/coarse grained sand - Some gravel; stones - No staining, no odours - Damp	GS1	0.0				No core recovered (0 to 4 m)
1.0							
		GS2	0.0				
2.0							
		GS3	0.0				
3.0							
3.1	**SAND AND GRAVEL (SW)** - Grey / brown - Coarse sand and gravel - Some silt - Strong hydrocarbon odours, no visible staining - Wet	GS4	29.9				
3.4							
4.0							
	DOLOSTONE (Guelph Formation) - Brown to tan colour - Fossiliferous - Magnesium/iron staining along fractures - No odours	GS5	45.7	39.8			Core Box 1 of 11 (4 to 6.7 m)
	- Very vuggy; highly porous - Calcification at 5.9 mbgs - Minor hydrocarbon staining						
5.0							
	- Large vugs at 5.3, 5.4, 5.7, 6.6, 7.5, 8.4, 8.9 mbgs	GS6	79.0	34.9			
6.0							
		GS7	114.0	57.5	2.3	22.7	
7.0							
							Core Box 2 of 11 (6.7 to 9.8 m)
8.0							
	- Heavy staining at 8.1 mbgs - Abundant horizontal fractures	GS8	369.2	168.3	13.0	28.7	
9.0							
9.2	**DOLOMUDSTONE (Eramosa Formation)** - Grey - light grey - Some fossil debris - Large vugs (less common) - Thickly bedded - Fractues common at mud streaks						
10.0		GS9	324.7	89.7	17.8	21.4	



REMARKS

Drilling and Casing Details
-Hollow stem auger from surface to 4.0 m.
-8 5/8" casing installed and sealed with concrete from surface to 4 mbgs (over-drilled into bedrock from 3.3 to 4.0 m)
-HQ coring using air rotary from 4.0 to 12.20 m
-6 5/8" casing installed and sealed from surface to12.20 m
-HQ coring using air rotary from 12.20 to 28.9 m
-4" casing installed and sealed from surface to 28.9
-HQ coring using air rotary from 28.9 to 33.3 m
-Open hole from 28.9 to 33.3 m

Sample Notes
-All units are in ug/L
cis-1,2-DCE = cis-1,2-Dichloroethylene
trans-1,2-DCE = trans-1,2-Dichloroethylene
TCE = Trichloroethylene
VC = Vinyl Chloride

Groundwater sample collected at 4.6 mbgs for comprehensive analysis of Metals & Inorganics, PAHs, PHCs, VOCs

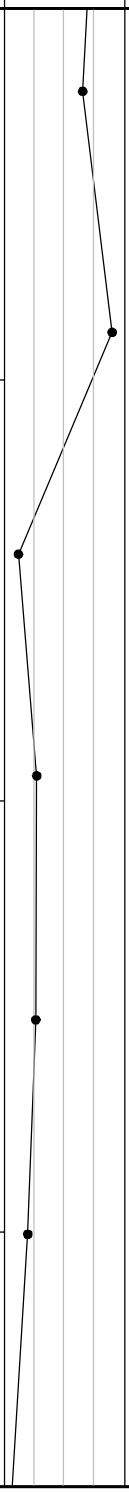
WSP GEOLOGIC (METRIC) WITH UTM WSP_ENV_V1.GPJ WSP_ENV_V1.GDT 10/4/16

BOREHOLE NO. OW31

PROJECT NAME: IMICO TCE VERTICAL DELINEATION STUDY
PROJECT NO.: 161-09287-00 / 3316442
CLIENT: CITY OF GUELPH
DATE COMPLETED: Sep 13, 2016
BOREHOLE TYPE: CONTINUOUS CORE
SUPERVISOR: SH/BH
GROUND ELEVATION: 316.46 mASL
REVIEWER: PH

UTM CO-ORDINATES
UTM Zone: 17 NAD: 83
Easting: 562387
Northing: 4822400

DEPTH (m)	STRATIGRAPHIC DESCRIPTION	SAMPLE TYPE	TCE	cis-1,2 DCE	trans-1,2 DCE	VC	CORE PHOTOGRAPH	REMARKS
10.0	- Iron/Manganese staining in fractures - Yellow-orange (sphalerite) and dolomite lined vugs							
	- Occasional carbonate mud clasts; few laminaions (~mm scale) appear banded	GS10					Core Box 3 of 11 (9.8 to 12.5 m)	No water between 10.6 - 11.5 mbgs
11.0								
	- Light/dark grey - Rare vugs - Muddy / fossil rich clasts at 11.7 mbgs - Slight petroleum hydrocarbon odour (natural) upon break	GS11	446.5	153.6	18.6	37.0		
12.0								
	- Occasional fossils - Dark banding (grey-black) - Stylolitic seams - Small (<1cm) rare vugs	GS12						No water between 12.2 - 12.9 mbgs
13.0								
		GS13	57.7	46.3		30.2	Core Box 4 of 11 (12.5 to 15.4 m)	
	- Rare fossiliferous content; some ostracod rich beds - Rare stylolitic seams - Hydrocarbon odour from fractures - Natural breaks / partings at muddy seams							
14.0								
		GS14	134.0	127.1		17.8		
15.0								
	- Light/dark grey - Rare fossil content - Hydrocarbon odour upon break							
16.0		GS15	130.0	146.5	28.6	16.4	Core Box 5 of 11 (15.4 to 18.3 m)	
17.0								
		GS16	96.8	103.6	15.4	39.7		
18.0	18.0 — - Vinemount member of the Eramosa Formation							No water between 18.3 - 19.6 mbgs
19.0	- Dark grey - black - Massive in appearance; thickly bedded - Compentent - Occassional fossil debris - Strong hydrocarbonn odour	GS17					Core Box 6 of 11 (18.3 to 21.1 m)	
	- Very competent - Low permeability	GS18	26.4	34.3		67.4		
20.0								



WSP GEOLOGIC (METRIC) WITH UTM WSP_ENV_V1.GPJ WSP_ENV_V1.GDT 10/4/16

BOREHOLE NO. OW31

PROJECT NAME: IMICO TCE VERTICAL DELINEATION STUDY
PROJECT NO.: 161-09287-00 / 3316442
CLIENT: CITY OF GUELPH
DATE COMPLETED: Sep 13, 2016
BOREHOLE TYPE: CONTINUOUS CORE
SUPERVISOR: SH/BH
GROUND ELEVATION: 316.46 mASL
REVIEWER: PH

UTM CO-ORDINATES
UTM Zone: 17 NAD: 83
Easting: 562387
Northing: 4822400

DEPTH (m)	STRATIGRAPHIC DESCRIPTION	SAMPLE TYPE	TCE	cis-1,2 DCE	trans-1,2 DCE	VC	CORE PHOTOGRAPH	REMARKS
20.0	- Thin to thickly bedded - No fossil content - Strong hydrocarbon odour - Large vug (~3cm) at 20 mbgs - Infilled with pyrite and dolostone - Thin to thickly bedded - Minor fossil debris - Verticle fracture from 21.0 to 21.6 mbgs - Strong hydrocarbon odours							
21.0		GS19	36.8	45.6		17.0		
22.0	- Reduced hydrocarbon odours - Large verticle fractures from 23.4 to 23.6 mbgs - Calcite and pyrite nodules (<0.5 to 1.5 cm)						Core Box 7 of 11 (21.1 to 24.2 m)	
23.0		GS20	25.1	16.1		49.8		
24.0	- Large vug at 25.47 mbgs, no pyrite - Stylolitic seams with fossil debris - Low hydrocarbon odours							
24.8	**DOLOMUDSTONE (Goat Island Formation - Ancaster Member)** - Large fracture at 24.8 mbgs - Heavily bioturbated - Low hydrocarbon odour - Cherty dolomudstone from 28.9 - 30.4 mbgs							
25.0		GS21	17.1	39.8		49.9	Core Box 8 of 11 (24.2 to 26.7 m)	
26.0		GS23	11.6	36.4				
		GS22	21.0	68.6		20.4		
27.0								
28.0		GS24	68.0	111.7		33.7	Core Box 9 of 11 (26.7 to 29.7 m)	
29.0								No water between 29 - 30.5 mbgs
30.0		GS25						

TCE (ug/L): 150 300 450

WSP GEOLOGIC (METRIC) WITH UTM WSP_ENV_V1.GPJ WSP_ENV_V1.GDT 10/4/16

BOREHOLE NO. OW31

PROJECT NAME: IMICO TCE VERTICAL DELINEATION STUDY
PROJECT NO.: 161-09287-00 / 3316442
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DATE COMPLETED: Sep 13, 2016
BOREHOLE TYPE: CONTINUOUS CORE
SUPERVISOR: SH/BH
GROUND ELEVATION: 316.46 mASL
REVIEWER: PH

UTM CO-ORDINATES
UTM Zone: 17 NAD: 83
Easting: 562387
Northing: 4822400

DEPTH (m)	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR DETAILS (Telescoped Borehole)	SAMPLE TYPE	SAMPLE TCE	SAMPLE cis-1,2 DCE	SAMPLE trans-1,2 DCE	SAMPLE VC	CORE PHOTOGRAPH	TCE (ug/L) 150 300 450	REMARKS
30.0											
30.4	- Niagara Falls Member (?) of Goat Island formation - Light grey - blue - Porous - Massive in appearance with abundant stylolite - No fossil content								Core Box 10 of 11 (29.7 to 31.7 m)		
31.0											
32.0				GS26	0.0	0.0		0.0	Core Box 11 of 11 (31.7 to 33.3 m)		Groundwater sample collected at end of hole for comprehensive analysis of Metals & Inorganics, PAHs, PHCs, VOCs
33.0				GS27	0.0	0.0		0.0			
33.3	BOREHOLE TERMINATED AT 33.32										
34.0											Above surface casing completed with 4" monument riser extending 1.14 m above ground surface. No PVC monitoring well installed. Lockable cap on well with temporary lock installed.
35.0											
36.0											
37.0											
38.0											
39.0											
40.0											

WSP GEOLOGIC (METRIC) WITH UTM WSP_ENV_V1.GPJ WSP_ENV_V1.GDT 10/4/16

Attachment B
Letter report, Geophysical Logging and
Well Video of IMICO OW31.
Lotowater Technical Services Inc.,
Reference No. 049-043,
dated April 23, 2018

Lotowater
TECHNICAL SERVICES INC.

P.O. Box 451
Paris, ON N3L 3T5

92 Scott Avenue
Paris, ON N3L 3R1
T (519) 442-2086
T (800) 923-6923
F (519) 442 7242
www.lotowater.com

April 23, 2018

Reference: 049-043

CH2M Hill Canada Limited
180 King Street South, Suite 600
Waterloo, ON
N2J 1P8

Attention: Mr. Ed Taves

Subject: Geophysical Logging and Well Video of IMICO OW31

This letter documents geophysical logging and well video of well OW31 (MOE A184204) located at the IMICO site in Guelph Ontario. This work was completed over two days from April 16-17, 2018.

The purpose of this logging and video was to document basic physical conditions of the well casing and borehole.

Video

A well video was completed on April 16 using an Aries/CCV BT9600 dual view water well camera. The camera was scanned in the down view on the way down the well and on side scan view on the way out, rotating 360 degrees at significant features. Significant features are noted on the Well Video Summary **Table 1**. A DVD copy of the video has been sent to the above address. Note that the video appears to be off about 20cm when compared to the geophysical logs. We believe this was due slipping from ice forming on the video depth counting wheel. You will need to subtract off 20cm from the depth counter shown in the video to match the geophysical logs.

The video showed the well was clear and unobstructed to near its reported depth of 34m indicating no significant accumulation of fill. Some minor mineral and biological buildup can be seen on the casing and borehole. No obvious breaches or holes were seen in the casing and the casing terminates into the rock at approximately 30m. It is also cut off at an angle and terminates very near a fracture (**Image 1 shown on following page**).

Over the open rock section of the borehole several minor fractures were noted. The most significant appears near the base of the casing at around 30.1m in the video. Another appears at 31.4m (**Image 2 & 3 below**). The rock has some very porous and vuggy zones (**Image 4**). There were no obvious particle movements in the video so it does not appear that there is any ambient flow condition in the well from one zone to another.

Image 1: Base of casing, notice how its cut off at an angle

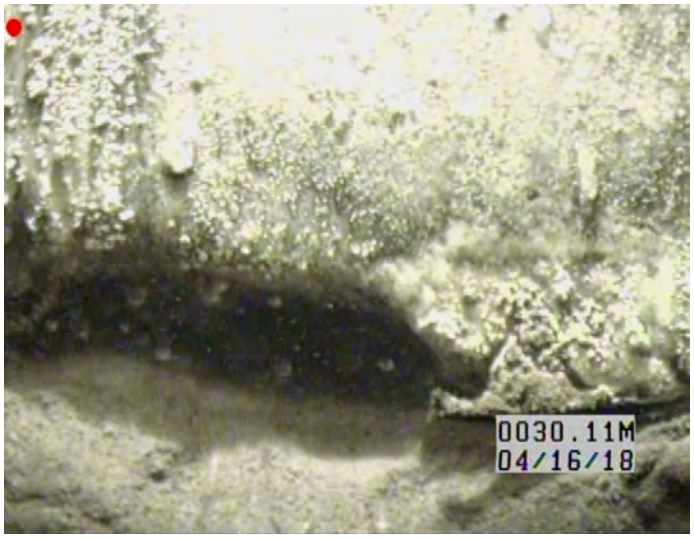


Image 2: Upper fracture feature located at apparent bedrock transition and at base of casing

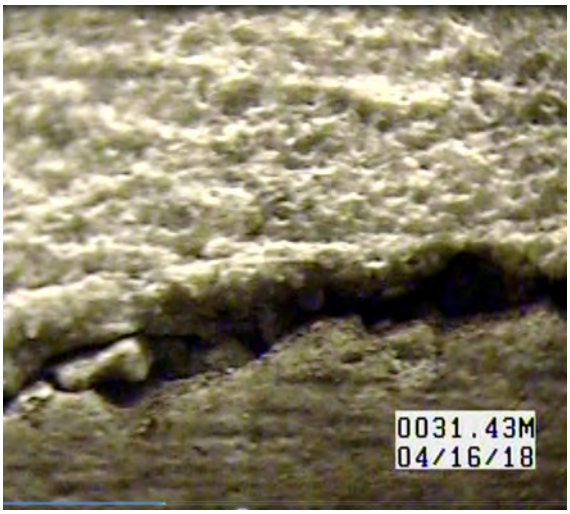


Image 3: Significant lower fracture located at transition in bedrock from light to dark

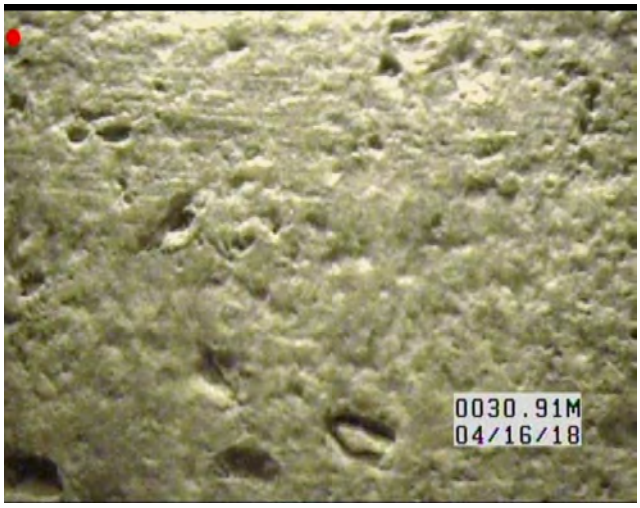


Image 4: Porous vuggy zone in rock

Geophysical Logging

Geophysical logs were performed over the casing and borehole using Mount Sopris logging equipment. This included natural gamma, 3-arm caliper, fluid temperature & conductivity, sonic, optical televiewer and acoustic televiewer.

Details on equipment used can be found using the following hyperlinks:

Matrix Logging Console
Natural Gamma QL40-GR
Caliper QL40-CAL-3Arm
Fluid Temperature and Conductivity QL40-FTC
Sonic Log QL40-FWS

Acoustic Televiewer AQ40-ABI-2G
Optical Televiewer QL40-OBI-2G

Attached **Figure 1** compares the logs graphically on a one page scale.

The following link includes a detailed optical and acoustic televiewer plot and all original Well Cad files to allow further analysis of this data.

https://www.dropbox.com/sh/fyreu6x4bvolf76/AAAUtPyj5PI-U0LjbN2Q_JJua/049-043/OW31?dl=0

It's been a pleasure to work with CH2M Hill on this project. If there are any questions please contact the undersigned.

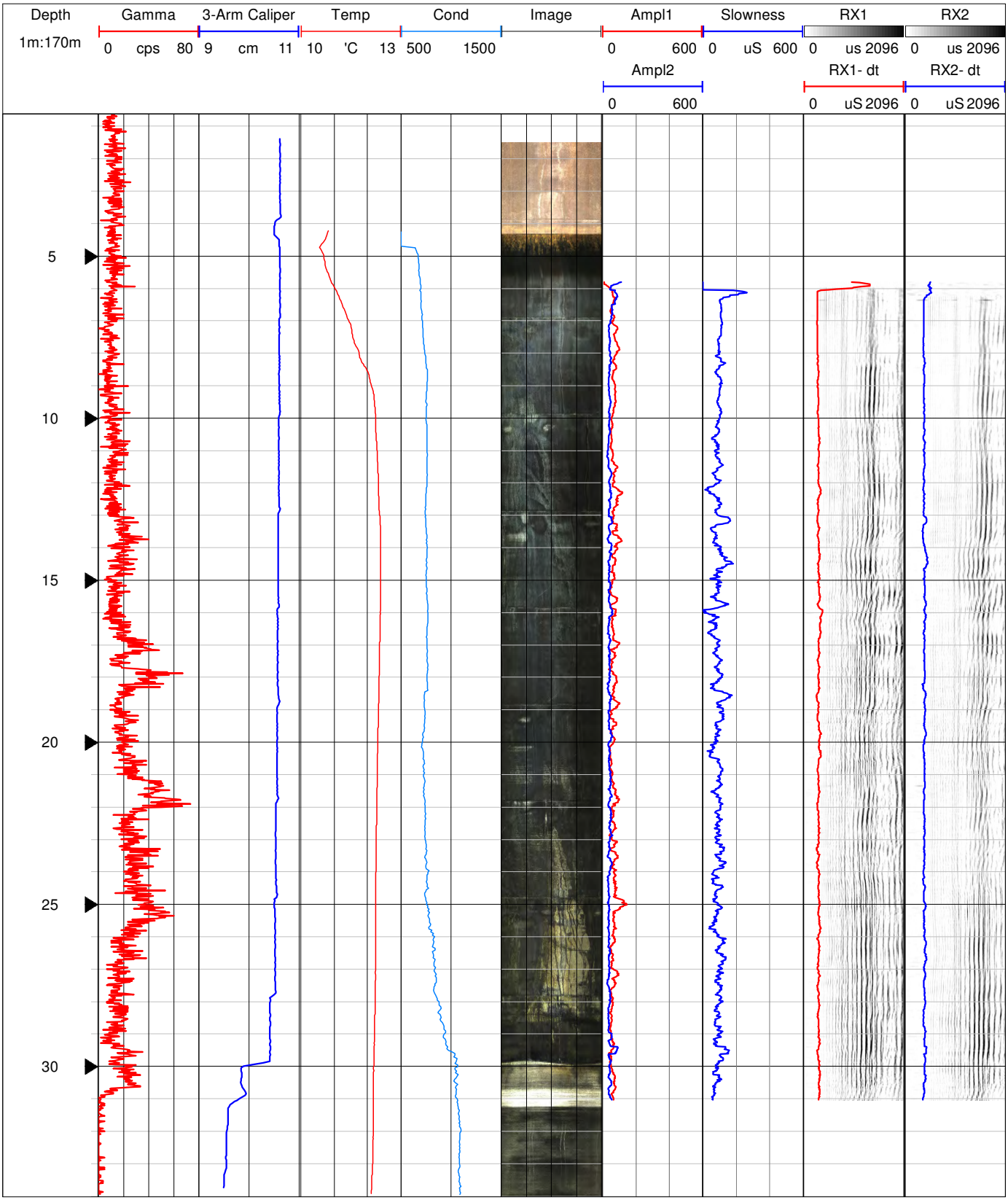
Yours truly,
Lotowater Technical Services Inc.

Boyd Pendleton, P.Geo.
Vice President

W:\Lotowater Projects\049 CH2M Hill\043 IMICO\9. Reports\IMICO Well OW31 Logging 1a (049-043).doc

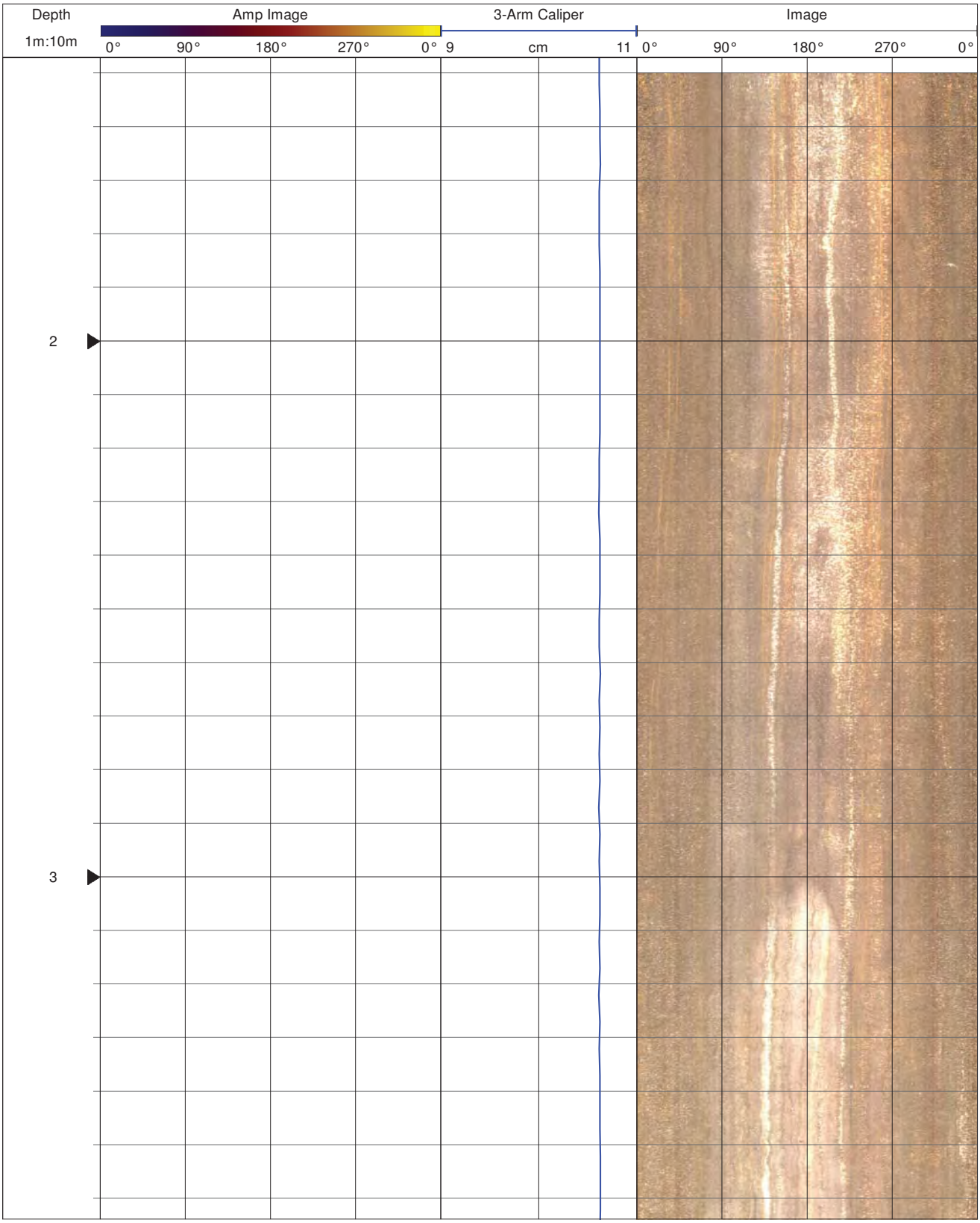
Lotowater TECHNICAL SERVICES INC.

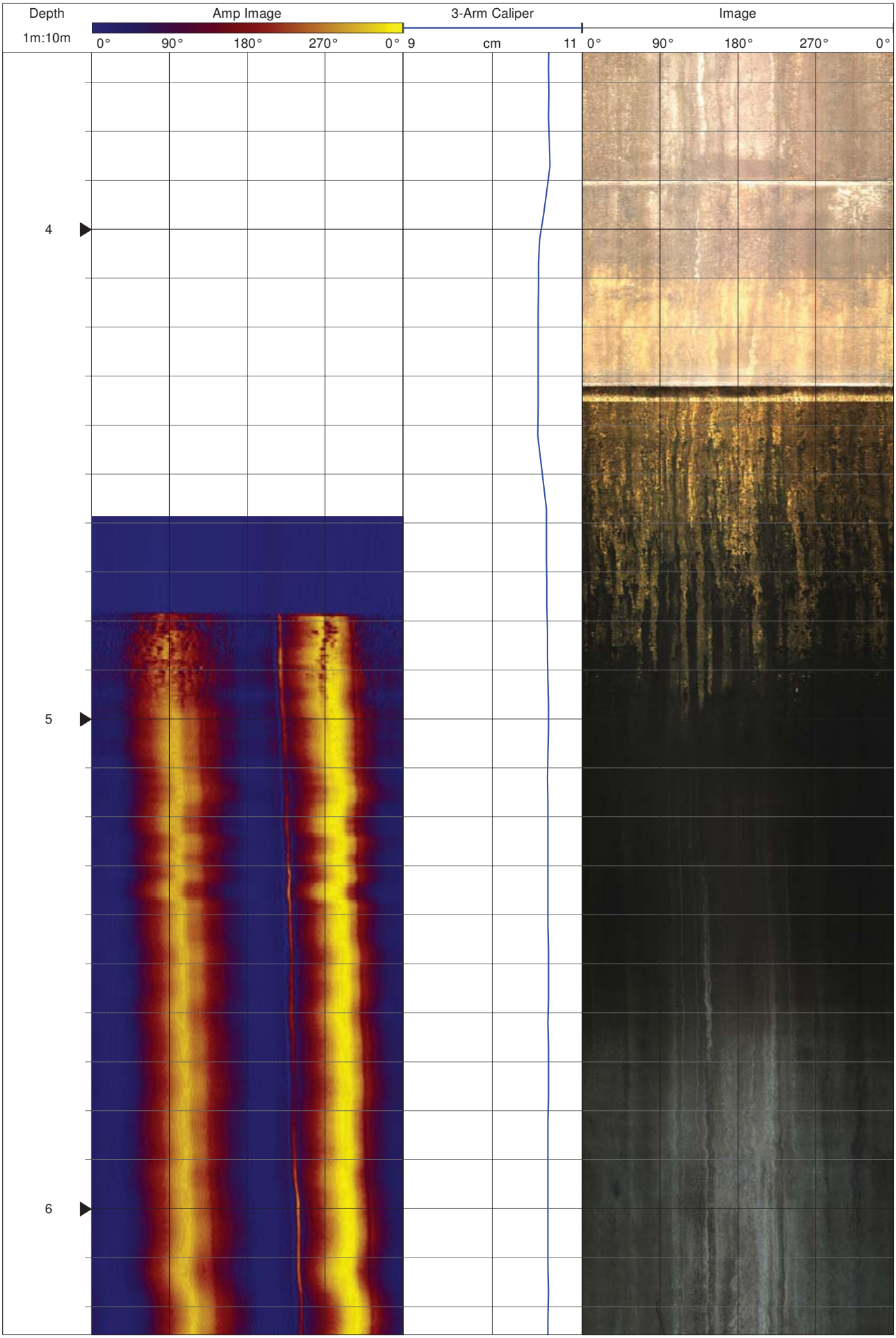
Client:	Jacobs / CH2MHill	Measuring Point:	TOC
Well Name:	OW31	Measuring Point Elev:	0.89m ags
Location:	200 Beverley St. Guelph	Logged By:	J. Dion
Project No:	049-043	Logging Date:	April 17, 2018



Attachment C
Detailed Image Logs
(Acoustic and Optical Televiewer)

Client:	Jacobs / CH2MHill	Measuring Point:	TOC
Well Name:	OW31	Measuring Point Elev:	0.89m ags
Location:	200 Beverley St. Guelph	Logged By:	J. Dion
Project No:	049-043	Logging Date:	April 17, 2018

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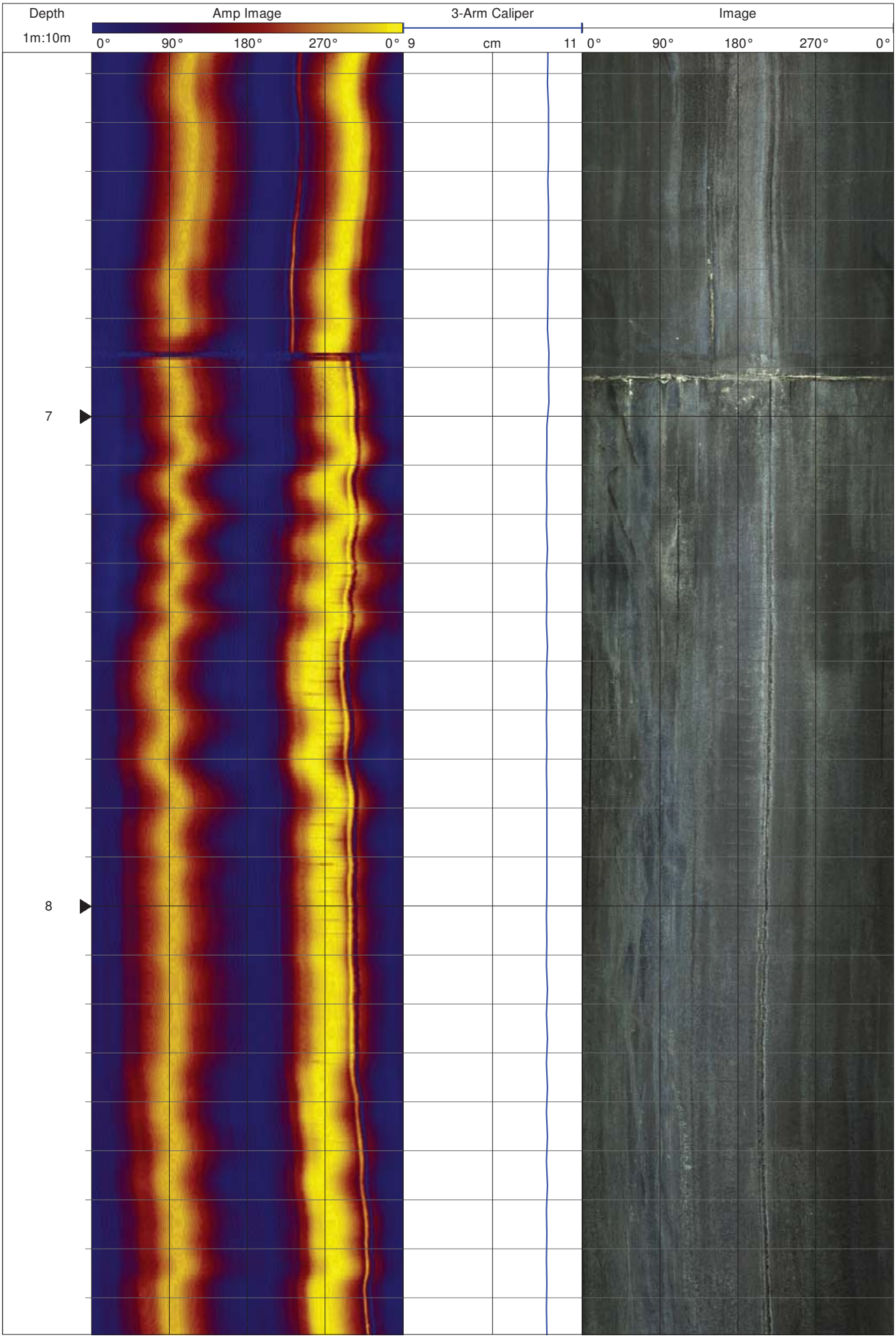
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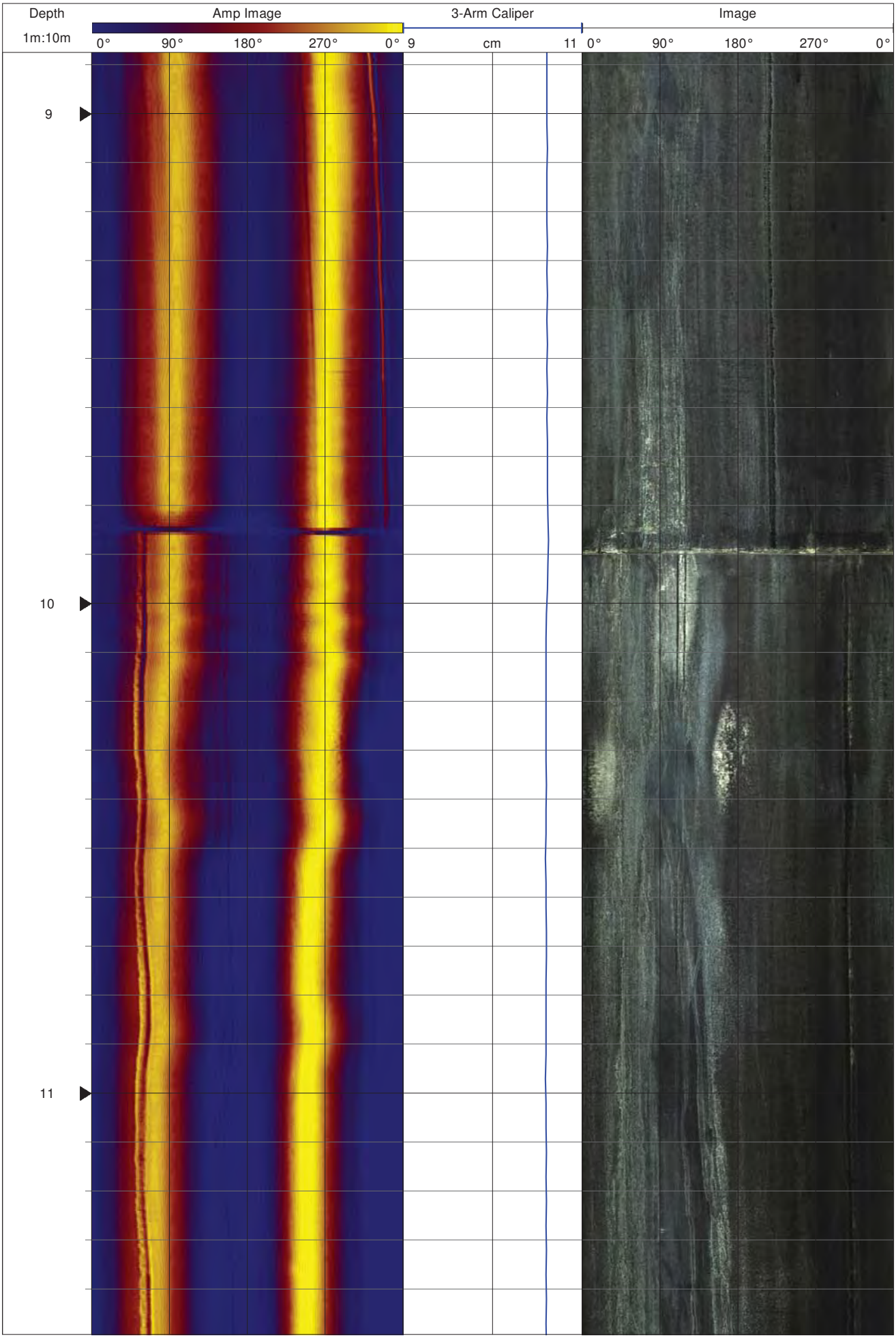
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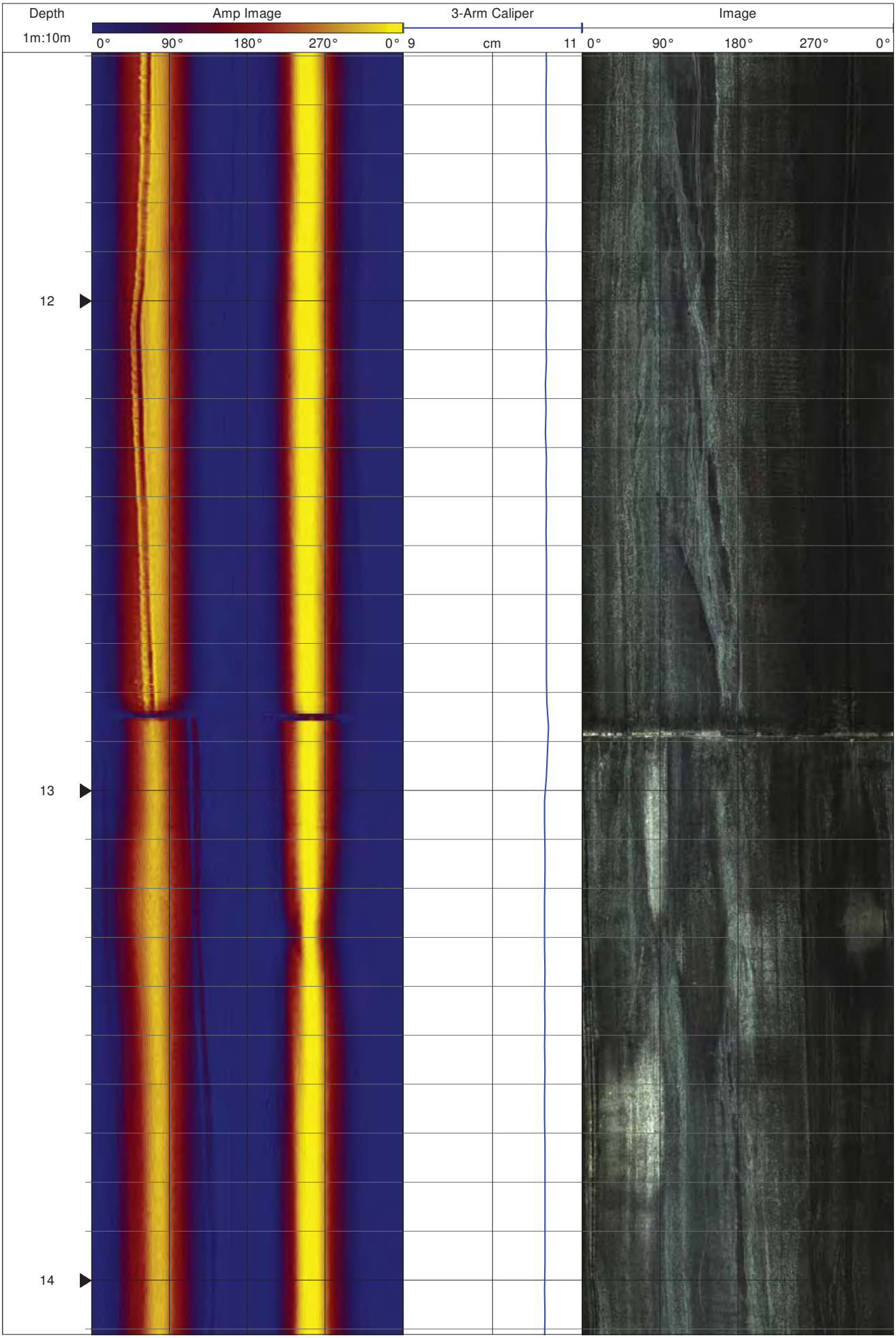
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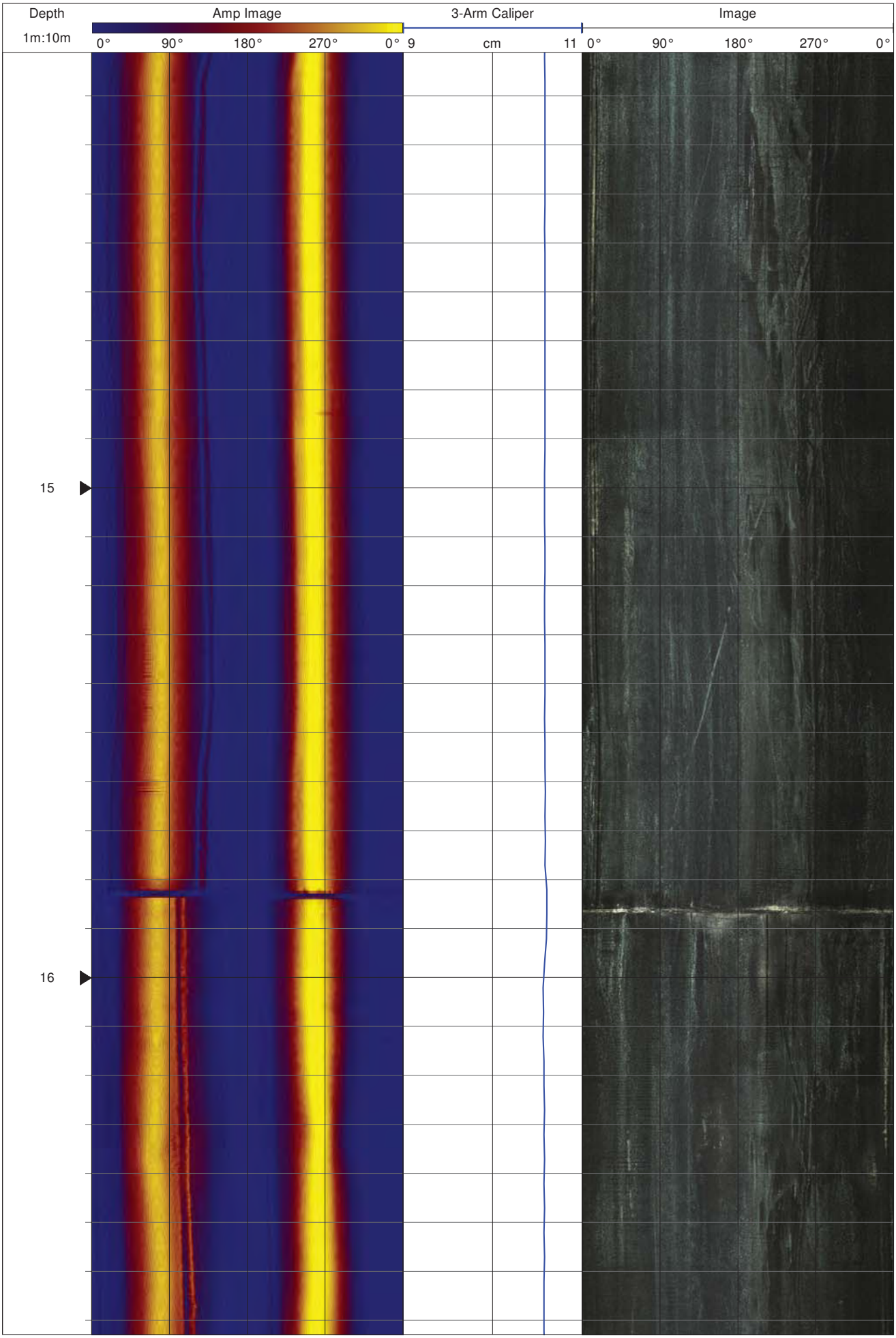
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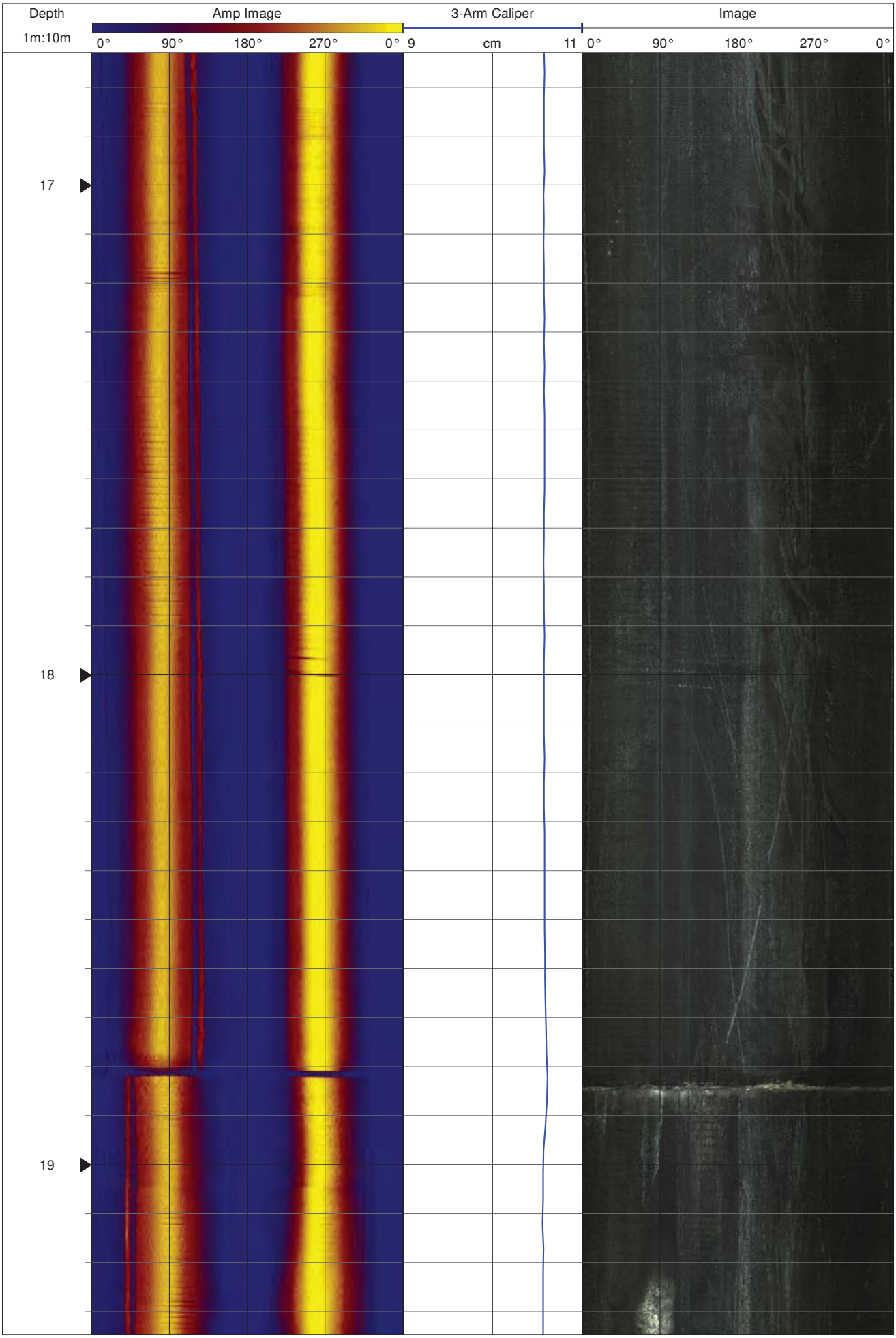
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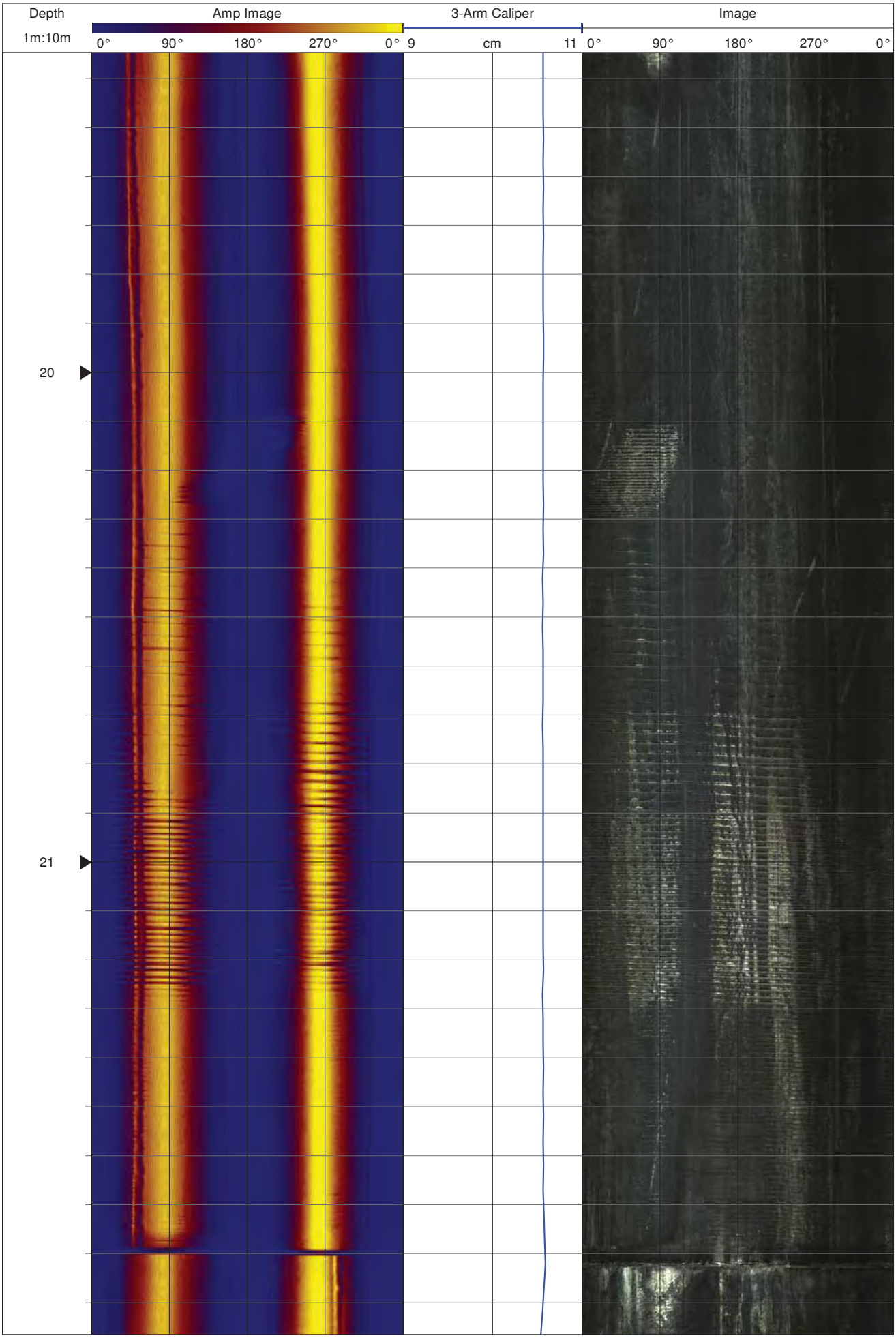
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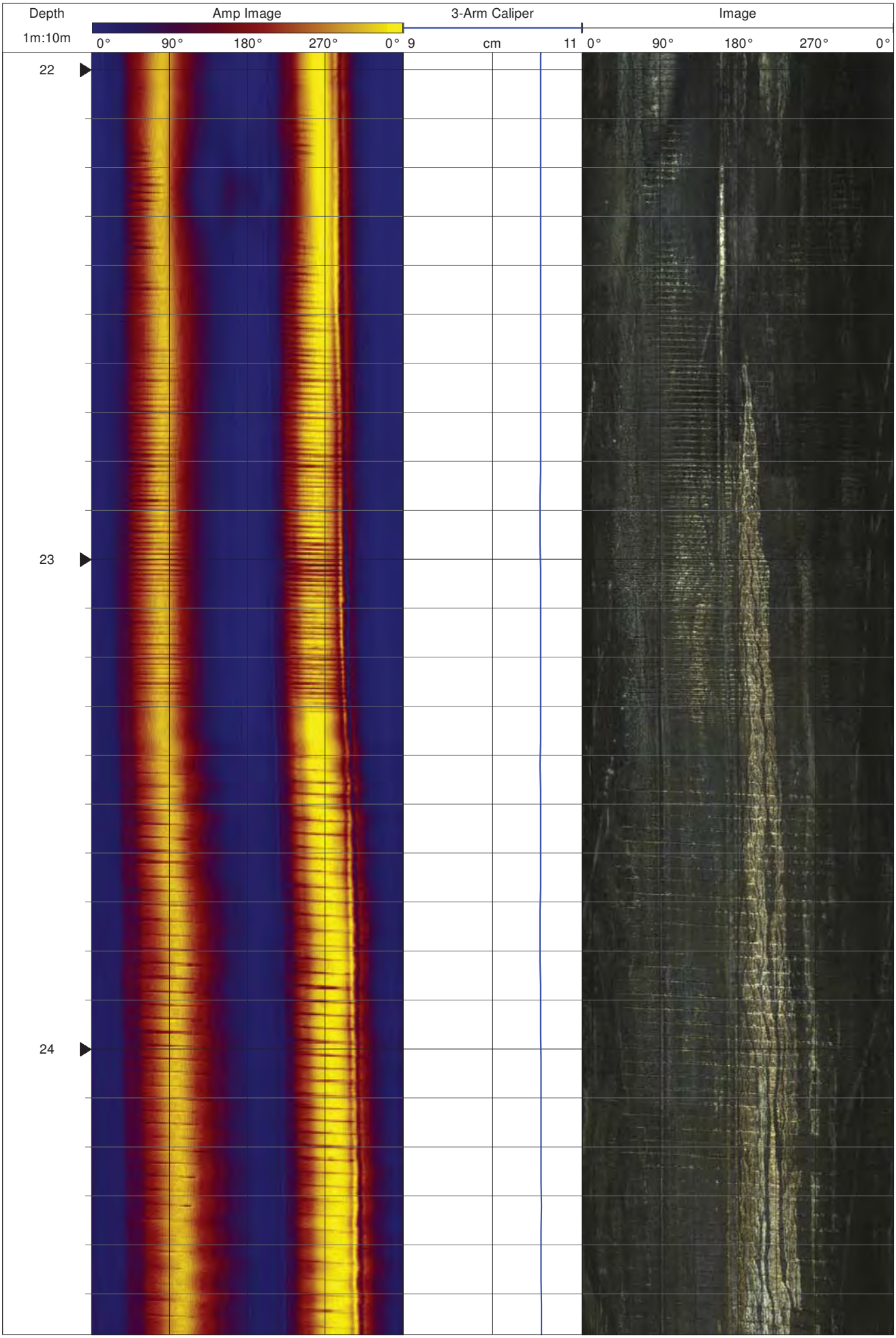
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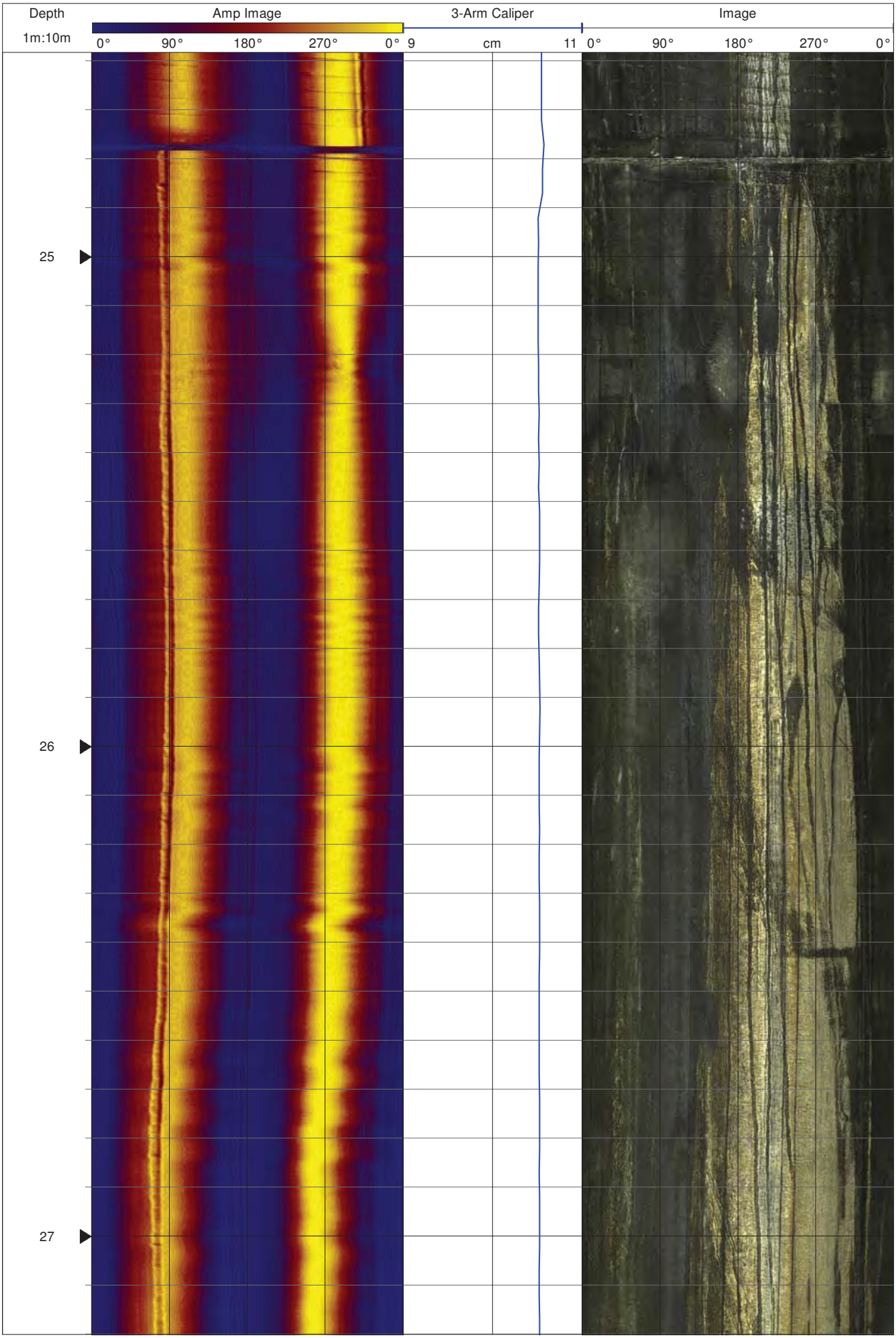
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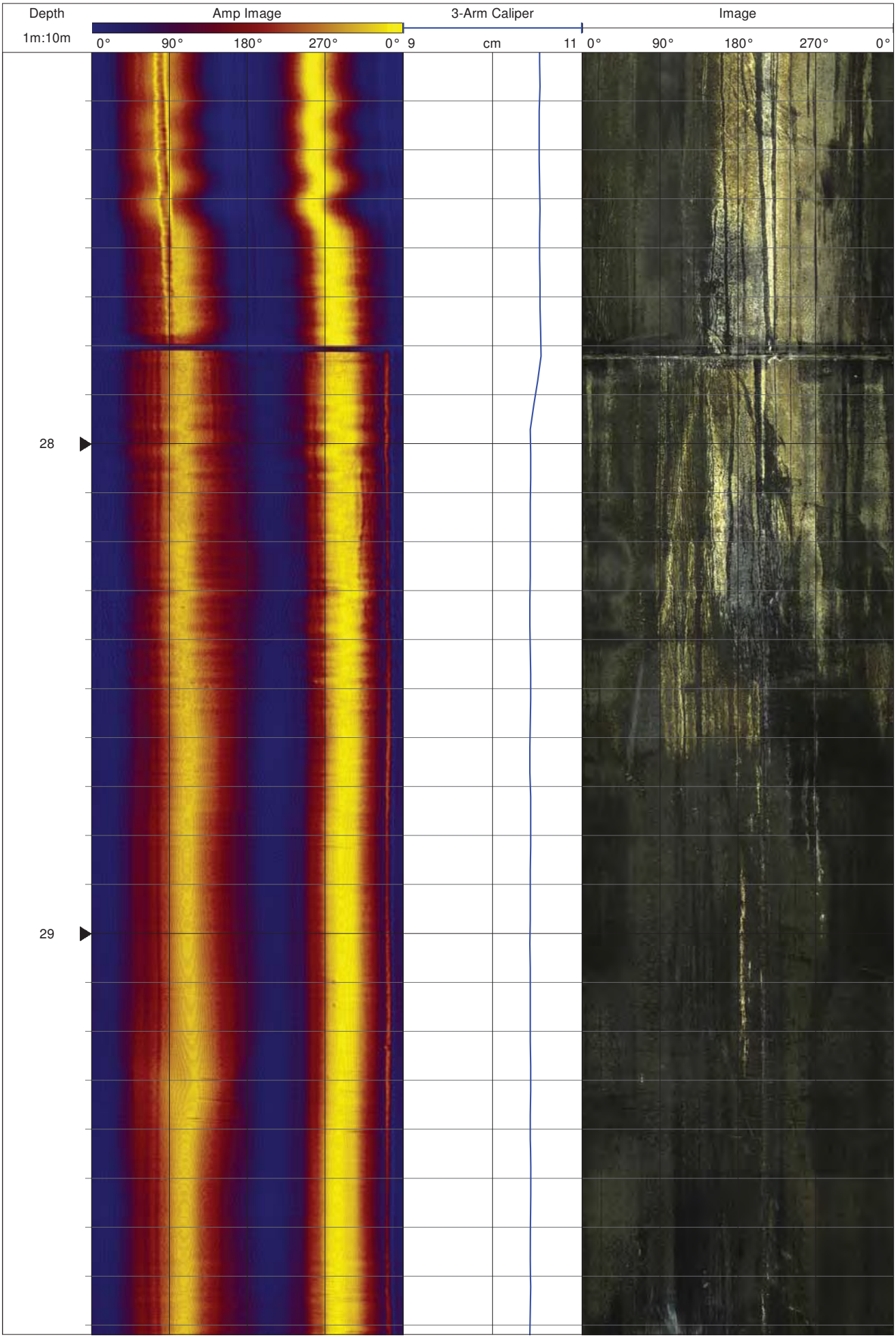
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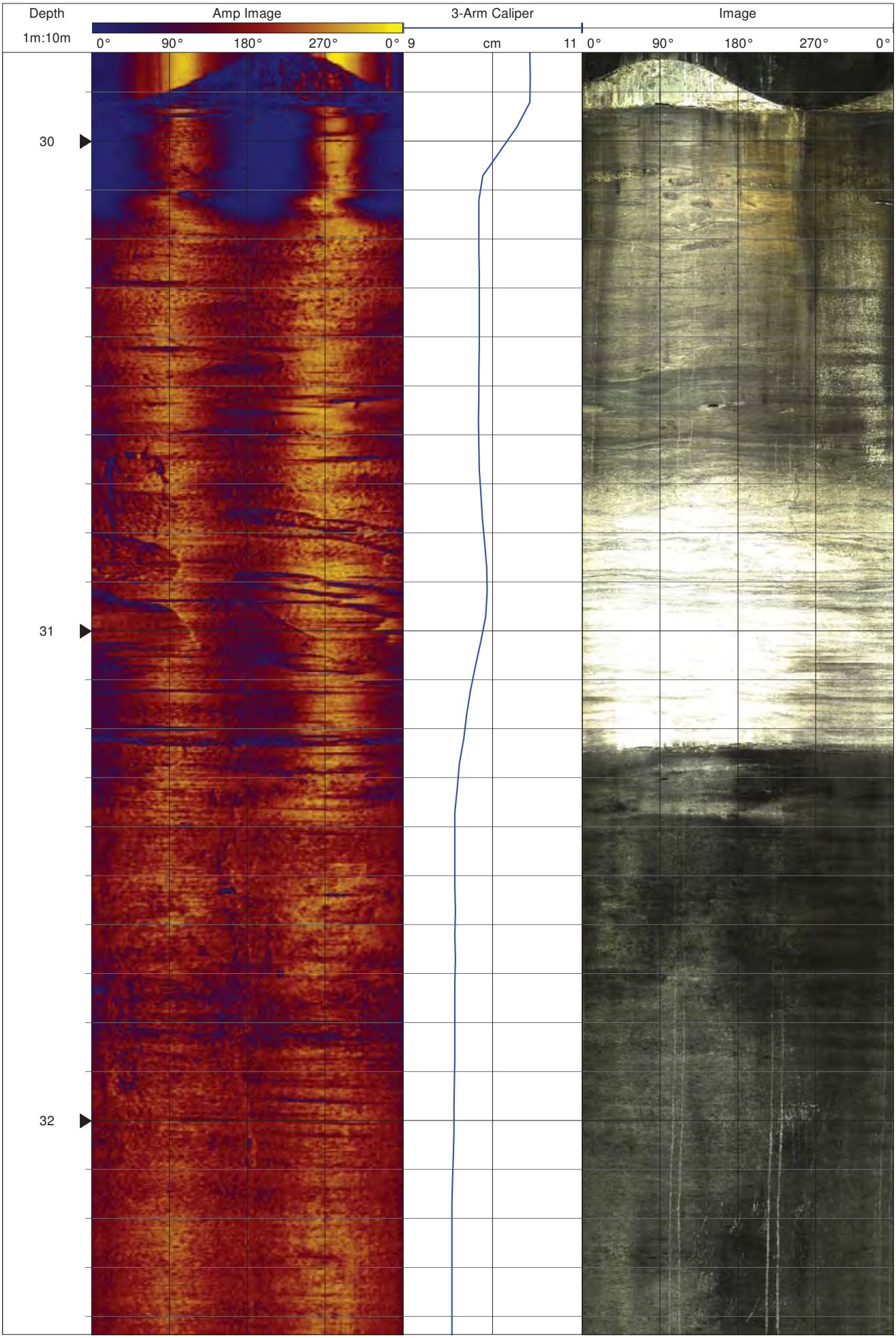
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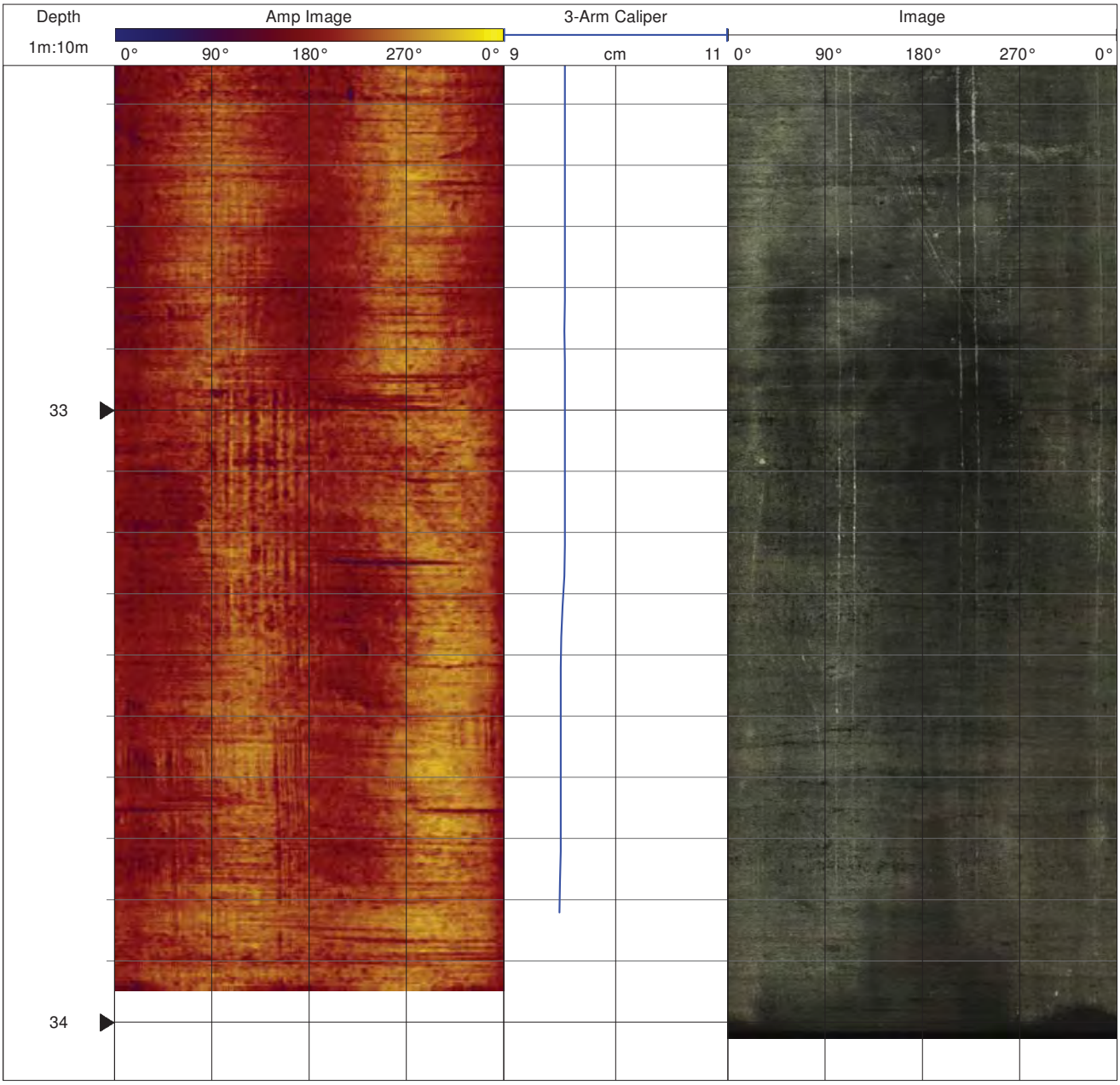
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Appendix E
Investigation-Derived Waste Management

MOVEMENT DOCUMENT / MANIFEST
DOCUMENT DE MOUVEMENT / MANIFESTE

This Movement document/manifest conforms to all federal and provincial environmental legislation.
Ce document de mouvement/manifeste est conforme aux législations fédérale et provinciale sur l'environnement.

ZM24272-6

Movement Document / Manifest Reference No.
N° de référence du document de mouvement/manifeste

A Generator / consignor / Producteur / expéditeur — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: ON3323094

Company name / Nom de l'entreprise: City of Guelph Engineering

Mailing address / Adresse postale: 1 Carden, Guelph, ON — City / Ville — Province — Postal code / Code postal: N1H3A1 FX 29445

E-mail / Courrier électronique: NR — Tel. No. / N° de tél.: 5198224260

Shipping site address / Adresse du lieu de l'expédition: 200 Beverly st

City / Ville: Guelph — Province: ON — Postal code / Code postal: N1E3C4

Intended Receiver / consignee / Réceptionnaire / destinataire prévu: Aquitas — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: A100212

Mailing address / Adresse postale: same as below — City / Ville — Province — Postal code / Code postal

E-mail / Courrier électronique: NR — Tel. No. / N° de tél.: 5197527646

Receiving site address / Adresse du lieu de destination: 36 Adams blvd

City / Ville: Brantford — Province: ON — Postal code / Code postal: N3S7U2

B Carrier / Transporteur — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: 3206-6APJHL

Company name / Nom de l'entreprise: Tesla Environmental Services INC

Mailing address / Adresse postale: 836 Nebo Rd, Hannon, ON — City / Ville — Province — Postal code / Code postal: L0R1P0

E-mail / Courrier électronique: NR — Tel. No. / N° de tél.: 9056792597

Vehicle / Véhicule	Registration No. / N° d'immatriculation	Prov.
Trailer - Rail car No. 1 / 1re remorque - wagon	AJ76399	ON
Trailer - Rail car No. 2 / 2e remorque - wagon		

Port of entry / Point d'entrée: International use only — Port of exit / Point de sortie: International use only

Carrier Certification : I certify that I have received waste or recyclable material from the generator / consignor for delivery to the receiver / consignee as set out in Part A and that the information contained in Part B is complete and correct.
Attestation du transporteur : J'atteste avoir reçu les déchets ou matières recyclables du producteur / expéditeur en vue de leur livraison au réceptionnaire / destinataire, tels qu'ils figurent à la partie A et que les renseignements inscrits à la partie B sont exacts et complets.

Name of authorized person (print): Nom de l'agent autorisé (caractères d'imprimerie): Brad Bonneau — Tel. No. / N° de tél.: 5187328097

Year / Année: 17 — Month / Mois: 10 — Day / Jour: 26 — Signature

Reference Nos. of other movement document(s)/manifest(s) used / N° de référence des autres documents de mouvement/manifestes utilisés

C Receiver / consignee / Réceptionnaire / destinataire — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial

Receiver / consignee information same as in Part A
Les renseignements du réceptionnaire / destinataire sont les mêmes qu'à la Partie A
☐ Yes / Oui ☐ No, complete the box below / Non, remplir la case ci-dessous

Company name / Nom de l'entreprise

Mailing address / Adresse postale

City / Ville — Province — Postal code / Code postal

E-mail / Courrier électronique — Tel. No. / N° de tél. ( )

Receiving site address / Adresse du lieu de destination

Date received / Date de réception: Year / Année — Month / Mois — Day / Jour — Time / Heure ☐ A.M. ☐ P.M.

If waste or recyclable material to be transferred, specify intended company name/ Si les dechets ou matières recyclables doivent être transférés, préciser le nom du destinataire — Registration No./Provincial ID No. / N° d'immatriculation/d'id provincial

	Prov. code / Code prov.	Shipping name / Appellation réglementaire	Class / Classe Sub. class(es) / Classe(s) sub.	UN No. / N° NU	Packing / risk gr. / Gr. d'emballage/ de risque	Quantiy shipped / Quantité expédiée	Units L or / ou Kg / Unités	Packaging/Contenant No. / N°	Codes int. – ext.	Phys. state / État phys.
(i)	221L	Light fuels & water	NR	NR	NR	7946	L	01	03	L
(ii)										
(iii)										
(iv)										

Quantity received / Quantité reçue	Units L or / ou kg / Unités	Comments / Commentaires	Handling Code / Code de manutention	Shipment / Envoi Accepted / Accepté	Shipment / Envoi Refused / Refusé	Decont. Pack. Cont.	Decont. Veh. Véh.

	Notice No. / N° de notification	Notice Line No / N° de ligne de la notification	Shipment / Envoi	Of / De	D or R code / Code D ou R	C code / Code C	Basel Annex VIII or OECD Code / Annexe VIII de Bâle ou Code OCDE	H code / Code H	Y code / Code Y	National code in country of / Code du pays: Export / Exportation	Import / Importation	Customs code(s) / Code(s) de douanes
(i)												
(ii)												
(iii)												
(iv)												

International use only

If handling code "Other" (specify) / Si code de manutention « autre » (spécifier)

Receiver / consignee certification : I certify that the information contained in Part C is correct and complete. / Attestation du réceptionnaire / destinataire : J'atteste que tous les renseignements à la partie C sont exacts et complets.

Name of authorized person (print) / Nom de l'agent autorisé (caractère d'imprimerie)

Signature — Tel. No. / N° de tél. ( )

Special handling / Manutention spéciale
☐ Attached / Ci-joint ☑ As follows / Ci-contre: 24Hr Tesla 1-866-663-6697

Generator / consignor certification: I certify that the information contained in Part A is correct and complete. I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.
Attestation du producteur / expéditeur: J'atteste que tous les renseignements à la partie A sont exacts et complets. Je déclare que le contenu de ce chargement est décrit ci-dessus de façon complète et exacte par la désignation officielle de transport et qu'il est convenablement classé, emballé, marqué, étiqueté, muni de plaques-étiquettes et à tous égards bien conditionné pour être transporté conformément aux réglementations internationales et nationales applicables.

Name of authorized person (print) / Nom de l'agent autorisé (caractère d'imprimerie): CHZM as agent for owner City of Guelph — Tel. No. / N° de tél.: 519-575-3500

Signature

Date shipped / Date d'expédition: Year / Année: 17 — Month / Mois: 10 — Day / Jour: 26 — Time / Heure ☐ A.M. ☑ P.M.: 530

Scheduled arrival date / Date d'arrivée prévue: Year / Année: 17 — Month / Mois: 10 — Day / Jour: 26

Retained by Consignor
Gardée par l'expéditeur

Tervita Corporation

24-Hour Number: 1-800-327-7455

Carrier #'s: AB - ABC2042 // NT NTC000038 // BC - LT0765 // MB - MBC03868 // ON - 2839-6E4LG6
Reciever #'s: AB - BL ABR10022, EDM ABR10054, CGY ABR10074 // BC - RIC RS16412, VIC BCG07373 // MB - MBR30053 // ON - 3837-5PYQTT

E-mail: info@tervita.com
24 hour Phone #: 1-800-327-7455

Number 004070

Reference Manifest:

Work Order #:

Project #:

☐ RECYCLE DOCKET ☒ BILL OF LADING ☐ OTHER TDG SHIPPING DOC

PART A Consignor/ Generator	Id / Code #: ON3323094	**PART B** Carrier	ID # 2839-6E4LG6	Alternate Carrier	ID #:
Company Name: CITY OF GUELPH		Company Name: TERVITA ENVIRONMENTAL SERVICES LTD		Company Name	
Mailing Address: C/O CH2M HILL CANADA LTD. 400 - 245 CONSUMERS ROAD (ATTN. MANIFESTS) TORONTO, ON M2J 1R3		Mailing Address: 1650 UPPER OTTAWA STREET HAMILTON ON L8W 3P2		Mailing Address	
Site Location: 200 BEVERLEY STREET GUELPH —		Registration #:		Registration #:	
** Generator Name and Signature: CH2M as agent for owner City of Guelph		Driver Name and Signature: Jordan Stillackler		Driver Name and Signature	
Date: Dec/12/7	Phone #: 289-971-1779	Date: Dec 5/17	Phone#: 905 383 5550	Date	Phone #

COLLECTION - C / DELIVERY - D

COL/ DEL	WASTE CODE	Handling CODE	DG	UN No.	PROPER SHIPPING NAME (Product Price)	CLASS	PG	QUANTITY SHIPPED	UNIT	PACKAGING NO.	TYPE
C	WSTMIS	02		N/A	NON-REGULATED SOLID (soil cuttings) WASTE	N/A	N/R	2100	KG	07	1

PART C

QUANTITY RECEIVED	UNIT	DISCREPANCIES

CARRIER COPY ONLY - DO NOT DISTRIBUTE - ATTACH TO (COPY 4 PINK/ROSE) OF MOVEMENT DOCUMENT ONLY

** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, are properly classified and packaged, have dangerous goods safety marks properly affixed or displayed on them, and are in all respects in proper condition for transport according to the Transportation of Dangerous Goods Regulations

This Waste Manifest Attachment Sheet is to accompany the Carrier's copy of the Movement Document only (copy 4 pink/rose) and must accompany the load while in transit at all times. This information contained on the Waste Manifest Attachment Sheet addresses Parts 3.5, 3.6 and 3.6.1 of the TDGR.

PART C Consignee/Receiver	Id / Code #: 3837-5PYQTT		
Company Name: Tervita Hamilton TS	Mailing Address: 1650 Upper Ottawa Street Hamilton, ON L8W 3P2	Receipt Date	Special handling / Instructions
Authorized Person and Signature	Receiving Site Location (Phone #)I: 905-383-5550	Intended Disposal Facility and Location: Tervita Hamilton TS	Other / Directions: WO#: 108276

MOVEMENT DOCUMENT / MANIFEST
DOCUMENT DE MOUVEMENT / MANIFESTE

This Movement document/manifest conforms to all federal and provincial environmental legislation.
Ce document de mouvement/manifeste est conforme aux législations fédérale et provinciale sur l'environnement.

Equivalency Certificate No. SU7498 (Ren. 8)

In case of EMERGENCY call 24-HOUR NUMBER 1-866-856-5366

PY27747-3

Movement Document / Manifest Reference No.
N° de référence du document de mouvement/manifeste

A Generator / consignor / Producteur / expéditeur — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: ON3323094

Company name / Nom de l'entreprise: City of Guelph Engineering

Mailing address / Adresse postale: 200 Beverly St. — City / Ville: Guelph — Province: ON — Postal code / Code postal:

E-mail / Courrier électronique: N/A — Tel. No. / N° de tél.: ( )

Shipping site address / Adresse du lieu de l'expédition: 200 Beverly St.

City / Ville: Guelph — Province: ON — Postal code / Code postal:

Intended Receiver / consignee / Réceptionnaire / destinataire prévu: Aevitas Inc (WWT) — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: A100212

Mailing address / Adresse postale: 36 Adams Boulevard — City / Ville: Brantford — Province: ON — Postal code / Code postal: N3S 7V2

E-mail / Courrier électronique: milos@aevitas.ca — Tel. No. / N° de tél.: 519-752-7646

Receiving site address / Adresse du lieu de destination: 36 Adams Boulevard

City / Ville: Brantford — Province: ON — Postal code / Code postal: N3S 7V2

B Carrier / Transporteur — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: 3208-6APJHL

Company name / Nom de l'entreprise: Tesla Environmental Services Inc

Mailing address / Adresse postale: 1740 Brampton Street — City / Ville: Hamilton — Province: ON — Postal code / Code postal: L8H 3S1

E-mail / Courrier électronique: — Tel. No. / N° de tél.: 905 679-2597

Vehicle / Véhicule	Registration No. / N° d'immatriculation	Prov.
Trailer - Rail car No. 1 / 1re remorque - wagon	AR40616	ON
Trailer - Rail car No. 2 / 2e remorque - wagon		

Port of entry / Point d'entrée: International use only — Port of exit / Point de sortie: International use only

Carrier Certification : I certify that I have received waste or recyclable material from the generator / consignor for delivery to the receiver / consignee as set out in Part A and that the information contained in Part B is complete and correct. Attestation du transporteur : J'atteste avoir reçu les déchets ou matières recyclables du producteur / expéditeur en vue de leur livraison au réceptionnaire / destinataire, tels qu'ils figurent à la partie A et que les renseignements inscrits à la partie B sont exacts et complets.

Name of authorized person (print) / Nom de l'agent autorisé (caractères d'imprimerie): PAUL EMILE SPEDE — Tel. No. / N° de tél.: 905 679-2597

Year / Année: 17 — Month / Mois: 12 — Day / Jour: 07 — Signature:

C Receiver / consignee / Réceptionnaire / destinataire — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial:

Receiver / consignee information same as in Part A
Les renseignements du réceptionnaire / destinataire sont les mêmes qu'à la Partie A
☐ Yes / Oui ☐ No, complete the box below / Non, remplir la case ci-dessous

Company name / Nom de l'entreprise

Mailing address / Adresse postale

City / Ville — Province — Postal code / Code postal

E-mail / Courrier électronique — Tel. No. / N° de tél. ( )

Receiving site address / Adresse du lieu de destination

Date received / Date de réception: Year / Année — Month / Mois — Day / Jour — Time / Heure ☐ A.M. ☐ P.M.

If waste or recyclable material to be transferred, specify intended company name/ Si les dechets ou matières recyclables doivent être transférés, préciser le nom du destinataire — Registration No./Provincial ID No. / N° d'immatriculation/d'id provincial

Reference Nos. of other movement document(s)/manifest(s) used / N° de référence des autres documents de mouvement/manifestes utilisés

Prov. code / Code prov.	Shipping name / Appellation réglementaire	Class / Classe / Sub. class(es) / Classe(s) sub.	UN No. / N° NU	Packing / risk gr. / Gr. d'emballage / de risque	Quantity shipped / Quantité expédiée	Units / L or / ou Kg / Unités	Packaging/Contenant No. / N°	Codes Int – ext.	Phys. state / État phys.
(i) 221L	LIGHT FUELS (CORE SAMPLE WATER)	N/A	N/A	N/A	5,500	L.	01	03	L.
(ii)									
(iii)									
(iv)									

Quantity received / Quantité reçue	Units / L or / ou kg / Unités	Comments / Commentaires	Handling Code / Code de manutention	Shipment / Envoi Accepted / Accepté	Shipment / Envoi Refused / Refusé	Decont. Pack. Cont	Decont. Veh. Véh

Notice No. / N° de notification	Notice Line No / N° de ligne de la notification	Shipment / Envoi	Of / De	D or R code / Code D ou R	C code / Code C	Basel Annex VIII or OECD Code / Annexe VIII de Bâle ou Code OCDE	H code / Code H	Y code / Code Y	National code in country of / Code du pays: Export / Exportation	Import / Importation	Customs code(s) / Code(s) de douanes
(i)											
(ii)											
(iii)											
(iv)											

International use only

If handling code "Other" (specify) / Si code de manutention « autre » (spécifier)

Receiver / consignee certification : I certify that the information contained in Part C is correct and complete. / Attestation du réceptionnaire / destinataire : J'atteste que tous les renseignements à la partie C sont exacts et complets.

Name of authorized person (print) / Nom de l'agent autorisé (caractère d'imprimerie)

Signature — Tel. No. / N° de tél. ( )

Special handling / Manutention spéciale: ☐ Attached / Ci-joint: ☐ As follows / Ci-contre:

Generator / consignor certification: I certify that the information contained in Part A is correct and complete. I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.
Attestation du producteur / expéditeur: J'atteste que tous les renseignements à la partie A sont exacts et complets. Je déclare que le contenu de ce chargement est décrit ci-dessus de façon complète et exacte par la désignation officielle de transport et qu'il est convenablement classé, emballé, marqué, étiqueté, muni de plaques-étiquettes et à tous égards bien conditionné pour être transporté conformément aux réglementations internationales et nationales applicables.

Name of authorized person (print) / Nom de l'agent autorisé (caractère d'imprimerie): CHEM as agent for owner City of Guelph — Tel. No. / N° de tél.: 519,822-1260

Signature

Date shipped / Date d'expédition: Year / Année 17 — Month / Mois 12 — Day / Jour 07 — Time / Heure ☐ A.M. ☒ P.M. 14:45

Scheduled arrival date / Date d'arrivée prévue: Year / Année 17 — Month / Mois 12 — Day / Jour 07

Retained by Consignor
Gardée par l'expéditeur

Copy / Copie 2 (green / verte)

aevitas

BILL OF LADING

ORIGINAL - NOT NEGOTIABLE

75 WANLESS COURT, AYR, ONTARIO N0B 1E0
www.aevitas.ca
(519) 740-1333

CARRIER: *AEVITAS INC.*

Carrier's A 101193

Vehicle: 403

Manifest No.

Name: Matt Lagace

Date: Sept 14th, 2018

Signature:

24 Hour Emergency Response: (866) 856 - 5366

FROM: ☐ same as carrier

Shipper / Consignor: City of Guelph

Street: 200 Beverley St

City: Guelph Prov.: ON

Postal Code: Tel. No.:

Name: Michael Shiry

Signature:

TO: ☒ same as carrier

Receiver / Consignee: Aevitas inc

Street: 75 Wanless Court

City: Ayr Prov: ON

Postal Code: N0B 1E0 Tel. No.: (519) 740-1333

Name:

Signature:

LAMPS

NO. OF UNITS	PACKAGING				LAMP TYPE											ESTIMATED COUNTS	NO. OF SKIDS	NOTES/WEIGHT
	Cartons/ Boxes	Blue Bins	Luggers	Other	4 Foot Fluores.			8 Foot Fluores.			HID/ HPS	INC	HAL	U/V	OTHER			
					T8	T12	MIX	T8	T12	MIX								

☒ **NON HAZARDOUS** ☐ **DANGEROUS GOODS**

15 Pkg Drums Non-Haz Soil

This is not a recycling certificate

I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, are properly classified and packaged, have dangerous goods safety marks properly affixed or displayed on them, and are in all respects in proper condition for transport according to the Transportation of Dangerous Goods Regulations.

Name: _____ **Signature:** _____
Please PRINT

USED OR LEFT ON SITE

Arrival Time 11:30 am **Departure Time** 1:45 pm **Workers:** 2 **Total Time on Site** 2.25h

☐ Drums ☐ Blue Boxes

Notes:

☐ Cartons/Boxes Type ☐ Other Type

P.O.:

Pursuant to applicable legislation, it is mutually agreed as to each carrier of all or any part of, said property over all or any said portion of said route to destination and as to each party, at any time interested in all or any said property, that every service performed hereunder shall be subject to all bill of lading terms and conditions in the governing classification on the date of shipment.

White Copy – Aevitas Yellow Copy – Receiver Pink Copy – Shipper

MOVEMENT DOCUMENT / MANIFEST
DOCUMENT DE MOUVEMENT / MANIFESTE

This Movement document/manifest conforms to all federal and provincial environmental legislation.
Ce document de mouvement/manifeste est conforme aux législations fédérale et provinciale sur l'environnement.

CA62002-4

Movement Document / Manifest Reference No.
N° de référence du document de mouvement/manifeste

A Generator / consignor / Producteur / expéditeur

Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: ON3323094

Company name / Nom de l'entreprise: City of Guelph Engineering

Mailing address / Adresse postale: 1 Carden Street | City / Ville: Guelph | Province: ON | Postal code / Code postal: N1H 3A1

E-mail / Courrier électronique: ATTN L Prasoon Adhikari | Tel. No. / N° de tél.: 519 822 1260

Shipping site address / Adresse du lieu de l'expédition: 200 Beverly Street

City / Ville: Guelph | Province: ON | Postal code / Code postal: N1E 3C4

Intended Receiver / consignee / Réceptionnaire / destinataire prévu: Aavitas Inc (WWT)

Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: A100212

Mailing address / Adresse postale: 36 Adams Boulevard | City / Ville: Brantford | Province: ON | Postal code / Code postal: N3S 7V2

E-mail / Courrier électronique | Tel. No. / N° de tél.: (519) 752-7646

Receiving site address / Adresse du lieu de destination: 36 Adams Boulevard

City / Ville: Brantford | Province: ON | Postal code / Code postal: N3S 7V2

B Carrier / Transporteur

Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: 3206-6APJHL

Company name / Nom de l'entreprise: Tosta Environmental Services Inc

Mailing address / Adresse postale: 1740 Brampton Street | City / Ville: Hamilton | Province: ON | Postal code / Code postal: L8H 3S1

E-mail / Courrier électronique | Tel. No. / N° de tél.: 905 679 2597

Vehicle / Véhicule	Registration No. / N° d'immatriculation	Prov.
Trailer - Rail car No. 1 / 1e remorque - wagon	ALS9276	ON
Trailer - Rail car No. 2 / 2e remorque - wagon		

Port of entry / Point d'entrée: International use only

Port of exit / Point de sortie: International use only

Carrier Certification: I certify that I have received waste or recyclable material from the generator / consignor for delivery to the receiver / consignee as set out in Part A and that the information contained in Part B is complete and correct.
Attestation du transporteur: J'atteste avoir reçu les déchets ou matières recyclables du producteur / expéditeur en vue de leur livraison au réceptionnaire / destinataire, tels qu'ils figurent à la partie A et que les renseignements inscrits à la partie B sont exacts et complets.

Name of authorized person (print): / Nom de l'agent autorisé (caractères d'imprimerie): JimLOMAX | Tel. No. / N° de tél.: 9056792597

Year / Année: 19 | Month / Mois: 05 | Day / Jour: 07 | Signature

C Receiver / consignee / Réceptionnaire / destinataire

Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial

Receiver / consignee information same as in Part A
Les renseignements du réceptionnaire / destinataire sont les mêmes qu'à la Partie A
☐ Yes / Oui ☐ No, complete the box below / Non, remplir la case ci-dessous

Company name / Nom de l'entreprise

Mailing address / Adresse postale

City / Ville | Province | Postal code / Code postal

E-mail / Courrier électronique | Tel. No. / N° de tél.

Receiving site address / Adresse du lieu de destination

Date received / Date de réception: Year / Année | Month / Mois | Day / Jour

Time / Heure: ☐ A.M. ☐ P.M.

If waste or recyclable material to be transferred, specify intended company name/ Si les dechets ou matières recyclables doivent être transférés, préciser le nom du destinataire

Registration No./Provincial ID No. / N° d'immatriculation/d'id provincial

	Prov. code / Code prov.	Shipping name / Appellation réglementaire	Class / Classe Sub. class(es) / Classe(s) sub.	UN No. / N° NU	Packing / risk gr. / Gr. d'emballage / de risque	Quantity shipped / Quantité expédiée	Units L or / ou Kg / Unités	Packaging / Contenant No. / N°	Codes Int. – ext.	Phys. state / État phys.
(i)	146L	WASTE WATER	N/R	N/R	N/R	12,776	L	01	07	L
(ii)										
(iii)										
(iv)										

Quantity received / Quantité reçue	Units L or / ou kg / Unités	Comments / Commentaires	Handling Code / Code de manutention	Shipment / Envoi Accepted / Accepté	Shipment / Envoi Refused / Refusé	Decont. Pack. Cont.	Decont. Veh. Véh.

	Notice No. / N° de notification	Notice Line No / N° de ligne de la notification	Shipment Envoi	Of / De	D or R code / Code D ou R	C code / Code C	Basel Annex VIII or OECD Code / Annexe VIII de Bâle ou Code OCDE	H code / Code H	Y code / Code Y	National code in country of / Code du pays: Export / Exportation	Import / Importation	Customs code(s) / Code(s) de douanes
(i)												
(ii)												
(iii)												
(iv)												

International use only

If handling code "Other" (specify) / Si code de manutention « autre » (spécifier)

Receiver / consignee certification: I certify that the information contained in Part C is correct and complete.
Attestation du réceptionnaire / destinataire: J'atteste que tous les renseignements à la partie C sont exacts et complets.

Name of authorized person (print) / Nom de l'agent autorisé (caractère d'imprimerie)

Signature | Tel. No. / N° de tél.

Special handling / Manutention spéciale: ☐ Attached / Ci-joint: ☐ As follows / Ci-contre: 24 hr # 1-866-667-6697

Generator / consignor certification: I certify that the information contained in Part A is correct and complete. I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.
Attestation du producteur / expéditeur: J'atteste que tous les renseignements à la partie A sont exacts et complets. Je déclare que le contenu de ce chargement est décrit ci-dessus de façon complète et exacte par la désignation officielle de transport et qu'il est convenablement classé, emballé, marqué, étiqueté, muni de plaques-étiquettes et à tous égards bien conditionné pour être transporté conformément aux réglementations internationales et nationales applicables.

Name of authorized person (print) / Nom de l'agent autorisé (caractère d'imprimerie): CHEMIus agent for City of Guelph owner | Tel. No. / N° de tél.: 519 822 1260

Signature

Date shipped / Date d'expédition: Year / Année: 19 | Month / Mois: 05 | Day / Jour: 07 | Time / Heure: ☐ A.M. ☐ P.M. 11:15

Scheduled arrival date / Date d'arrivée prévue: Year / Année: 19 | Month / Mois: 05 | Day / Jour: 07

Retained by Consignor
Gardée par l'expéditeur

Copy / Copie 2 (green / verte

aevitas

BILL OF LADING

ORIGINAL - NOT NEGOTIABLE

75 WANLESS COURT, AYR, ONTARIO N0B 1E0
www.aevitas.ca
(519) 740-1333

CARRIER: *AEVITAS INC.*

Carrier's A 106996

Vehicle: 401

Manifest No.

Name: Mike Beer

Date: 06-07-14

Signature: MBeer

24 Hour Emergency Response: (866) 856 - 5366

FROM: ☐ same as carrier

Shipper / Consignor: City of Guelph

Street: 200 Beverley St

City: Guelph Prov.:

Postal Code: Tel. No.:

Name: H. Shull

Signature:

TO: ☑ same as carrier

Receiver / Consignee: Aevitas

Street:

City: Prov:

Postal Code: Tel. No.:

Name:

Signature:

LAMPS

NO. OF UNITS	PACKAGING				LAMP TYPE											ESTIMATED COUNTS	NO. OF SKIDS	NOTES/WEIGHT
	Cartons/ Boxes	Blue Bins	Luggers	Other	4 Foot Fluores.			8 Foot Fluores.			HID/ HPS	INC	HAL	U/V	OTHER			
					T8	T12	MIX	T8	T12	MIX								

☑ **NON HAZARDOUS** ☐ **DANGEROUS GOODS**

15 Drums of Aerosol Spray

This is not a recycling certificate

I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, are properly classified and packaged, have dangerous goods safety marks properly affixed or displayed on them, and are in all respects in proper condition for transport according to the Transportation of Dangerous Goods Regulations.

Name: Please PRINT **Signature:**

USED OR LEFT ON SITE

Arrival Time 7:00 **Departure Time** 8:45 **Workers:** **Total Time on Site** 1.75

☐ Drums ☐ Blue Boxes

Notes:

☐ Cartons/Boxes Type ☐ Other Type

P.O.:

Pursuant to applicable legislation, it is mutually agreed as to each carrier of all or any part of, said property over all or any said portion of said route to destination and as to each party, at any time interested in all or any said property, that every service performed hereunder shall be subject to all bill of lading terms and conditions in the governing classification on the date of shipment.

White Copy – Aevitas Yellow Copy – Receiver Pink Copy – Shipper

CH2M HILL CANADA LIMITED
ATTN: MICHAEL SHIRY
72 VICTORIA ST SOUTH
SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 30-OCT-17
Report Date: 07-NOV-17 13:36 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2015415

Project P.O. #:	NOT SUBMITTED
Job Reference:	694757
C of C Numbers:	15-613139
Legal Site Desc:	

Mathy Mahadeva
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

694757

ANALYTICAL GUIDELINE REPORT

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2		
L2015415-1	DRILL TCLP									
Sampled By:	M. SHIRY on 27-OCT-17 @ 08:30									
Matrix:	SOIL									
Sample Preparation										
	Initial pH	9.34		0.10	pH units	02-NOV-17				
	Final pH	5.26		0.10	pH units	02-NOV-17				
Physical Tests										
	Air Velocity Of Fume Hood	0.70		0.10	m/sec	06-NOV-17				
	Burning Rate	N/A		0.010	mm/sec	06-NOV-17				
	Ignitability-Class	NON FLAMMABLE			No Unit	06-NOV-17				
	Samp Comment	BROWN SOIL			No Unit	06-NOV-17				
	Temperature Of Test Material	21.0		1.0	Deg. C	06-NOV-17				
	Time To Ignition	N/A		1.0	sec	06-NOV-17				
TCLP Extractables										
	Aroclor 1242	<0.00020		0.00020	mg/L	06-NOV-17				
	Aroclor 1248	<0.00020		0.00020	mg/L	06-NOV-17				
	Aroclor 1254	<0.00020		0.00020	mg/L	06-NOV-17				
	Aroclor 1260	<0.00020		0.00020	mg/L	06-NOV-17				
	Benzo(a)pyrene	<0.0020	RRR	0.0020	mg/L	06-NOV-17	**0.001			
	Surrogate: 2-Bromobenzotrifluoride	96.9		50-150	%	06-NOV-17				
	Chrom. to baseline at nC50	YES			No Unit	06-NOV-17				
	Cyanide, Weak Acid Diss	<0.10		0.10	mg/L	03-NOV-17	20			
	Fluoride (F)	<10		10	mg/L	03-NOV-17	150.0			
	Nitrate and Nitrite as N	<4.0		4.0	mg/L	03-NOV-17	1000			
	Nitrate-N	<2.0		2.0	mg/L	03-NOV-17				
	Nitrite-N	<2.0		2.0	mg/L	03-NOV-17				
	Total PCBs	<0.00040		0.00040	mg/L	06-NOV-17	0.3			
	Surrogate: d12-Chrysene	31.2	SOL:MI	60-140	%	06-NOV-17				
	Surrogate: 2-Fluorobiphenyl	103.5		40-160	%	06-NOV-17				
TCLP Metals										
	Arsenic (As)	<0.050		0.050	mg/L	03-NOV-17	2.5			
	Barium (Ba)	<0.50		0.50	mg/L	03-NOV-17	100			
	Boron (B)	<2.5		2.5	mg/L	03-NOV-17	500			
	Cadmium (Cd)	0.0168		0.0050	mg/L	03-NOV-17	0.5			
	Chromium (Cr)	<0.050		0.050	mg/L	03-NOV-17	5.0			
	Lead (Pb)	0.163		0.050	mg/L	03-NOV-17	5.0			
	Mercury (Hg)	<0.00010		0.00010	mg/L	03-NOV-17	0.1			
	Selenium (Se)	<0.025		0.025	mg/L	03-NOV-17	1.0			
	Silver (Ag)	<0.0050		0.0050	mg/L	03-NOV-17	5.0			
	Uranium (U)	<0.25		0.25	mg/L	03-NOV-17	10			
TCLP VOCs										
	1,1-Dichloroethylene	<0.025		0.025	mg/L	06-NOV-17	1.4			
	1,2-Dichlorobenzene	<0.025		0.025	mg/L	06-NOV-17	20.0			
	1,2-Dichloroethane	<0.025		0.025	mg/L	06-NOV-17	0.5			
	1,4-Dichlorobenzene	<0.025		0.025	mg/L	06-NOV-17	0.5			
	Benzene	<0.025		0.025	mg/L	06-NOV-17	0.5			
	Carbon tetrachloride	<0.025		0.025	mg/L	06-NOV-17	0.5			
	Chlorobenzene	<0.025		0.025	mg/L	06-NOV-17	8			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Federal & Provincial Waste Regulations (MAR, 2008) = [Suite] - ON-REG347/90 - Schedule 4 Leachate + Bulk PCB

#1: Ontario Ministry of the Environment, General Waste Control Regulation No. 347/90

#2: Polychlorinated Biphenyls (PCBs) - Ontario Regulation 347/90

694757

ANALYTICAL GUIDELINE REPORT

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2		
L2015415-1	DRILL TCLP									
Sampled By:	M. SHIRY on 27-OCT-17 @ 08:30									
Matrix:	SOIL									
TCLP VOCs										
	Chloroform	<0.10		0.10	mg/L	06-NOV-17	10			
	Dichloromethane	<0.50		0.50	mg/L	06-NOV-17	5.0			
	Methyl Ethyl Ketone	<1.0		1.0	mg/L	06-NOV-17	200.0			
	Tetrachloroethylene	<0.025		0.025	mg/L	06-NOV-17	3			
	Trichloroethylene	<0.025		0.025	mg/L	06-NOV-17	5			
	Vinyl chloride	<0.050		0.050	mg/L	06-NOV-17	0.2			
	Surrogate: 4-Bromofluorobenzene	98.2		70-130	%	06-NOV-17				
Volatile Organic Compounds										
	Surrogate: 1,4-Difluorobenzene	99.2		70-130	%	06-NOV-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	mg/L	07-NOV-17				
	F1-BTEX	<5.0		5.0	mg/L	07-NOV-17				
	F2 (C10-C16)	<0.10		0.10	mg/L	07-NOV-17				
	F3 (C16-C34)	<0.25		0.25	mg/L	07-NOV-17				
	F4 (C34-C50)	<0.25		0.25	mg/L	07-NOV-17				
	Total Hydrocarbons (C6-C50)	<5.0		5.0	mg/L	07-NOV-17				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Federal & Provincial Waste Regulations (MAR, 2008) = [Suite] - ON-REG347/90 - Schedule 4 Leachate + Bulk PCB

#1: Ontario Ministry of the Environment, General Waste Control Regulation No. 347/90

#2: Polychlorinated Biphenyls (PCBs) - Ontario Regulation 347/90

Reference Information

Sample Parameter Qualifier key listed:

Qualifier	Description
SOL:MI	Surrogate recovery outside acceptable limits due to matrix interference
RRR	Refer to Report Remarks for issues regarding this analysis

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference***
BAP-ONT-TCLP-WT	Waste	Benzo(a)pyrene for O. Reg 347	SW 846 8270-GC-MS on TCLP Leachate
CN-TCLP-WT	Waste	Cyanide for O. Reg 347	APHA 4500CN C E
ETL-TVH,TEH-TCLP-WT	Waste	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001
F-TCLP-WT	Waste	Fluoride (F) for O. Reg 347	APHA 4110 B-Ion Chromatography
F1-TCLP-WT	Waste	O. Reg 347 TCLP leachable F1	SW846 8260
F2-F4-TCLP-WT	Waste	O. Reg 347 TCLP leachable F2-F4	MOE DECPH-E3398/CCME TIER 1
HG-TCLP-WT	Waste	Mercury (CVAA) for O.Reg 347	SW846 7470A
IGNITABILITY-WT	Waste	O. Reg 347 Ignitability	EPA SW846, Method 1030, 1996

Preliminary Screening Test:
Prepare a sample "as received" 250 mm long by 20 mm wide by 10 mm high. Apply the tip of the flame to the end of the sample strip.
If the sample is non-metallic, hold the flame tip on the sample until the sample ignites or for a maximum of 2 minutes. If combustion occurs, begin timing with a stop watch and note whether the sample propagates up to the 200 mm mark within the 2 minute test period.
If the sample is metal or metal alloy powder, hold the flame tip on the sample until the sample ignites or for a maximum of 5 minutes. If combusiton occurs, begin timing with a stop watch and note whether the sample propagates up to the 200 mm mark within the 20 minute test period.
Note: If the waste propagates burning of 200 mm of the test strip within 2 minutes (20 minutes for metals), the material must be evaluated by the burning rate test.
Burning Rate Test:
Refer to section 7.2 of EPA Method 1030. Samples that have a burning rate of greater than 2.2 mm/s are considered to have a positive result for ignitability according to DOT regulations. For metallic samples , the burning rate must be greater than 0.17 mm/s.

LEACH-TCLP-WT	Waste	Leachate Procedure for Reg 347	EPA 1311

Inorganic and Semi-Volatile Organic contaminants are leached from waste samples in strict accordance with US EPA Method 1311, "Toxicity Characteristic Leaching Procedure" (TCLP). Test results are reported in leachate concentration units (normally mg/L).

MET-TCLP-WT	Waste	O.Reg 347 TCLP Leachable Metals	EPA 200.8
N2N3-TCLP-WT	Waste	Nitrate/Nitrite-N for O. Reg 347	APHA 4110 B-Ion Chromatography
PCB-TCLP-WT	Waste	PCBs for O. Reg 347	SW846 8270
VOC-TCLP-WT	Waste	VOC for O. Reg 347	SW846 8260

A sample of waste is leached in a zero headspace extractor at 30–2 rpm for 18–2.0 hours with the appropriate leaching solution. After tumbling the leachate is analyzed directly by headspace technology, followed by GC/MS using internal standard quantitation.

*** ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody numbers:

15-613139

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA		

Reference Information

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.

Quality Control Report

Workorder: L2015415 Report Date: 07-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BAP-ONT-TCLP-WT	**Waste**							
Batch R3877488								
WG2657368-6 DUP		**WG2657368-4**						
Benzo(a)pyrene		<0.0020	<0.0020	RPD-NA	mg/L	N/A	50	06-NOV-17
WG2657368-2 LCS								
Benzo(a)pyrene			73.0		%		50-150	06-NOV-17
WG2657368-1 MB								
Benzo(a)pyrene			<0.0010		mg/L		0.001	06-NOV-17
Surrogate: d12-Chrysene			87.6		%		60-140	06-NOV-17
WG2657368-3 MB								
Benzo(a)pyrene			<0.0010		mg/L		0.001	06-NOV-17
Surrogate: d12-Chrysene			67.9		%		60-140	06-NOV-17
WG2657368-5 MS		**WG2657368-4**						
Benzo(a)pyrene			55.2		%		50-150	07-NOV-17
CN-TCLP-WT	**Waste**							
Batch R3875034								
WG2656233-3 DUP		**L2014744-1**						
Cyanide, Weak Acid Diss		<0.10	<0.10	RPD-NA	mg/L	N/A	20	03-NOV-17
WG2656233-2 LCS								
Cyanide, Weak Acid Diss			99.0		%		70-130	03-NOV-17
WG2656233-1 MB								
Cyanide, Weak Acid Diss			<0.10		mg/L		0.1	03-NOV-17
WG2656233-4 MS		**L2014744-1**						
Cyanide, Weak Acid Diss			96.7		%		50-150	03-NOV-17
F-TCLP-WT	**Waste**							
Batch R3875476								
WG2656615-3 DUP		**L2014744-1**						
Fluoride (F)		<10	<10	RPD-NA	mg/L	N/A	30	03-NOV-17
WG2656615-2 LCS								
Fluoride (F)			91.7		%		70-130	03-NOV-17
WG2656615-1 MB								
Fluoride (F)			<10		mg/L		10	03-NOV-17
WG2656615-4 MS		**L2014744-1**						
Fluoride (F)			89.1		%		50-150	03-NOV-17
F2-F4-TCLP-WT	**Waste**							
Batch R3877590								
WG2657368-1 MB								
Surrogate: 2-Bromobenzotrifluoride			96.1		%		50-150	06-NOV-17
WG2657368-3 MB								

Quality Control Report

Workorder: L2015415 Report Date: 07-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-TCLP-WT	**Waste**							
Batch R3877590								
WG2657368-3 MB								
Surrogate: 2-Bromobenzotrifluoride			91.4		%		50-150	06-NOV-17
HG-TCLP-WT	**Waste**							
Batch R3873660								
WG2656005-3 DUP		**L2017135-1**						
Mercury (Hg)		<0.00010	<0.00010	RPD-NA	mg/L	N/A	50	03-NOV-17
WG2656005-2 LCS								
Mercury (Hg)			103.0		%		70-130	03-NOV-17
WG2656005-1 MB								
Mercury (Hg)			<0.00010		mg/L		0.0001	03-NOV-17
WG2656005-4 MS		**L2014844-22**						
Mercury (Hg)			96.3		%		50-140	03-NOV-17
MET-TCLP-WT	**Waste**							
Batch R3873747								
WG2656051-4 DUP		**WG2656051-3**						
Silver (Ag)		<0.0050	<0.0050	RPD-NA	mg/L	N/A	40	03-NOV-17
Arsenic (As)		<0.050	<0.050	RPD-NA	mg/L	N/A	40	03-NOV-17
Boron (B)		<2.5	<2.5	RPD-NA	mg/L	N/A	40	03-NOV-17
Barium (Ba)		0.56	0.56		mg/L	0.7	40	03-NOV-17
Cadmium (Cd)		<0.0050	<0.0050	RPD-NA	mg/L	N/A	40	03-NOV-17
Chromium (Cr)		<0.050	<0.050	RPD-NA	mg/L	N/A	40	03-NOV-17
Lead (Pb)		<0.050	<0.050	RPD-NA	mg/L	N/A	40	03-NOV-17
Selenium (Se)		<0.025	<0.025	RPD-NA	mg/L	N/A	40	03-NOV-17
Uranium (U)		<0.25	<0.25	RPD-NA	mg/L	N/A	40	03-NOV-17
WG2656051-2 LCS								
Silver (Ag)			102.1		%		70-130	03-NOV-17
Arsenic (As)			94.7		%		70-130	03-NOV-17
Boron (B)			85.7		%		70-130	03-NOV-17
Barium (Ba)			93.5		%		70-130	03-NOV-17
Cadmium (Cd)			97.8		%		70-130	03-NOV-17
Chromium (Cr)			96.2		%		70-130	03-NOV-17
Lead (Pb)			97.7		%		70-130	03-NOV-17
Selenium (Se)			96.7		%		70-130	03-NOV-17
Uranium (U)			98.4		%		70-130	03-NOV-17
WG2656051-1 MB								

Quality Control Report

Workorder: L2015415 Report Date: 07-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-TCLP-WT	**Waste**							
Batch R3873747								
WG2656051-1 MB								
Silver (Ag)			<0.0050		mg/L		0.005	03-NOV-17
Arsenic (As)			<0.050		mg/L		0.05	03-NOV-17
Boron (B)			<2.5		mg/L		2.5	03-NOV-17
Barium (Ba)			<0.50		mg/L		0.5	03-NOV-17
Cadmium (Cd)			<0.0050		mg/L		0.005	03-NOV-17
Chromium (Cr)			<0.050		mg/L		0.05	03-NOV-17
Lead (Pb)			<0.050		mg/L		0.05	03-NOV-17
Selenium (Se)			<0.025		mg/L		0.025	03-NOV-17
Uranium (U)			<0.25		mg/L		0.25	03-NOV-17
WG2656051-5 MS		**WG2656051-3**						
Silver (Ag)			138.1		%		50-150	03-NOV-17
Arsenic (As)			112.3		%		50-150	03-NOV-17
Boron (B)			97.7		%		50-150	03-NOV-17
Barium (Ba)			113.4		%		50-150	03-NOV-17
Cadmium (Cd)			113.7		%		50-150	03-NOV-17
Chromium (Cr)			110.9		%		50-150	03-NOV-17
Lead (Pb)			105.1		%		50-150	03-NOV-17
Selenium (Se)			115.0		%		50-150	03-NOV-17
Uranium (U)			110.3		%		50-150	03-NOV-17
N2N3-TCLP-WT	**Waste**							
Batch R3875476								
WG2656615-3 DUP		**L2014744-1**						
Nitrate-N		<2.0	<2.0	RPD-NA	mg/L	N/A	30	03-NOV-17
Nitrite-N		<2.0	<2.0	RPD-NA	mg/L	N/A	30	03-NOV-17
WG2656615-2 LCS								
Nitrate-N			100.7		%		70-130	03-NOV-17
Nitrite-N			96.6		%		70-130	03-NOV-17
WG2656615-1 MB								
Nitrate-N			<2.0		mg/L		2	03-NOV-17
Nitrite-N			<2.0		mg/L		2	03-NOV-17
WG2656615-4 MS		**L2014744-1**						
Nitrate-N			98.8		%		50-150	03-NOV-17
Nitrite-N			95.3		%		50-150	03-NOV-17
PCB-TCLP-WT	**Waste**							

Quality Control Report

Workorder: L2015415 Report Date: 07-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PCB-TCLP-WT	**Waste**							
Batch R3873496								
WG2655318-4 DUP		**WG2655318-3**						
Aroclor 1242		<0.00020	<0.00020	RPD-NA	mg/L	N/A	50	03-NOV-17
Aroclor 1248		<0.00020	<0.00020	RPD-NA	mg/L	N/A	50	03-NOV-17
Aroclor 1254		<0.00020	<0.00020	RPD-NA	mg/L	N/A	50	03-NOV-17
Aroclor 1260		<0.00020	<0.00020	RPD-NA	mg/L	N/A	50	03-NOV-17
WG2655318-2 LCS								
Aroclor 1242			70.8		%		65-130	03-NOV-17
Aroclor 1248			82.3		%		65-130	03-NOV-17
Aroclor 1254			110.8		%		65-130	03-NOV-17
Aroclor 1260			119.7		%		65-130	03-NOV-17
WG2655318-1 MB								
Aroclor 1242			<0.00020		mg/L		0.0002	03-NOV-17
Aroclor 1248			<0.00020		mg/L		0.0002	03-NOV-17
Aroclor 1254			<0.00020		mg/L		0.0002	03-NOV-17
Aroclor 1260			<0.00020		mg/L		0.0002	03-NOV-17
Surrogate: 2-Fluorobiphenyl			108.7		%		40-160	03-NOV-17
WG2655318-5 MS		**WG2655318-3**						
Aroclor 1242			65.9		%		50-150	03-NOV-17
Aroclor 1254			103.6		%		50-150	03-NOV-17
Aroclor 1260			109.9		%		50-150	03-NOV-17
VOC-TCLP-WT	**Waste**							
Batch R3874744								
WG2654799-4 DUP		**WG2654799-3**						
1,1-Dichloroethylene		<0.025	<0.025	RPD-NA	mg/L	N/A	50	06-NOV-17
1,2-Dichlorobenzene		<0.025	<0.025	RPD-NA	mg/L	N/A	50	06-NOV-17
1,2-Dichloroethane		<0.025	<0.025	RPD-NA	mg/L	N/A	50	06-NOV-17
1,4-Dichlorobenzene		<0.025	<0.025	RPD-NA	mg/L	N/A	50	06-NOV-17
Benzene		<0.025	<0.025	RPD-NA	mg/L	N/A	50	06-NOV-17
Carbon tetrachloride		<0.025	<0.025	RPD-NA	mg/L	N/A	50	06-NOV-17
Chlorobenzene		<0.025	<0.025	RPD-NA	mg/L	N/A	50	06-NOV-17
Chloroform		<0.10	<0.10	RPD-NA	mg/L	N/A	50	06-NOV-17
Dichloromethane		<0.50	<0.50	RPD-NA	mg/L	N/A	50	06-NOV-17
Methyl Ethyl Ketone		<1.0	<1.0	RPD-NA	mg/L	N/A	50	06-NOV-17
Tetrachloroethylene		<0.025	<0.025	RPD-NA	mg/L	N/A	50	06-NOV-17
Trichloroethylene		<0.025	<0.025	RPD-NA	mg/L	N/A	50	06-NOV-17

Quality Control Report

Workorder: L2015415 Report Date: 07-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-TCLP-WT	**Waste**							
Batch R3874744								
WG2654799-4 DUP		**WG2654799-3**						
Vinyl chloride		<0.050	<0.050	RPD-NA	mg/L	N/A	50	06-NOV-17
WG2654799-1 LCS								
1,1-Dichloroethylene			88.9		%		70-130	06-NOV-17
1,2-Dichlorobenzene			100.8		%		70-130	06-NOV-17
1,2-Dichloroethane			111.2		%		70-130	06-NOV-17
1,4-Dichlorobenzene			98.8		%		70-130	06-NOV-17
Benzene			101.6		%		70-130	06-NOV-17
Carbon tetrachloride			95.5		%		60-140	06-NOV-17
Chlorobenzene			101.6		%		70-130	06-NOV-17
Chloroform			102.4		%		70-130	06-NOV-17
Dichloromethane			106.1		%		70-130	06-NOV-17
Methyl Ethyl Ketone			120.7		%		50-150	06-NOV-17
Tetrachloroethylene			92.7		%		70-130	06-NOV-17
Trichloroethylene			99.1		%		70-130	06-NOV-17
Vinyl chloride			98.2		%		60-130	06-NOV-17
WG2654799-2 MB								
1,1-Dichloroethylene			<0.025		mg/L		0.025	06-NOV-17
1,2-Dichlorobenzene			<0.025		mg/L		0.025	06-NOV-17
1,2-Dichloroethane			<0.025		mg/L		0.025	06-NOV-17
1,4-Dichlorobenzene			<0.025		mg/L		0.025	06-NOV-17
Benzene			<0.025		mg/L		0.025	06-NOV-17
Carbon tetrachloride			<0.025		mg/L		0.025	06-NOV-17
Chlorobenzene			<0.025		mg/L		0.025	06-NOV-17
Chloroform			<0.10		mg/L		0.1	06-NOV-17
Dichloromethane			<0.50		mg/L		0.5	06-NOV-17
Methyl Ethyl Ketone			<1.0		mg/L		1	06-NOV-17
Tetrachloroethylene			<0.025		mg/L		0.025	06-NOV-17
Trichloroethylene			<0.025		mg/L		0.025	06-NOV-17
Vinyl chloride			<0.050		mg/L		0.05	06-NOV-17
Surrogate: 1,4-Difluorobenzene			99.0		%		70-130	06-NOV-17
Surrogate: 4-Bromofluorobenzene			98.1		%		70-130	06-NOV-17
WG2654799-5 MS		**WG2654799-3**						
1,1-Dichloroethylene			90.5		%		50-140	06-NOV-17
1,2-Dichlorobenzene			100.8		%		50-140	06-NOV-17

Quality Control Report

Workorder: L2015415 Report Date: 07-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-TCLP-WT	**Waste**							
Batch R3874744								
WG2654799-5 MS		**WG2654799-3**						
1,2-Dichloroethane			109.6		%		50-140	06-NOV-17
1,4-Dichlorobenzene			97.6		%		50-140	06-NOV-17
Benzene			102.9		%		50-140	06-NOV-17
Carbon tetrachloride			98.0		%		50-140	06-NOV-17
Chlorobenzene			101.4		%		50-140	06-NOV-17
Chloroform			103.7		%		50-140	06-NOV-17
Dichloromethane			106.1		%		50-140	06-NOV-17
Methyl Ethyl Ketone			118.6		%		50-140	06-NOV-17
Tetrachloroethylene			92.8		%		50-140	06-NOV-17
Trichloroethylene			99.3		%		50-140	06-NOV-17
Vinyl chloride			98.8		%		50-140	06-NOV-17

Quality Control Report

Workorder: L2015415 Report Date: 07-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9
Contact: MICHAEL SHIRY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

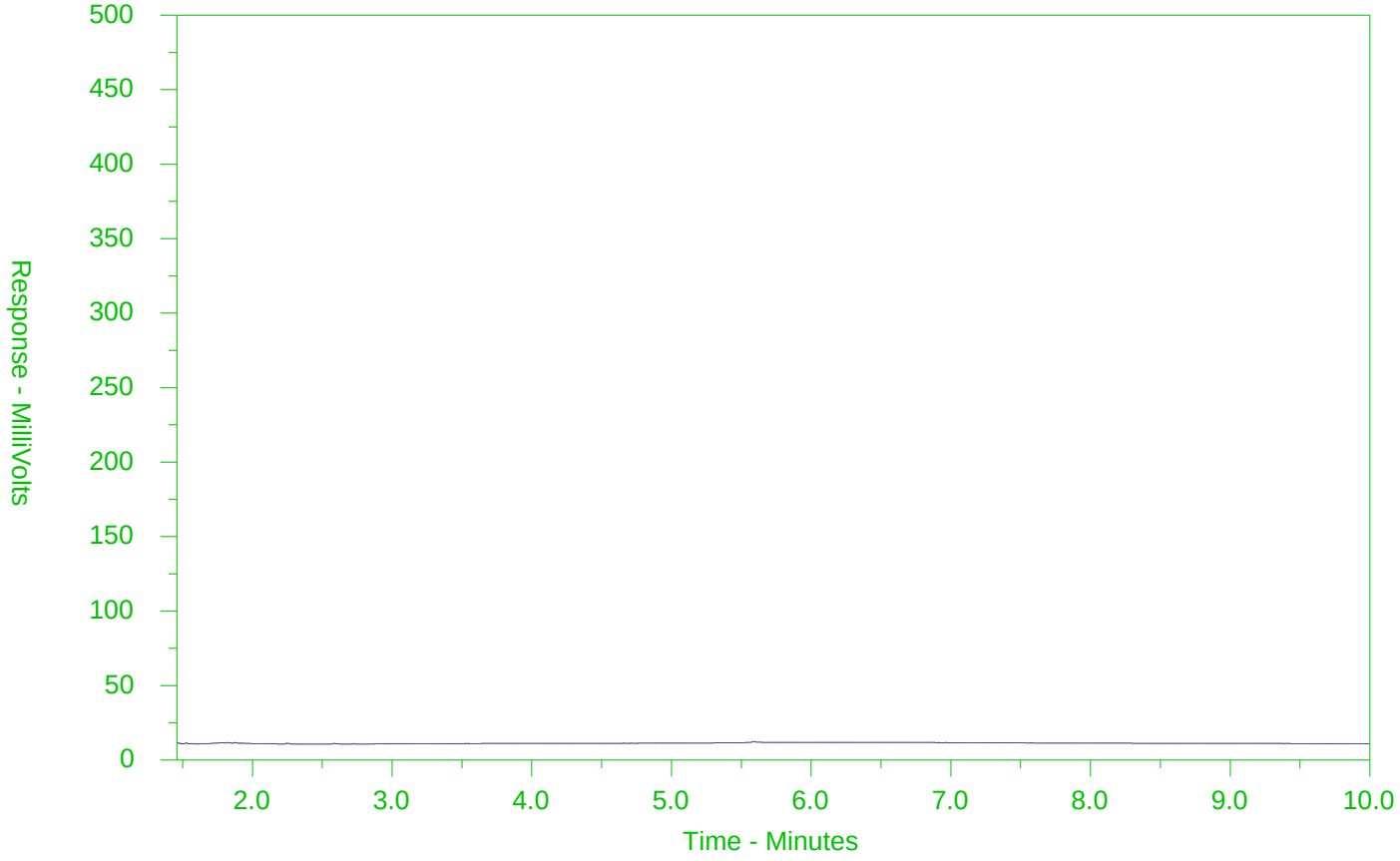
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2015415-1
Client Sample ID: DRILL TCLP



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2015415-COFC

COC Number: 15 - 613139

Page 1 of 1

Report To	Contact and company name below will appear on the final report	Report Form	Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply
Company:	CHZM	Select Report Format: ☒ PDF ☒ EXCEL ☒ EDD (DIGITAL)	Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply
Contact:	M. Shiny	Quality Control (QC) Report with Report ☒ YES ☐ NO	PRIORITY (Business Days): 4 day [P4] ☐; 3 day [P3] ☐; 2 day [P2] ☐
Phone:		☒ Compare Results to Criteria on Report - provide details below if box checked	EMERGENCY: 1 Business day [E1] ☐; Same Day, Weekend or Statutory holiday [E0] ☐
	Company address below will appear on the final report	Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX	
Street:		Email 1 or Fax: Dark, Michael	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
City/Province:		Email 2: Kynic Tania	For tests that can not be performed according to the service level selected, you will be contacted.
Postal Code:		Email 3:	

Invoice To		Invoice Distribution	
	Same as Report To ☐ YES ☒ NO	Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX	
	Copy of Invoice with Report ☐ YES ☒ NO	Email 1 or Fax	
Company:		Email 2	
Contact:	Acct Payable		

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:	Q62156	AFE/Cost Center:	PO#:
Job #:	694757	Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (lab use only):	L2015415	ALS Contact: Mathy	Sampler: M. Shiny

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	TCLP Metals + Convert	TCLP PHC & UCCS	TCLP BaP	TCLP PCBs	Ignitability	Number of Containers
	Drill TCLP	27-Oct-17	830	Soil	X	X	X	X	X	5

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)	SAMPLE CONDITION AS RECEIVED (lab use only)
Are samples taken from a Regulated DW System? ☐ YES ☐ NO	O. Reg 347 Schd 4	Frozen ☐ SIF Observations Yes ☐ No ☐
Are samples for human drinking water use? ☐ YES ☐ NO		Ice Packs ☐ Ice Cubes ☒ Custody seal intact Yes ☒ No ☐
		Cooling Initiated ☐
		INITIAL COOLER TEMPERATURES °C: -0.4 FINAL COOLER TEMPERATURES °C: 0.1

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: M. Shiny	Date: 2017/10/30	Time: 545	Received by:	Date: Oct 30/17	Time: 900	Received by:	Date: 30-OCT-17	Time: 1500

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

MOVEMENT DOCUMENT / MANIFEST
DOCUMENT DE MOUVEMENT / MANIFESTE

This Movement document/manifest conforms to all federal and provincial environmental legislation.
Ce document de mouvement/manifeste est conforme aux législations fédérale et provinciale sur l'environnement.

CA63621-0

Movement Document / Manifest Reference No.
N° de référence du document de mouvement/manifeste

A Generator / consignor / Producteur / expéditeur

Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: ON3323094

Company name / Nom de l'entreprise: City of Guelph Engineering

Mailing address / Adresse postale: 1 Carden Street | City / Ville: Guelph | Province: ON | Postal code / Code postal: N1H 3A1

E-mail / Courrier électronique: ATTN L Prasoon Adhikari | Tel. No. / N° de tél.: 2899711779

Shipping site address / Adresse du lieu de l'expédition: 200 Beverly Street

City / Ville: Guelph | Province: ON | Postal code / Code postal: N1E 3C4

Intended Receiver / consignee / Réceptionnaire / destinataire prévu: Aevitas Inc (WWT)

Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: A100212

Mailing address / Adresse postale: 36 Adams Boulevard | City / Ville: Brantford | Province: ON | Postal code / Code postal: N3S 7V2

E-mail / Courrier électronique | Tel. No. / N° de tél.: (519) 752-7846

Receiving site address / Adresse du lieu de destination: 36 Adams Boulevard

City / Ville: Brantford | Province: ON | Postal code / Code postal: N3S 7V2

B Carrier / Transporteur

Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: 3206-6APJHL

Company name / Nom de l'entreprise: Tesla Environmental Services Inc

Mailing address / Adresse postale: 1740 Brampton Street | City / Ville: Hamilton | Province: ON | Postal code / Code postal: L8H 3S1

E-mail / Courrier électronique | Tel. No. / N° de tél.: 5197538888

Vehicle / Véhicule	Registration No. / N° d'immatriculation	Prov.
Trailer - Rail car No. 1 / 1re remorque - wagon	AL58069	ON
Trailer - Rail car No. 2 / 2e remorque - wagon		

Port of entry / Point d'entrée: International use only | Port of exit / Point de sortie: International use only

Carrier Certification: I certify that I have received waste or recyclable material from the generator / consignor for delivery to the receiver / consignee as set out in Part A and that the information contained in Part B is complete and correct.
Attestation du transporteur: J'atteste avoir reçu les déchets ou matières recyclables du producteur / expéditeur en vue de leur livraison au réceptionnaire / destinataire, tels qu'ils figurent à la partie A et que les renseignements inscrits à la partie B sont exacts et complets.

Name of authorized person (print) / Nom de l'agent autorisé (caractères d'imprimerie): Jim Lomax | Tel. No. / N° de tél.: 2896842752

Year / Année: 18 | Month / Mois: 08 | Day / Jour: 30 | Signature

C Receiver / consignee / Réceptionnaire / destinataire

Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial

Receiver / consignee information same as in Part A
Les renseignements du réceptionnaire / destinataire sont les mêmes qu'à la Partie A
☐ Yes / Oui ☐ No, complete the box below / Non, remplir la case ci-dessous

Company name / Nom de l'entreprise

Mailing address / Adresse postale

City / Ville | Province | Postal code / Code postal

E-mail / Courrier électronique | Tel. No. / N° de tél. ( )

Receiving site address / Adresse du lieu de destination

Date received / Date de réception: Year / Année | Month / Mois | Day / Jour | Time / Heure ☐ A.M. ☐ P.M.

If waste or recyclable material to be transferred, specify intended company name/ Si les dechets ou matières recyclables doivent être transférés, préciser le nom du destinataire

Registration No./Provincial ID No. / N° d'immatriculation/d'id provincial

Prov. code / Code prov.	Shipping name / Appellation réglementaire	Class / Classe	Sub. class(es) / Classe(s) sub.	UN No. / N° NU	Packing / risk gr. / Gr. d'emballage/ de risque	Quantity shipped / Quantité expédiée	Units / L or / ou Kg / Unités	Packaging/Contenant No. / N°	Codes Int – ext.	Phys. state / État phys.
(i) 146 L	OTHER SPECIFIED INORGANIC LIQUID	N/R	N/R	N/R	N/R	8,200	L	01	03	L
(ii)										
(iii)										
(iv)										

Quantity received / Quantité reçue	Units / L or / ou kg / Unités	Comments / Commentaires	Handling Code / Code de manutention	Shipment / Envoi: Accepted / Accepté	Shipment / Envoi: Refused / Refusé	Decont.: Pack. Cont.	Decont.: Veh. Véh.

Notice No. / N° de notification	Notice Line No / N° de ligne de la notification	Shipment / Envoi	Of / De	D or R code / Code D ou R	C code / Code C	Basel Annex VIII or OECD Code / Annexe VIII de Bâle ou Code OCDE	H code / Code H	Y code / Code Y	National code in country of / Code du pays: Export / Exportation	Import / Importation	Customs code(s) / Code(s) de douanes
(i)											
(ii)											
(iii)											
(iv)											

International use only

If handling code "Other" (specify) / Si code de manutention « autre » (spécifier)

Receiver / consignee certification: I certify that the information contained in Part C is correct and complete.
Attestation du réceptionnaire / destinataire: J'atteste que tous les renseignements à la partie C sont exacts et complets.

Name of authorized person (print) / Nom de l'agent autorisé (caractère d'imprimerie)

Signature | Tel. No. / N° de tél. ( )

Special handling / Manutention spéciale: ☐ Attached / Ci-joint ☑ As follows / Ci-contre
24 HR# 1-866-663-6697

Generator / consignor certification: I certify that the information contained in Part A is correct and complete. I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.
Attestation du producteur / expéditeur: J'atteste que tous les renseignements à la partie A sont exacts et complets. Je déclare que le contenu de ce chargement est décrit ci-dessus de façon complète et exacte par la désignation officielle de transport et qu'il est convenablement classé, emballé, marqué, étiqueté, muni de plaques-étiquettes et à tous égards bien conditionné pour être transporté conformément aux réglementations internationales et nationales applicables.

Name of authorized person (print) / Nom de l'agent autorisé (caractère d'imprimerie): CHZM as agent for City of Guelph owner | Tel. No. / N° de tél.: 2899711779

Signature

Date shipped / Date d'expédition: Year / Année: 18 | Month / Mois: 08 | Day / Jour: 30 | Time / Heure ☑ A.M. ☐ P.M. 09:00

Scheduled arrival date / Date d'arrivée prévue: Year / Année: 18 | Month / Mois: 08 | Day / Jour: 30

Instructions on reverse
Instructions au verso

Copy / Copie 1 (white / blanche

MOVEMENT DOCUMENT / MANIFEST
DOCUMENT DE MOUVEMENT / MANIFESTE

This Movement document/manifest conforms to all federal and provincial environmental legislation.
Ce document de mouvement/manifeste est conforme aux législations fédérale et provinciale sur l'environnement.

SA23209-8

Movement Document / Manifest Reference No.
N° de référence du document de mouvement/manifeste

A Generator / consignor / Producteur / expéditeur — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: ON3323094

Company name / Nom de l'entreprise: CITY OF GUELPH ENGINEERING

Mailing address / Adresse postale: | City / Ville: | Province: | Postal code / Code postal:

E-mail / Courrier électronique: | Tel. No. / N° de tél.: ( )

Shipping site address / Adresse du lieu de l'expédition: 200 BEVERLY STREET

City / Ville: GUELPH | Province: ON | Postal code / Code postal: N1E 3C4

Intended Receiver / consignee / Réceptionnaire / destinataire prévu: AGITAS INC. | Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: A100212

Mailing address / Adresse postale: 36 ADAMS BLVD | City / Ville: BRANTFORD | Province: ON | Postal code / Code postal: N3S 7N2

E-mail / Courrier électronique: | Tel. No. / N° de tél.: 519 752-7646

Receiving site address / Adresse du lieu de destination: 36 ADAMS BLVD

City / Ville: BRANTFORD | Province: ON | Postal code / Code postal: N3S 7N2

B Carrier / Transporteur — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: 3206-6AP JHL

Company name / Nom de l'entreprise: TESLA ENVIRONMENTAL SERVICES

Mailing address / Adresse postale: 174 BRAMPTON ST | City / Ville: HAMILTON | Province: ON | Postal code / Code postal: L8H 3S1

E-mail / Courrier électronique: | Tel. No. / N° de tél.: 905 679-2597

Vehicle / Véhicule	Registration No. / N° d'immatriculation	Prov.
Trailer - Rail car No. 1 / 1er remorque - wagon	ARJ76399	ON
Trailer - Rail car No. 2 / 2e remorque - wagon		

Port of entry / Point d'entrée (International use only) | Port of exit / Point de sortie (International use only)

Carrier Certification: *I certify that I have received waste or recyclable material from the generator / consignor for delivery to the receiver / consignee as set out in Part A and that the information contained in Part B is complete and correct.*
Attestation du transporteur : J'atteste avoir reçu les déchets ou matières recyclables du producteur / expéditeur en vue de leur livraison au réceptionnaire / destinataire, tels qu'ils figurent à la partie A et que les renseignements inscrits à la partie B sont exacts et complets.

Name of authorized person (print) / Nom de l'agent autorisé (caractère d'imprimerie): PAUL DONNE SIGNE | Tel. No. / N° de tél.: 905 679-2597

Year / Année: 18 | Month / Mois: 07 | Day / Jour: 30 | Signature:

Reference Nos. of other movement document(s)/manifest(s) used / N° de référence des autres documents de mouvement/manifestes utilisés

C Receiver / consignee / Réceptionnaire / destinataire — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial

Receiver / consignee information same as in Part A / Les renseignements du réceptionnaire / destinataire sont les mêmes qu'à la Partie A: ☐ Yes / Oui ☐ No, complete the box below / Non, remplir la case ci-dessous

Company name / Nom de l'entreprise

Mailing address / Adresse postale

City / Ville | Province | Postal code / Code postal

E-mail / Courrier électronique | Tel. No. / N° de tél. ( )

Receiving site address / Adresse du lieu de destination

Date received / Date de réception: Year / Année | Month / Mois | Day / Jour | Time / Heure ☐ A.M. ☐ P.M.

If waste or recyclable material to be transferred, specify intended company name/ Si les dechets ou matières recyclables doivent être transférés, préciser le nom du destinataire | Registration No./Provincial ID No. / N° d'immatriculation/d'id provincial

	Prov. code / Code prov.	Shipping name / Appellation réglementaire	Class / Classe / Sub. class(es) / Classe(s) sub.	UN No. / N° NU	Packing / risk gr. / Gr. d'emballage / de risque	Quantity shipped / Quantité expédiée	Units L or / ou Kg / Unités	Packaging/Contenant No. / N°	Codes Int – ext.	Phys. state / État phys.
(i)	146 L	WASTE WATER	N/A	N/A	N/A	16,191	L	01	03	L
(ii)										
(iii)										
(iv)										

Quantity received / Quantité reçue	Units L or / ou kg / Unités	Comments / Commentaires	Handling Code / Code de manutention	Shipment / Envoi Accepted / Accepté	Shipment / Envoi Refused / Refusé	Decont. Pack. / Cont.	Decont. Veh. / Véh.

Notice No. / N° de notification	Notice Line No / N° de ligne de la notification	Shipment / Envoi	Of / De	D or R code / Code D ou R	C code / Code C	Basel Annex VIII or OECD Code / Annexe VIII de Bâle ou Code OCDE	H code / Code H	Y code / Code Y	National code in country of / Code du pays: Export / Exportation	Import / Importation	Customs code(s) / Code(s) de douanes
(i)											
(ii)											
(iii)											
(iv)											

International use only

If handling code "Other" (specify) / Si code de manutention « autre » (spécifier)

Receiver / consignee certification: *I certify that the information contained in Part C is correct and complete. / Attestation du réceptionnaire / destinataire : J'atteste que tous les renseignements à la partie C sont exacts et complets.*

Name of authorized person (print) / Nom de l'agent autorisé (caractère d'imprimerie)

Signature | Tel. No. / N° de tél. ( )

Special handling / Manutention spéciale: ☐ Attached / Ci-joint: ☒ As follows / Ci-contre: 24 HR. RESPONSE 1-866-663-6697

Generator / consignor certification: *I certify that the information contained in Part A is correct and complete. I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.*
Attestation du producteur / expéditeur: *J'atteste que tous les renseignements à la partie A sont exacts et complets. Je déclare que le contenu de ce chargement est décrit ci-dessus de façon complète et exacte par la désignation officielle de transport et qu'il est convenablement classé, emballé, marqué, étiqueté, muni de plaques-étiquettes et à tous égards bien conditionné pour être transporté*

Name of authorized person (print) / Nom de l'agent autorisé (caractère d'imprimerie): CHRIS HILL Canada as agent for owner City of Guelph | Signature | Tel. No. / N° de tél.: 519 519-3500

Date shipped / Date d'expédition: Year / Année: 18 | Month / Mois: 07 | Day / Jour: 30 | Time / Heure: ☐ A.M. ☒ P.M. 15:15 | Scheduled arrival date / Date d'arrivée prévue: Year / Année | Month / Mois: 07 | Day / Jour: 30

Retained by Consignor

Copy / Copie 2 (green / verte)

Appendix F
Hydrogeological Investigation Measures

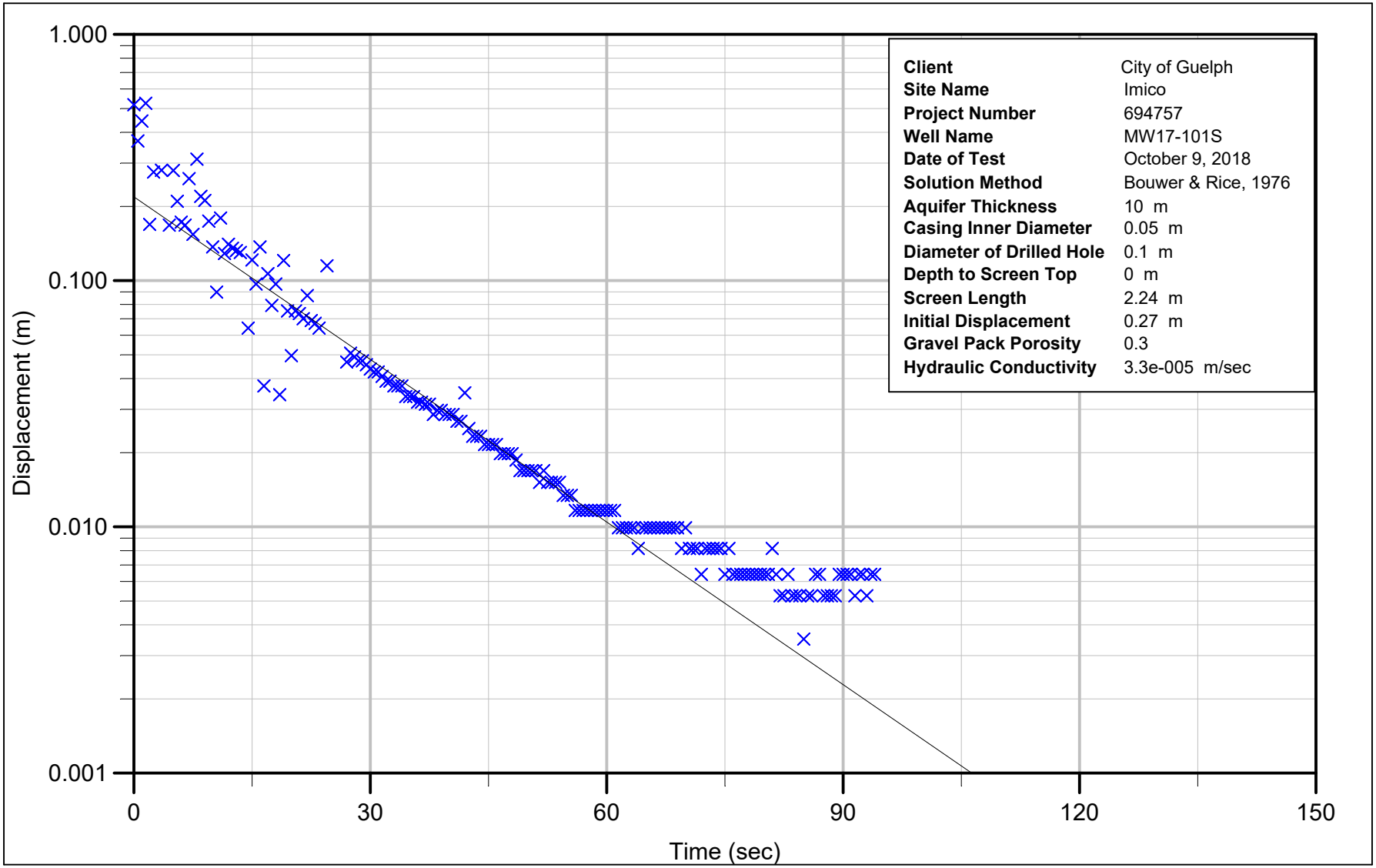


Figure F-1a - MW17-101S
Bouwer & Rice - Falling Head Test 1
Imico
City of Guelph
Guelph, Ontario

JACOBS

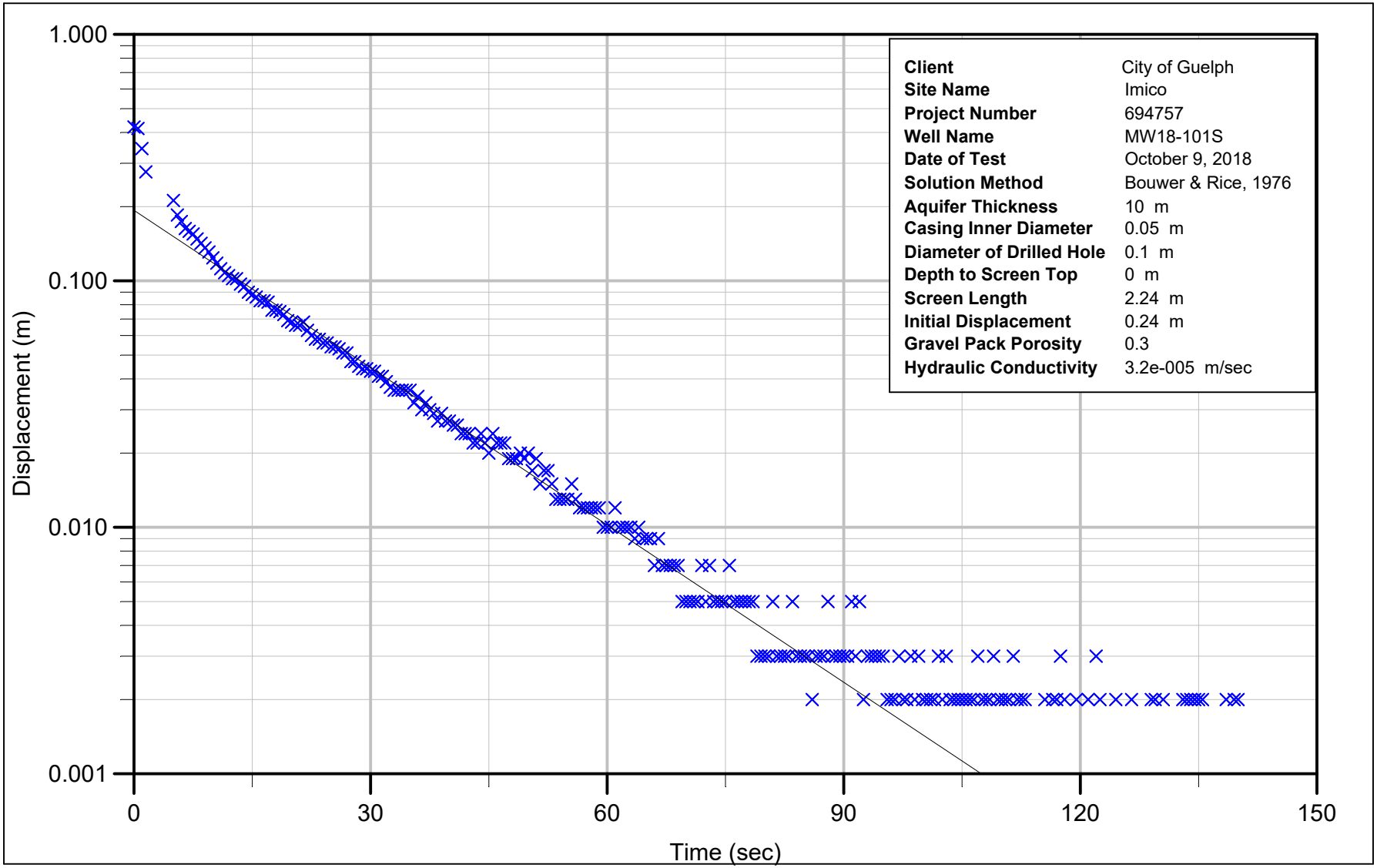


Figure F-1b - MW17-101S
Bouwer & Rice - Falling Head Test 2
Imico
City of Guelph
Guelph, Ontario

JACOBS

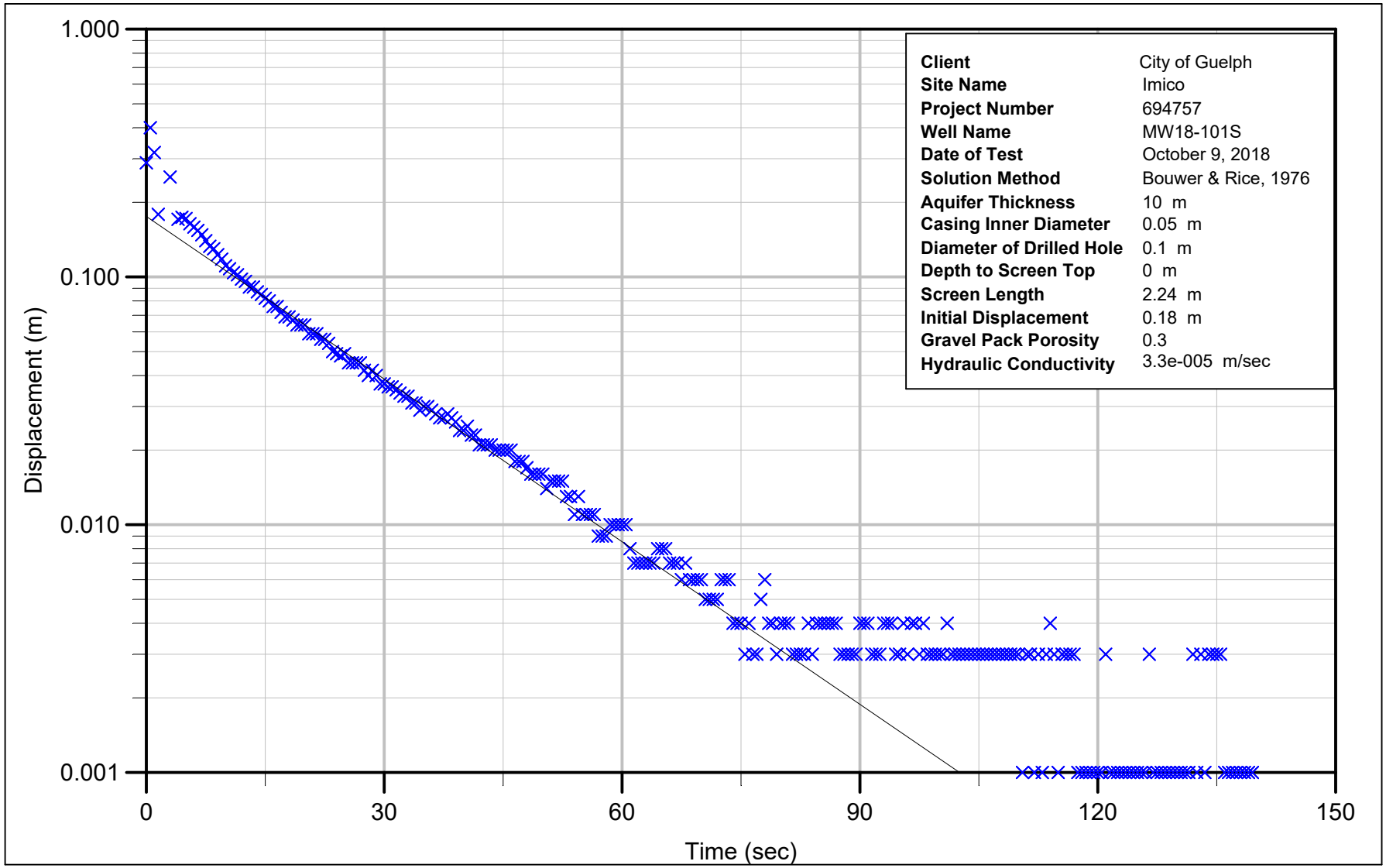


Figure F-1c - MW17-101S
Bouwer & Rice - Falling Head Test 3
Imico
City of Guelph
Guelph, Ontario

JACOBS

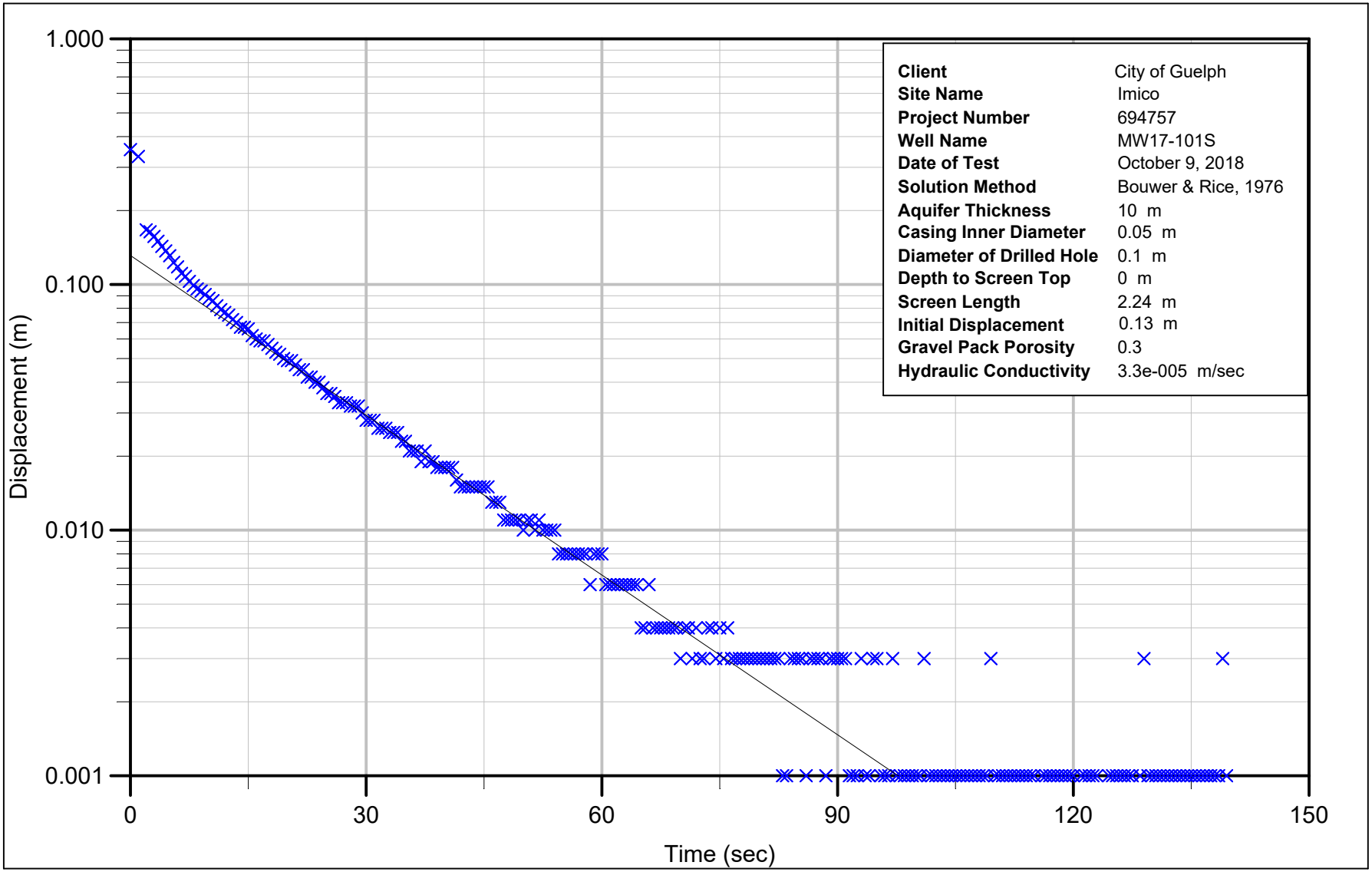


Figure F-1d - MW17-101S
Bouwer & Rice - Falling Head Test 4
Imico
City of Guelph
Guelph, Ontario

JACOBS

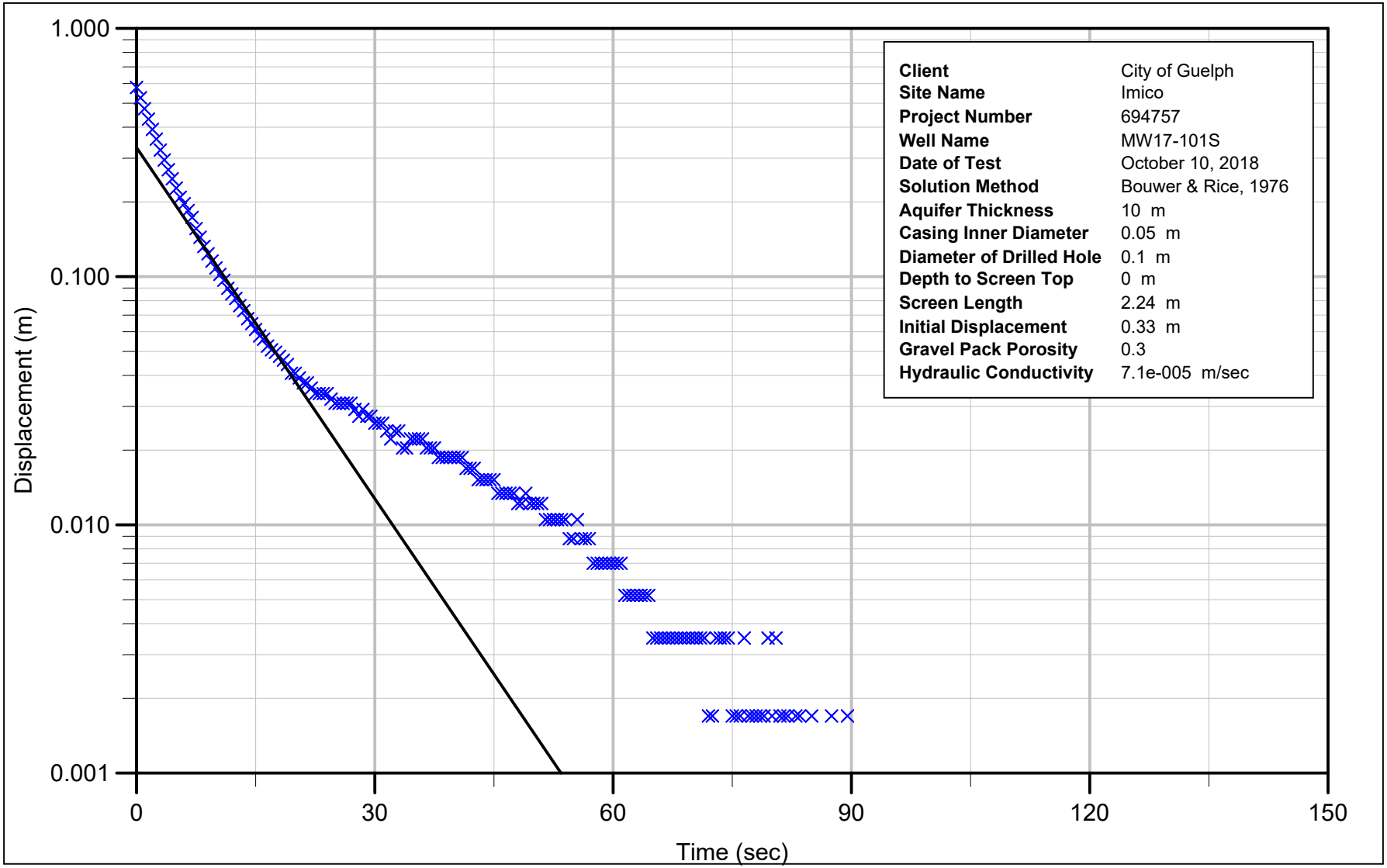


Figure F-1e - MW17-101S
Bouwer & Rice - Rising Head Test 1
Imico
City of Guelph
Guelph, Ontario

JACOBS

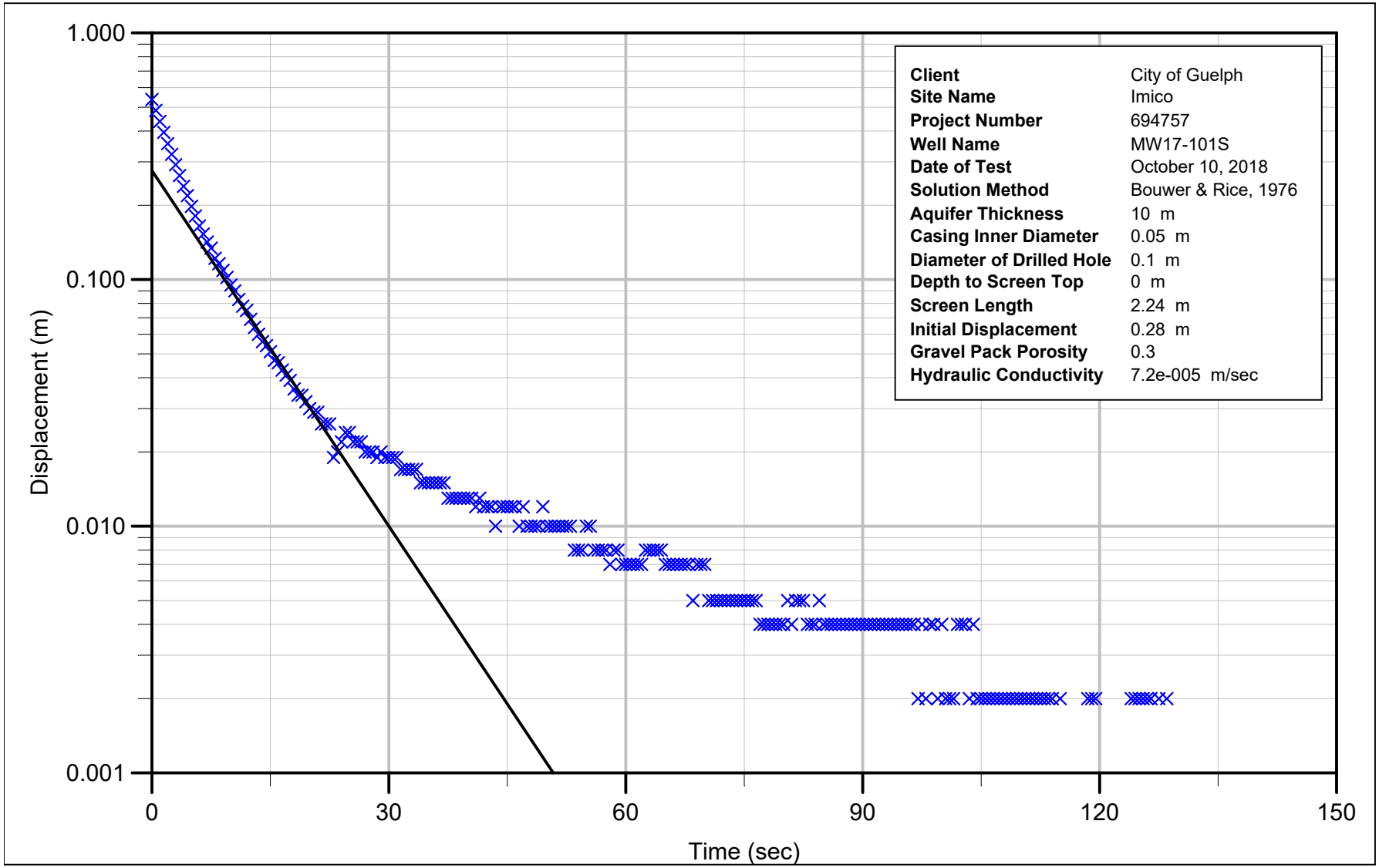


Figure F-1f - MW17-101S
Bouwer & Rice - Rising Head Test 2
Imico
City of Guelph
Guelph, Ontario

JACOBS

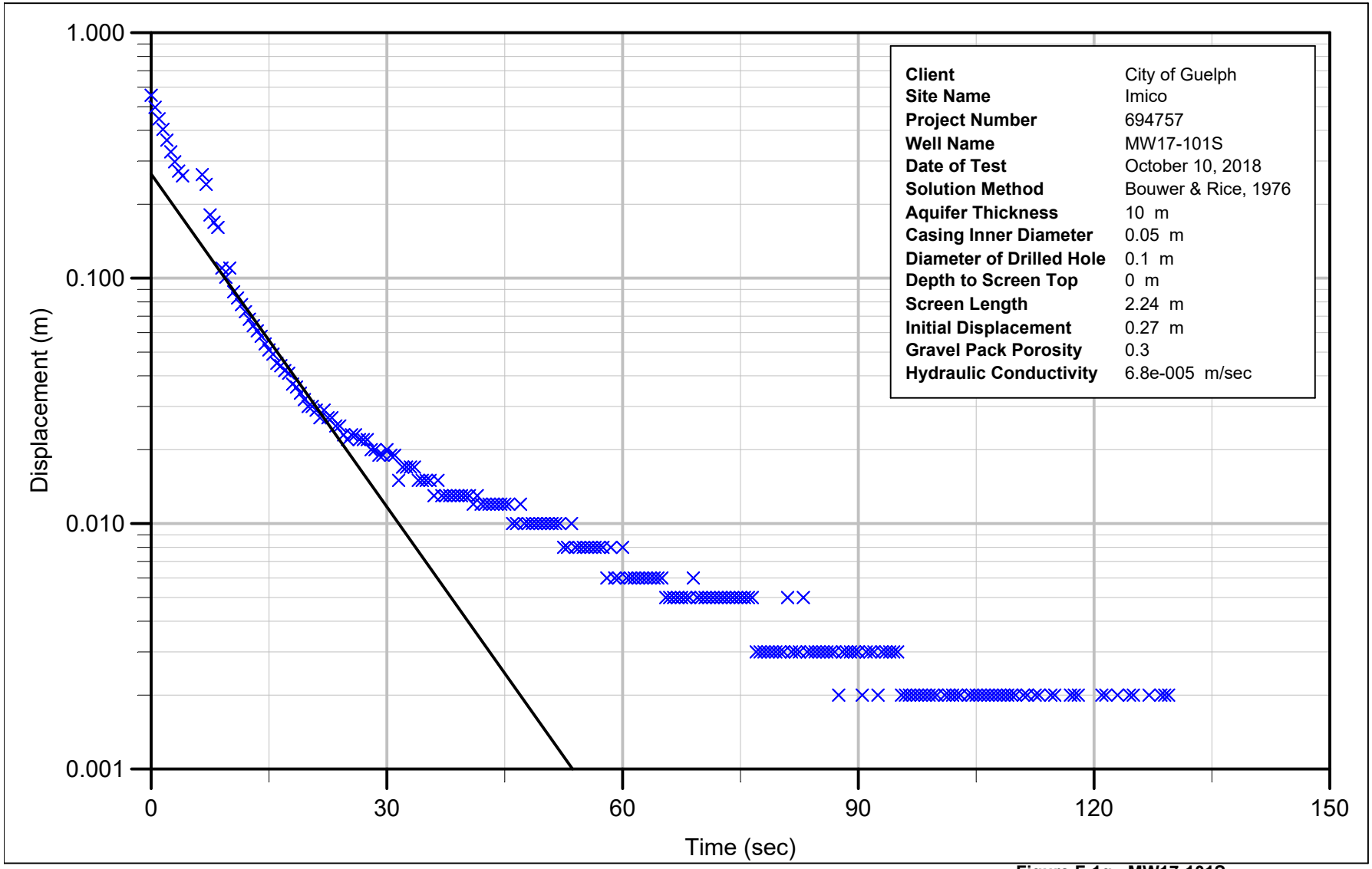


Figure F-1g - MW17-101S
Bouwer & Rice - Rising Head Test 3
Imico
City of Guelph
Guelph, Ontario

JACOBS

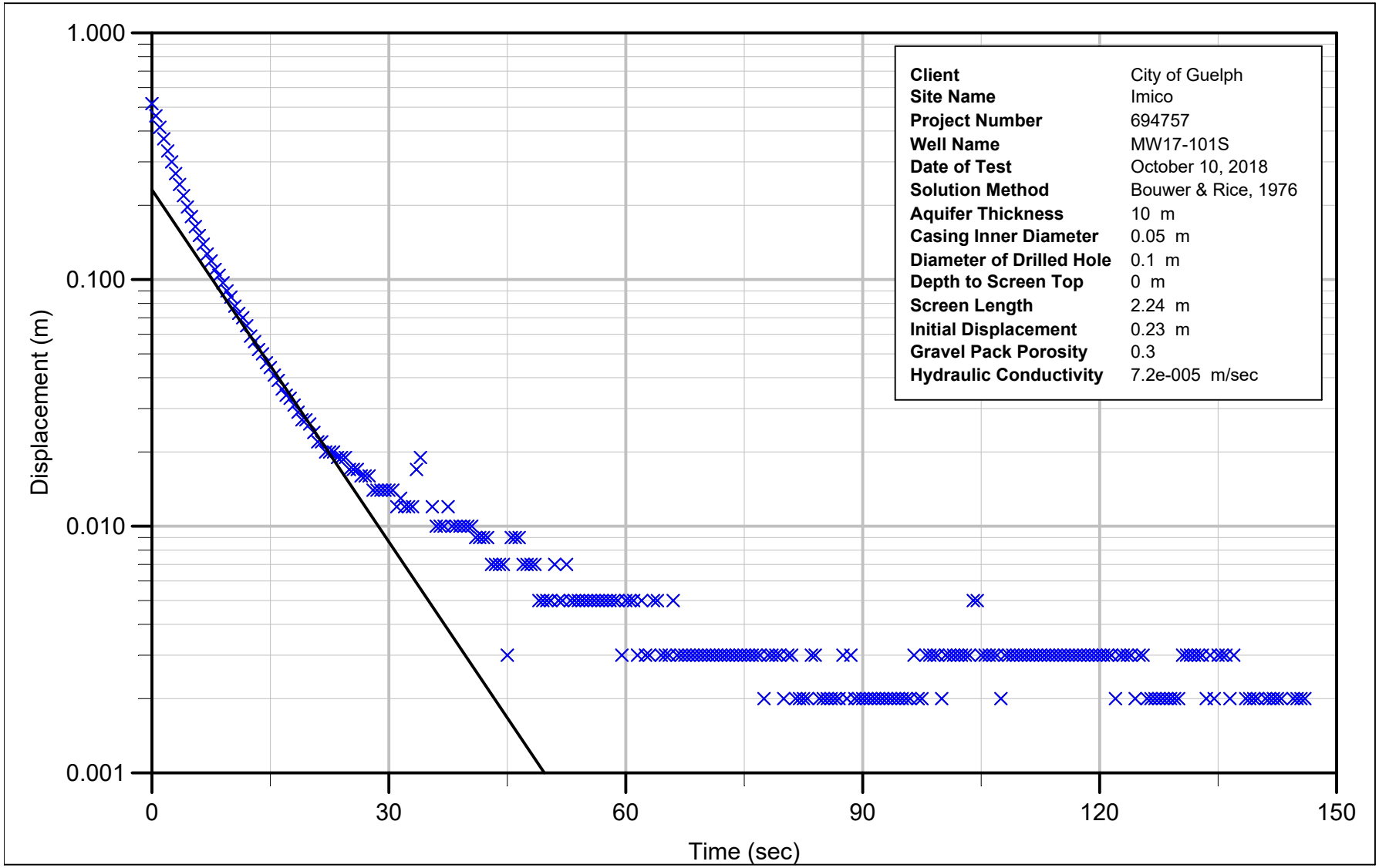


Figure F-1h - MW17-101S
Bouwer & Rice - Rising Head Test 4
Imico
City of Guelph
Guelph, Ontario

JACOBS

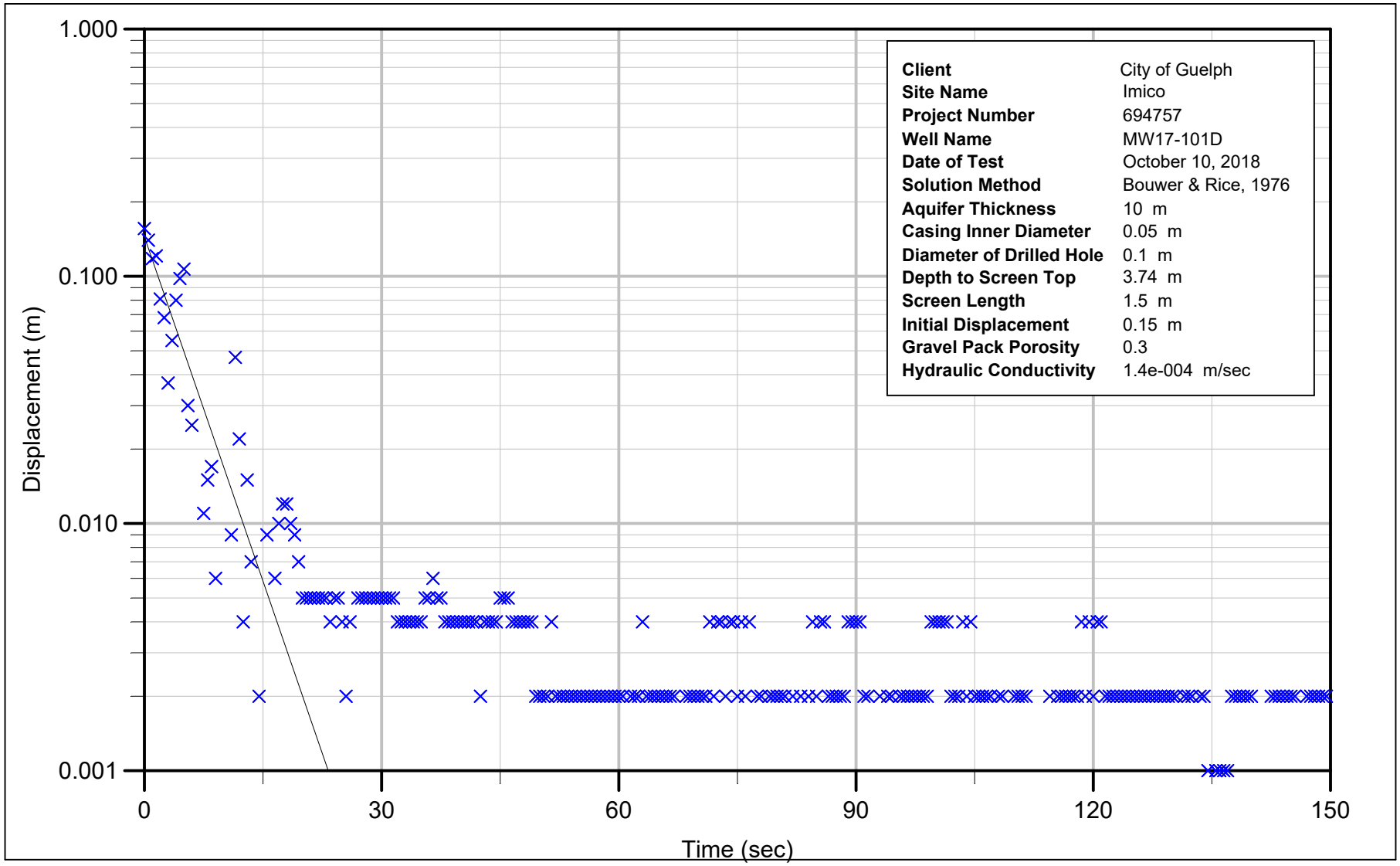


Figure F-2a - MW17-101D
Bouwer & Rice - Falling Head Test 1
Imico
City of Guelph
Guelph, Ontario

JACOBS

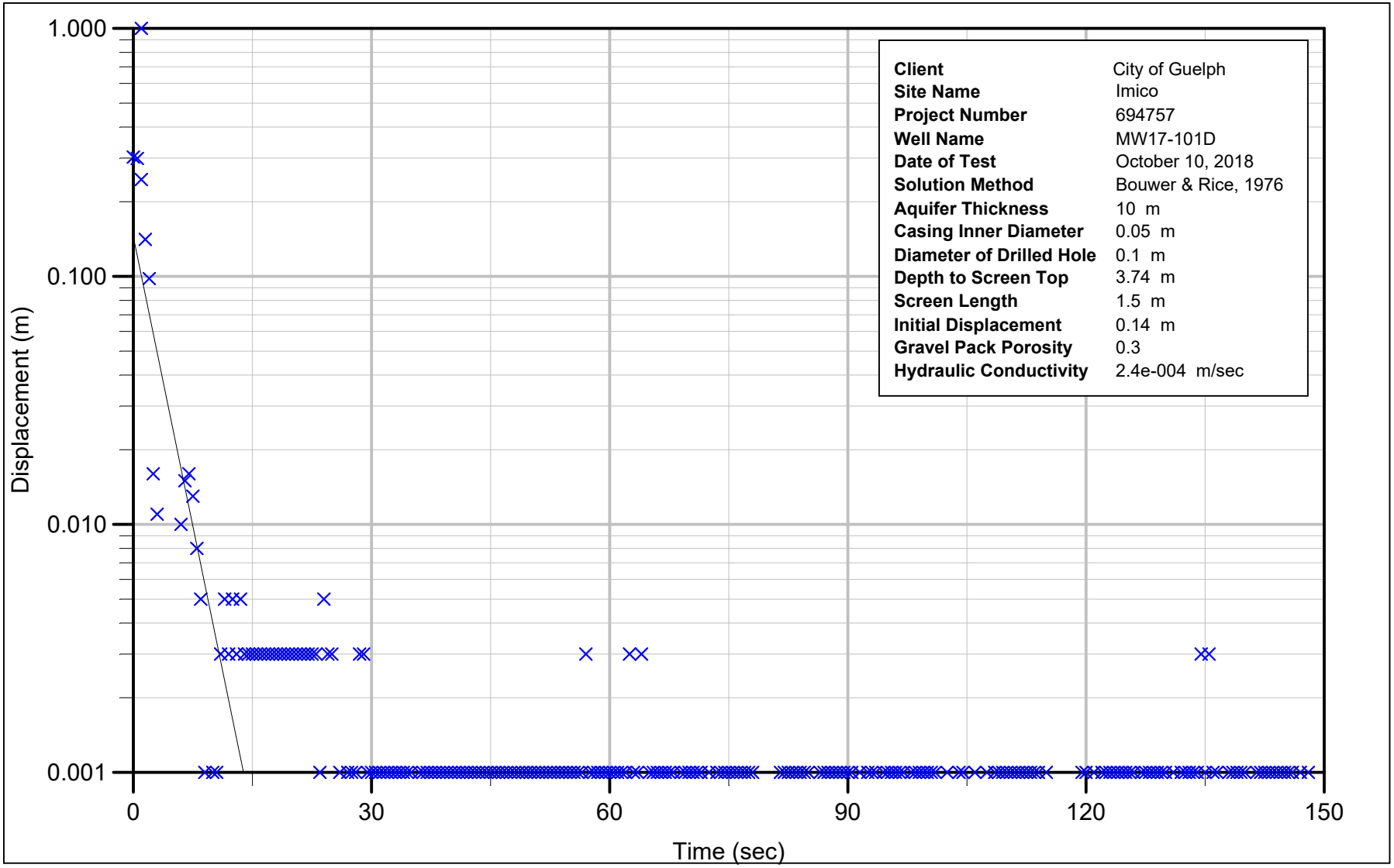


Figure F-2b - MW17-101D
Bouwer & Rice - Falling Head Test 2
Imico
City of Guelph
Guelph, Ontario

JACOBS

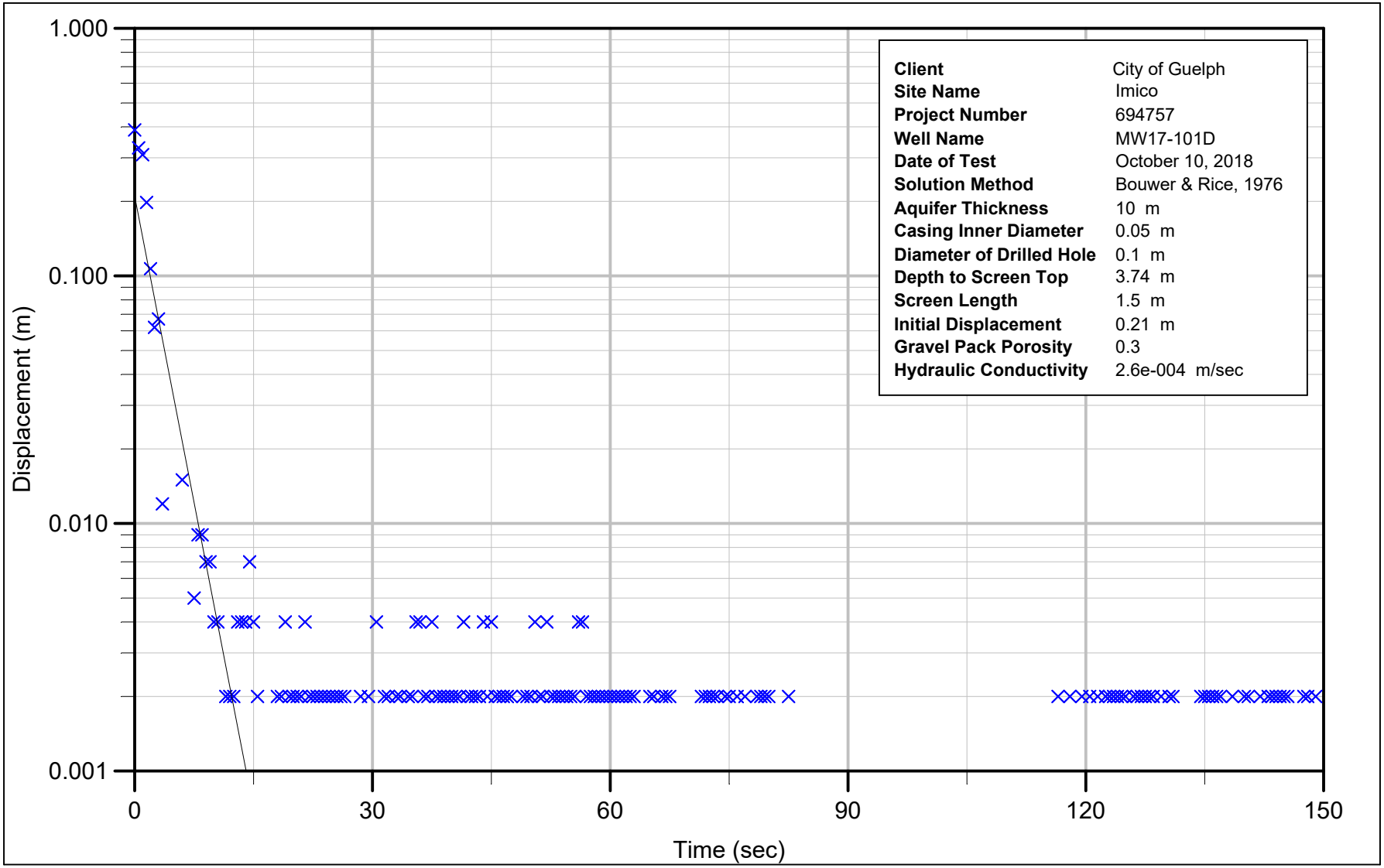


Figure F-2c - MW17-101D
Bouwer & Rice - Falling Head Test 3
Imico
City of Guelph
Guelph, Ontario

JACOBS

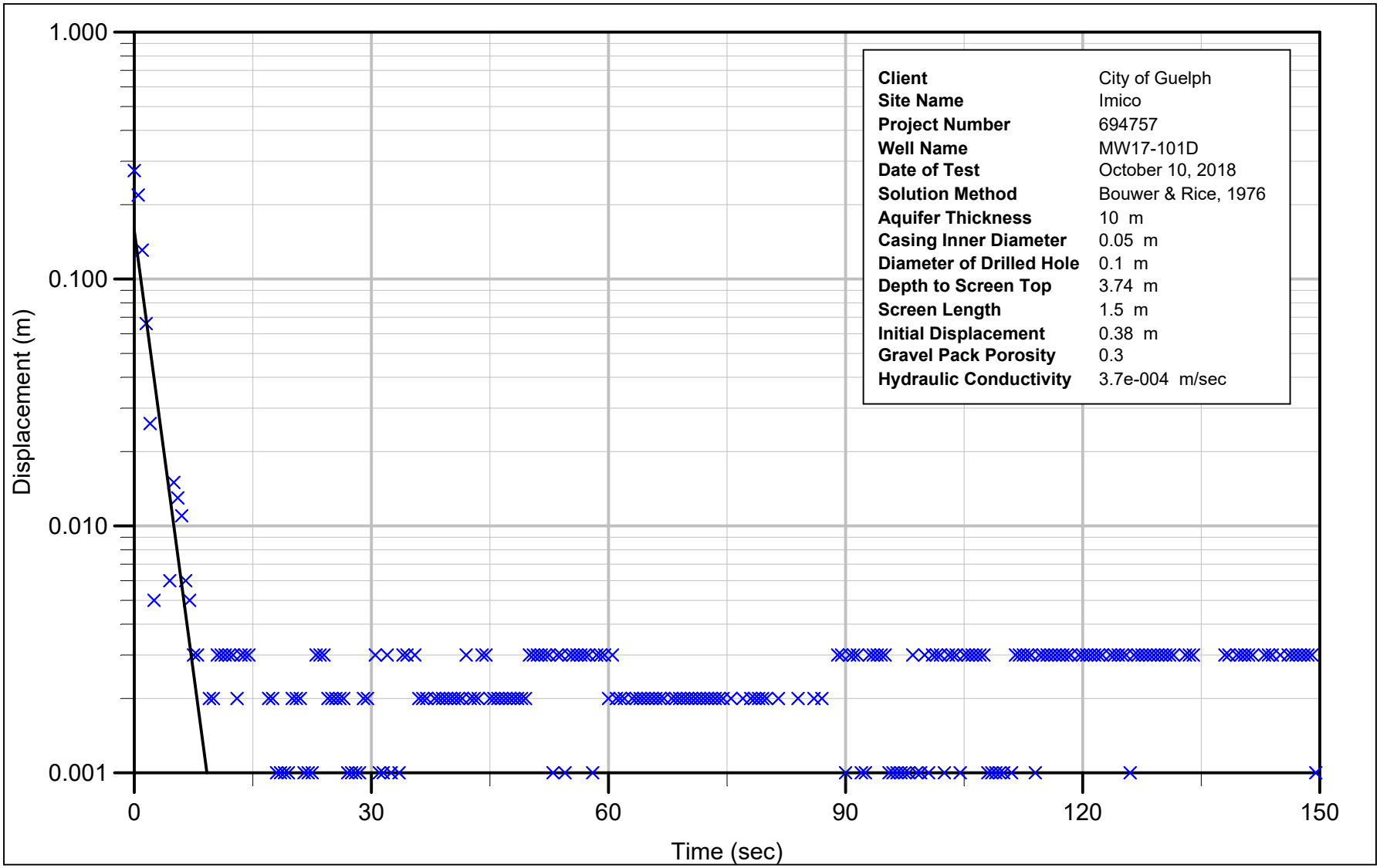


Figure F-2d - MW17-101D
Bouwer & Rice - Rising Head Test 1
Imico
City of Guelph
Guelph, Ontario

JACOBS

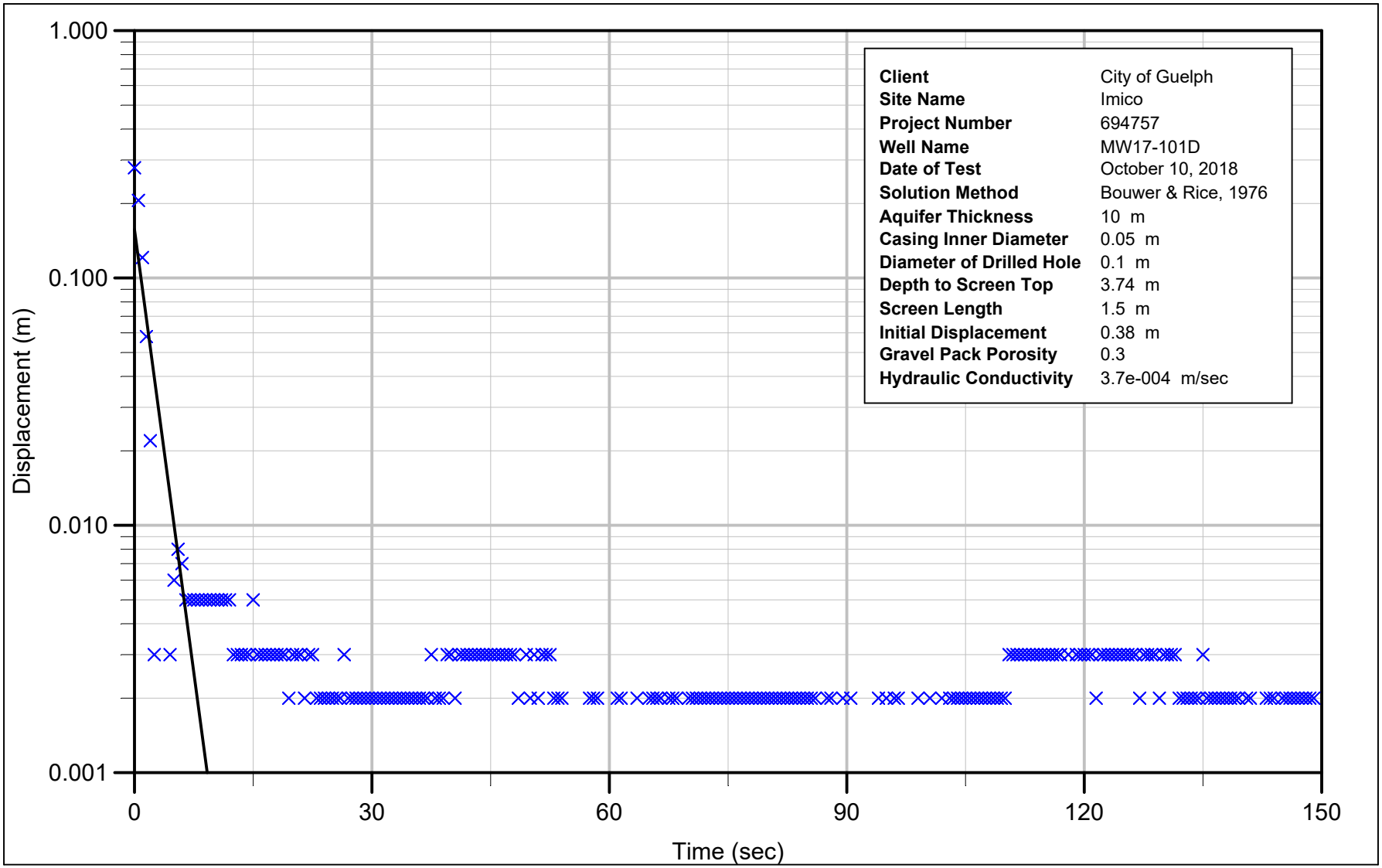


Figure F-2e - MW17-101D
Bouwer & Rice - Rising Head Test 2
Imico
City of Guelph
Guelph, Ontario

JACOBS

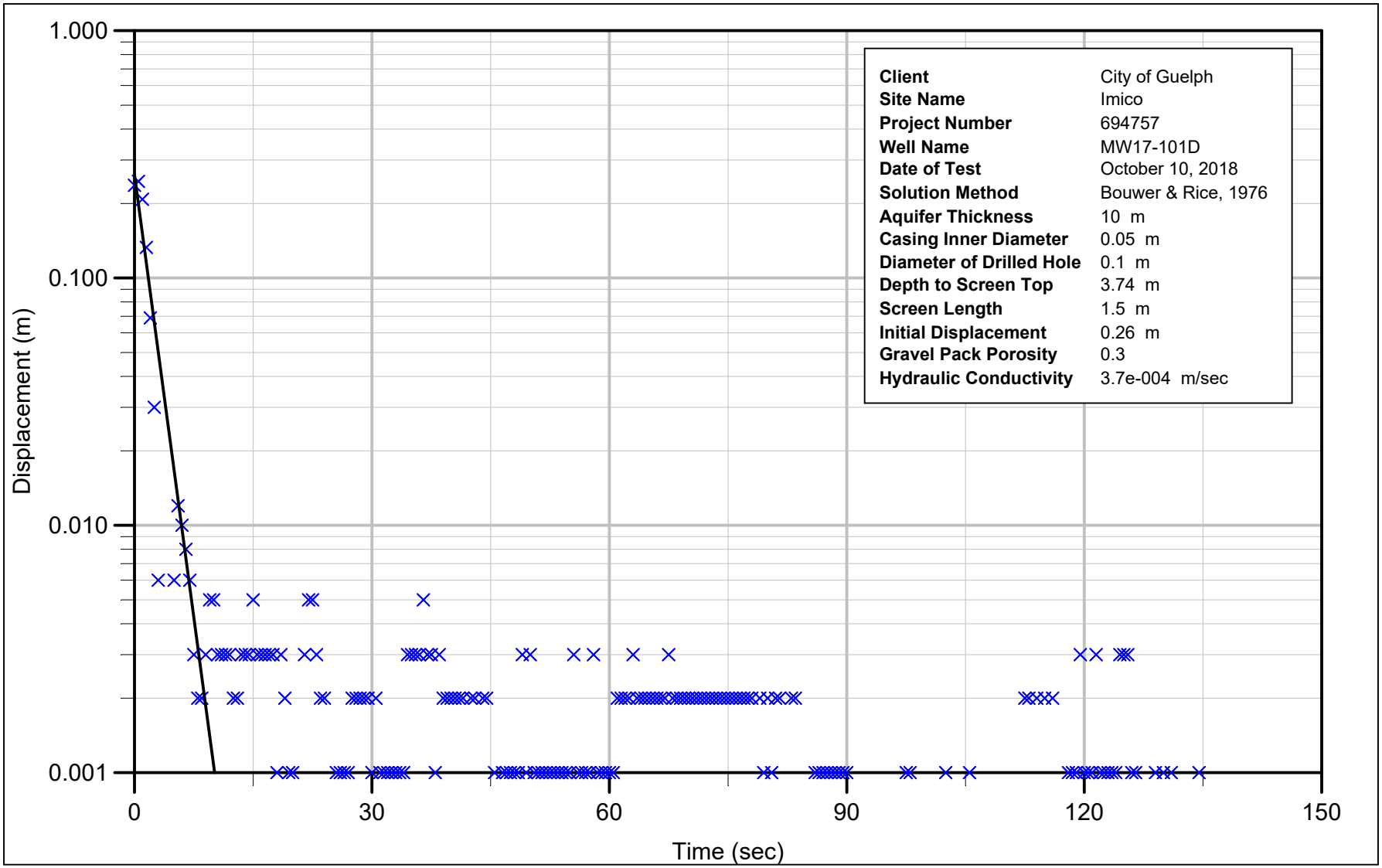


Figure F-2f - MW17-101D
Bouwer & Rice - Rising Head Test 3
Imico
City of Guelph
Guelph, Ontario

JACOBS

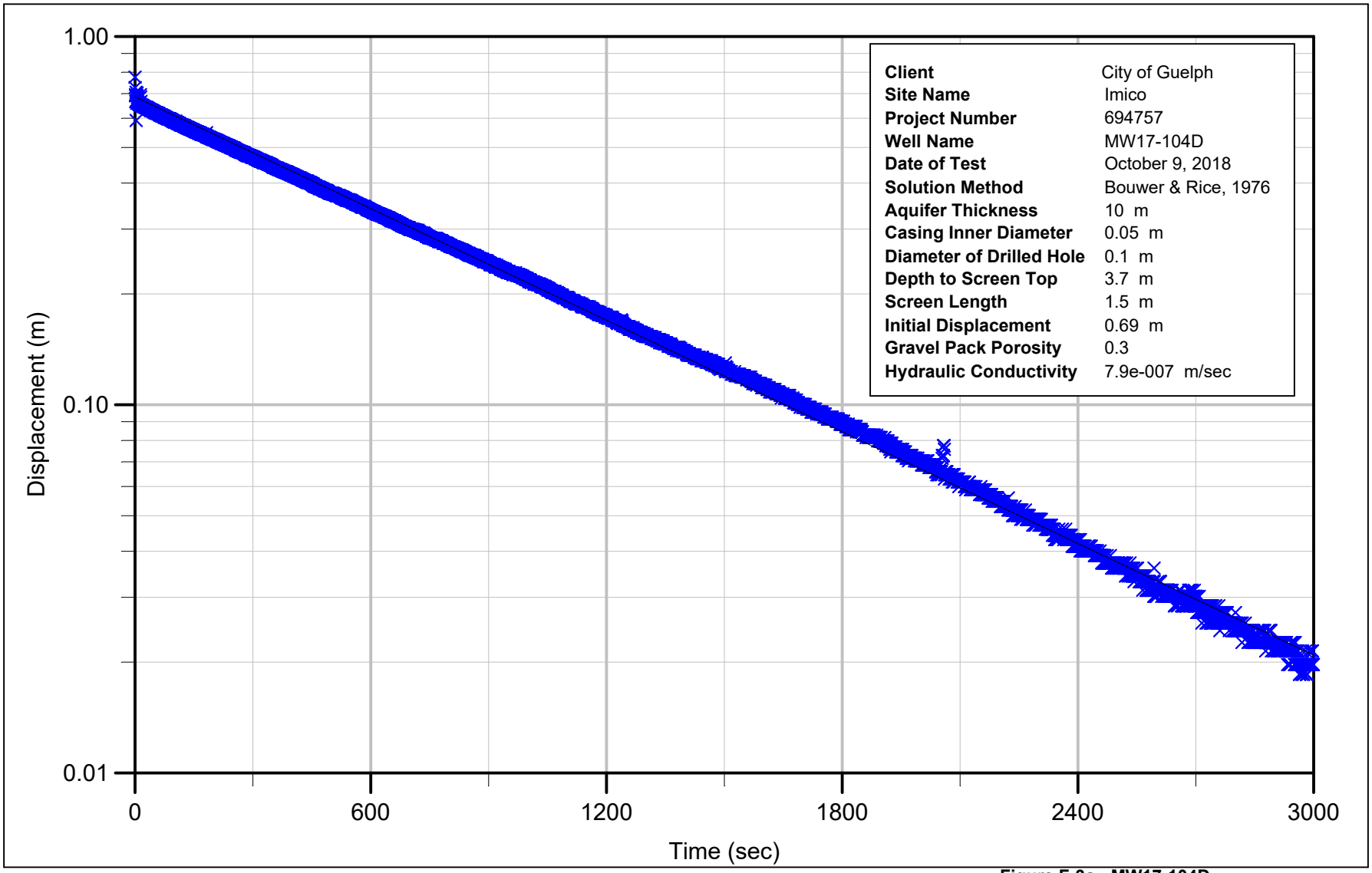


Figure F-3a - MW17-104D
Bouwer & Rice - Falling Head Test 1
Imico
City of Guelph
Guelph, Ontario

JACOBS

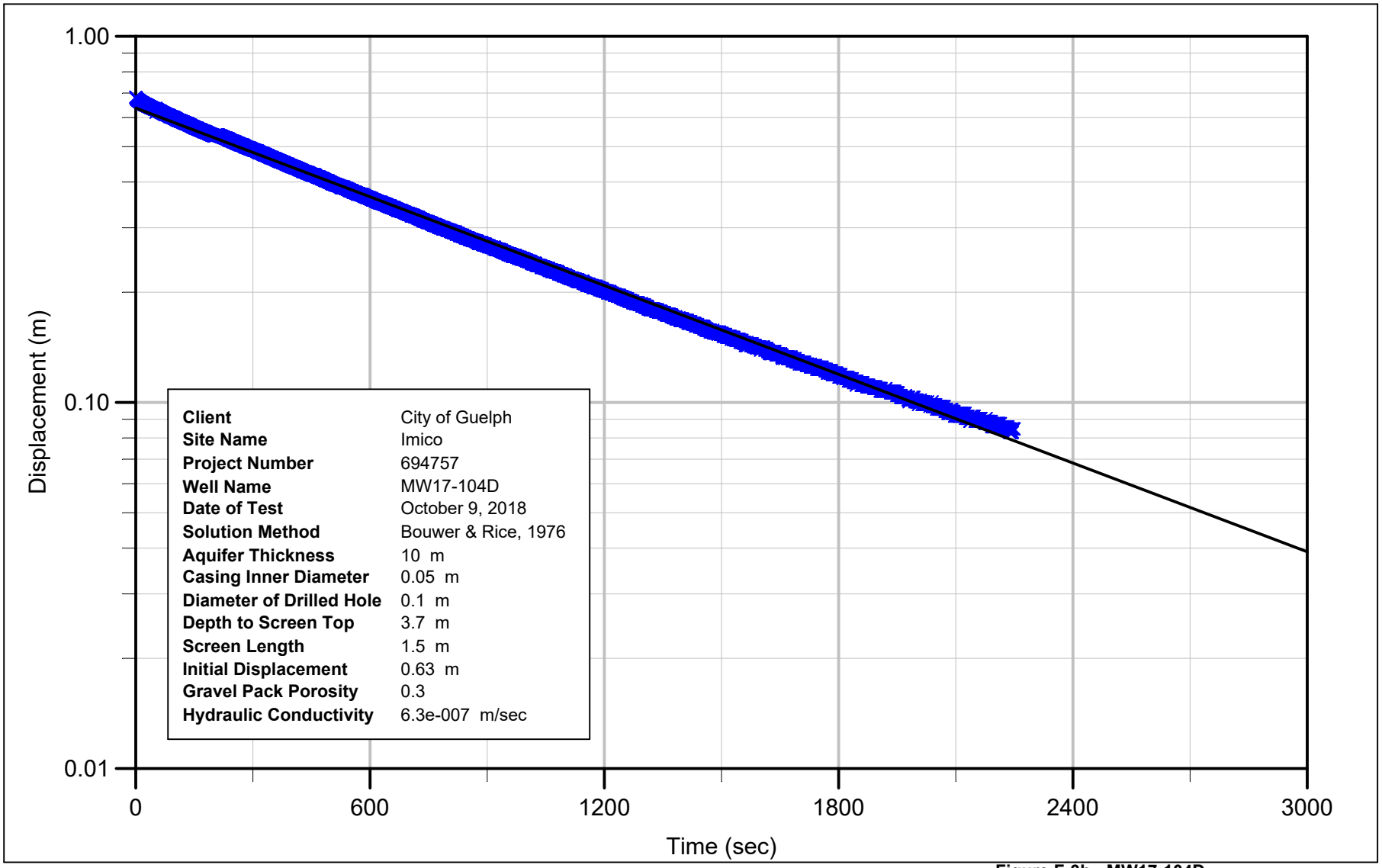


Figure F-3b - MW17-104D
Bouwer & Rice - Rising Head Test 1
Imico
City of Guelph
Guelph, Ontario

JACOBS

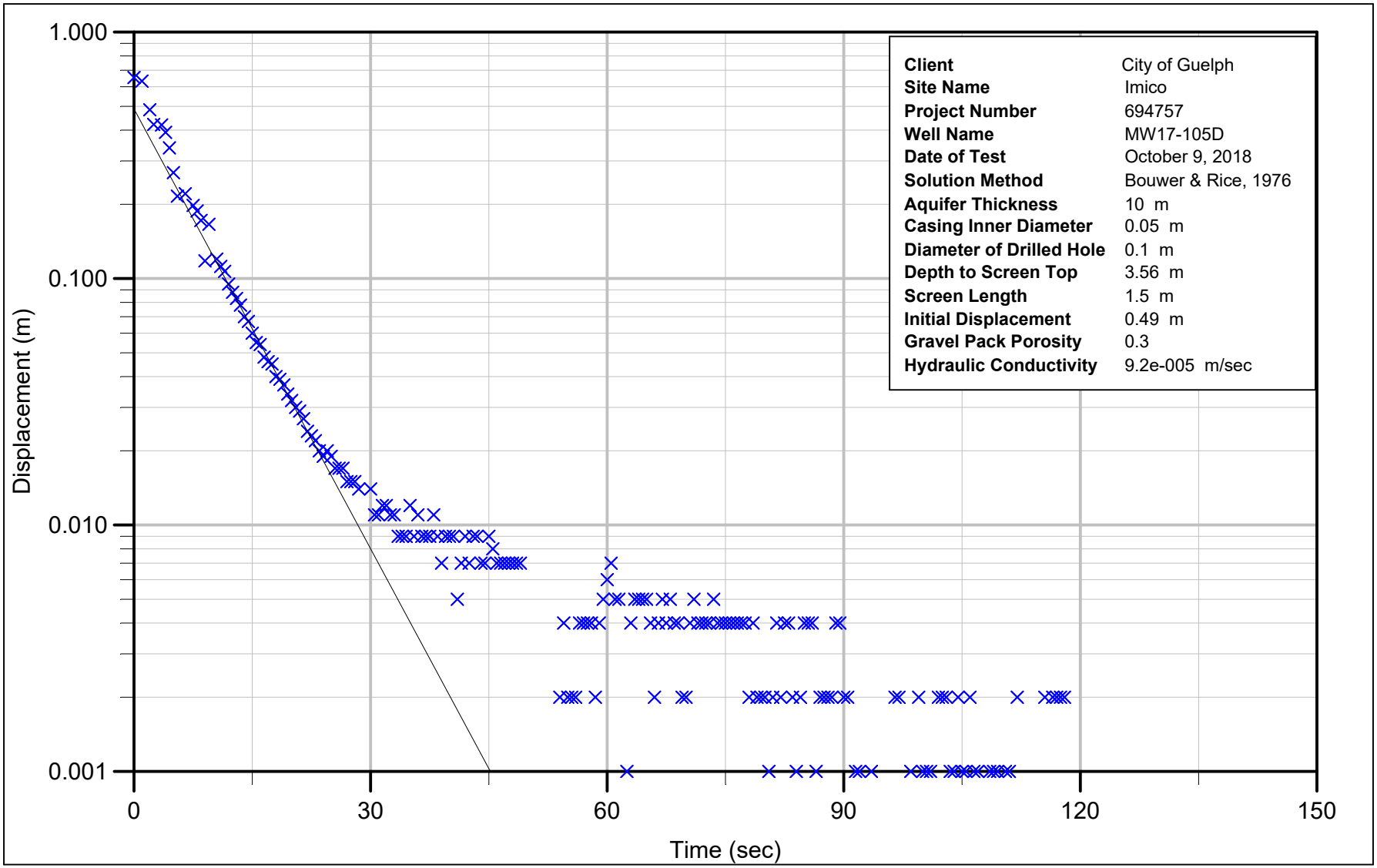


Figure F-4a - MW17-105D
Bouwer & Rice - Falling Head Test 1
Imico
City of Guelph
Guelph, Ontario

JACOBS

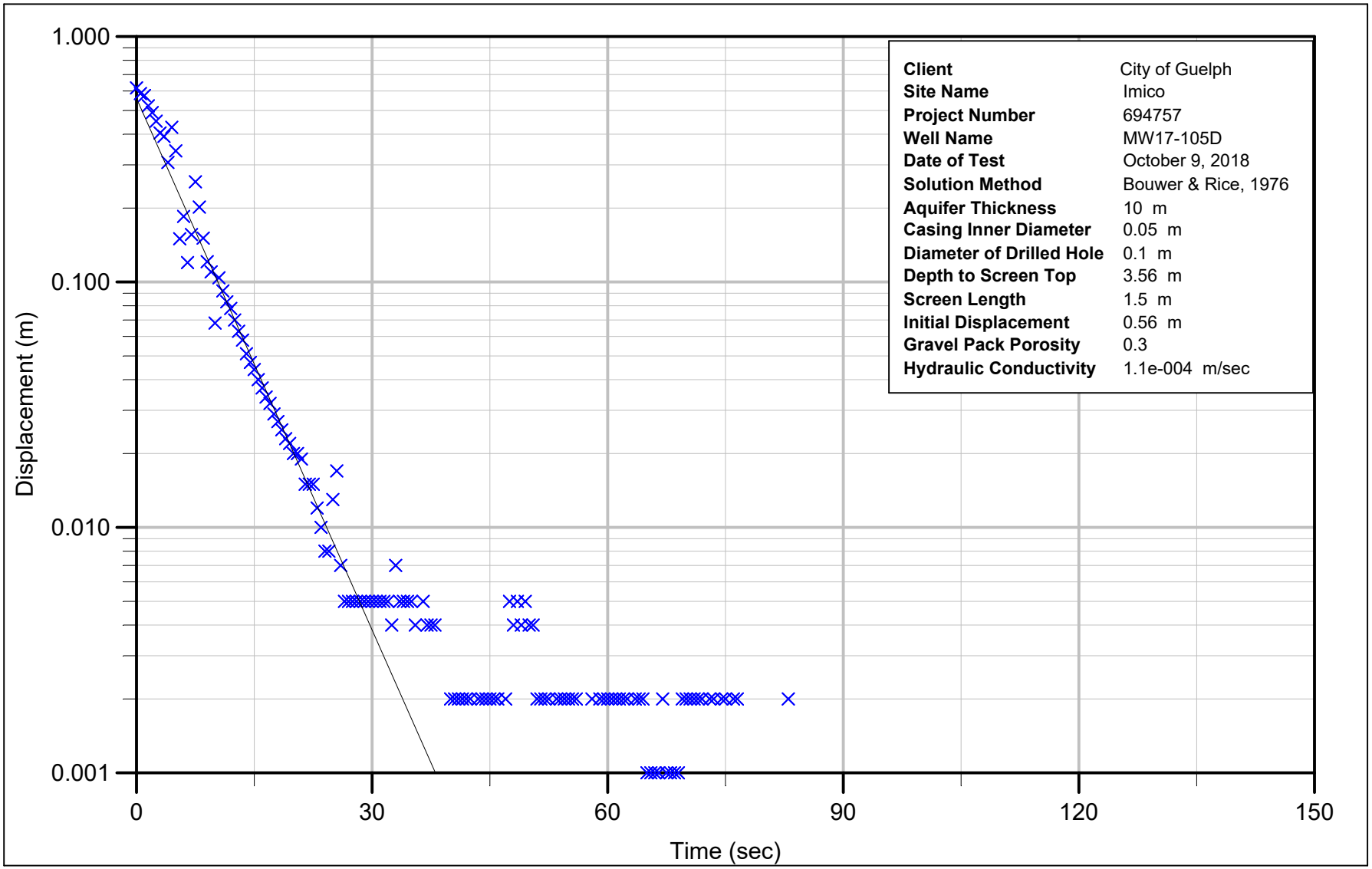


Figure F-4b - MW17-105D
Bouwer & Rice - Falling Head Test 2
Imico
City of Guelph
Guelph, Ontario

JACOBS

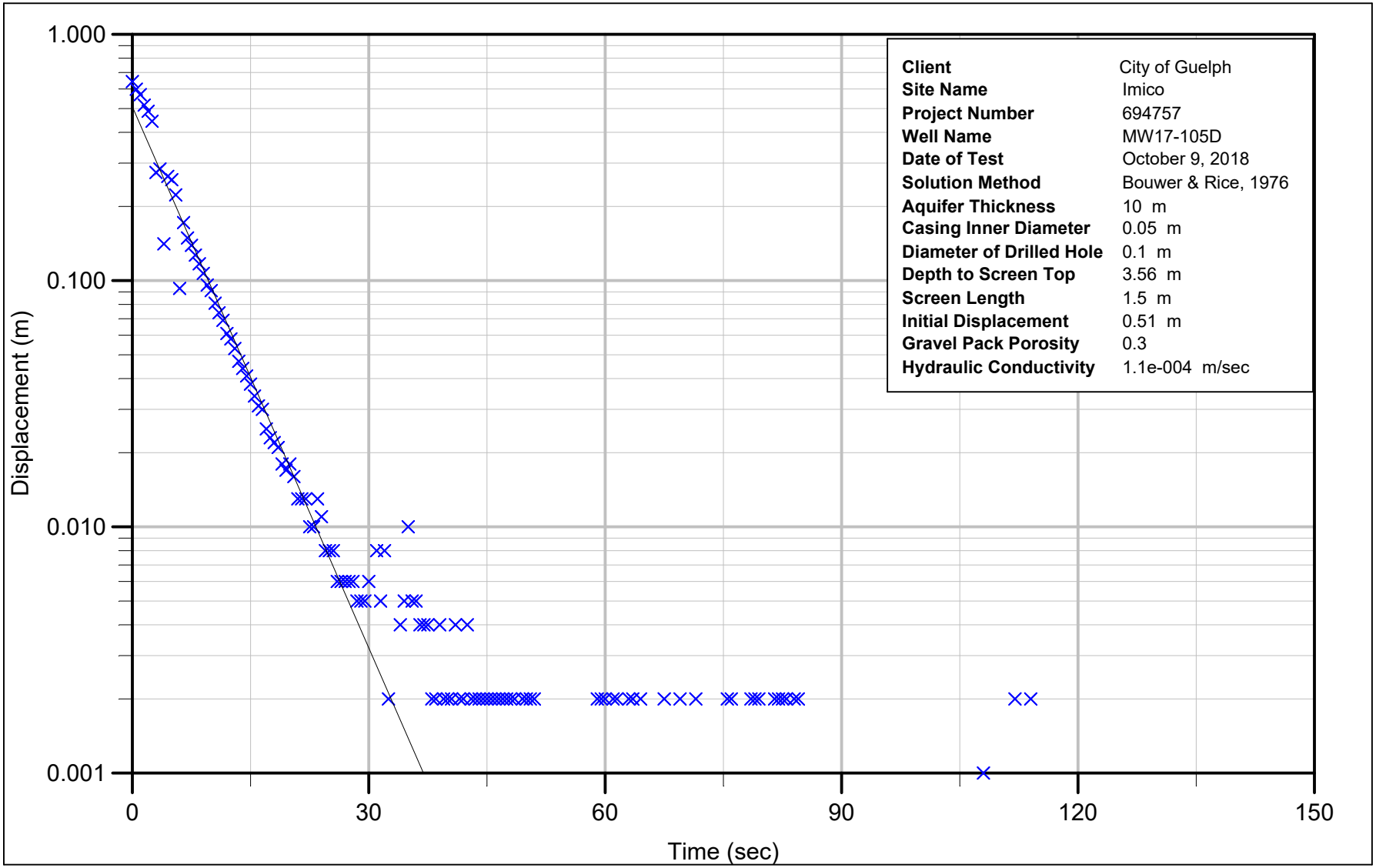


Figure F-4c - MW17-105D
Bouwer & Rice - Falling Head Test 3
Imico
City of Guelph
Guelph, Ontario

JACOBS

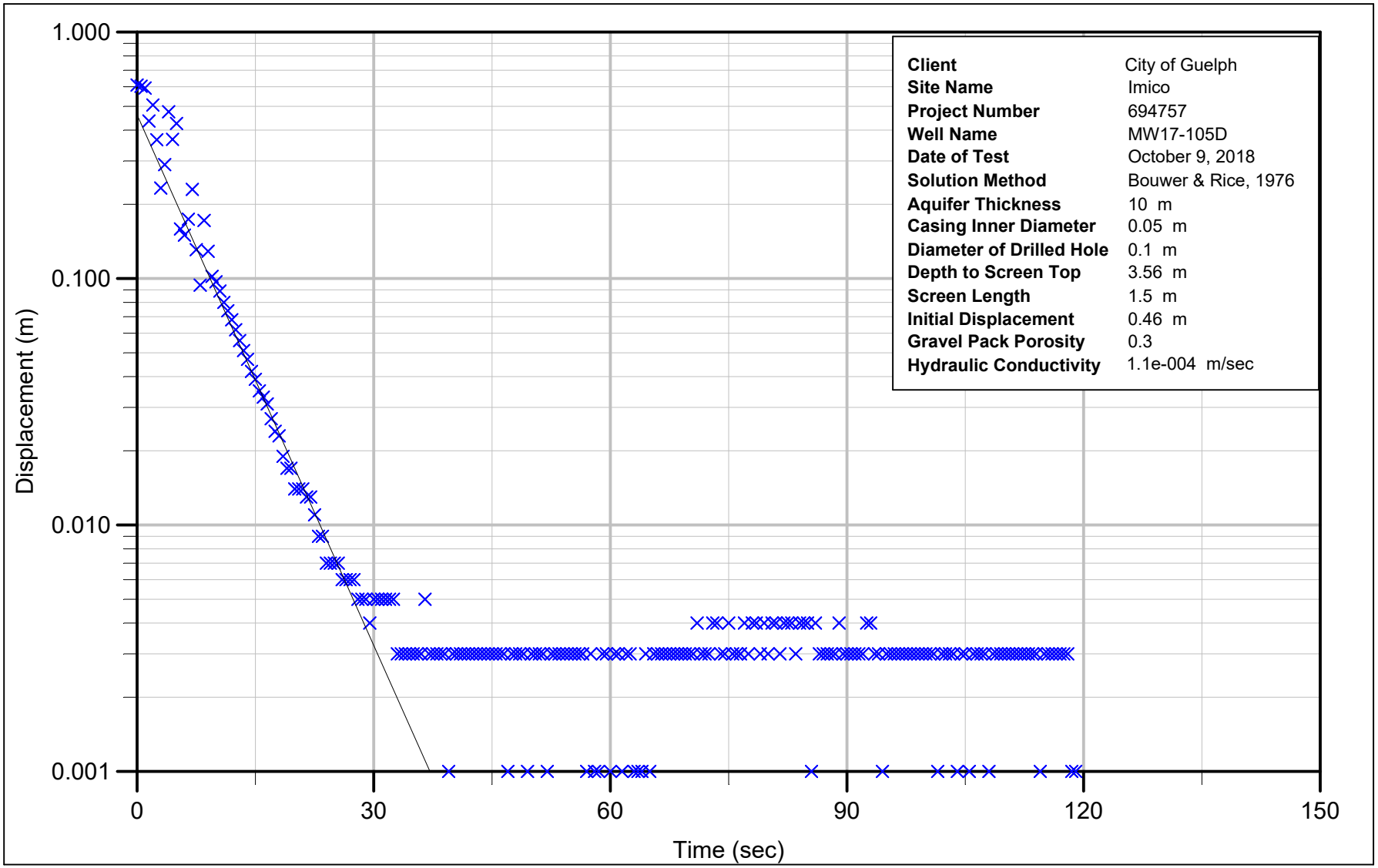


Figure F-4d - MW17-105D
Bouwer & Rice - Falling Head Test 4
Imico
City of Guelph
Guelph, Ontario

JACOBS

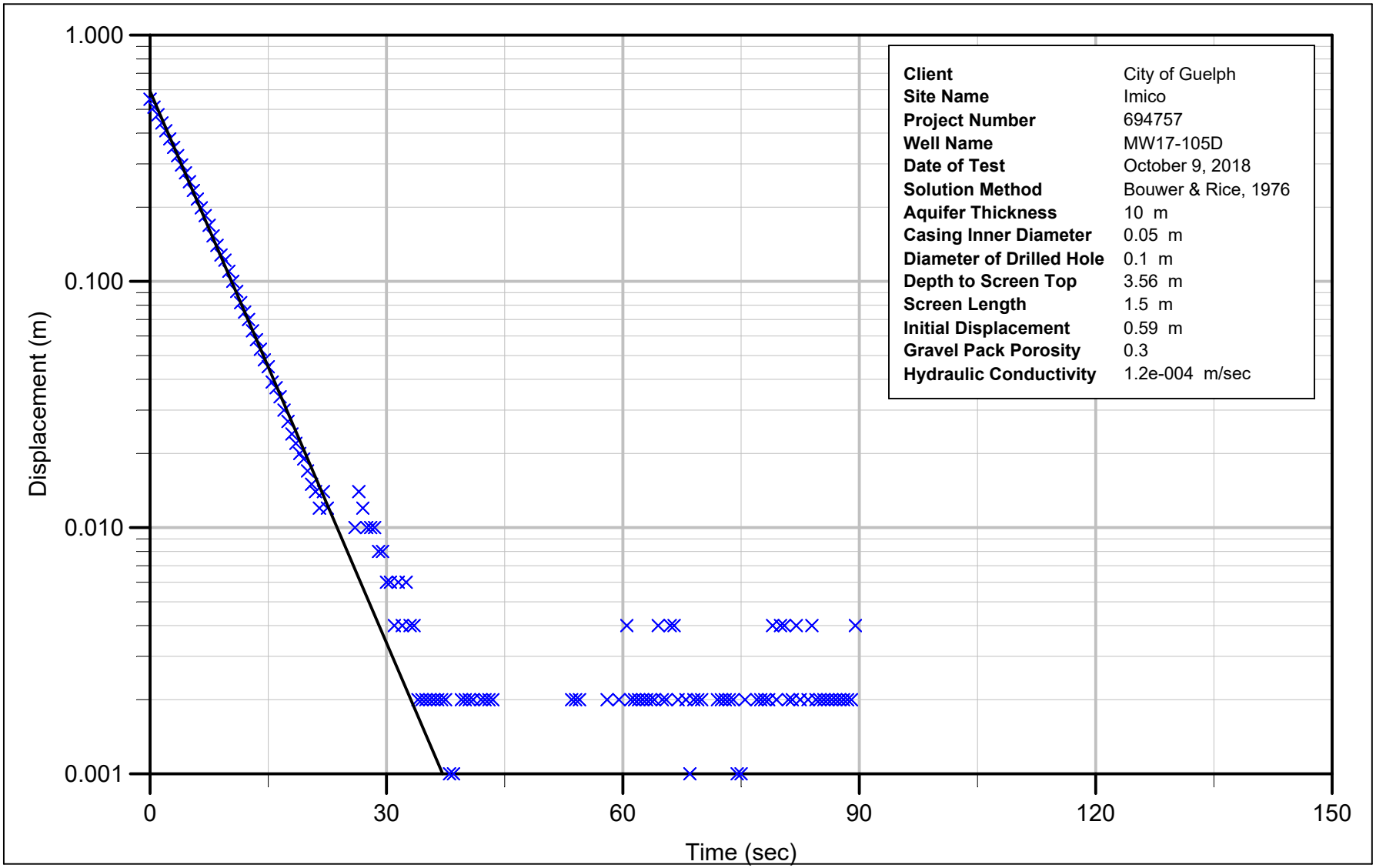


Figure F-4e - MW17-105D
Bouwer & Rice - Rising Head Test 1
Imico
City of Guelph
Guelph, Ontario

JACOBS

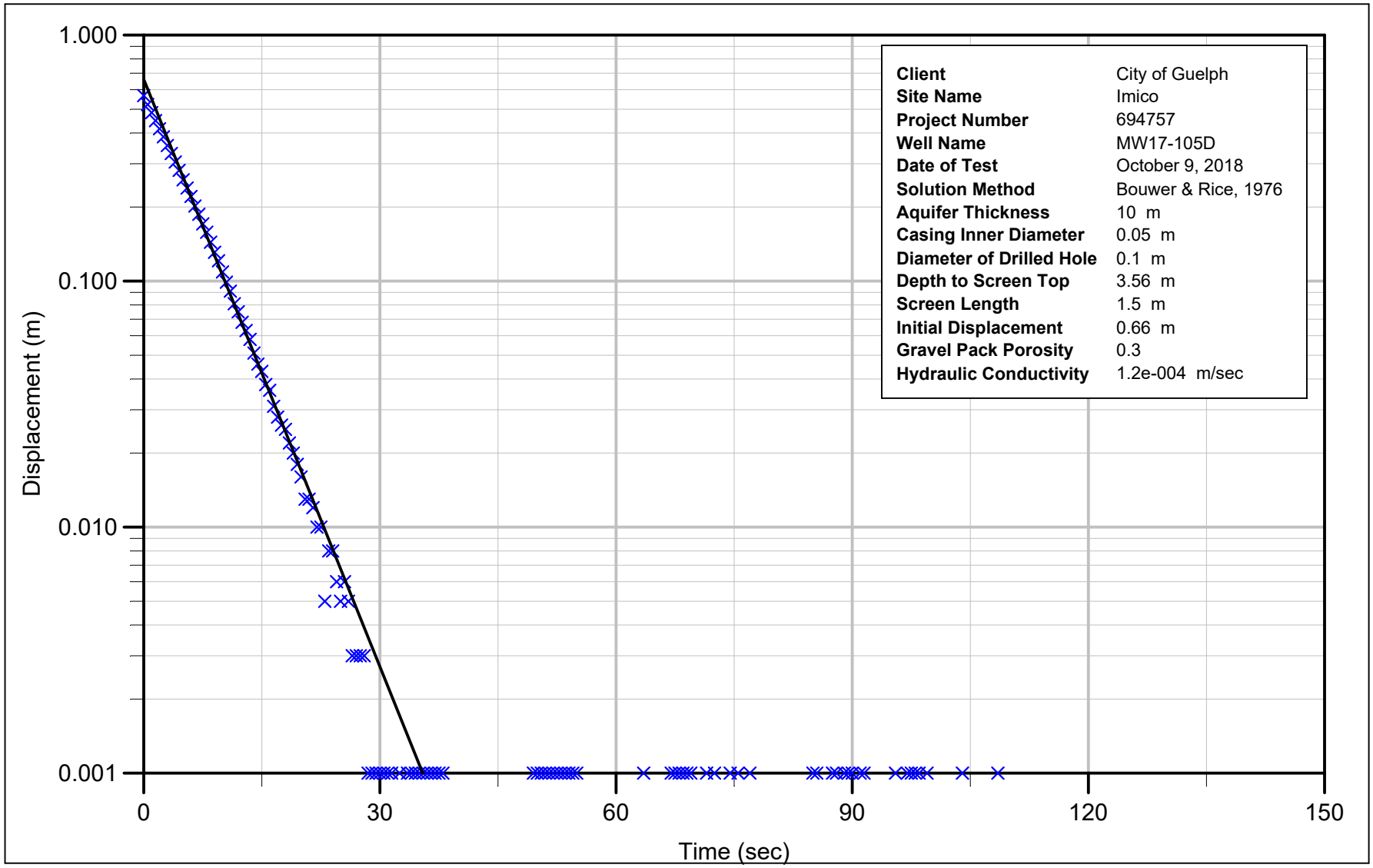


Figure F-4f - MW17-105D
Bouwer & Rice - Rising Head Test 2
Imico
City of Guelph
Guelph, Ontario

JACOBS

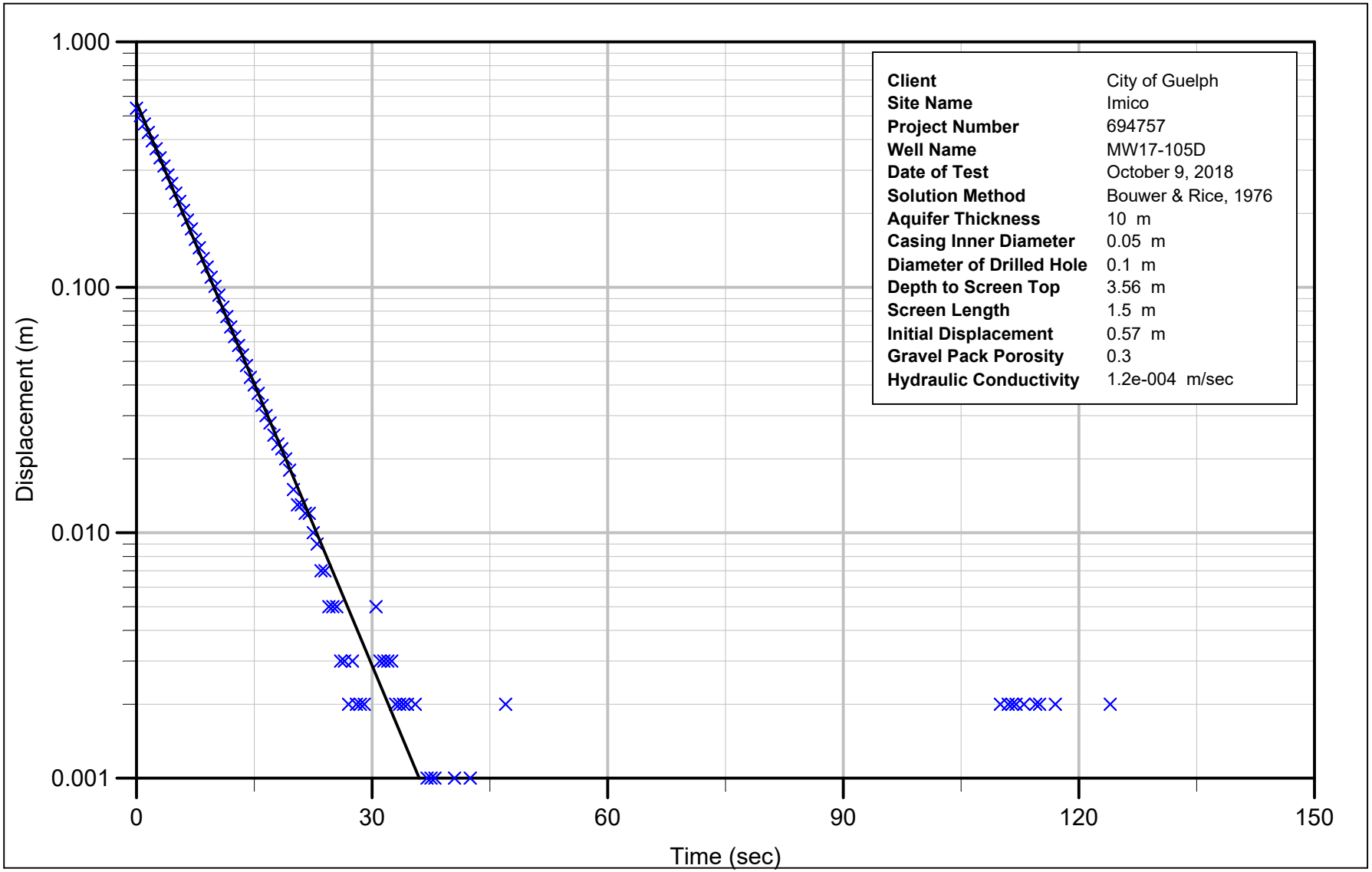


Figure F-4g - MW17-105D
Bouwer & Rice - Rising Head Test 3
Imico
City of Guelph
Guelph, Ontario

JACOBS

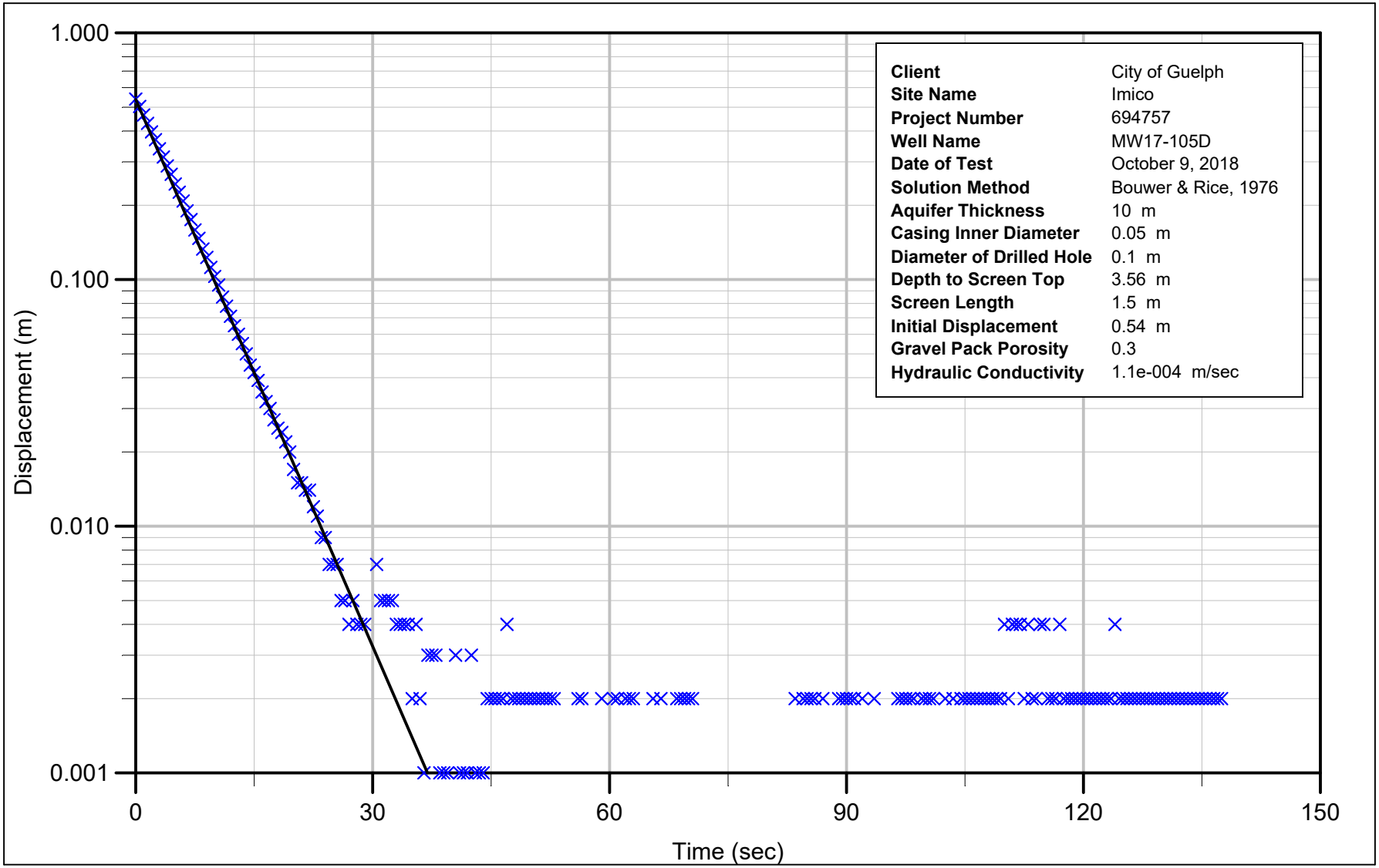


Figure F-4h - MW17-105D
Bouwer & Rice - Rising Head Test 4
Imico
City of Guelph
Guelph, Ontario

JACOBS

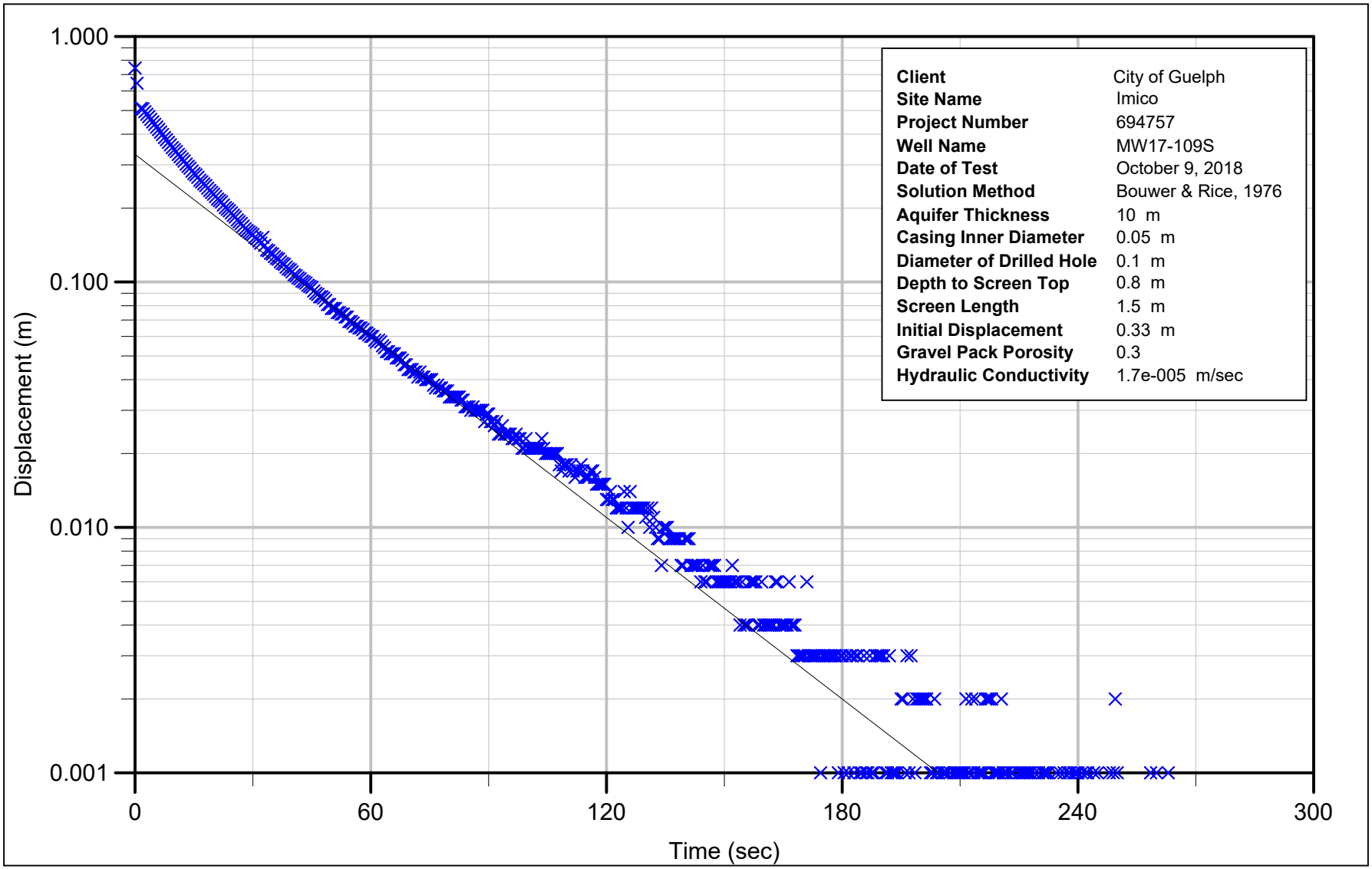


Figure F-5a - MW17-109S
Bouwer & Rice - Falling Head Test 1
Imico
City of Guelph
Guelph, Ontario

JACOBS

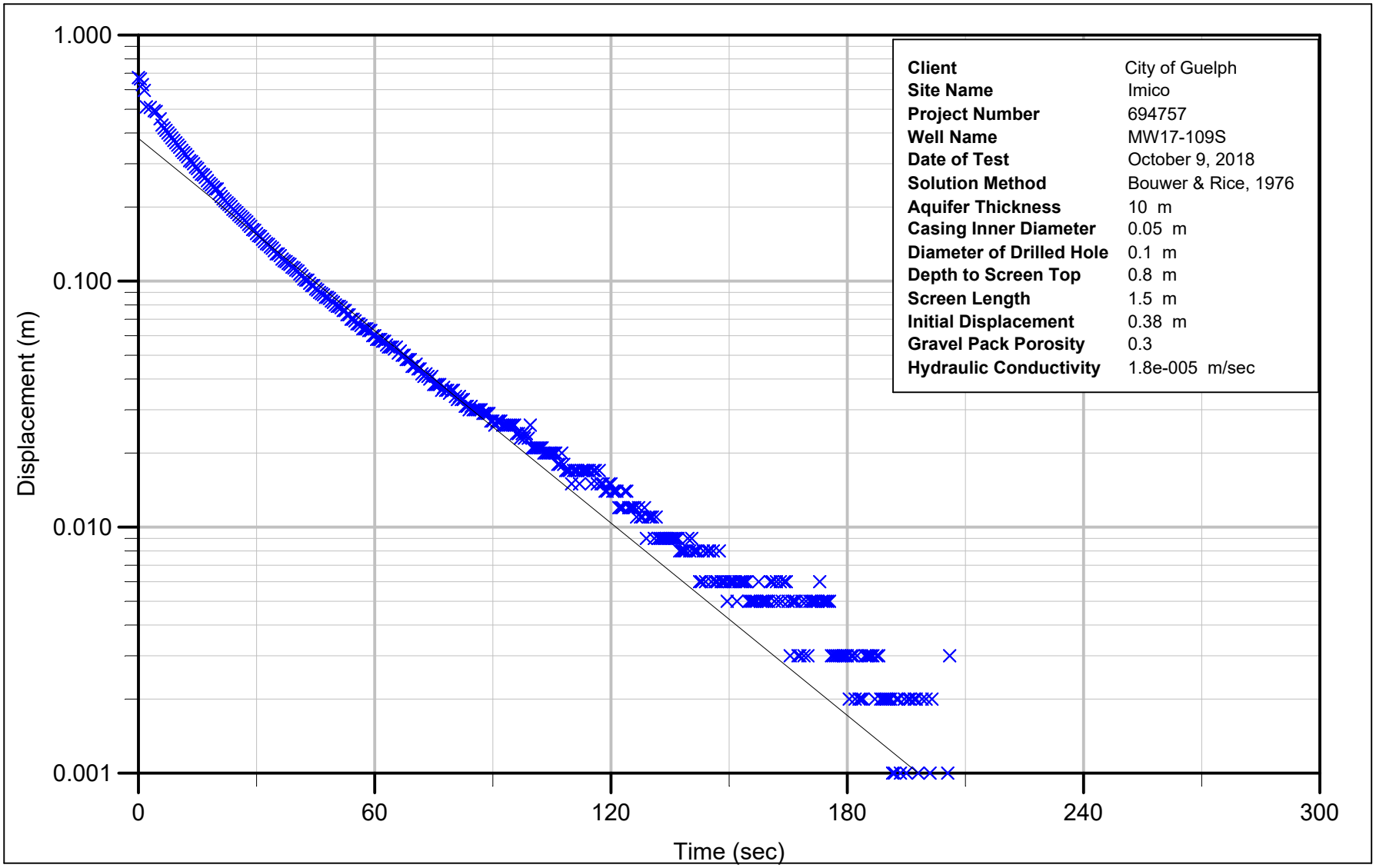


Figure F-5b - MW17-109S
Bouwer & Rice - Falling Head Test 2
Imico
City of Guelph
Guelph, Ontario

JACOBS

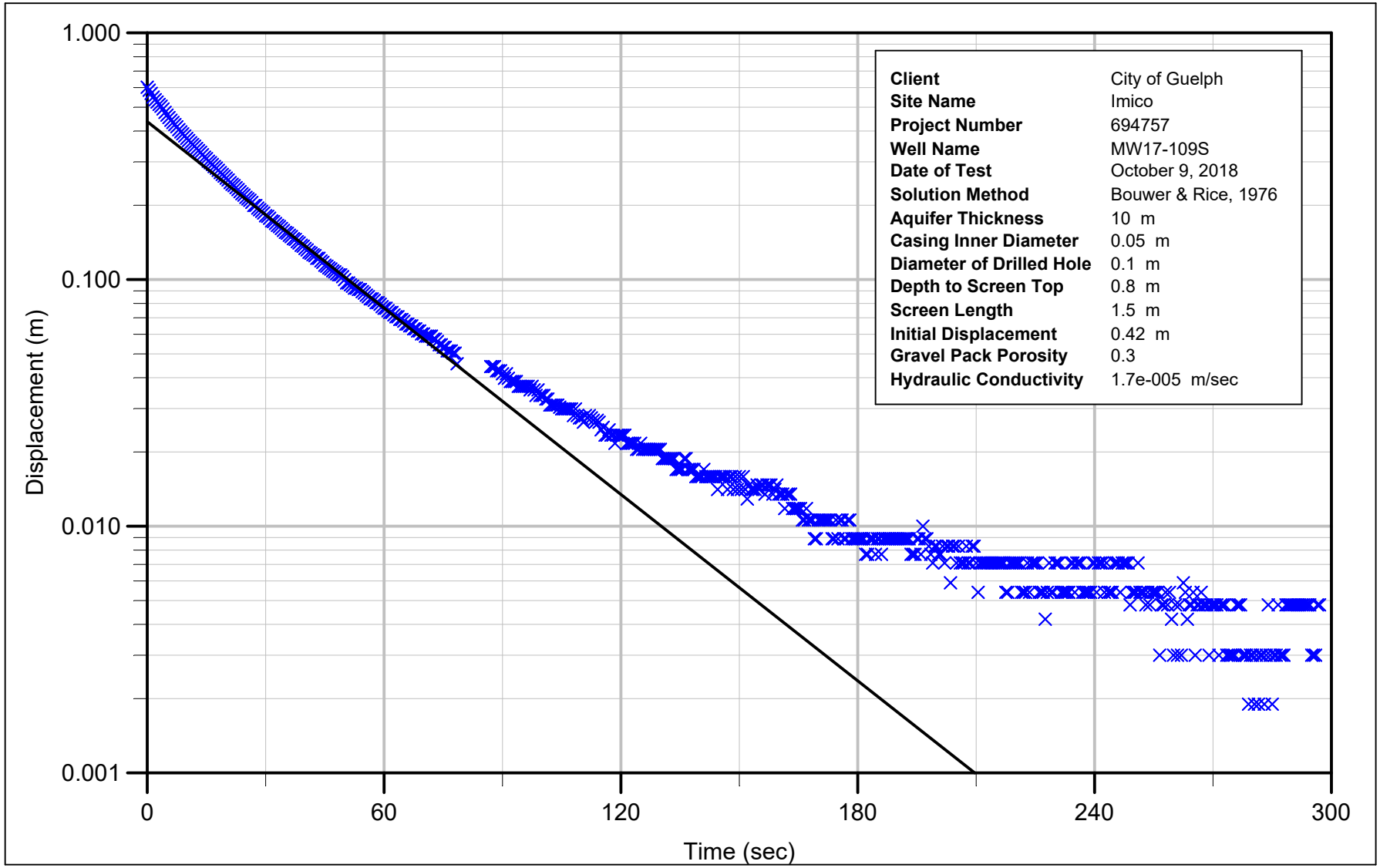


Figure F-5c - MW17-109S
Bouwer & Rice - Rising Head Test 1
Imico
City of Guelph
Guelph, Ontario

JACOBS

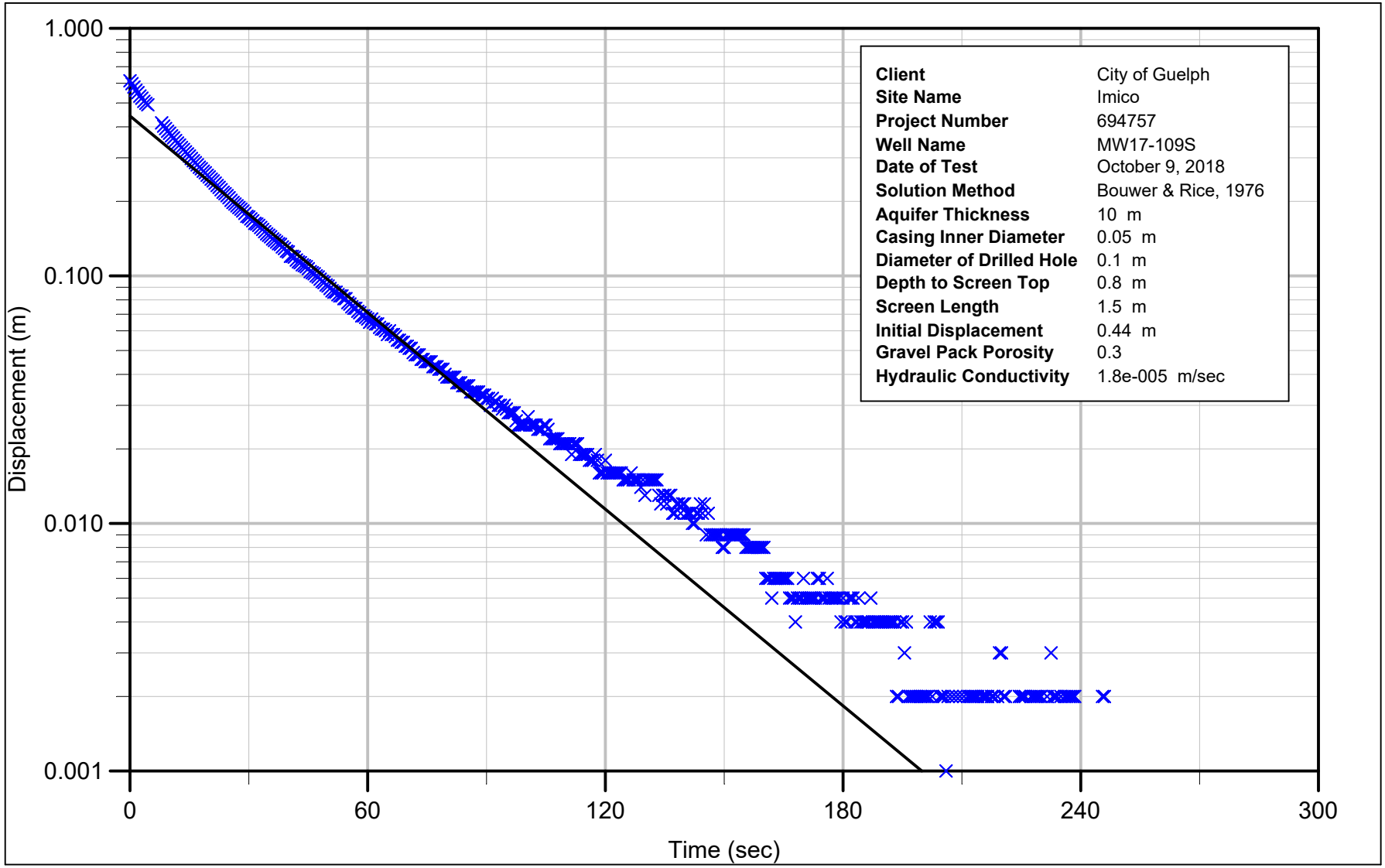


Figure F-5d - MW17-109D
Bouwer & Rice - Rising Head Test 2
Imico
City of Guelph
Guelph, Ontario

JACOBS

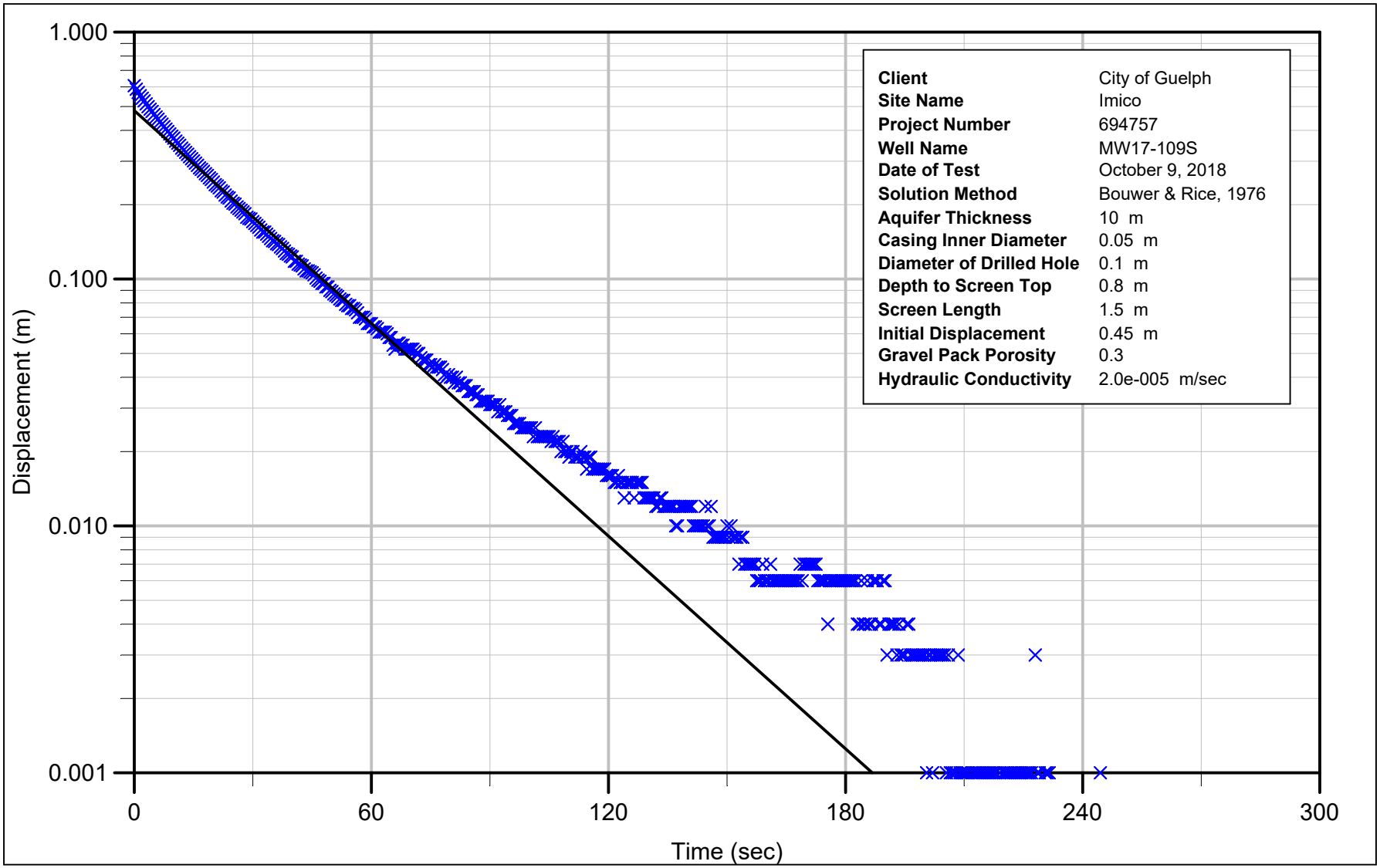


Figure F-5e - MW17-109S
Bouwer & Rice - Rising Head Test 3
Imico
City of Guelph
Guelph, Ontario

JACOBS

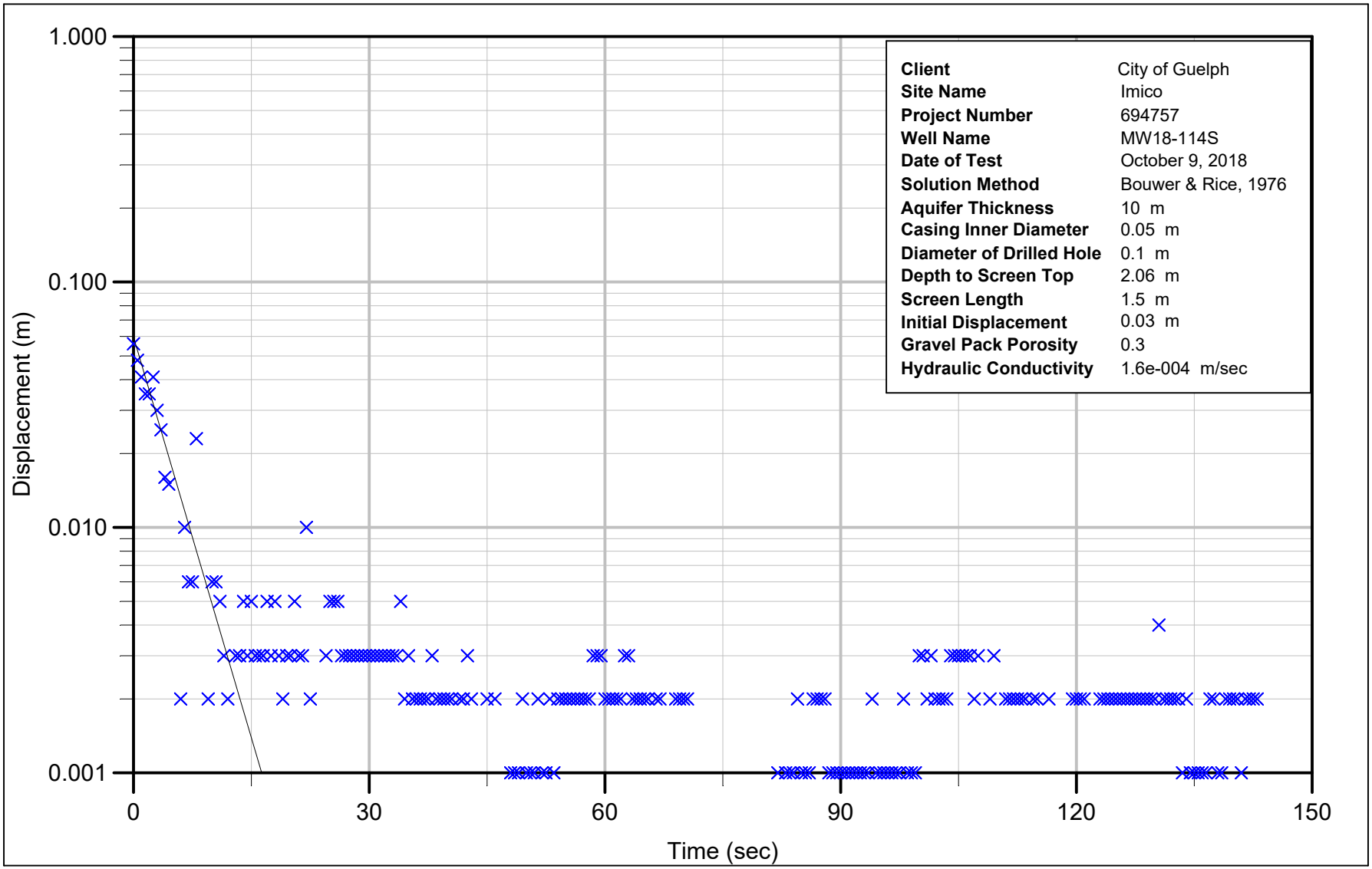


Figure F-6a - MW18-114S
Bouwer & Rice - Falling Head Test 1
Imico
City of Guelph
Guelph, Ontario

JACOBS

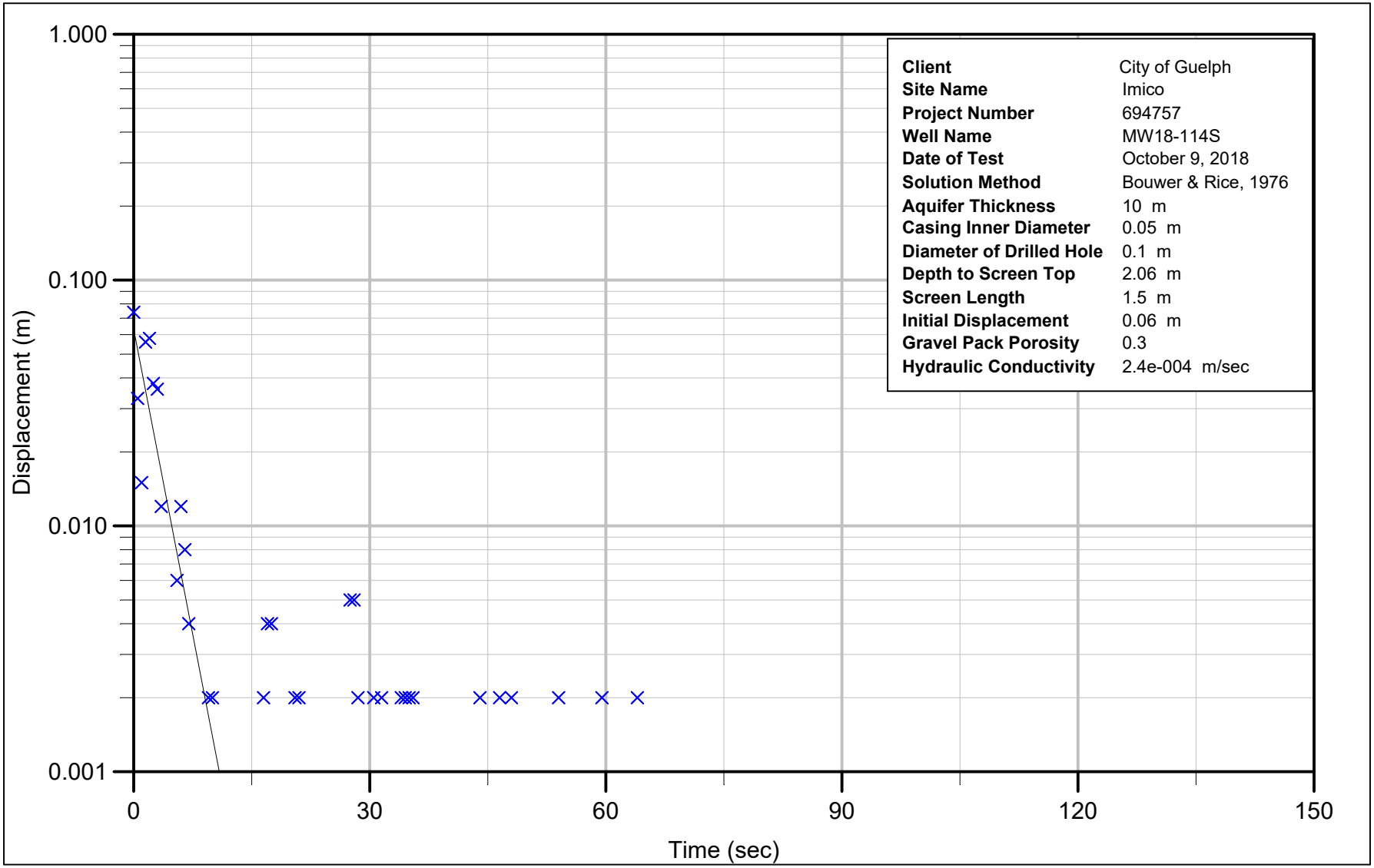


Figure F-6b - MW18-114S
Bouwer & Rice - Falling Head Test 2
Imico
City of Guelph
Guelph, Ontario

JACOBS

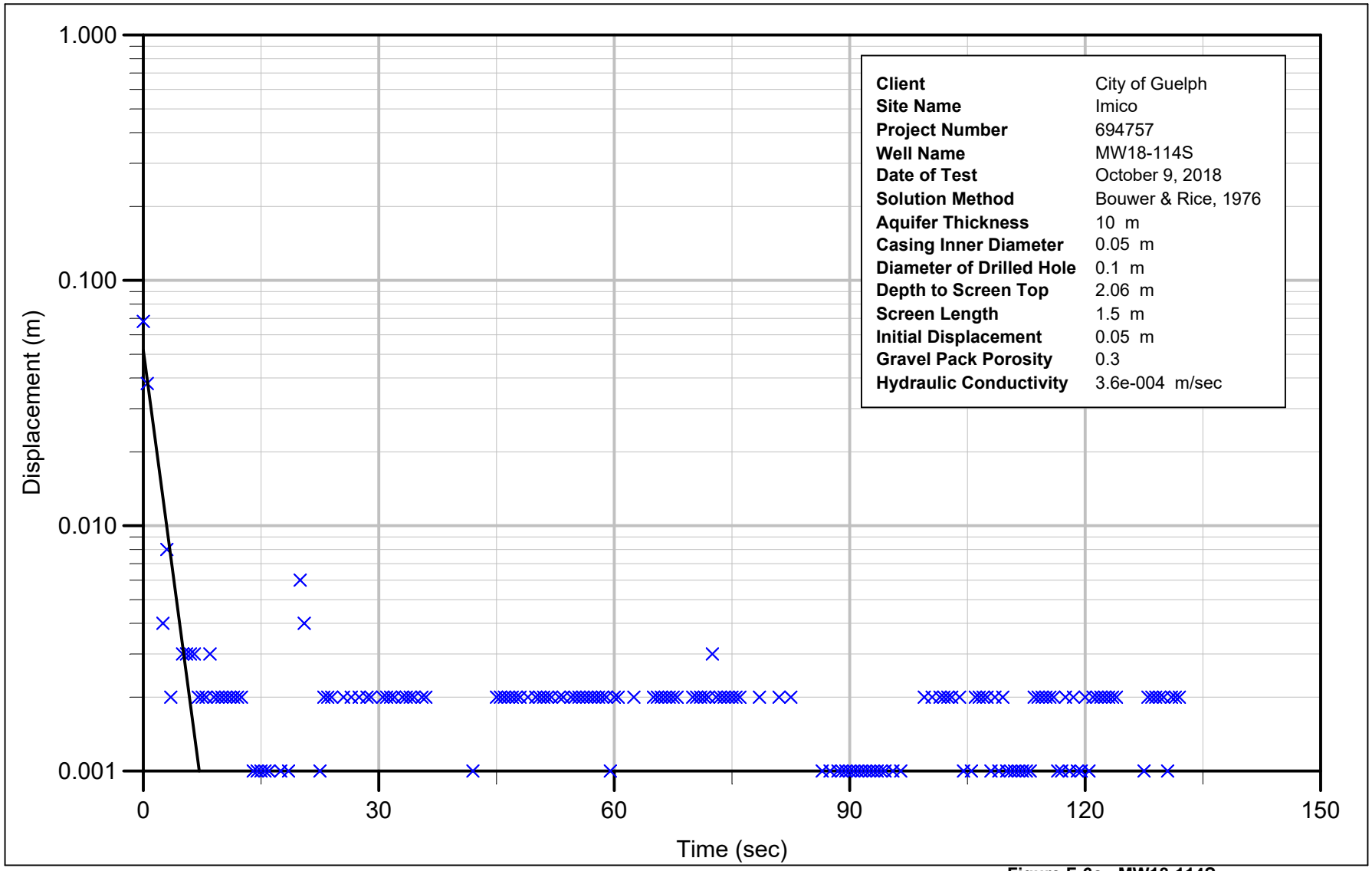


Figure F-6c - MW18-114S
Bouwer & Rice - Rising Head Test 1
Imico
City of Guelph
Guelph, Ontario

JACOBS

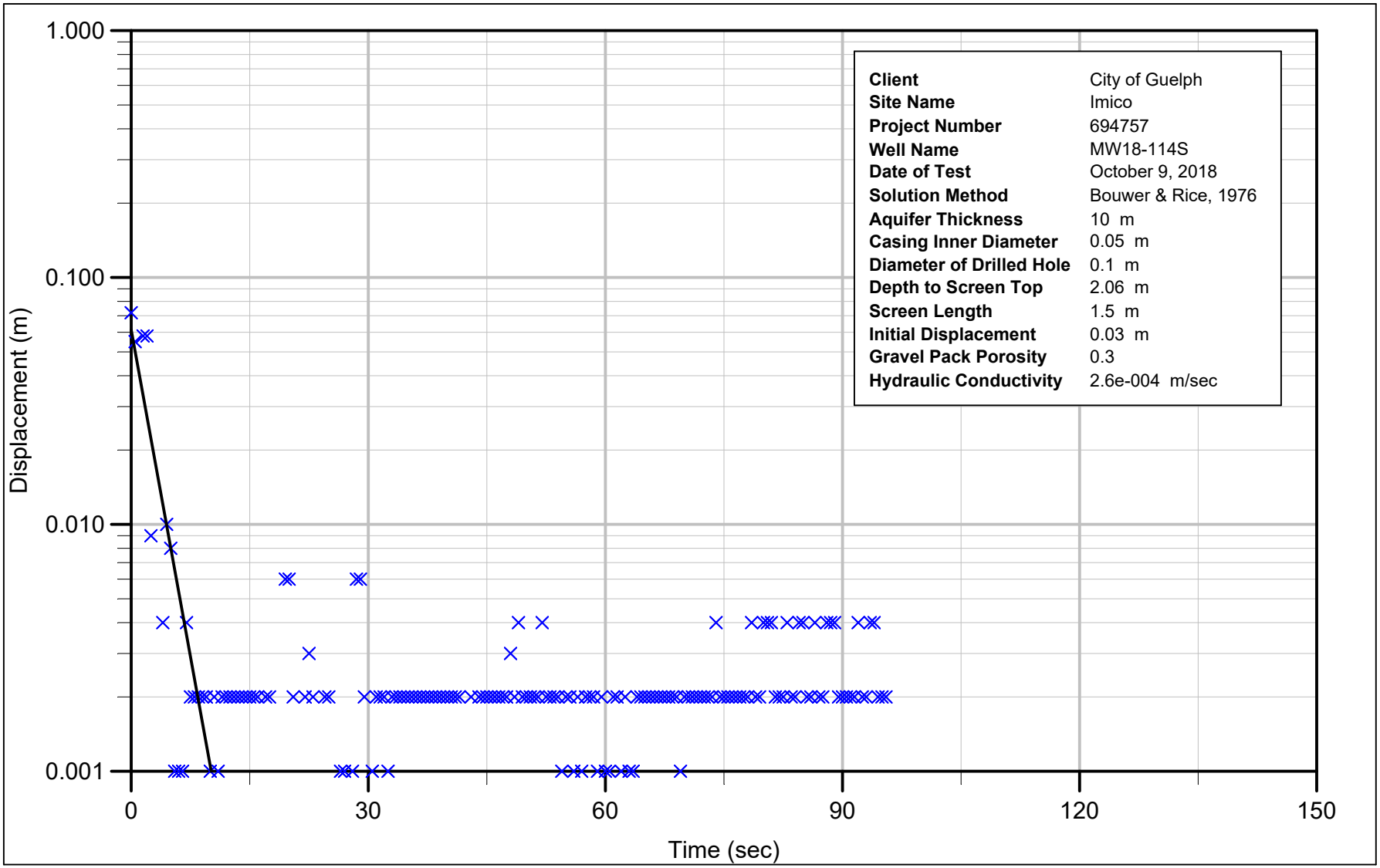


Figure F-6d - MW18-114S
Bouwer & Rice - Rising Head Test 2
Imico
City of Guelph
Guelph, Ontario

JACOBS

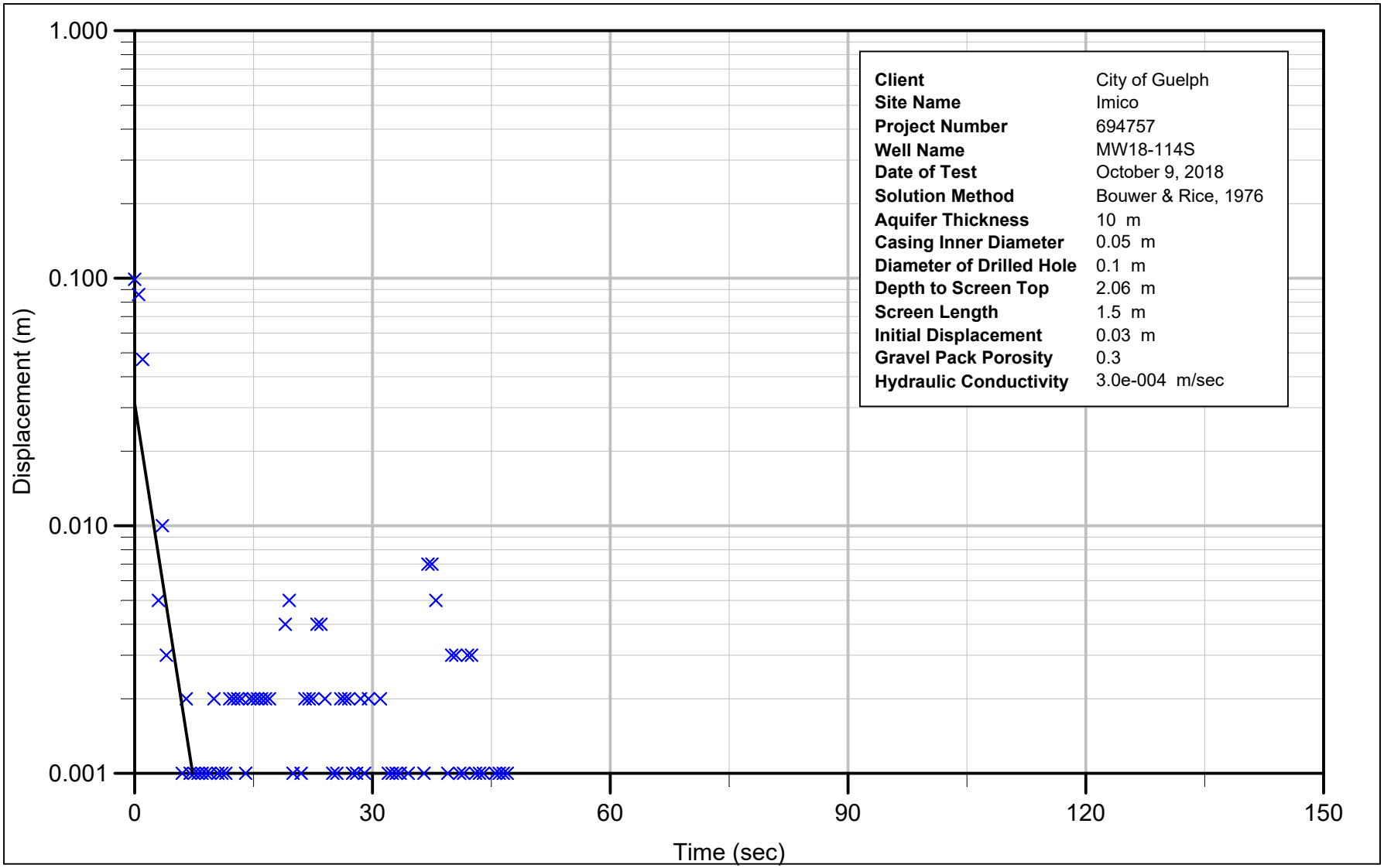


Figure F-6e - MW18-114S
Bouwer & Rice - Rising Head Test 3
Imico
City of Guelph
Guelph, Ontario

JACOBS

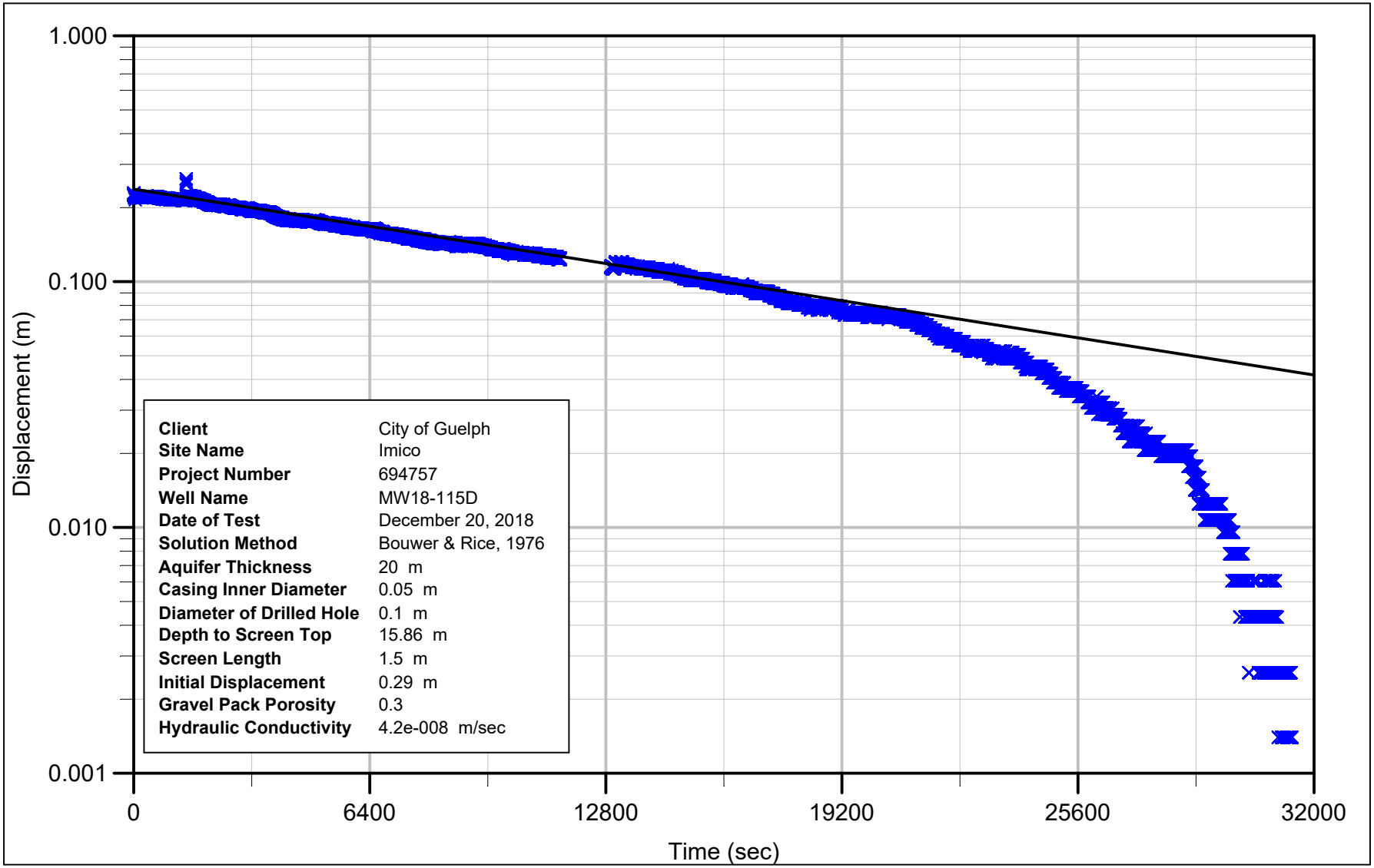


Figure F-7 - MW18-115D
Bouwer & Rice - Rising Head Test 1
Imico
City of Guelph
Guelph, Ontario

JACOBS

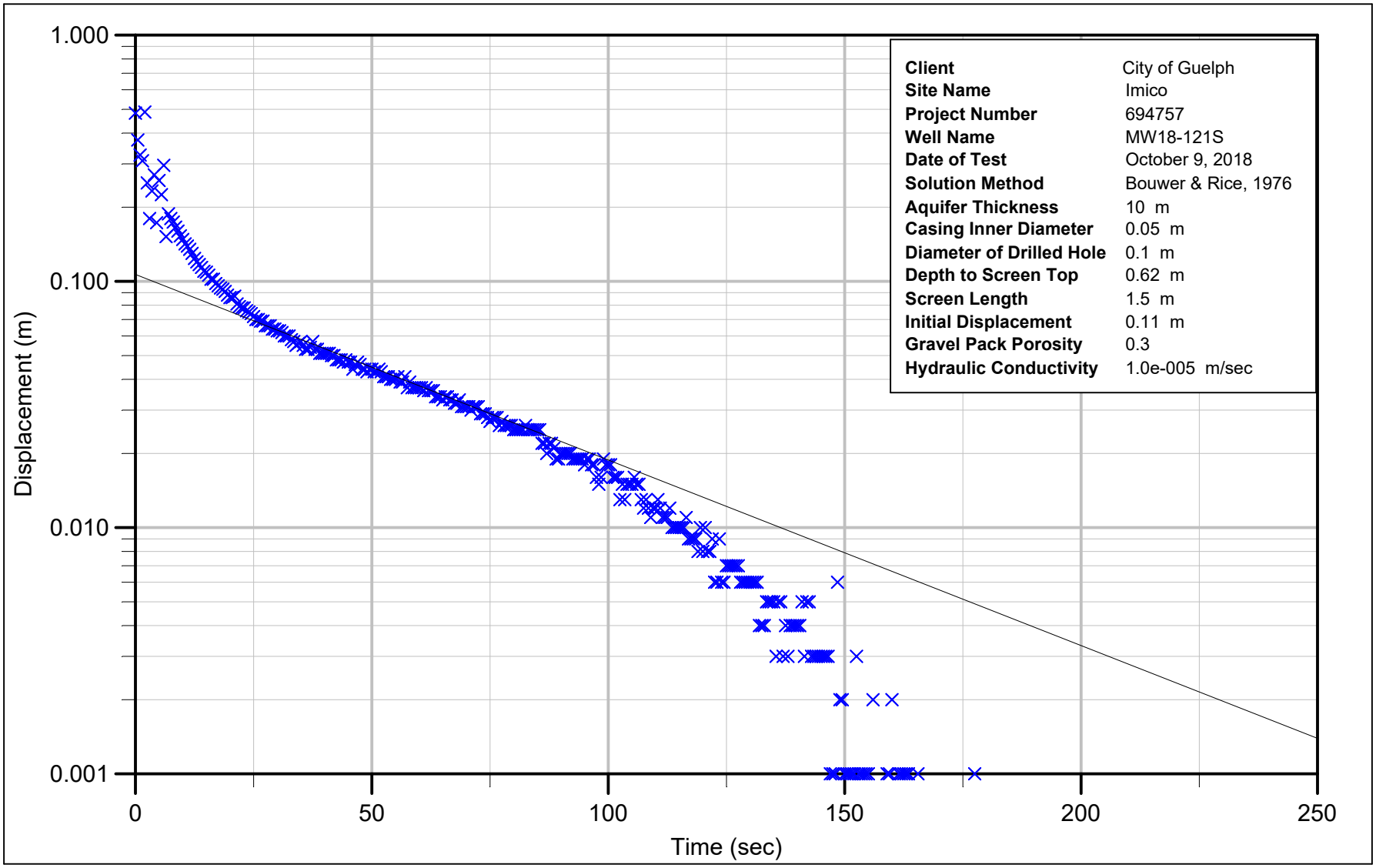


Figure F-8a - MW18-121S
Bouwer & Rice - Falling Head Test 1
Imico
City of Guelph
Guelph, Ontario

JACOBS

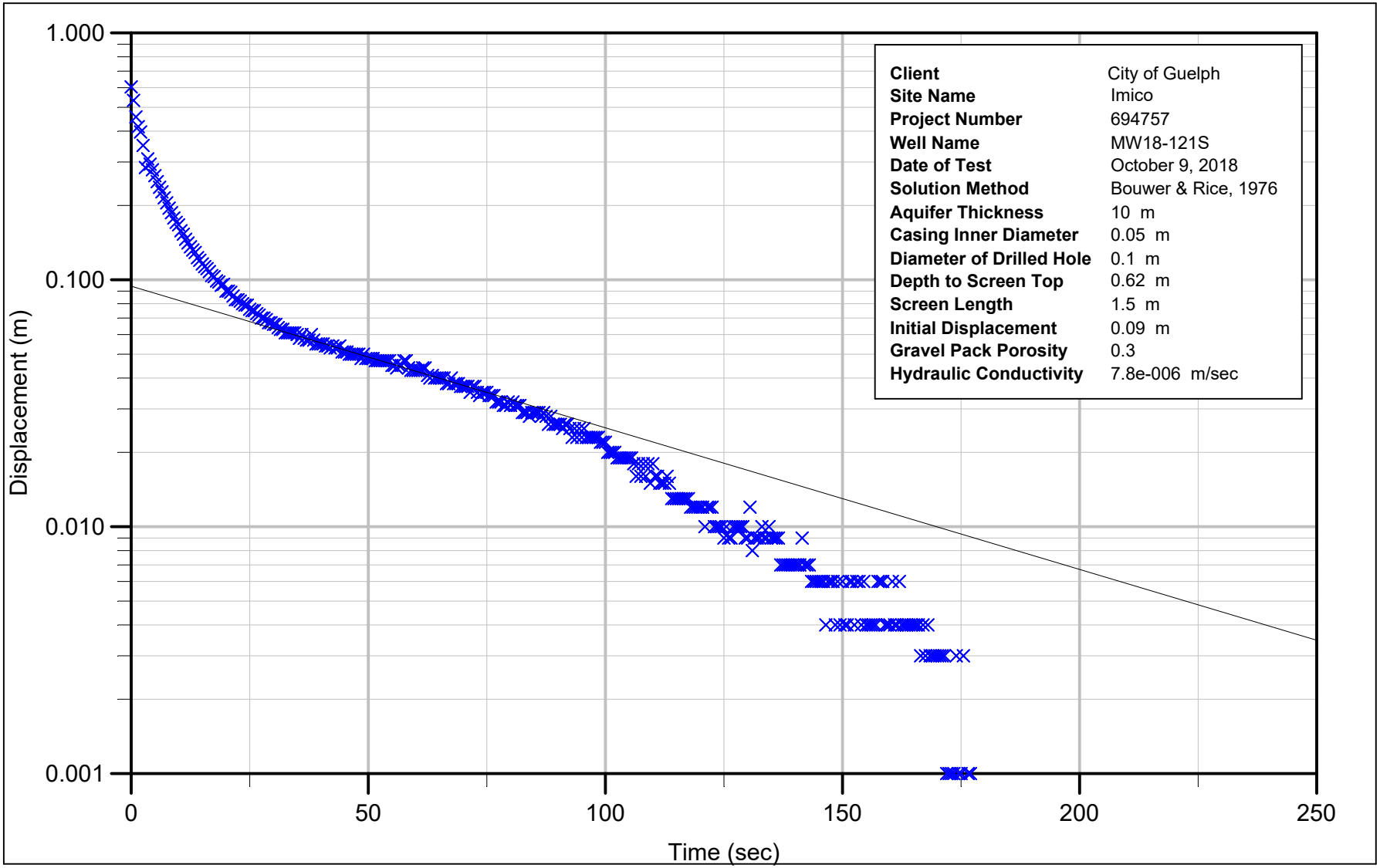


Figure F-8b - MW18-121S
Bouwer & Rice - Falling Head Test 2
Imico
City of Guelph
Guelph, Ontario

JACOBS

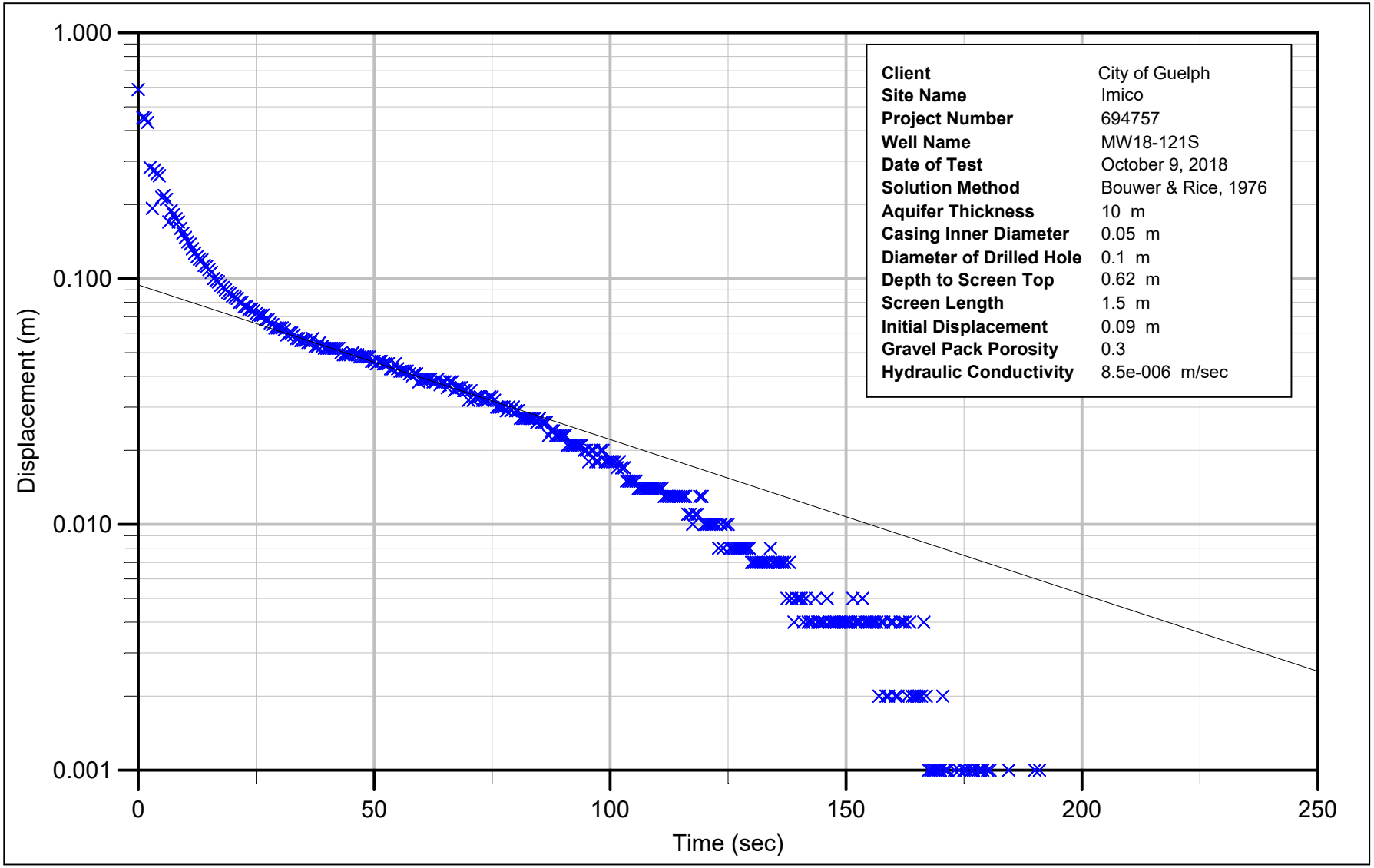


Figure F-8c - MW18-121S
Bouwer & Rice - Falling Head Test 3
Imico
City of Guelph
Guelph, Ontario

JACOBS

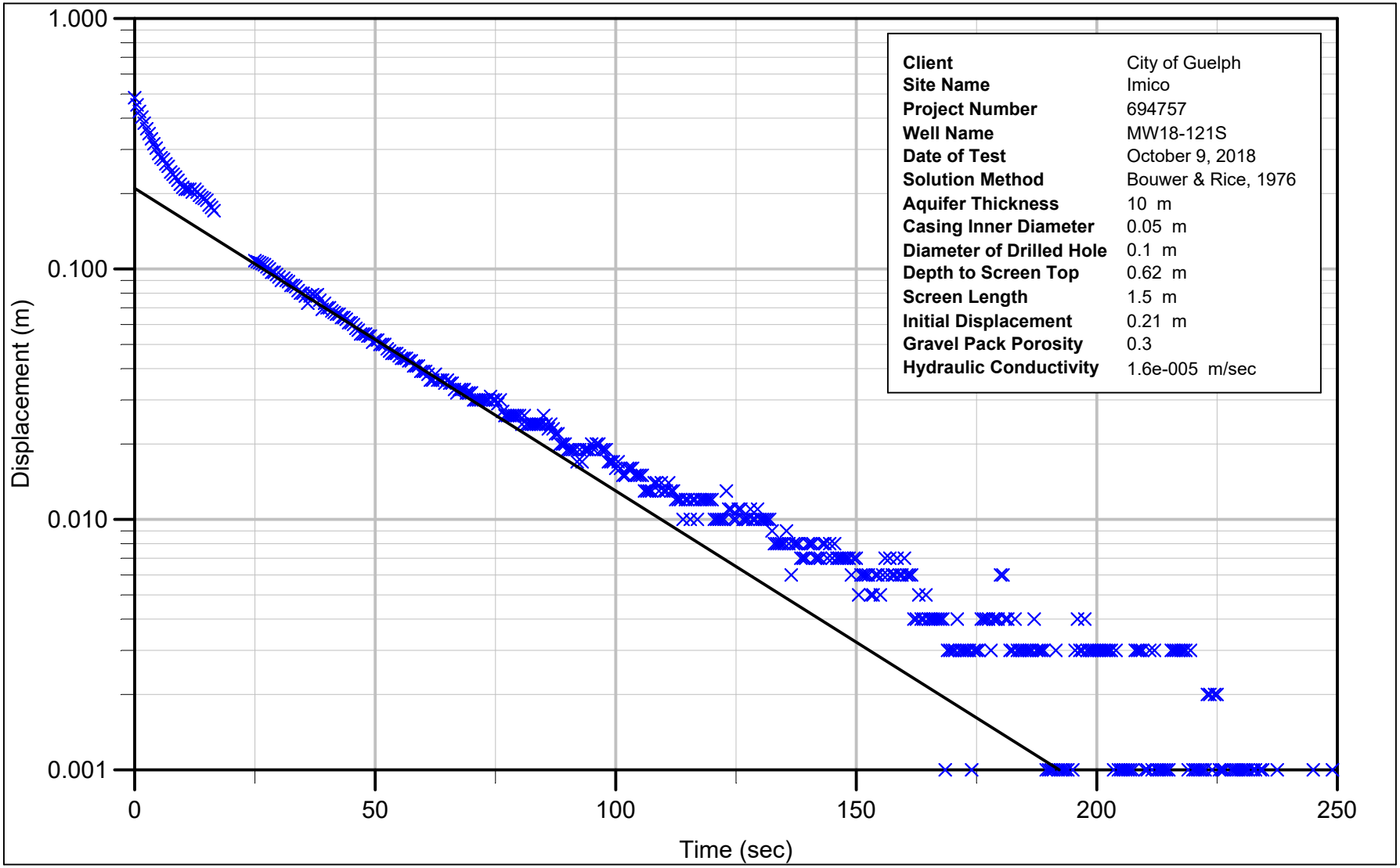


Figure F-8d - MW18-121S
Bouwer & Rice - Rising Head Test 1
Imico
City of Guelph
Guelph, Ontario

JACOBS

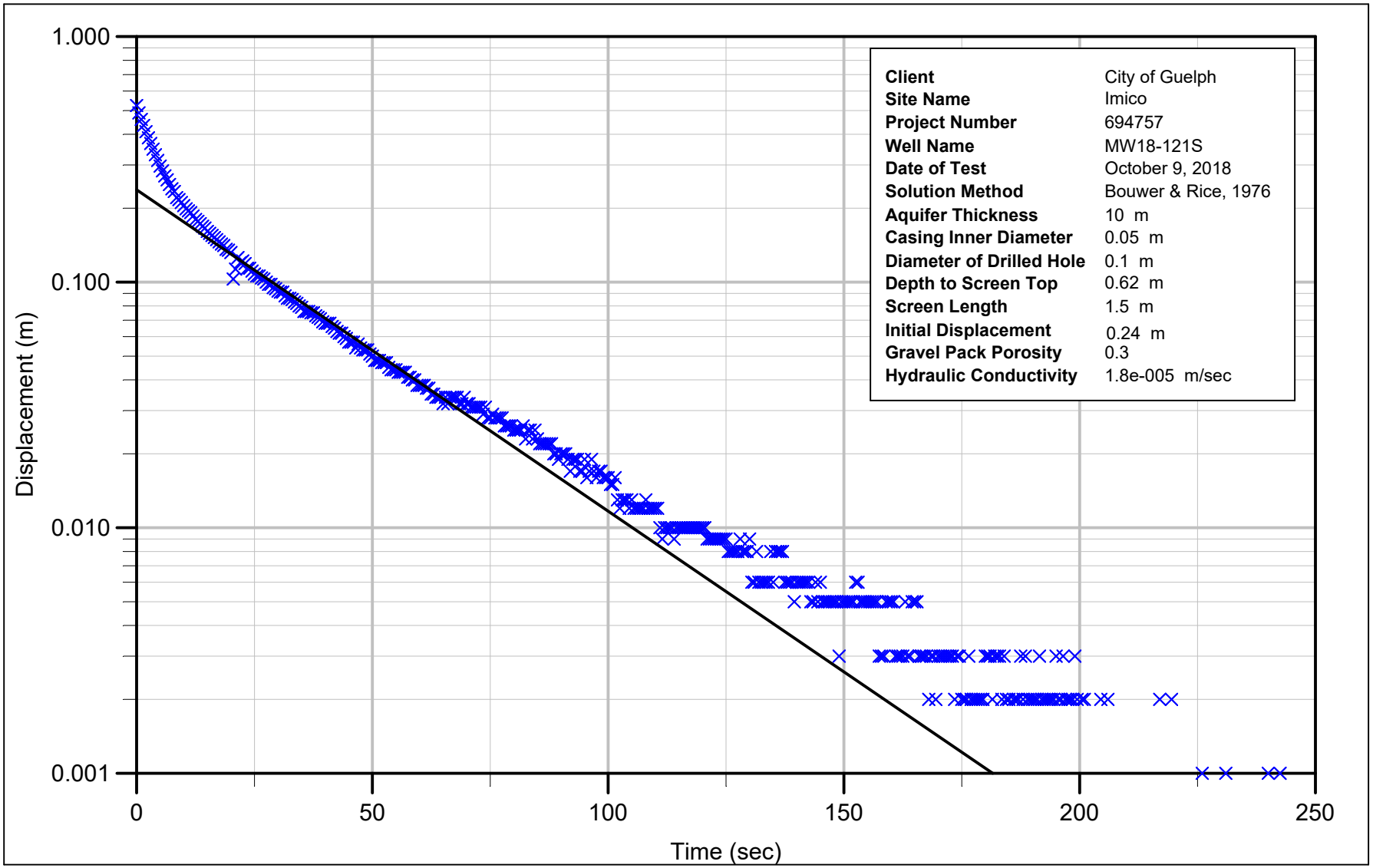


Figure F-8e - MW18-121S
Bouwer & Rice - Rising Head Test 2
Imico
City of Guelph
Guelph, Ontario

JACOBS

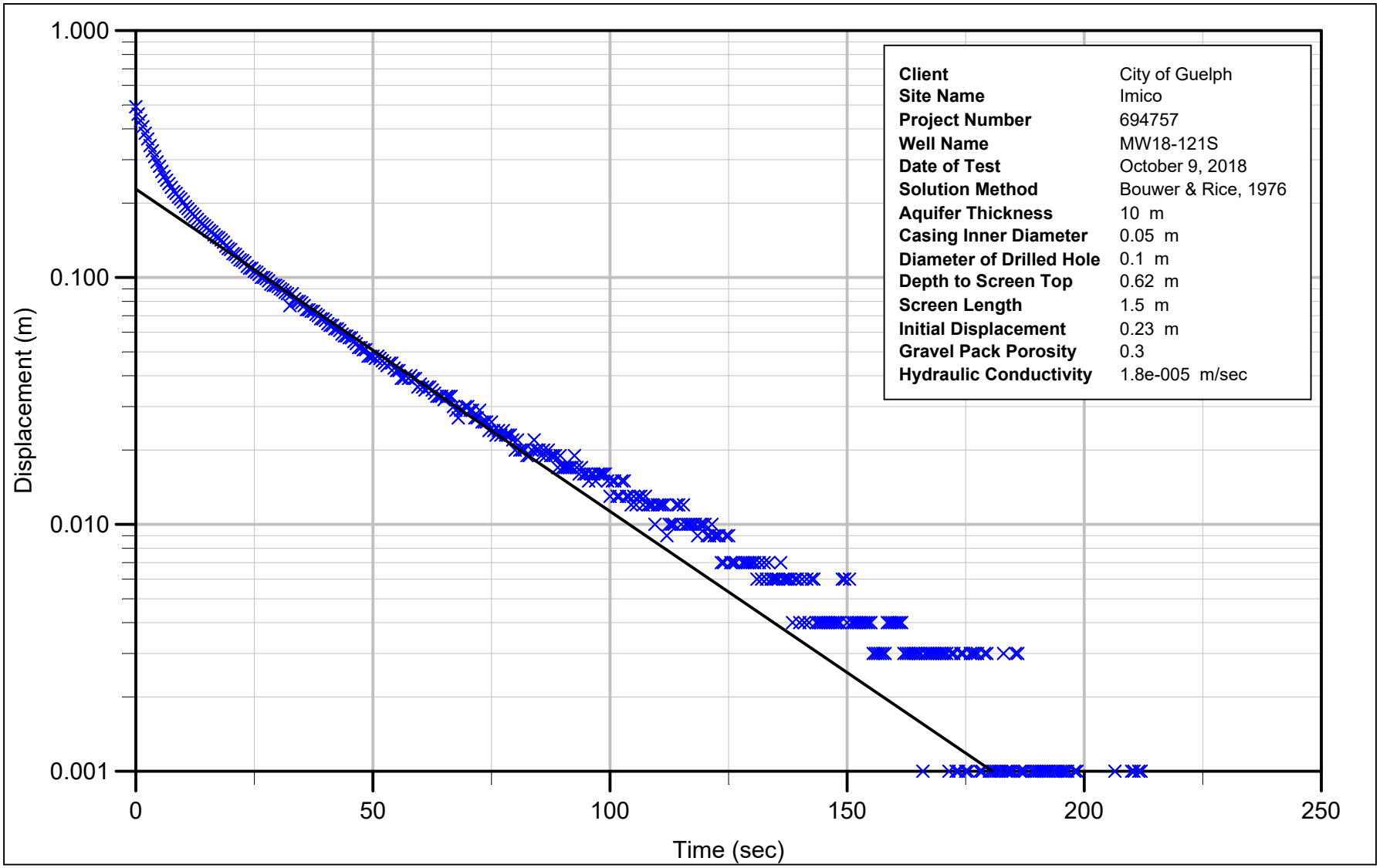


Figure F-8f - MW18-121S
Bouwer & Rice - Rising Head Test 3
Imico
City of Guelph
Guelph, Ontario

JACOBS

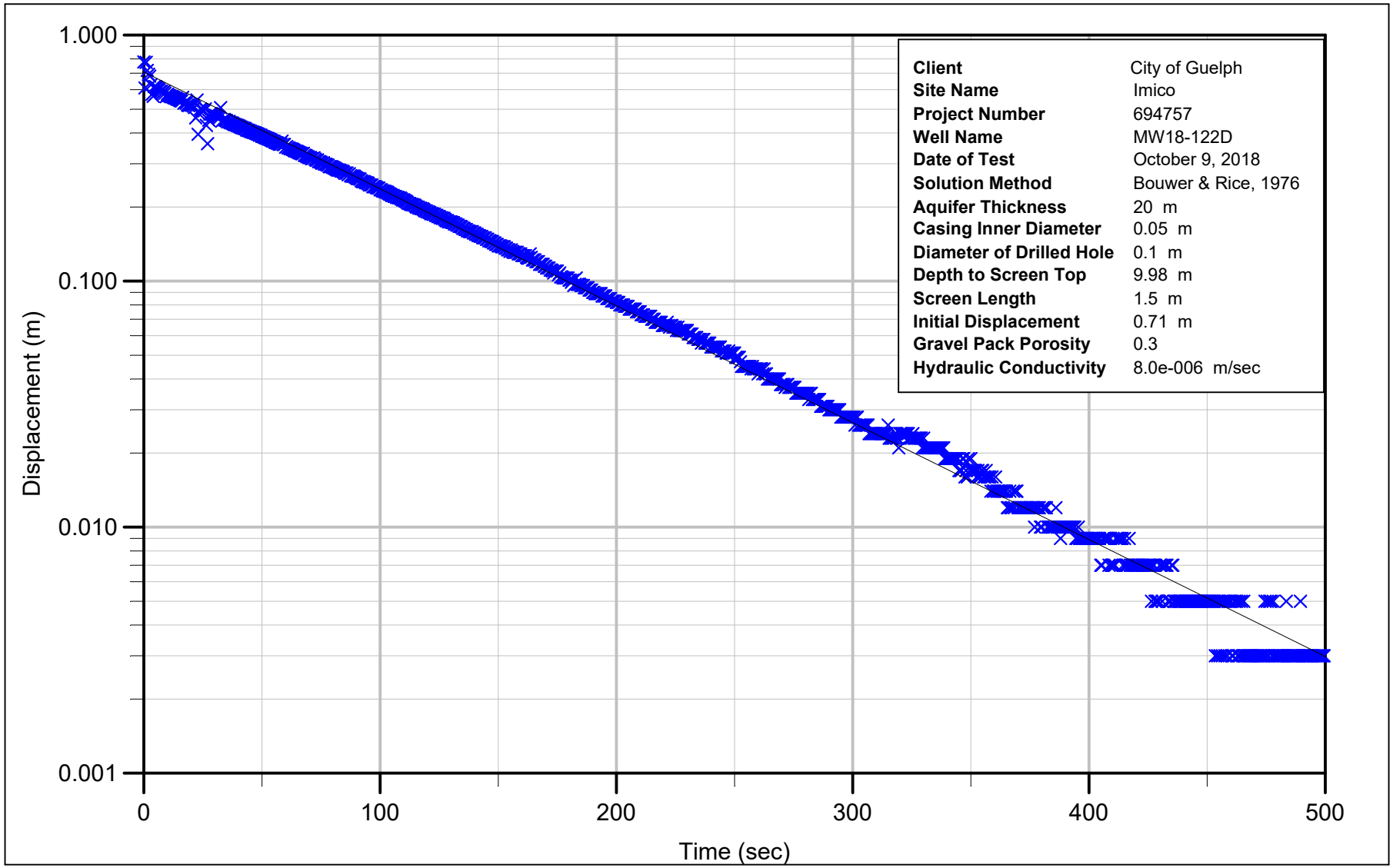


Figure F-9a - MW18-122D
Bouwer & Rice - Falling Head Test 1
Imico
City of Guelph
Guelph, Ontario

JACOBS

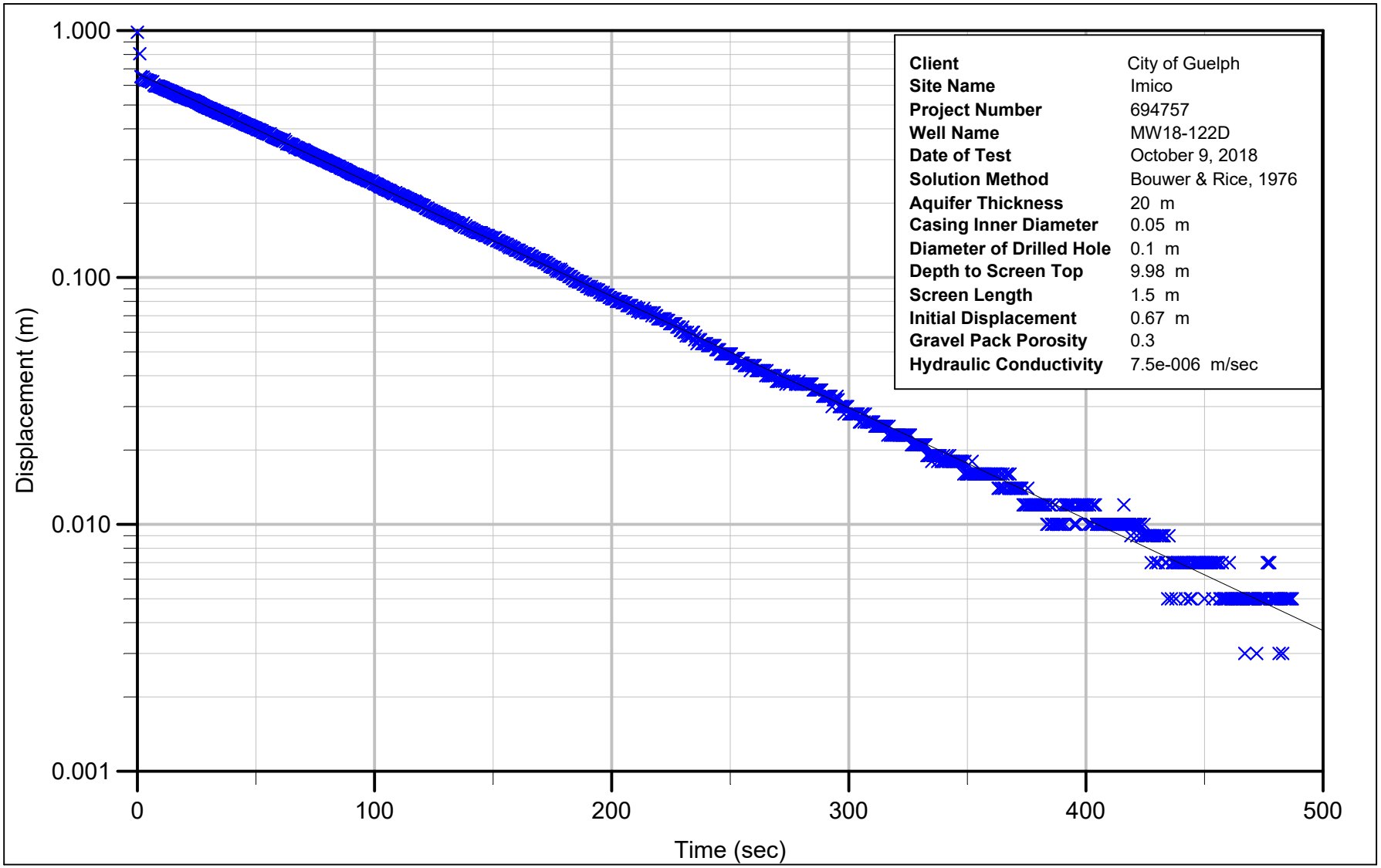


Figure F-9b - MW18-122D
Bouwer & Rice - Falling Head Test 2
Imico
City of Guelph
Guelph, Ontario

JACOBS

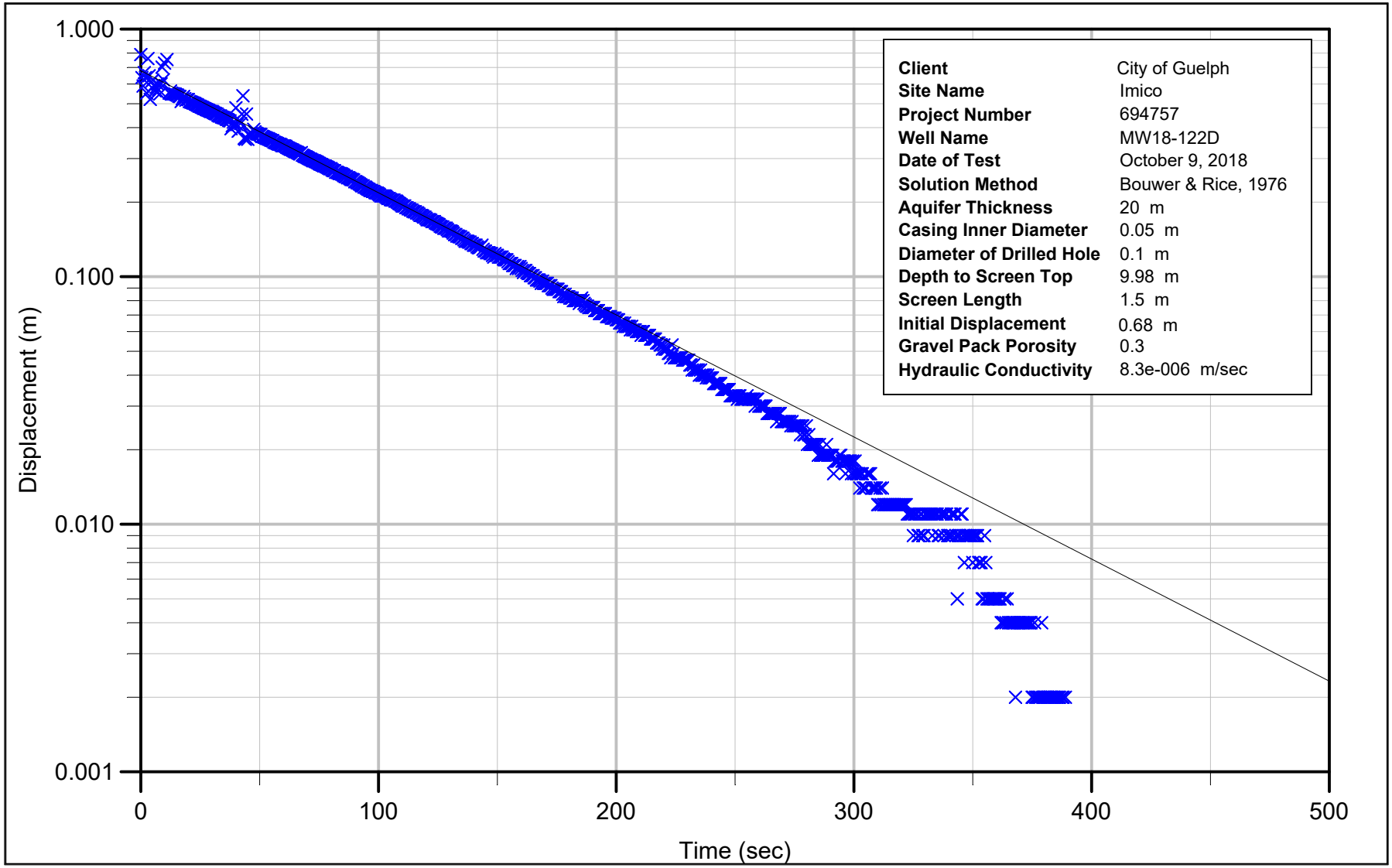


Figure F-9c - MW18-122D
Bouwer & Rice - Falling Head Test 3
Imico
City of Guelph
Guelph, Ontario

JACOBS

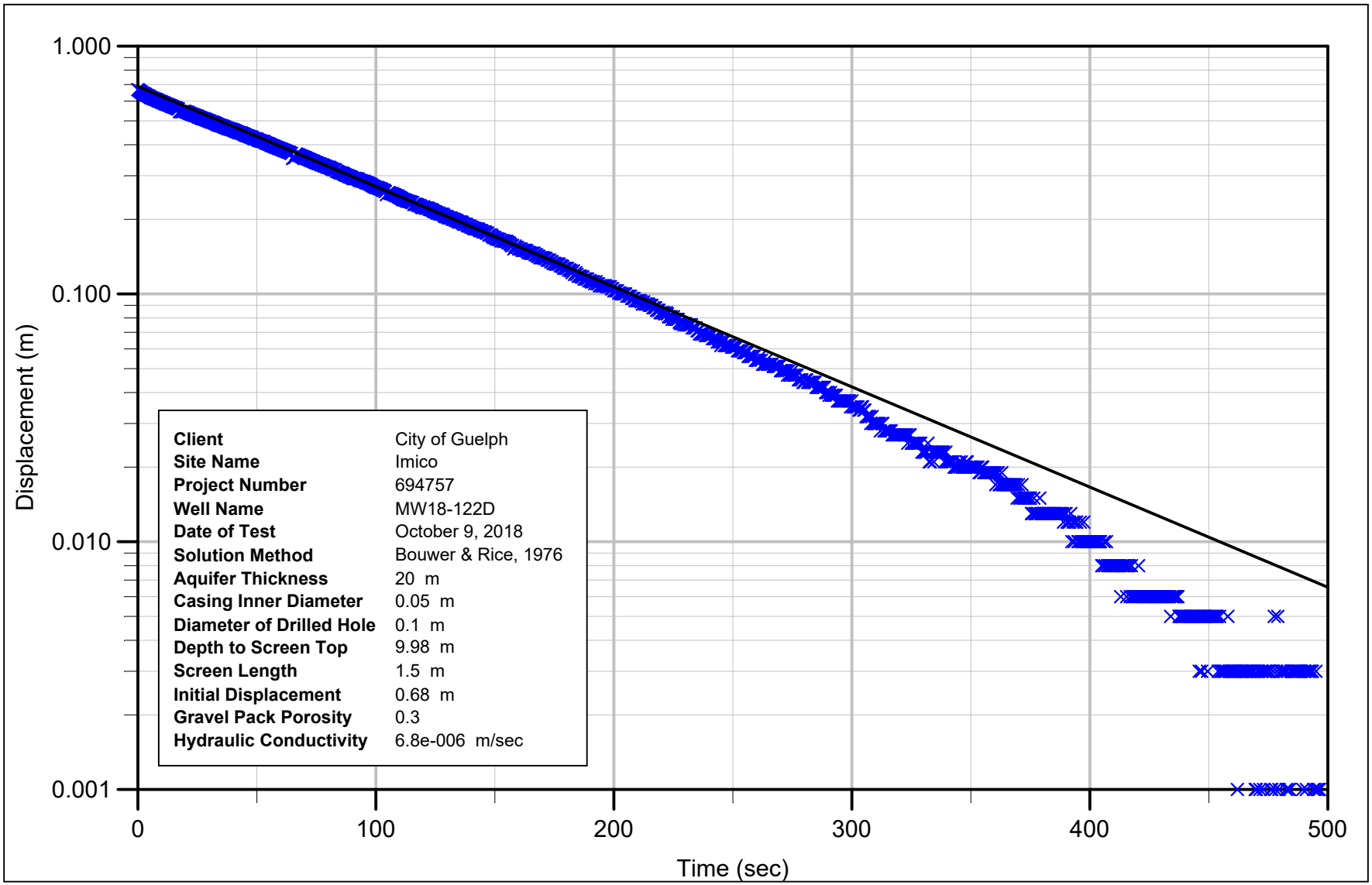


Figure F-9d - MW18-122D
Bouwer & Rice - Rising Head Test 1
Imico
City of Guelph
Guelph, Ontario

JACOBS

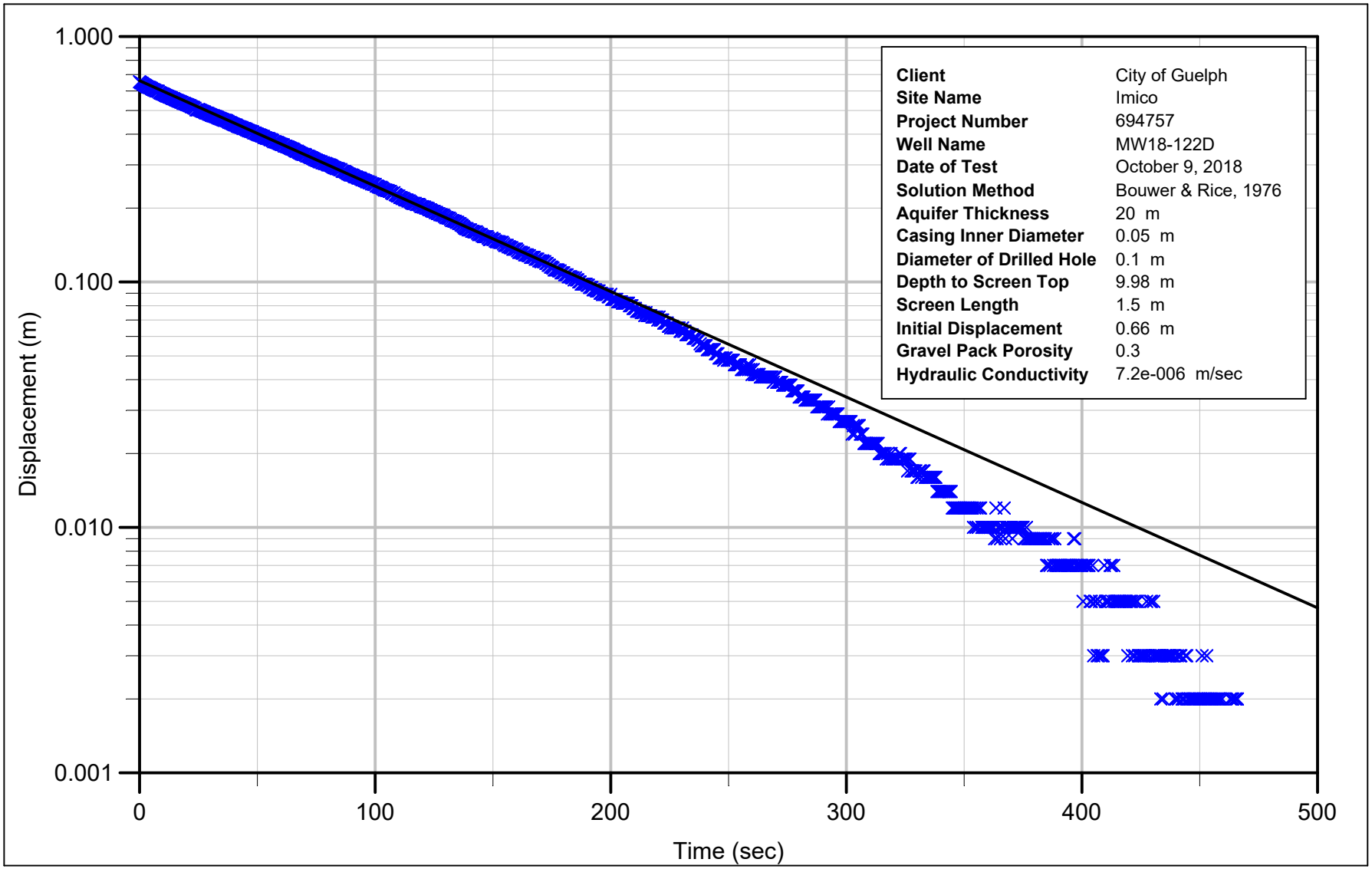


Figure F-9e - MW18-122D
Bouwer & Rice - Rising Head Test 2
Imico
City of Guelph
Guelph, Ontario

JACOBS

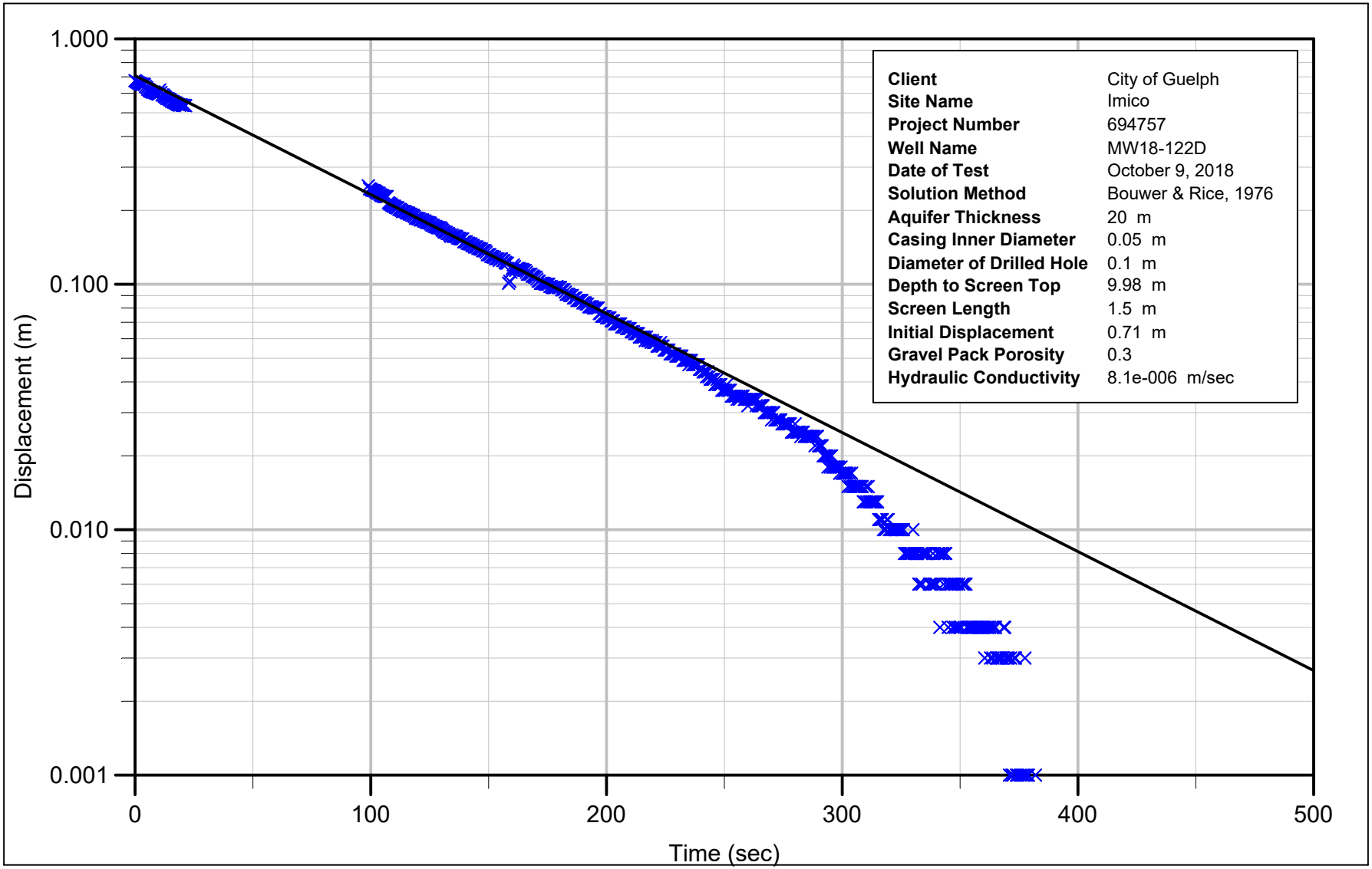


Figure F-9f - MW18-122D
Bouwer & Rice - Rising Head Test 3
Imico
City of Guelph
Guelph, Ontario

JACOBS

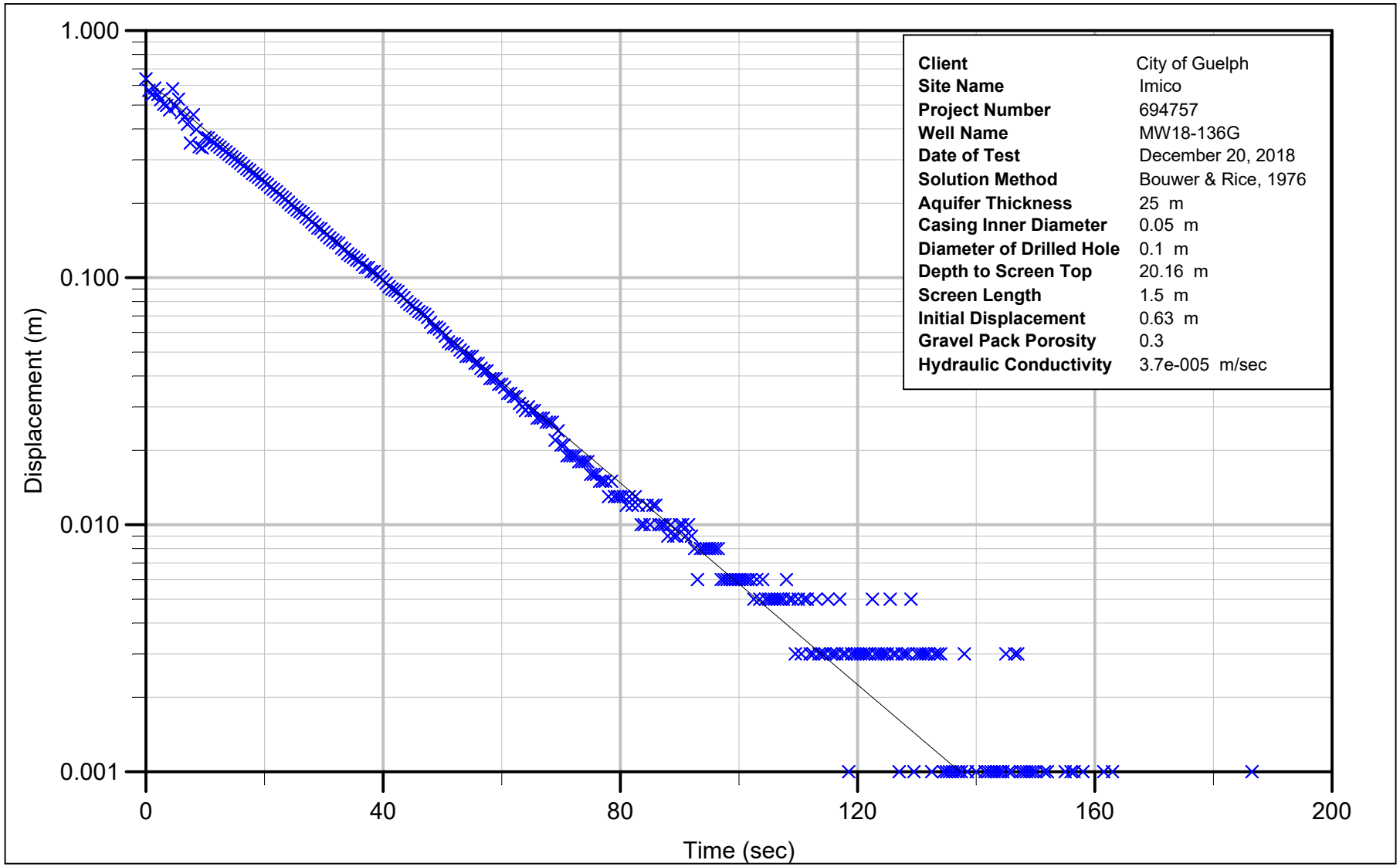


Figure F-10a - MW18-136G
Bouwer & Rice - Falling Head Test 1
Imico
City of Guelph
Guelph, Ontario

JACOBS

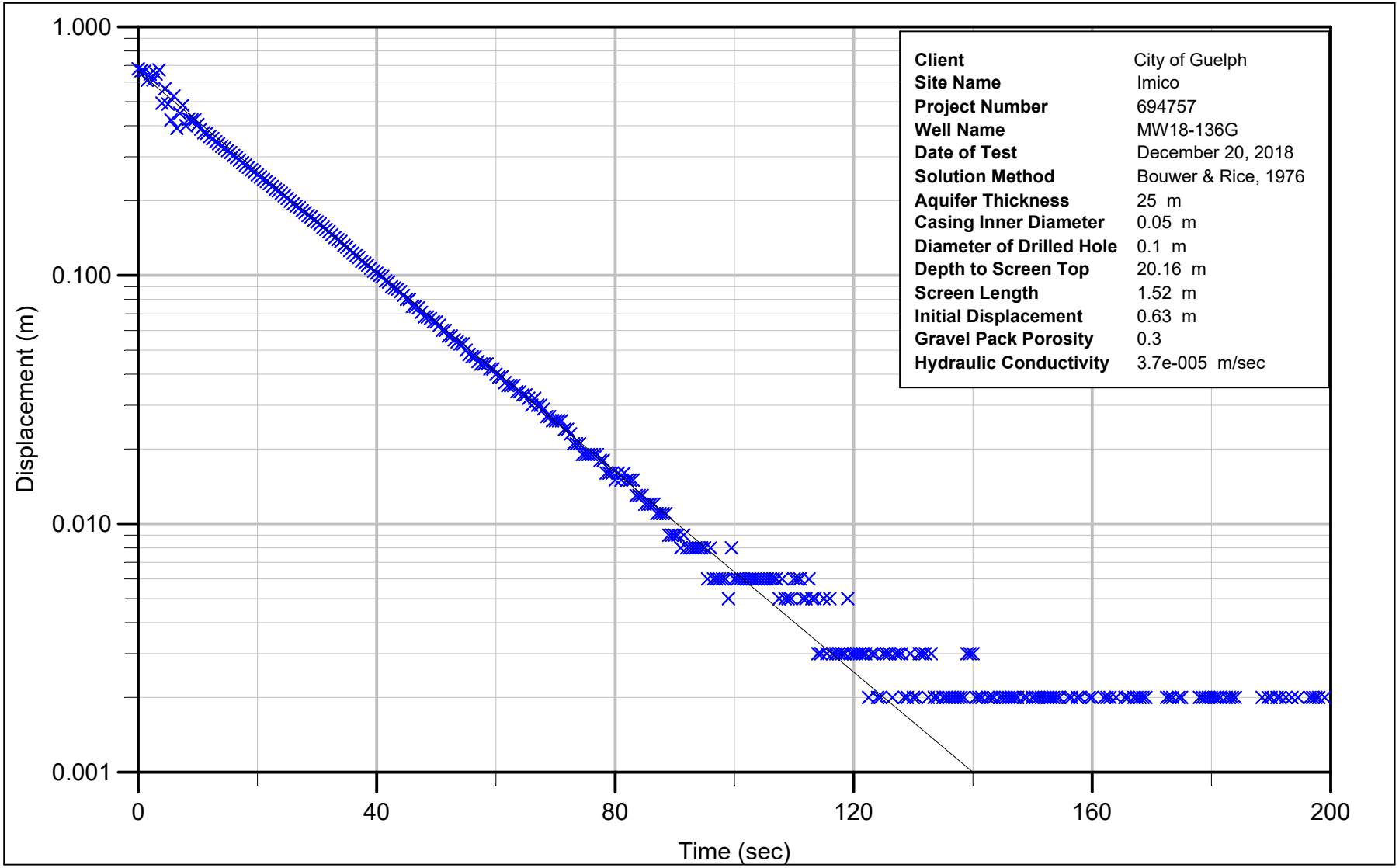


Figure F-10b - MW18-136G
Bouwer & Rice - Falling Head Test 2
Imico
City of Guelph
Guelph, Ontario

JACOBS

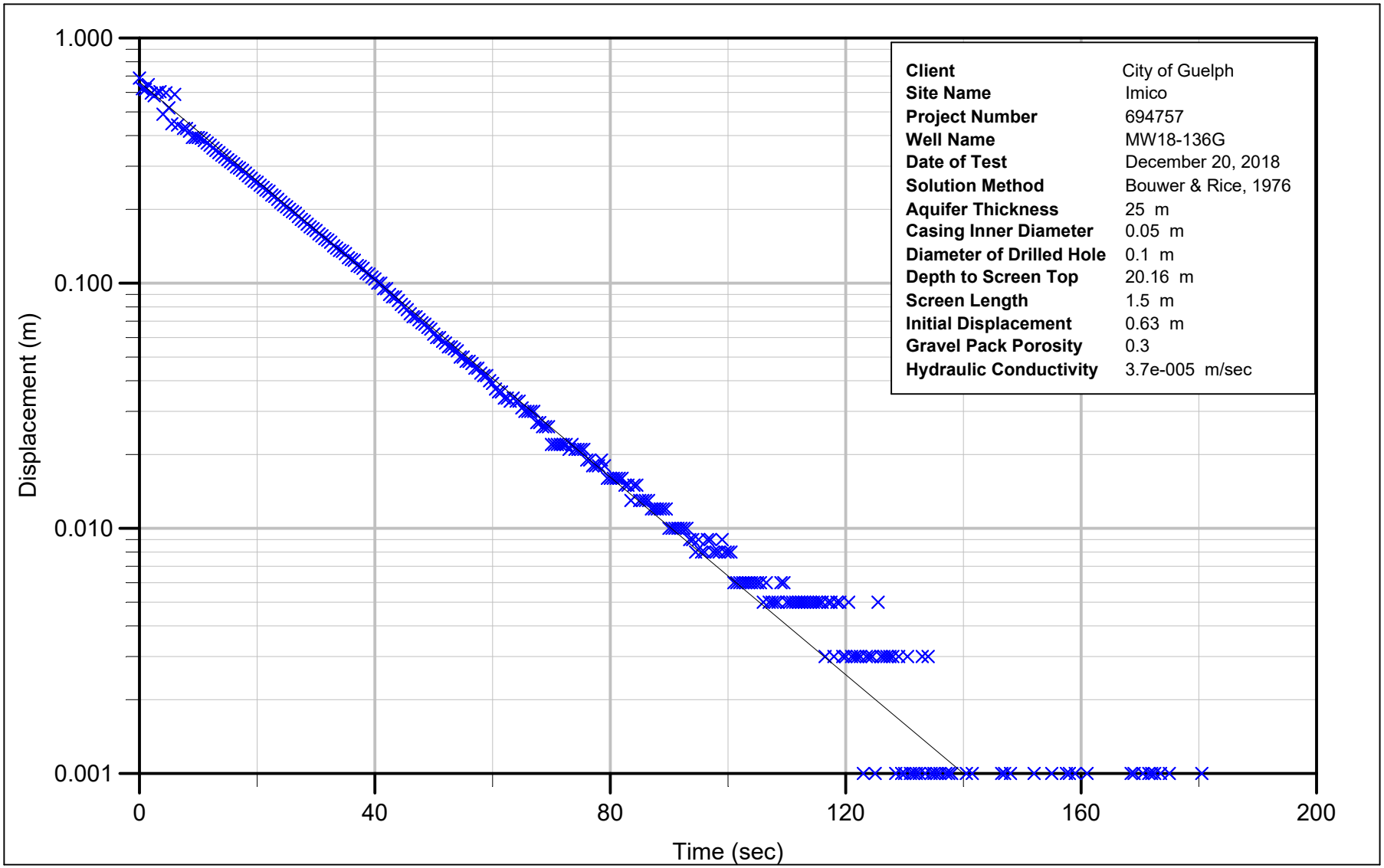


Figure F-10c - MW18-136G
Bouwer & Rice - Falling Head Test 3
Imico
City of Guelph
Guelph, Ontario

JACOBS

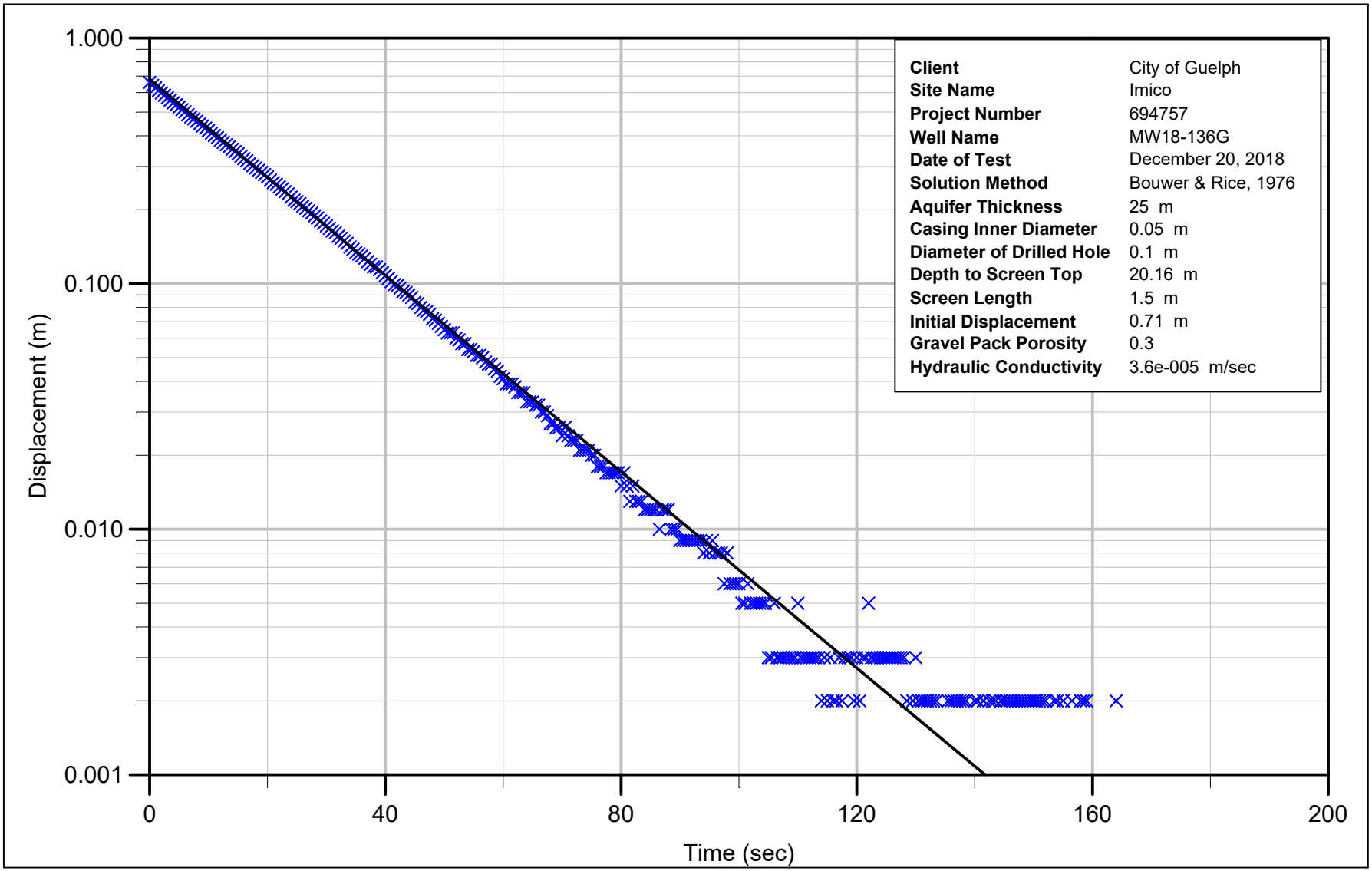


Figure F-10d - MW18-136G
Bouwer & Rice - Rising Head Test 1
Imico
City of Guelph
Guelph, Ontario

JACOBS

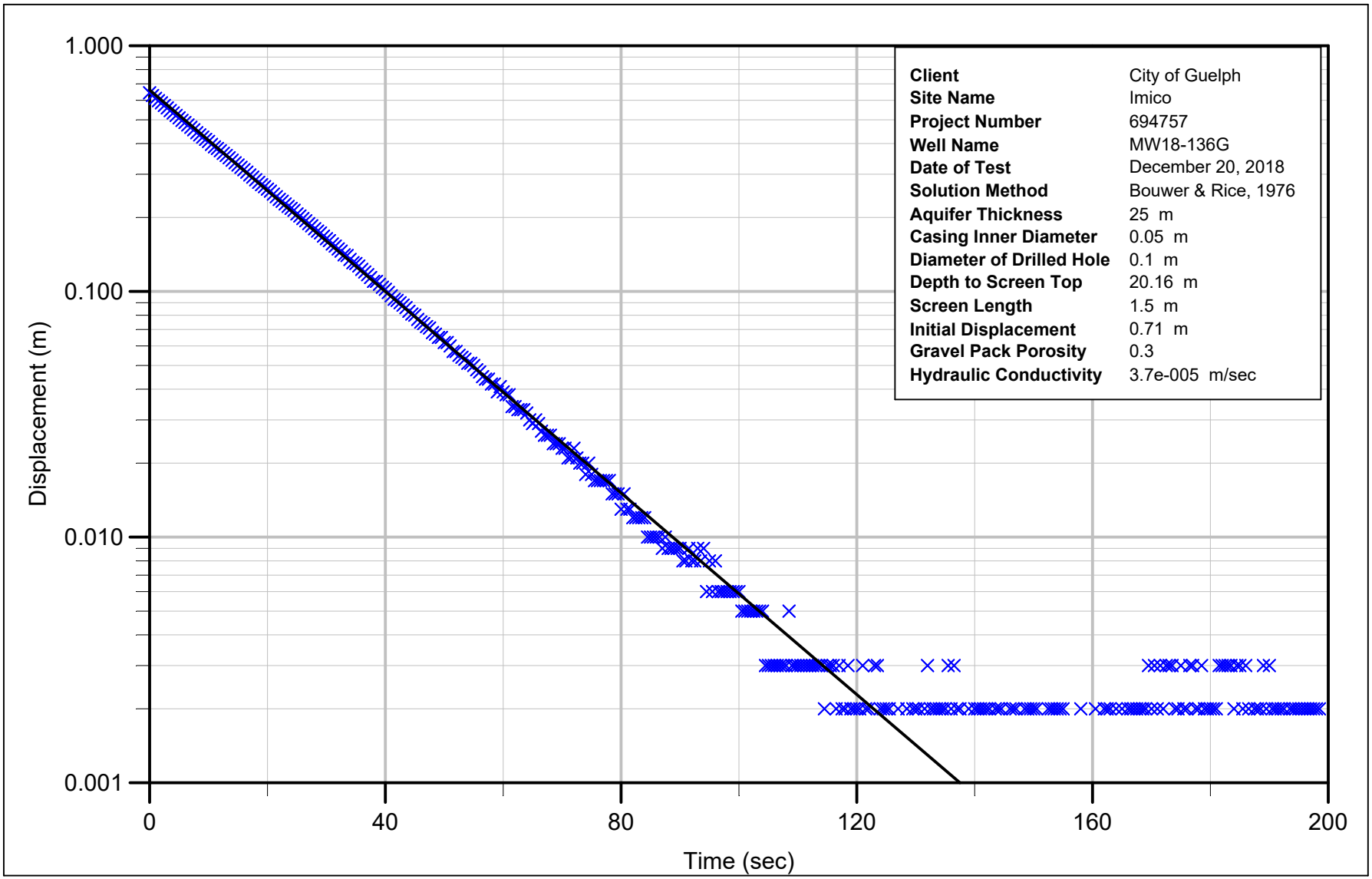


Figure F-10e - MW18-136G
Bouwer & Rice - Rising Head Test 2
Imico
City of Guelph
Guelph, Ontario

JACOBS

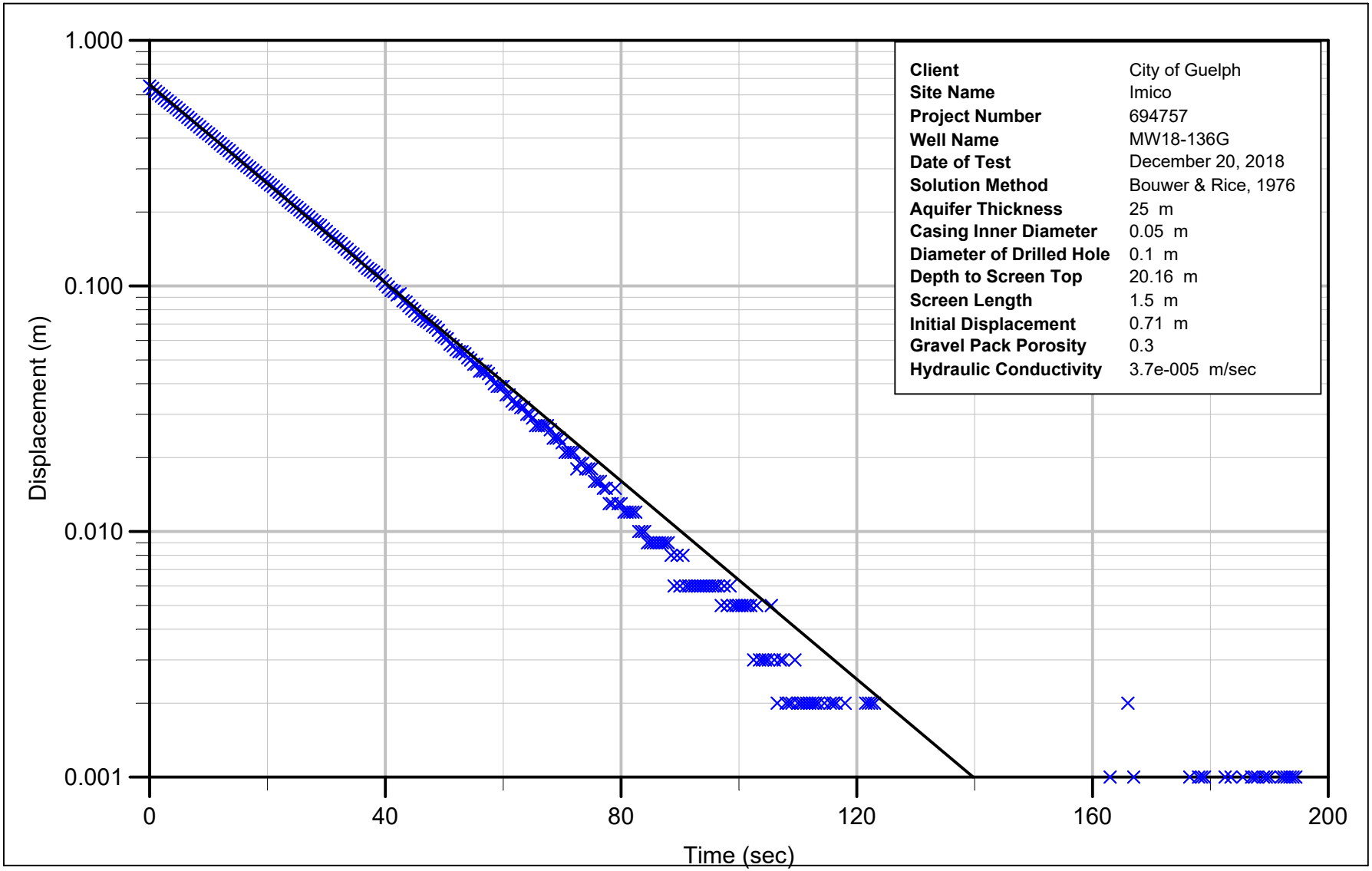


Figure F-10f - MW18-136G
Bouwer & Rice - Rising Head Test 3
Imico
City of Guelph
Guelph, Ontario

JACOBS

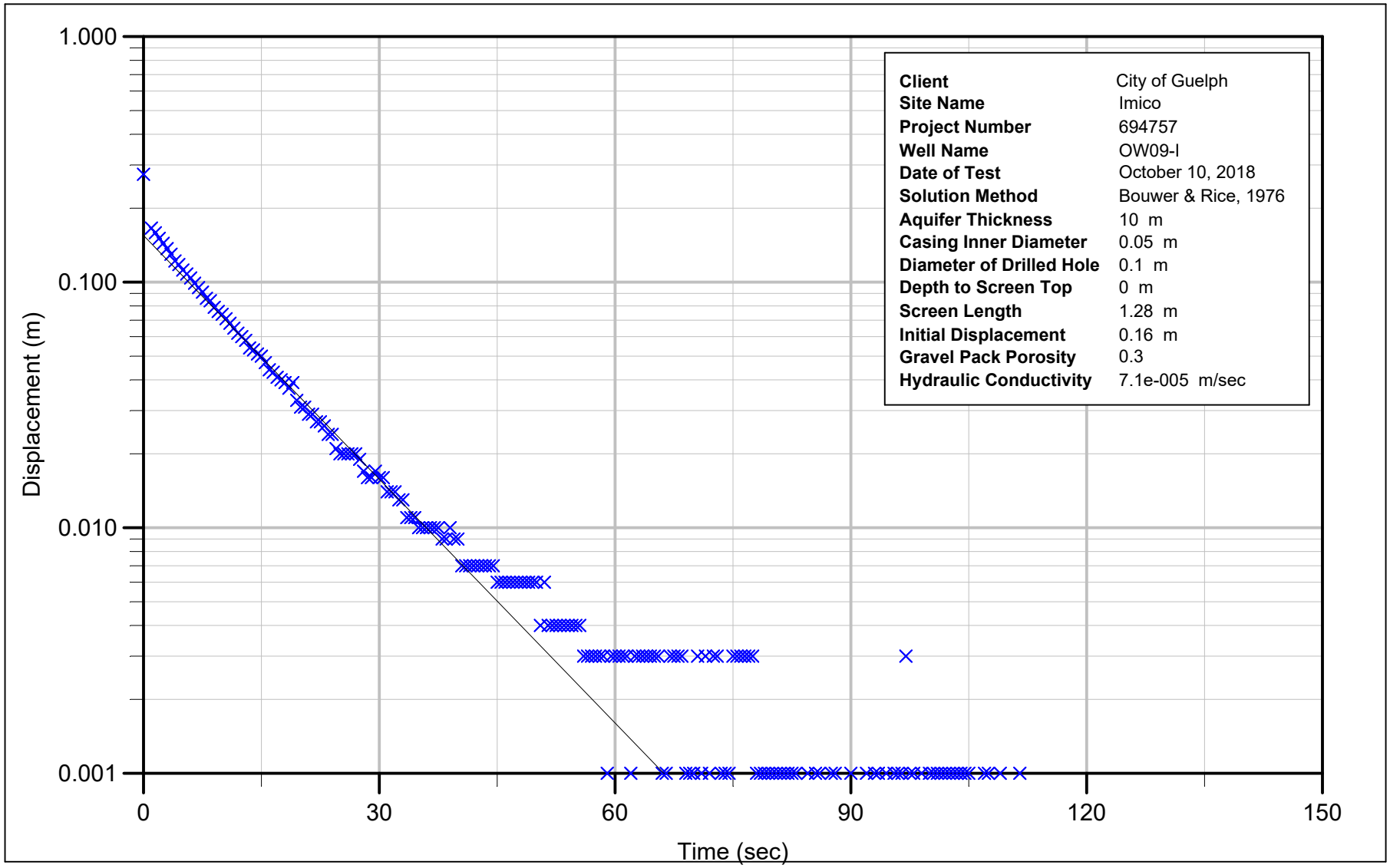


Figure F-11a - OW09-I
Bouwer & Rice - Falling Head Test 1
Imico
City of Guelph
Guelph, Ontario

JACOBS

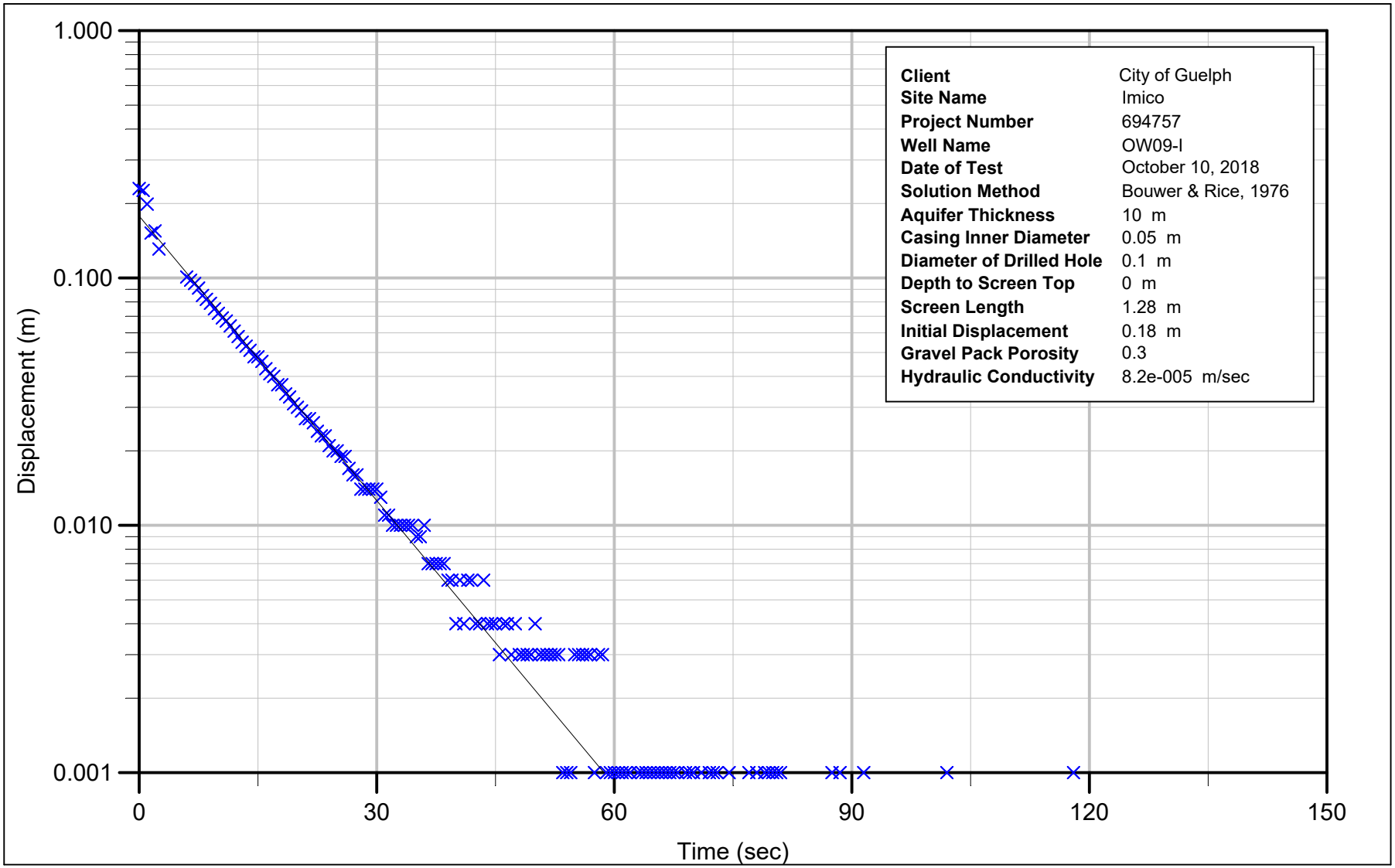


Figure F-11b - OW09-I
Bouwer & Rice - Falling Head Test 2
Imico
City of Guelph
Guelph, Ontario

JACOBS

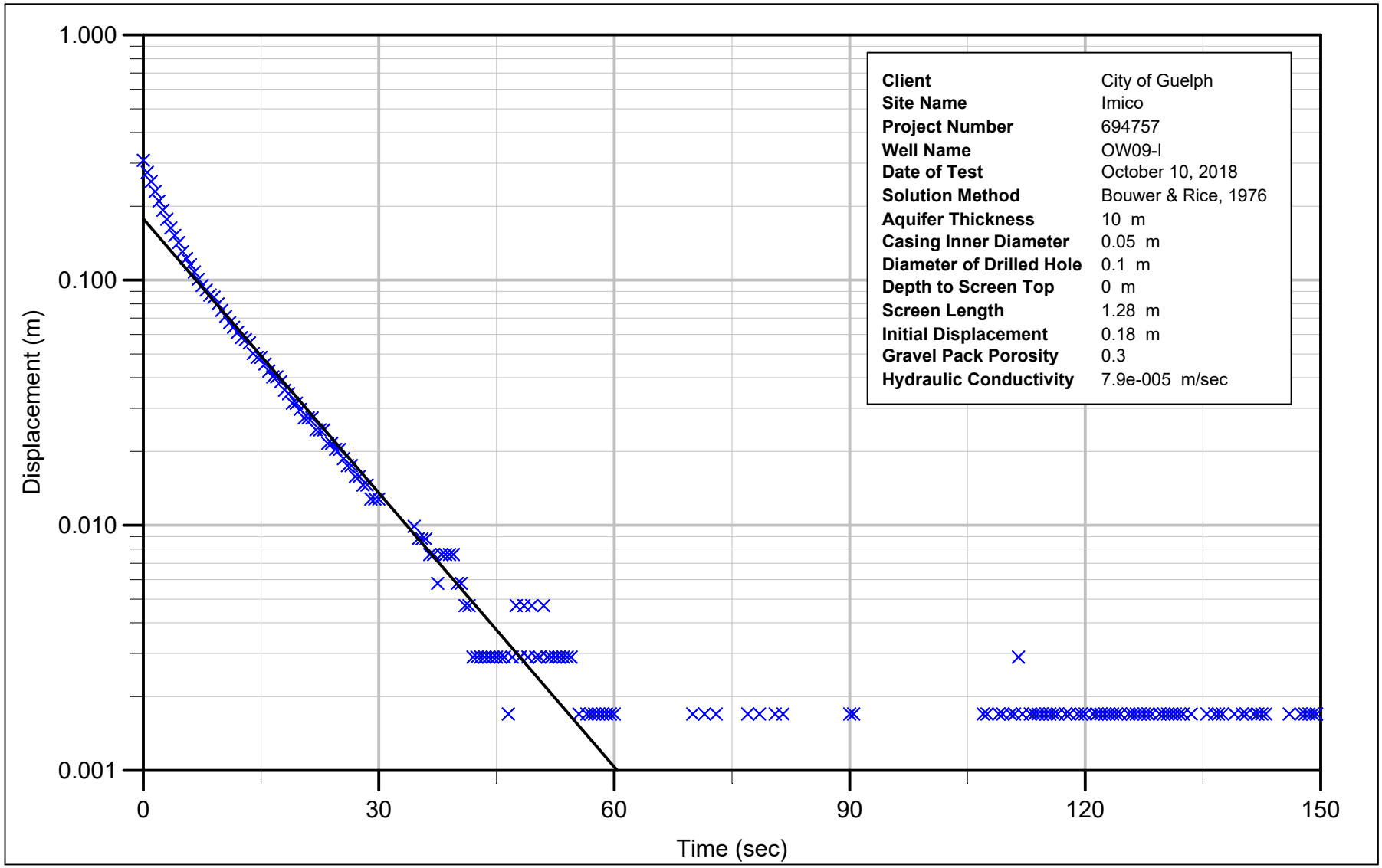


Figure F-11c - OW09-I
Bouwer & Rice - Rising Head Test 1
Imico
City of Guelph
Guelph, Ontario

JACOBS

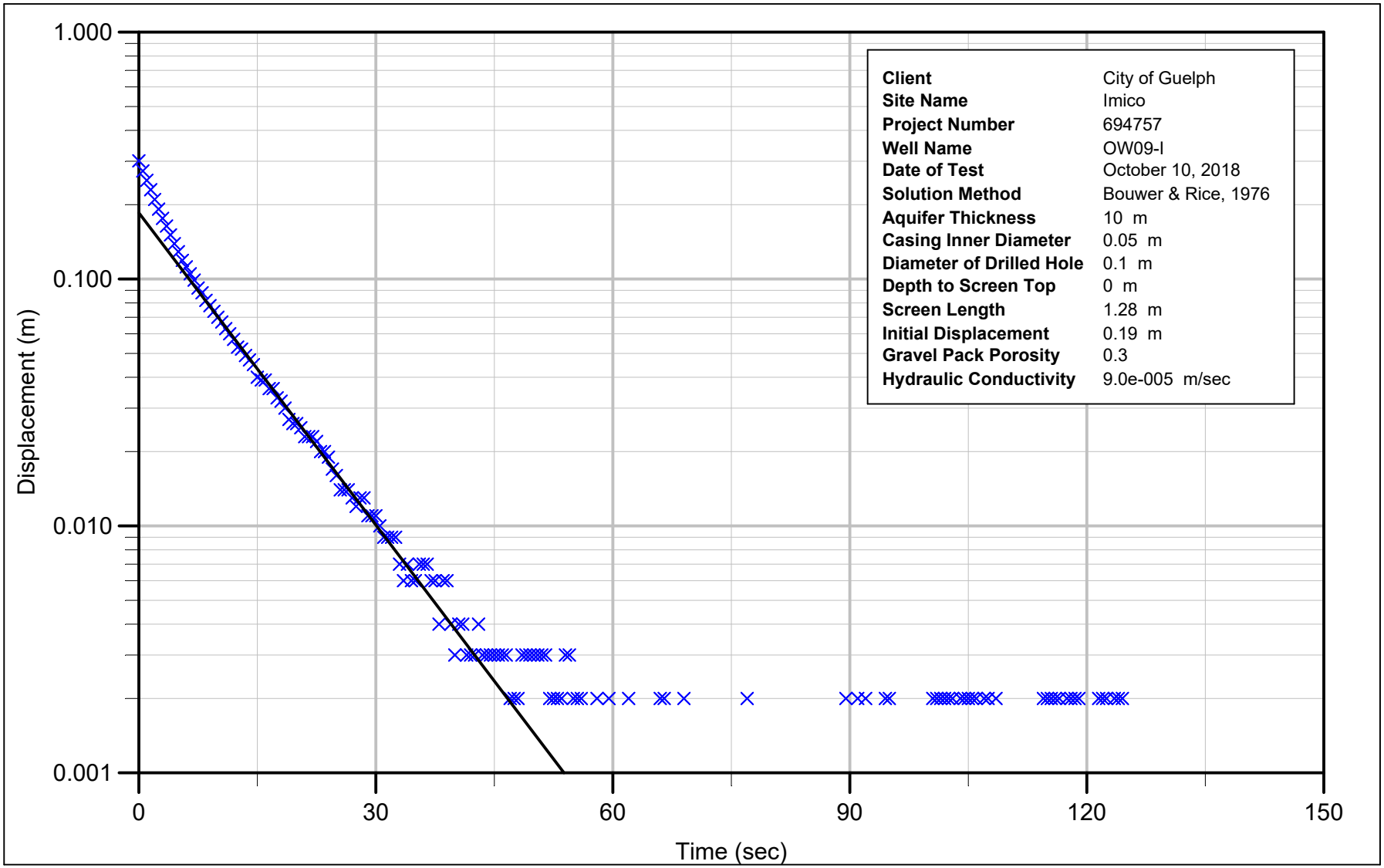


Figure F-11d - OW09-I
Bouwer & Rice - Rising Head Test 2
Imico
City of Guelph
Guelph, Ontario

JACOBS

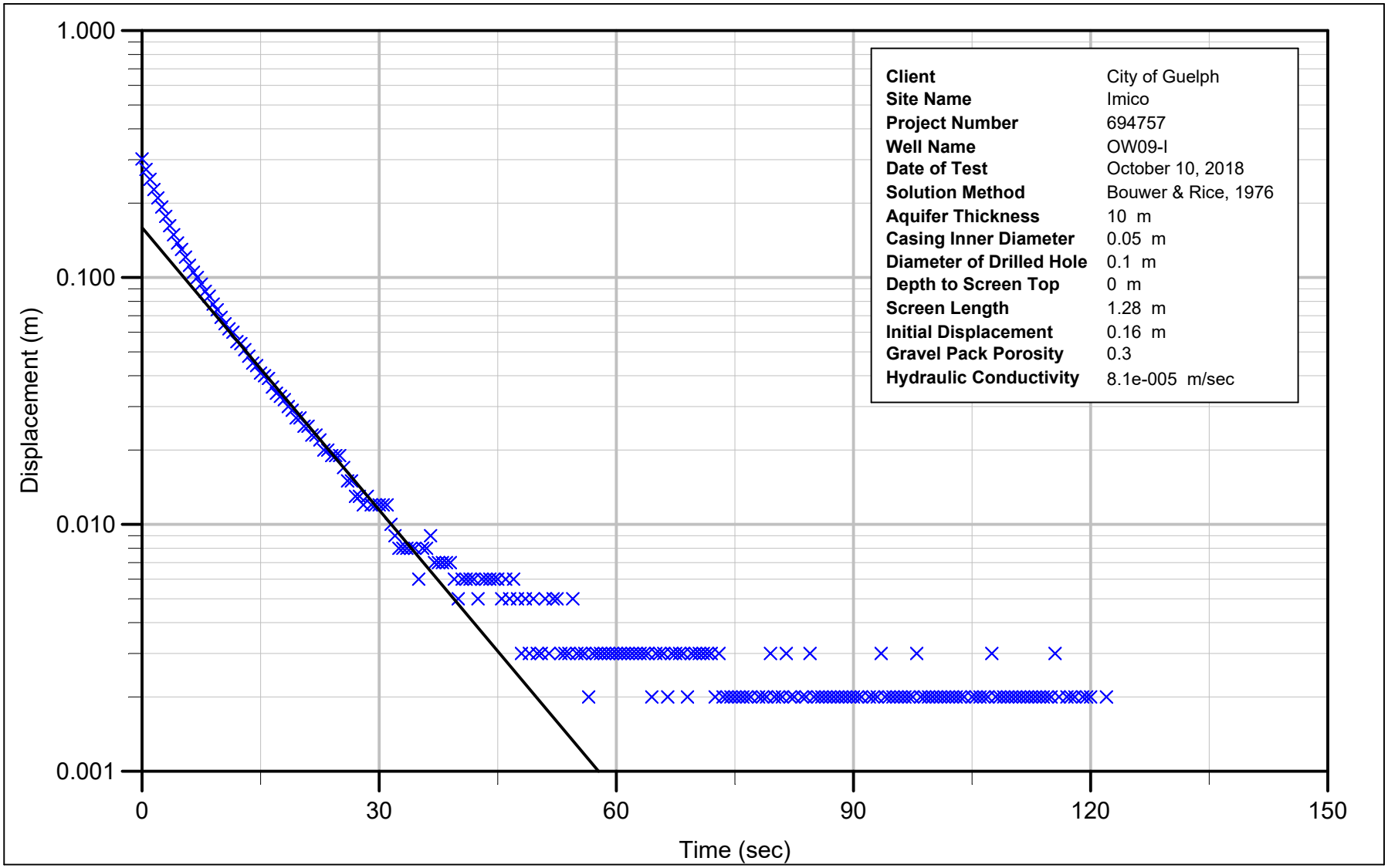


Figure F-11e - OW09-I
Bouwer & Rice - Rising Head Test 3
Imico
City of Guelph
Guelph, Ontario

JACOBS

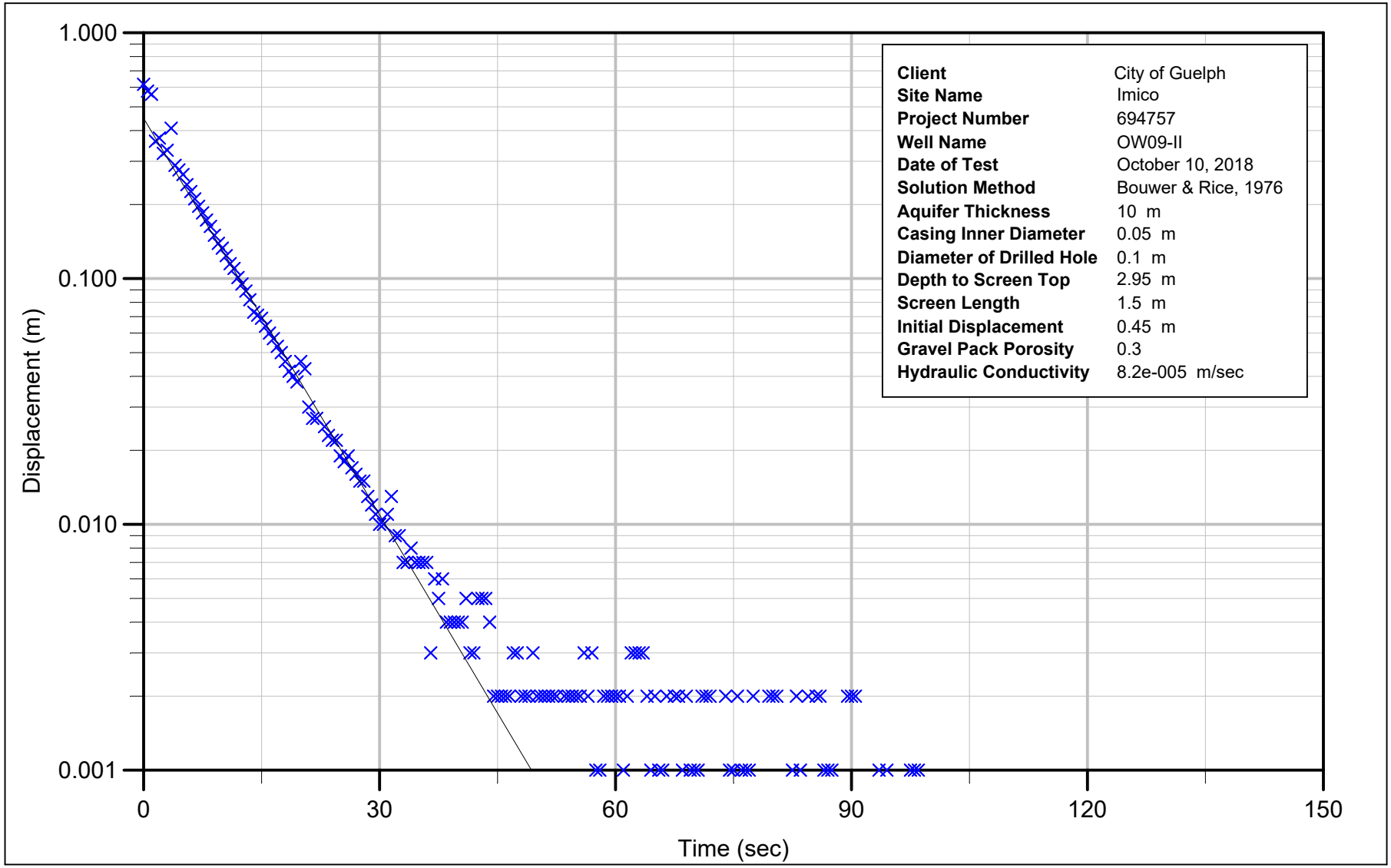


Figure F-12a - OW09-II
Bouwer & Rice - Falling Head Test 1
Imico
City of Guelph
Guelph, Ontario

JACOBS

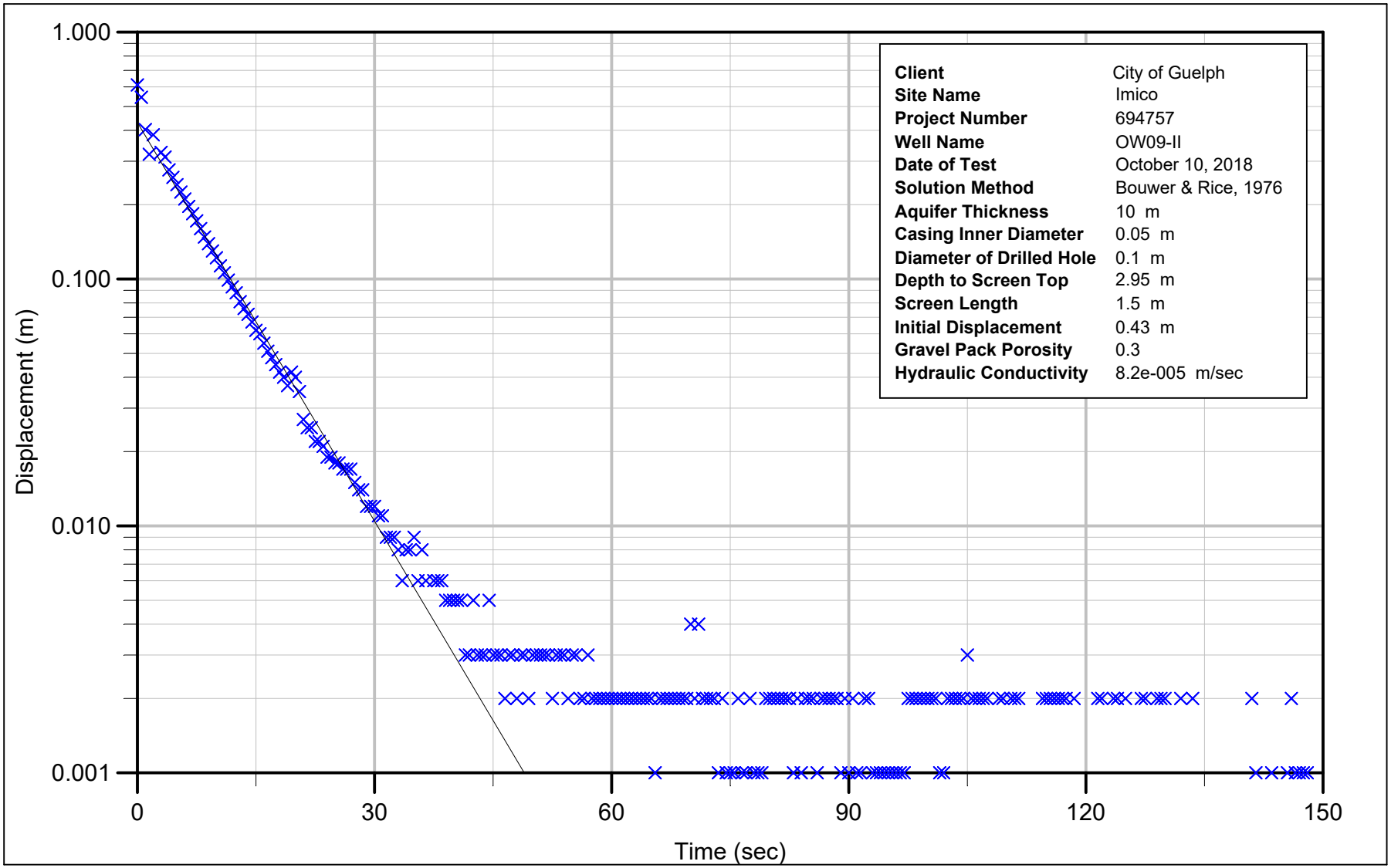


Figure F-12b - OW09-II
Bouwer & Rice - Falling Head Test 2
Imico
City of Guelph
Guelph, Ontario

JACOBS

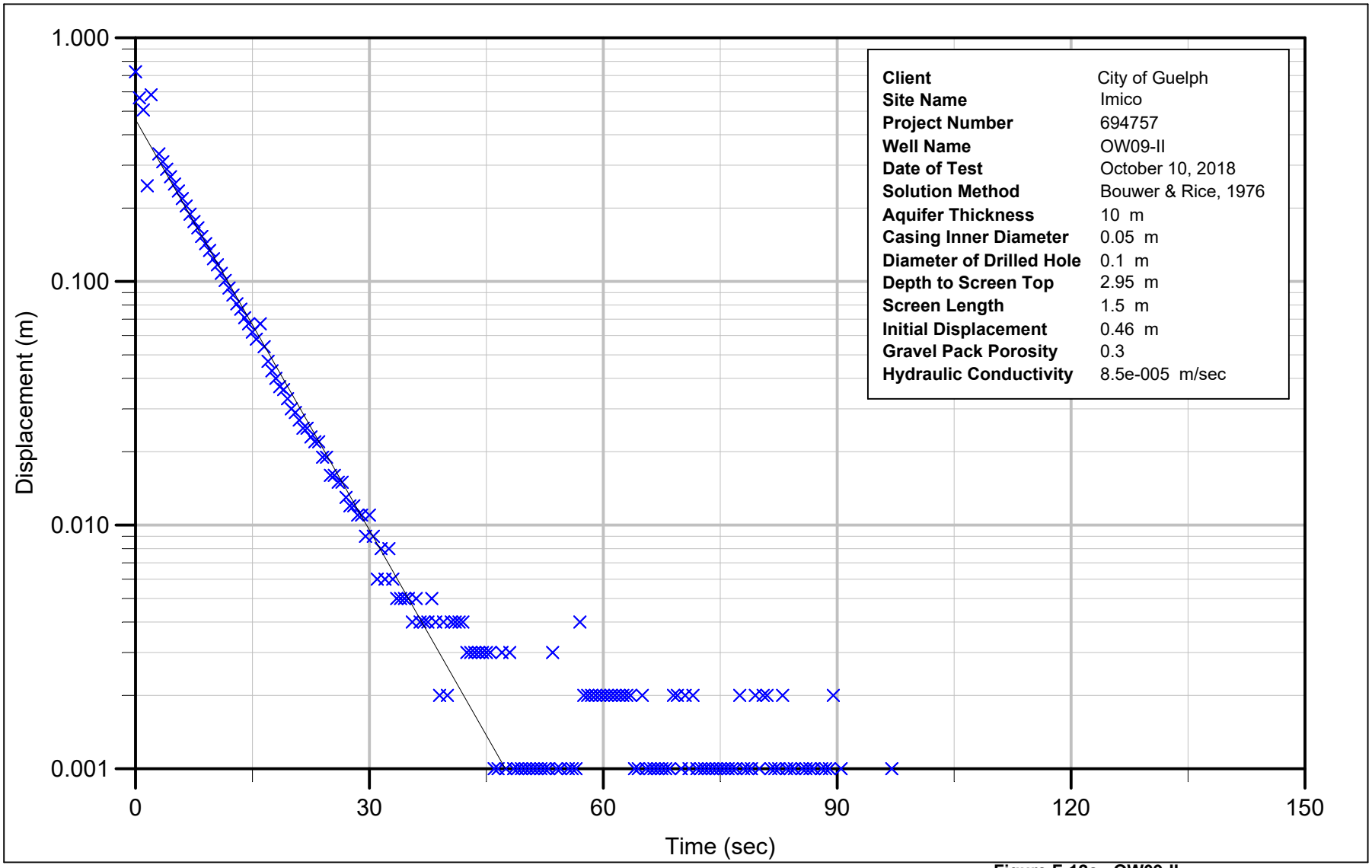


Figure F-12c - OW09-II
Bouwer & Rice - Falling Head Test 3
Imico
City of Guelph
Guelph, Ontario

JACOBS

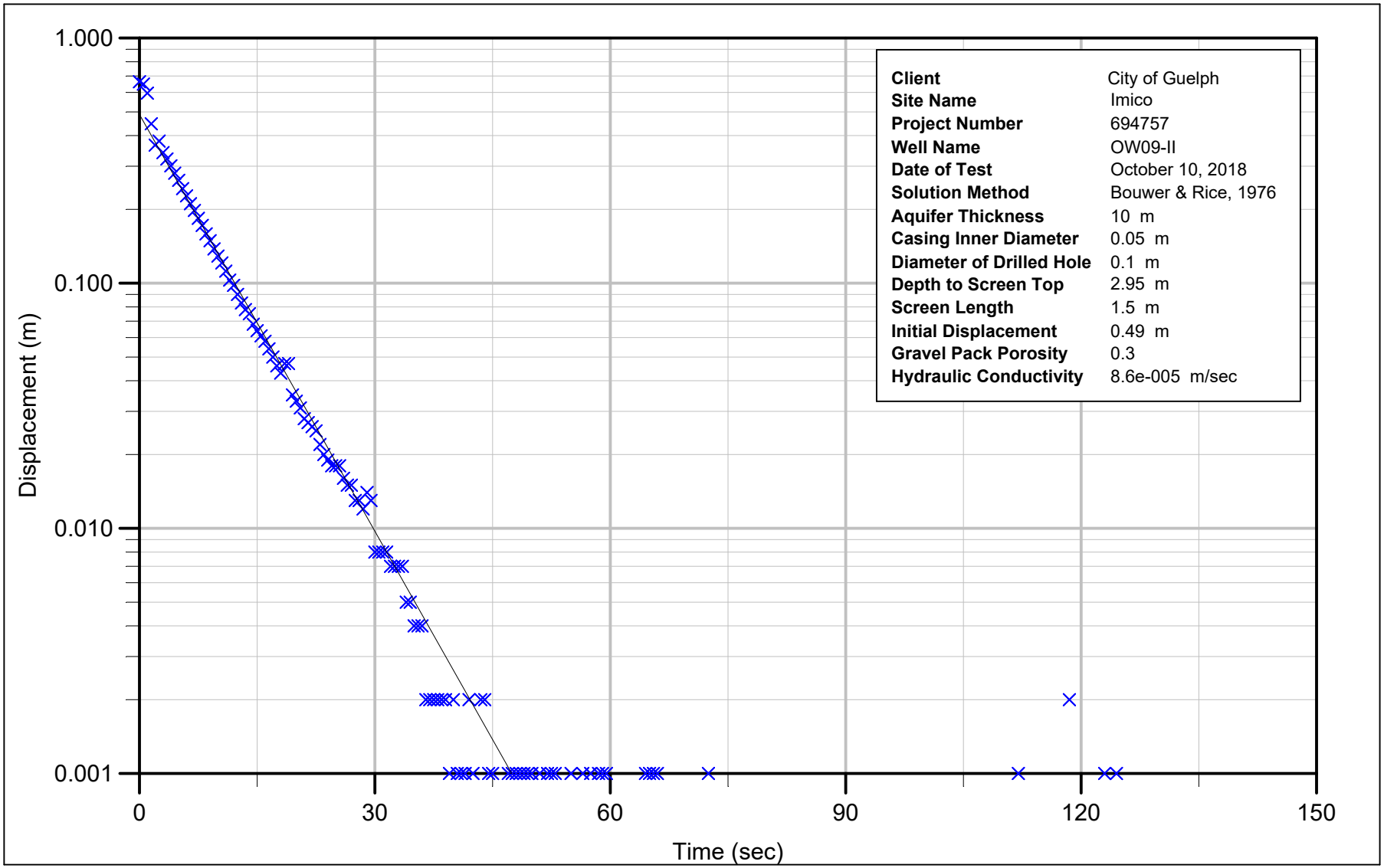


Figure F-12d - OW09-II
Bouwer & Rice - Falling Head Test 4
Imico
City of Guelph
Guelph, Ontario

JACOBS

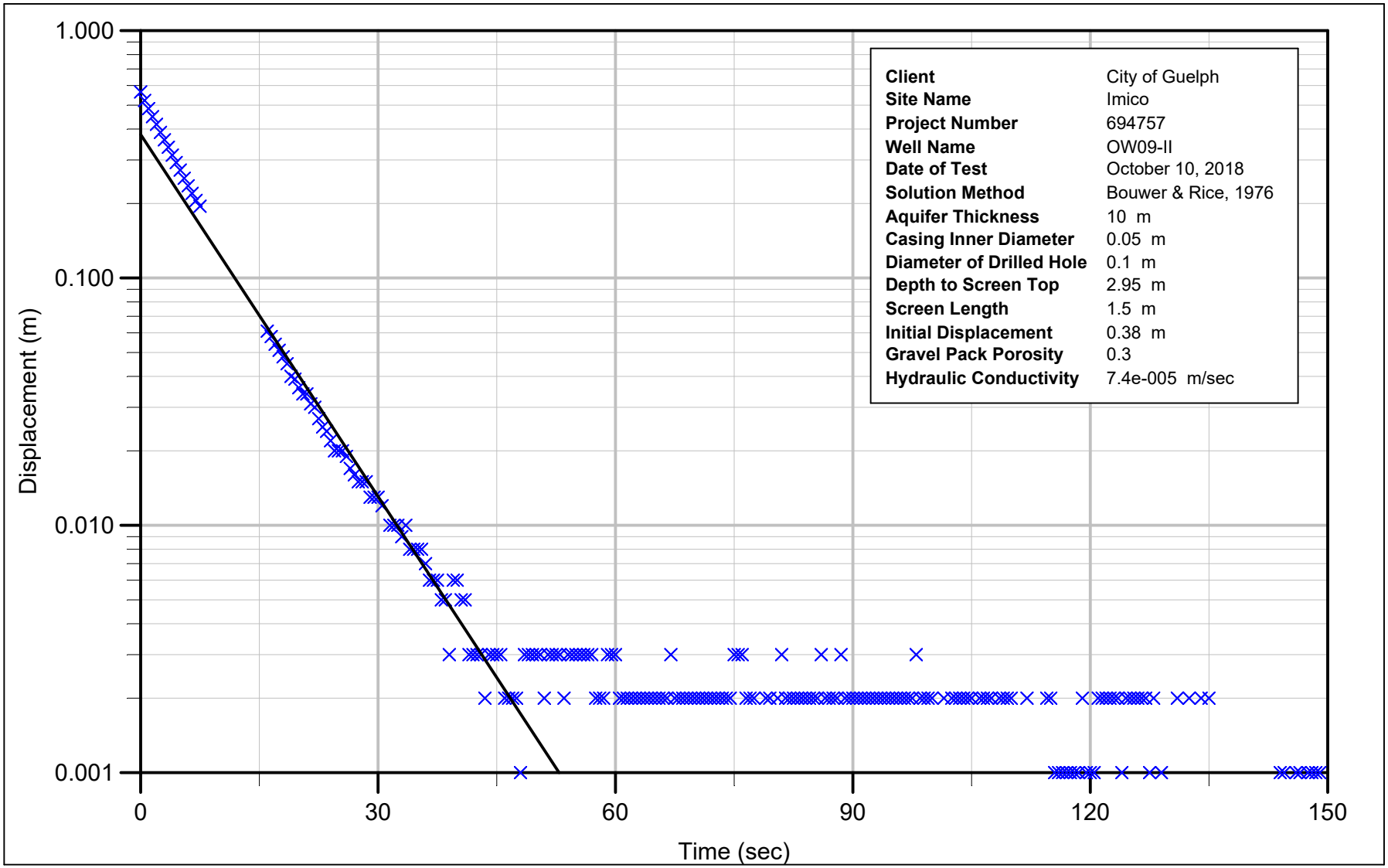


Figure F-12e - OW09-II
Bouwer & Rice - Rising Head Test 1
Imico
City of Guelph
Guelph, Ontario

JACOBS

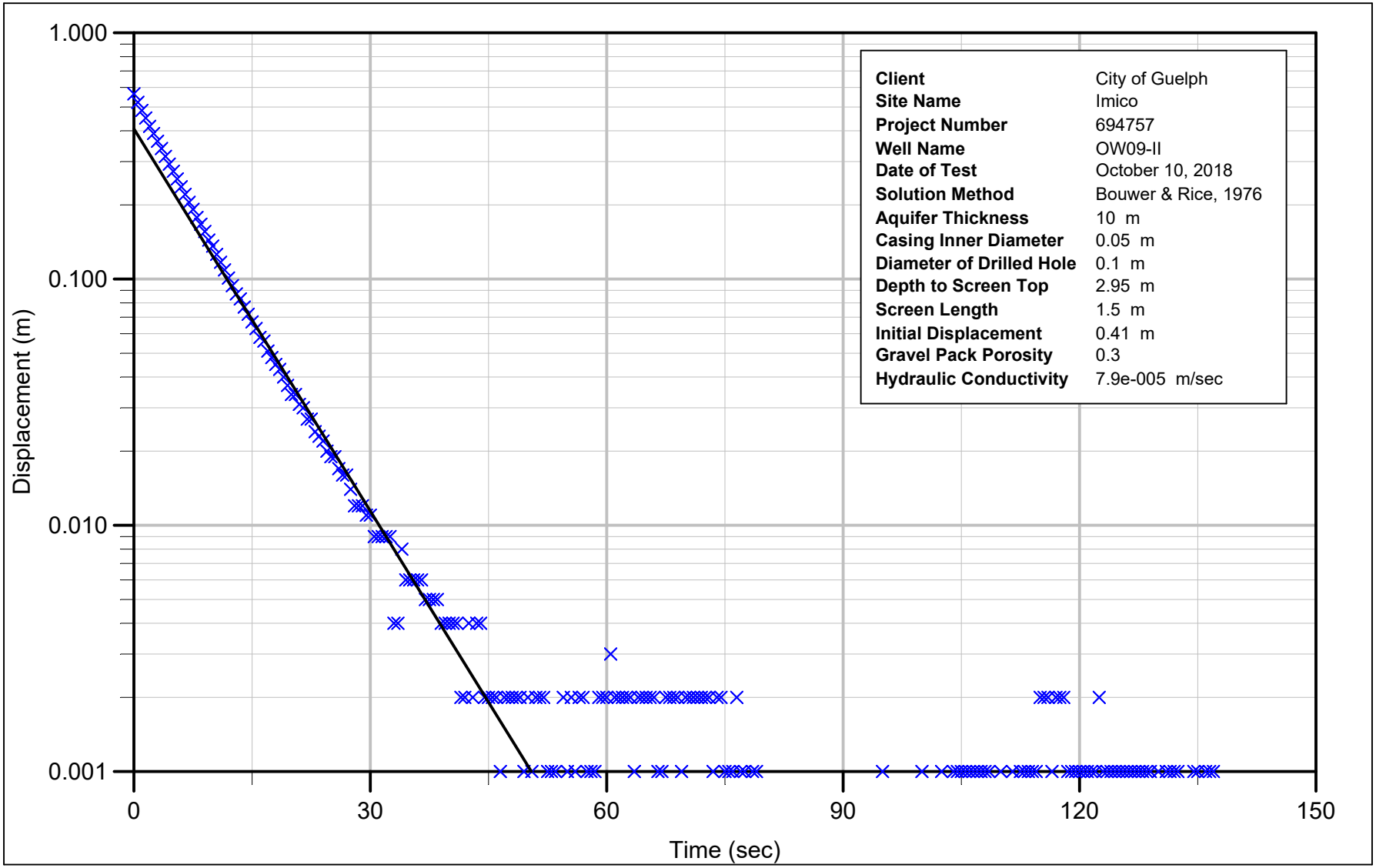


Figure F-12f - OW09-II
Bouwer & Rice - Rising Head Test 2
Imico
City of Guelph
Guelph, Ontario

JACOBS

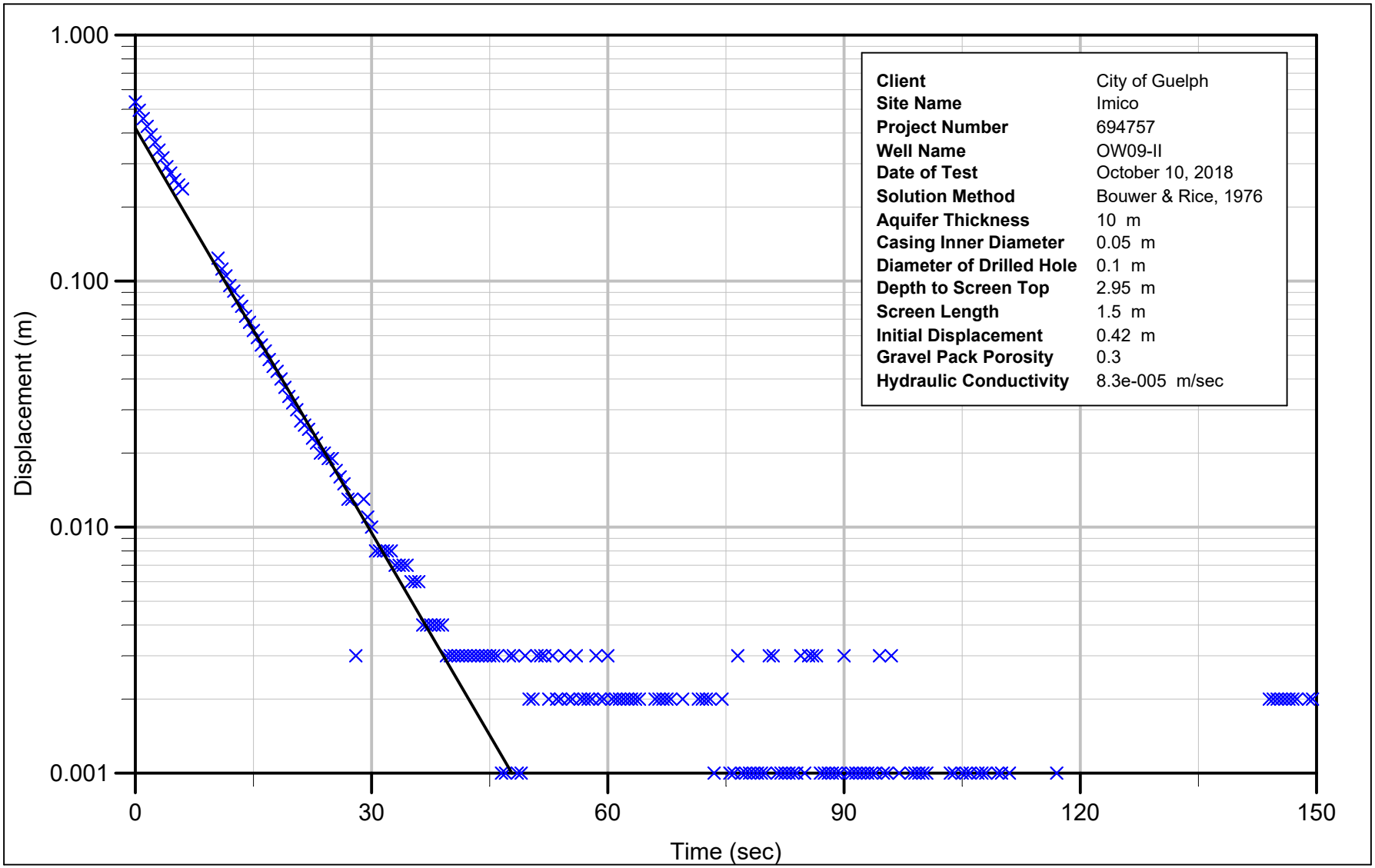


Figure F-12g - OW09-II
Bouwer & Rice - Rising Head Test 3
Imico
City of Guelph
Guelph, Ontario

JACOBS

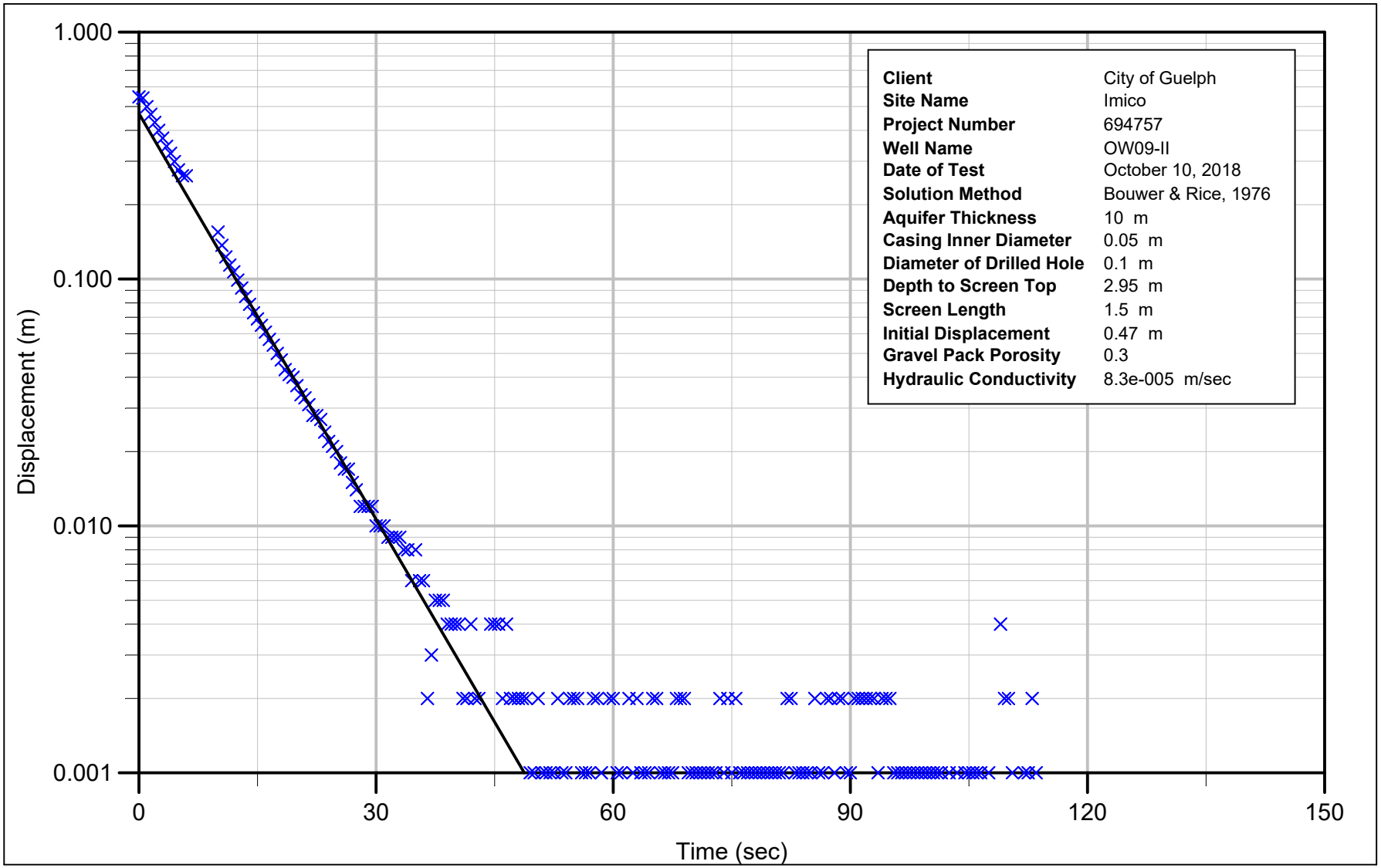


Figure F-12h - OW09-II
Bouwer & Rice - Rising Head Test 4
Imico
City of Guelph
Guelph, Ontario

JACOBS

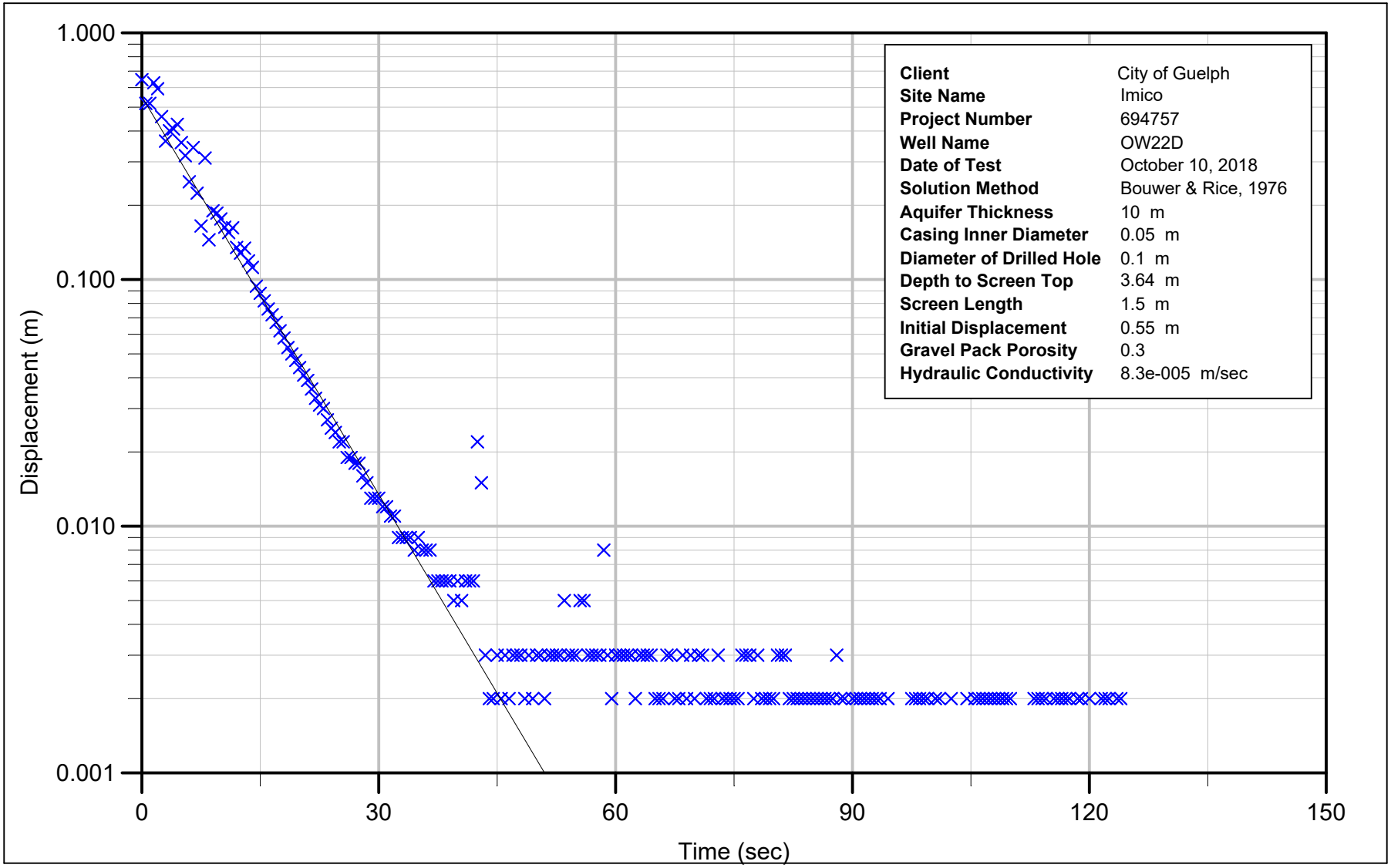


Figure F-13a - OW22D
Bouwer & Rice - Falling Head Test 1
Imico
City of Guelph
Guelph, Ontario

JACOBS

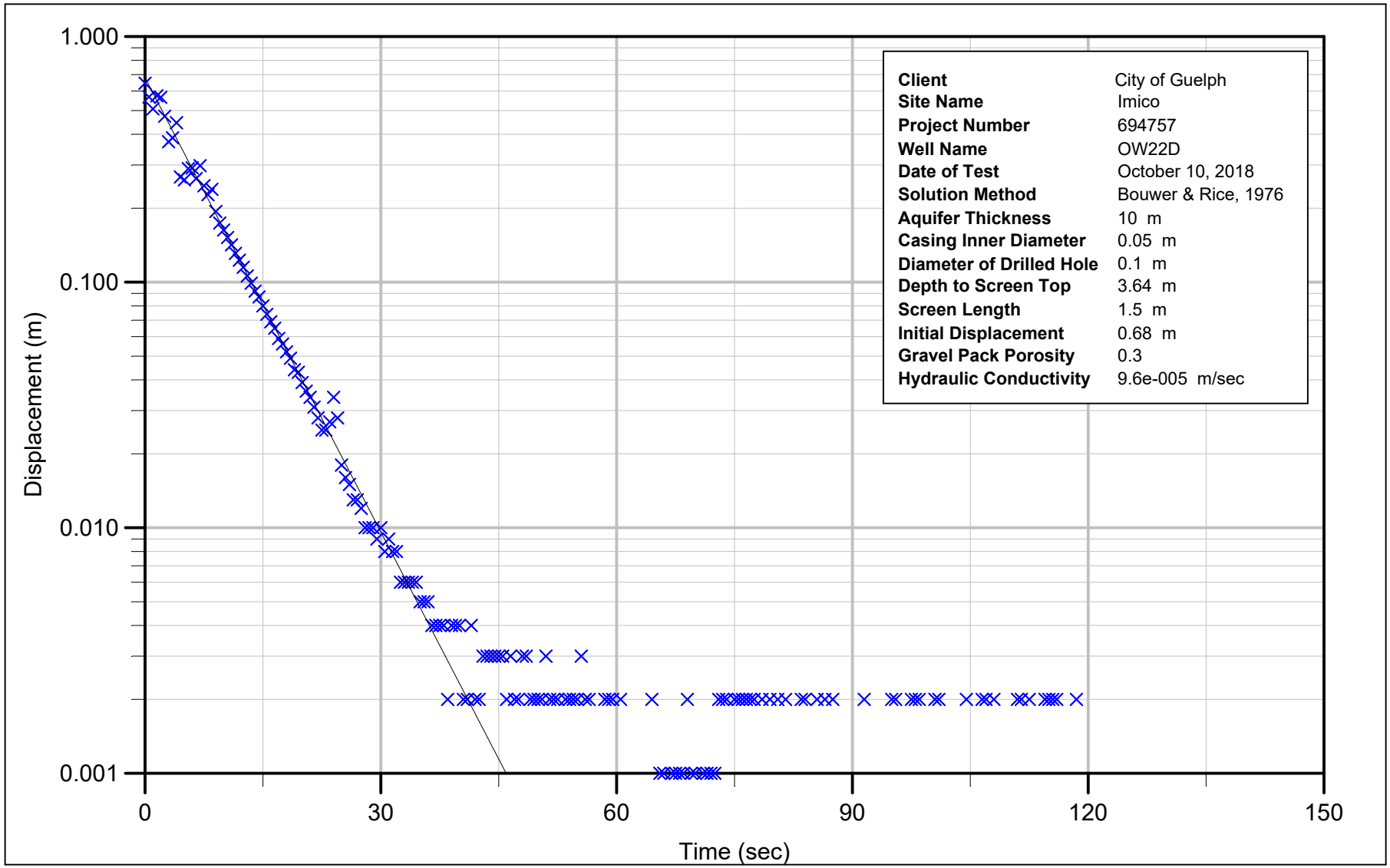


Figure F-13b - OW22D
Bouwer & Rice - Falling Head Test 2
Imico
City of Guelph
Guelph, Ontario

JACOBS

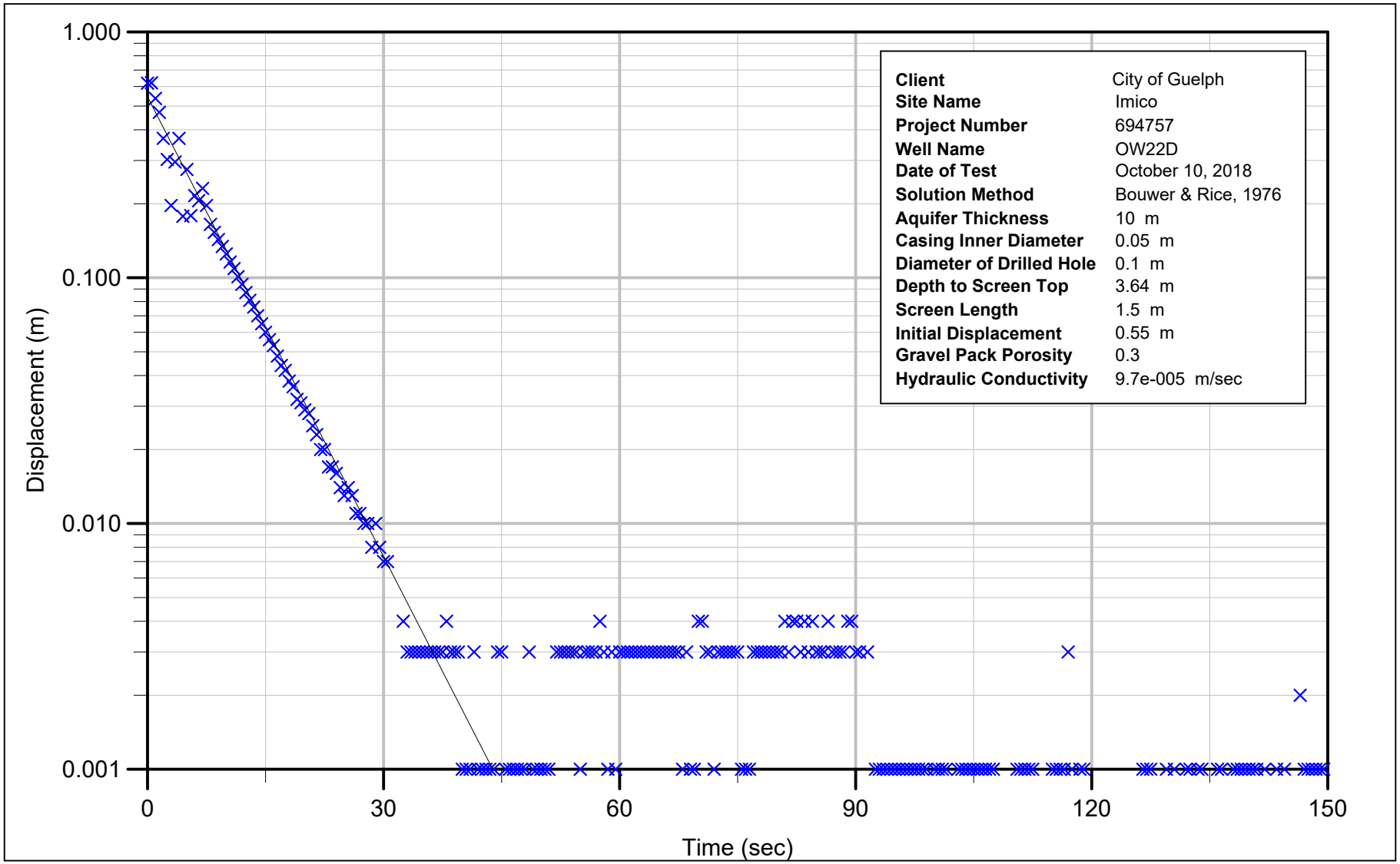


Figure F-13c - OW22D
Bouwer & Rice - Falling Head Test 3
Imico
City of Guelph
Guelph, Ontario

JACOBS

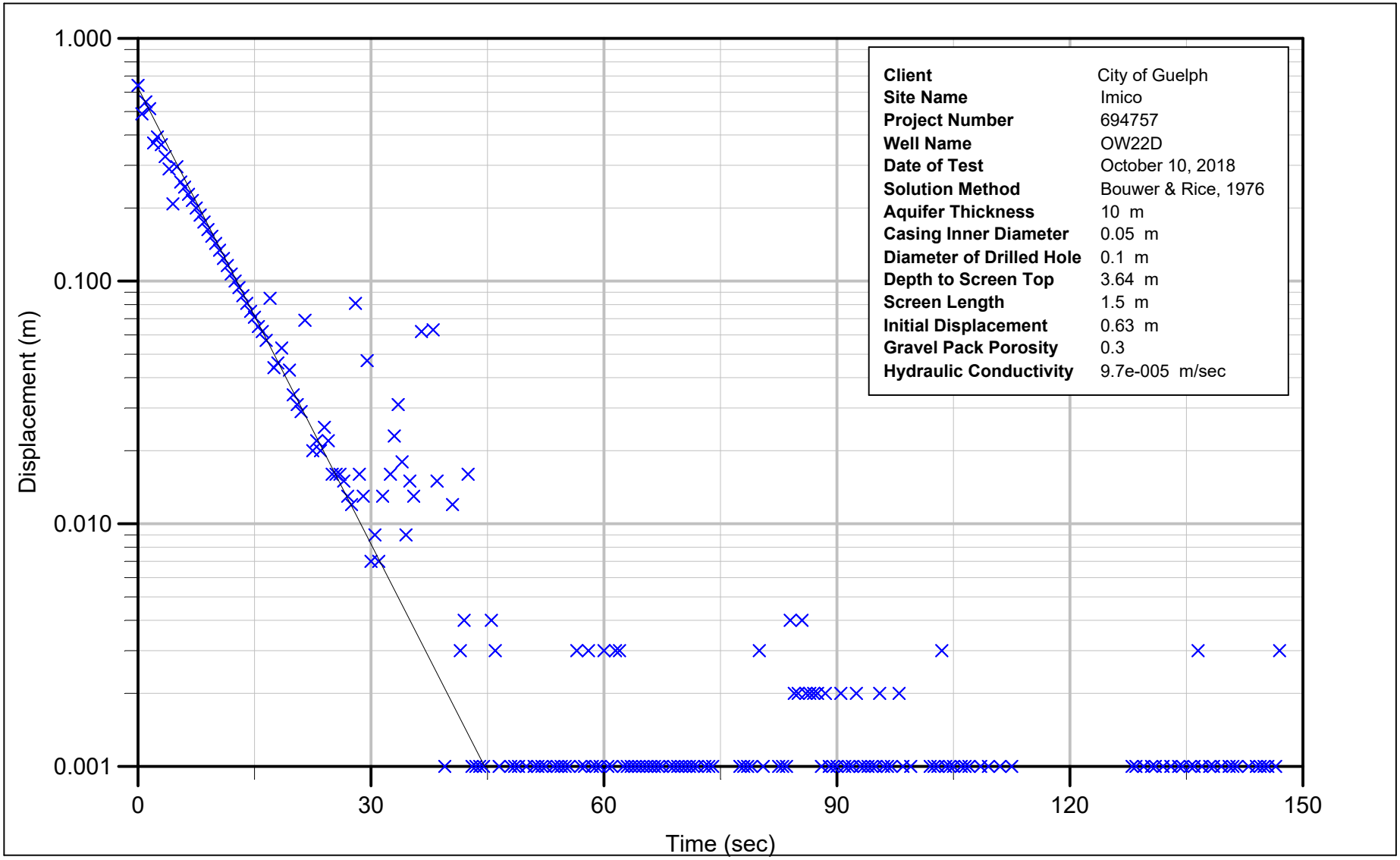


Figure F-13d - OW22D
Bouwer & Rice - Falling Head Test 4
Imico
City of Guelph
Guelph, Ontario

JACOBS

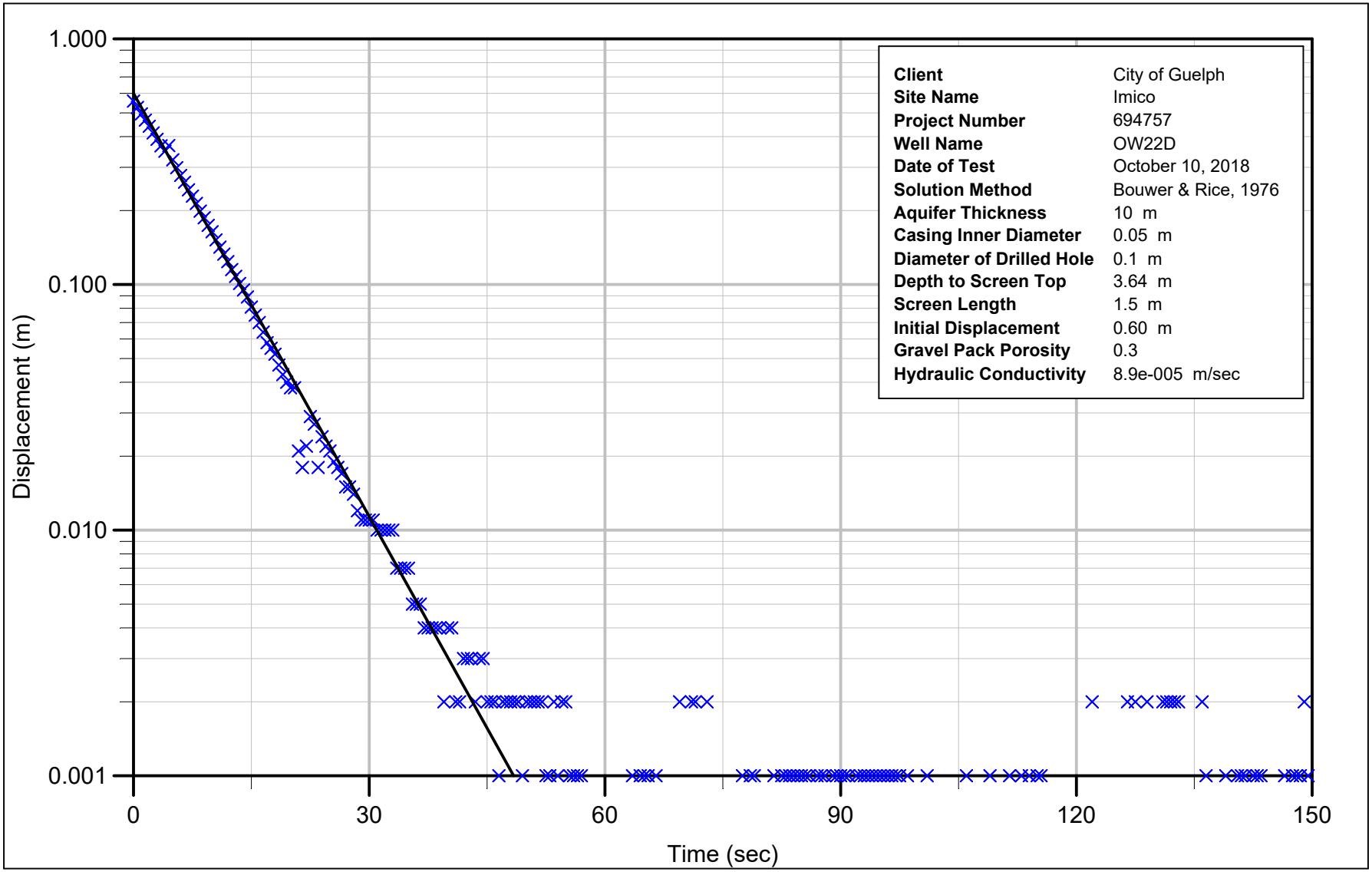


Figure F-13e - OW22D
Bouwer & Rice - Rising Head Test 1
Imico
City of Guelph
Guelph, Ontario

JACOBS

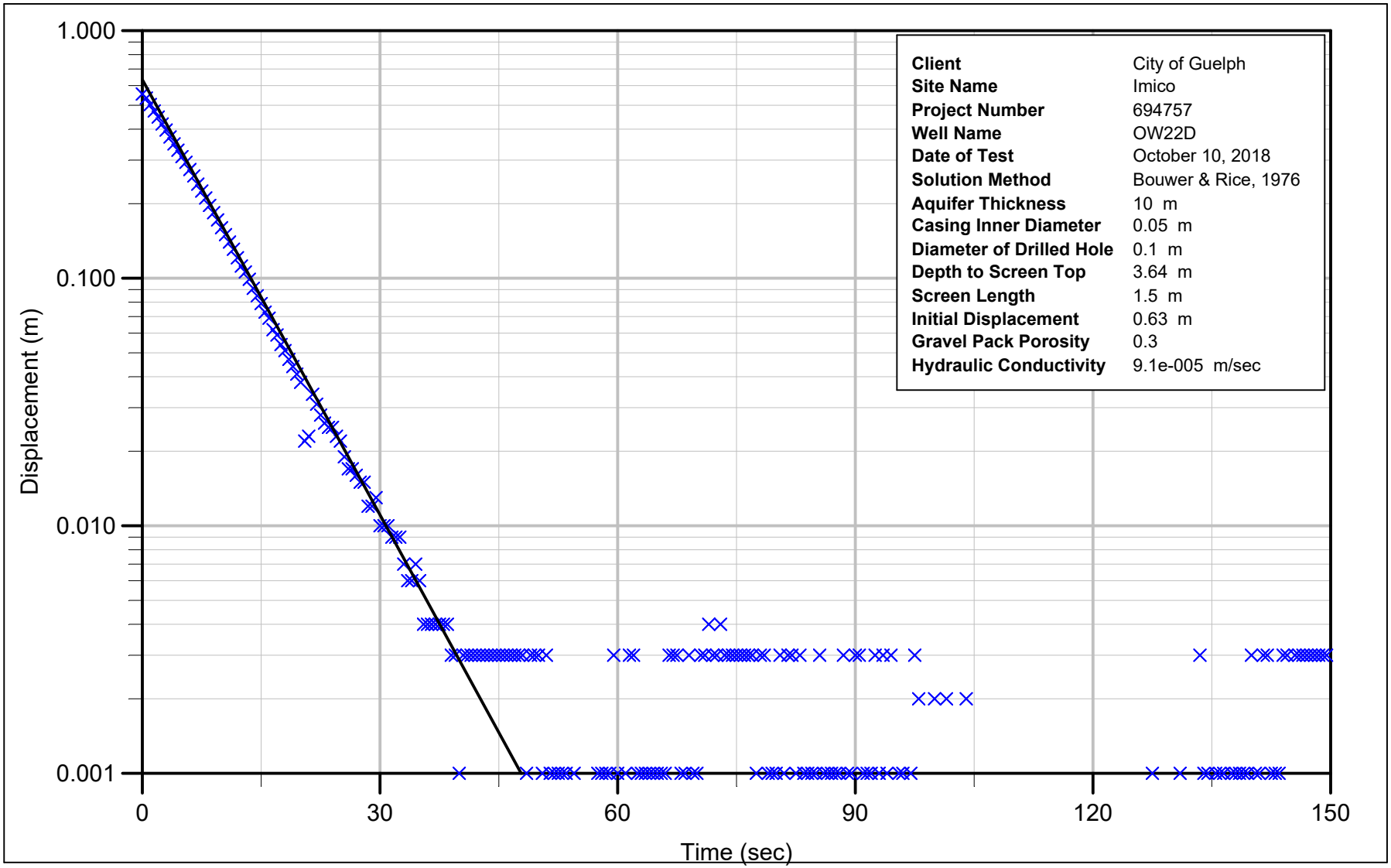


Figure F-13f - OW22D
Bouwer & Rice - Rising Head Test 2
Imico
City of Guelph
Guelph, Ontario

JACOBS

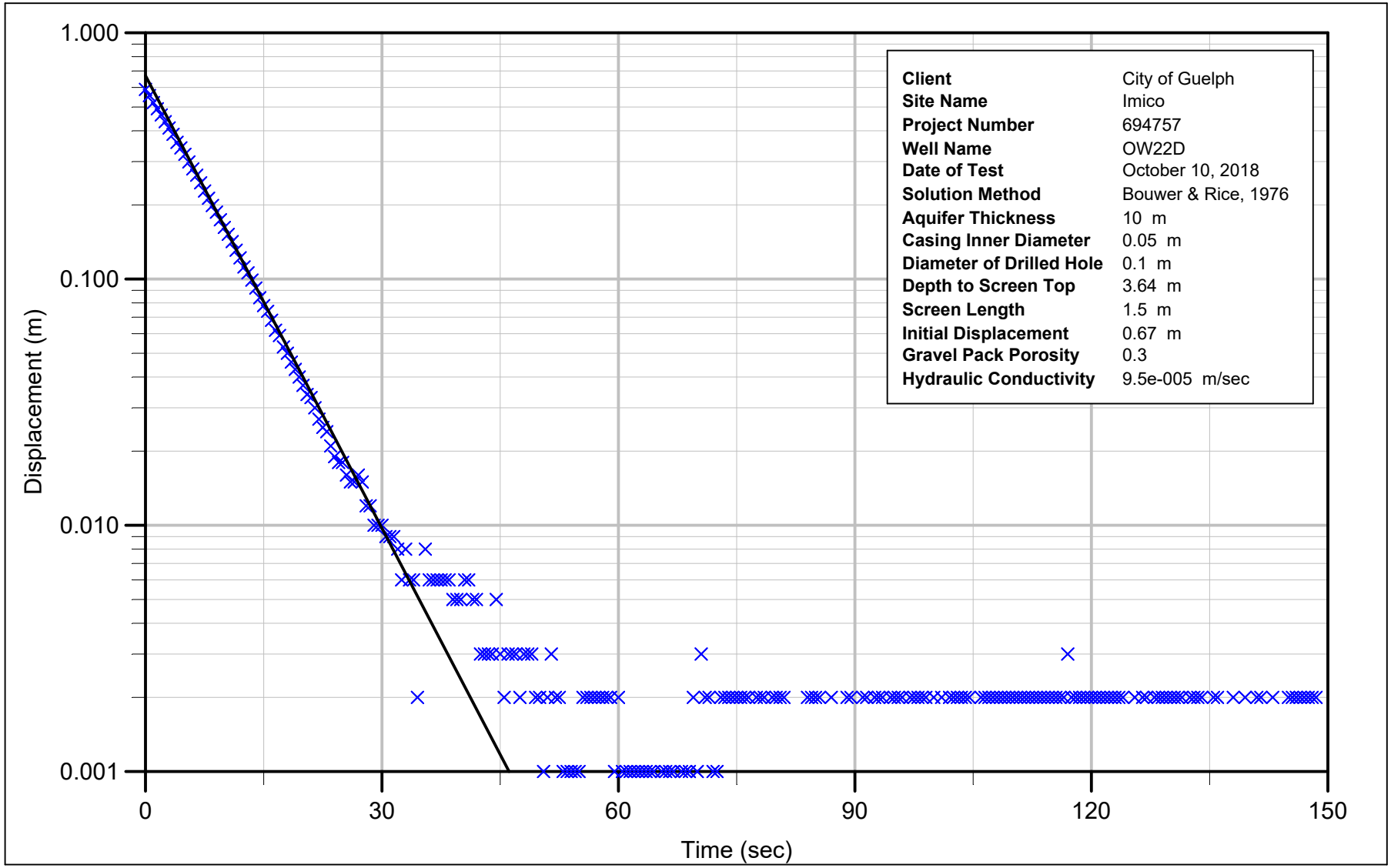


Figure F-13g - OW22D

Bouwer & Rice - Rising Head Test 3
Imico
City of Guelph
Guelph, Ontario

JACOBS

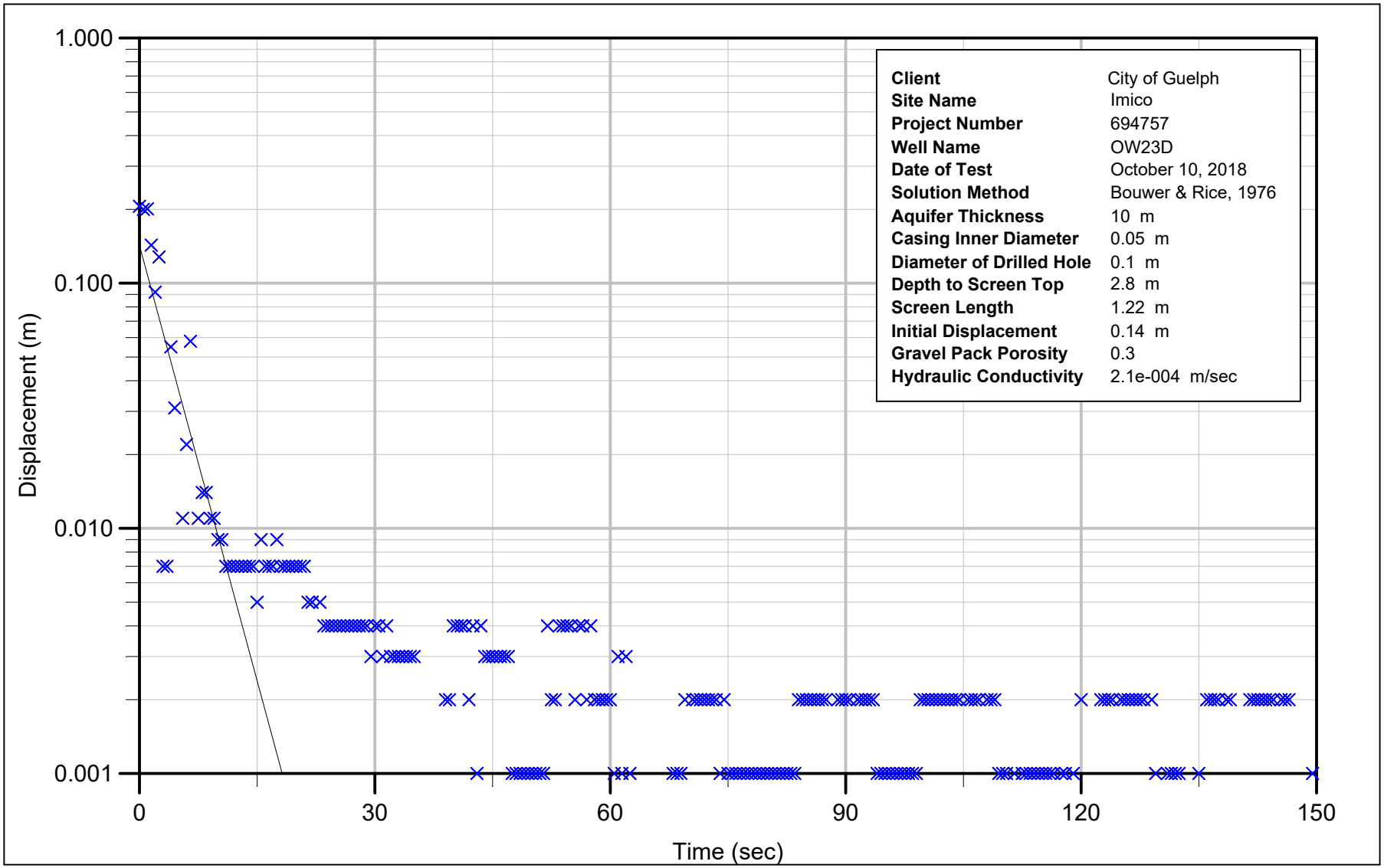


Figure F-14a - OW23D
Bouwer & Rice - Falling Head Test 1
Imico
City of Guelph
Guelph, Ontario

JACOBS

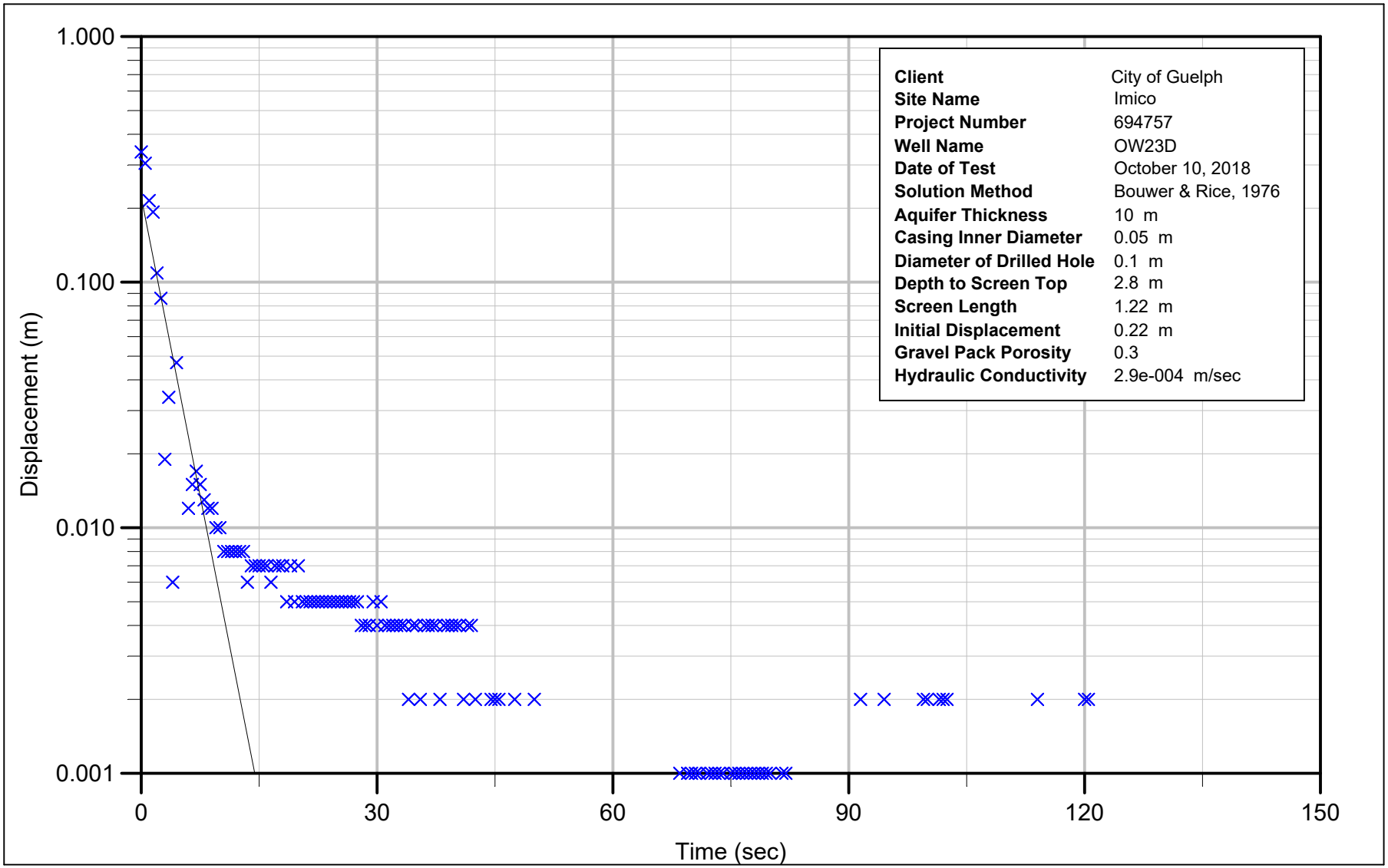


Figure F-14b - OW23D
Bouwer & Rice - Falling Head Test 2
Imico
City of Guelph
Guelph, Ontario

JACOBS

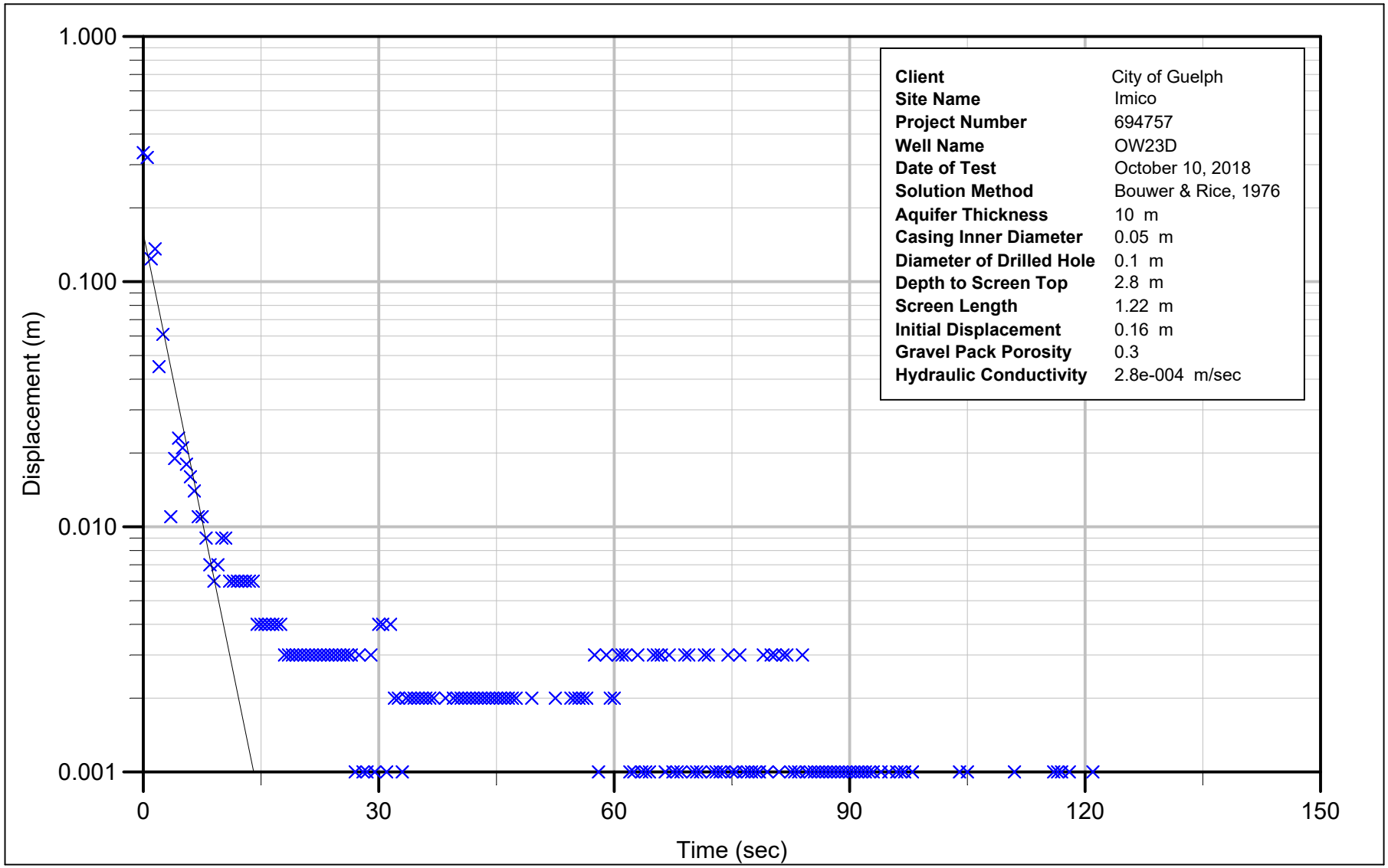


Figure F-14c - OW23D Bouwer & Rice - Falling Head Test 3 Imico
City of Guelph
Guelph, Ontario

JACOBS

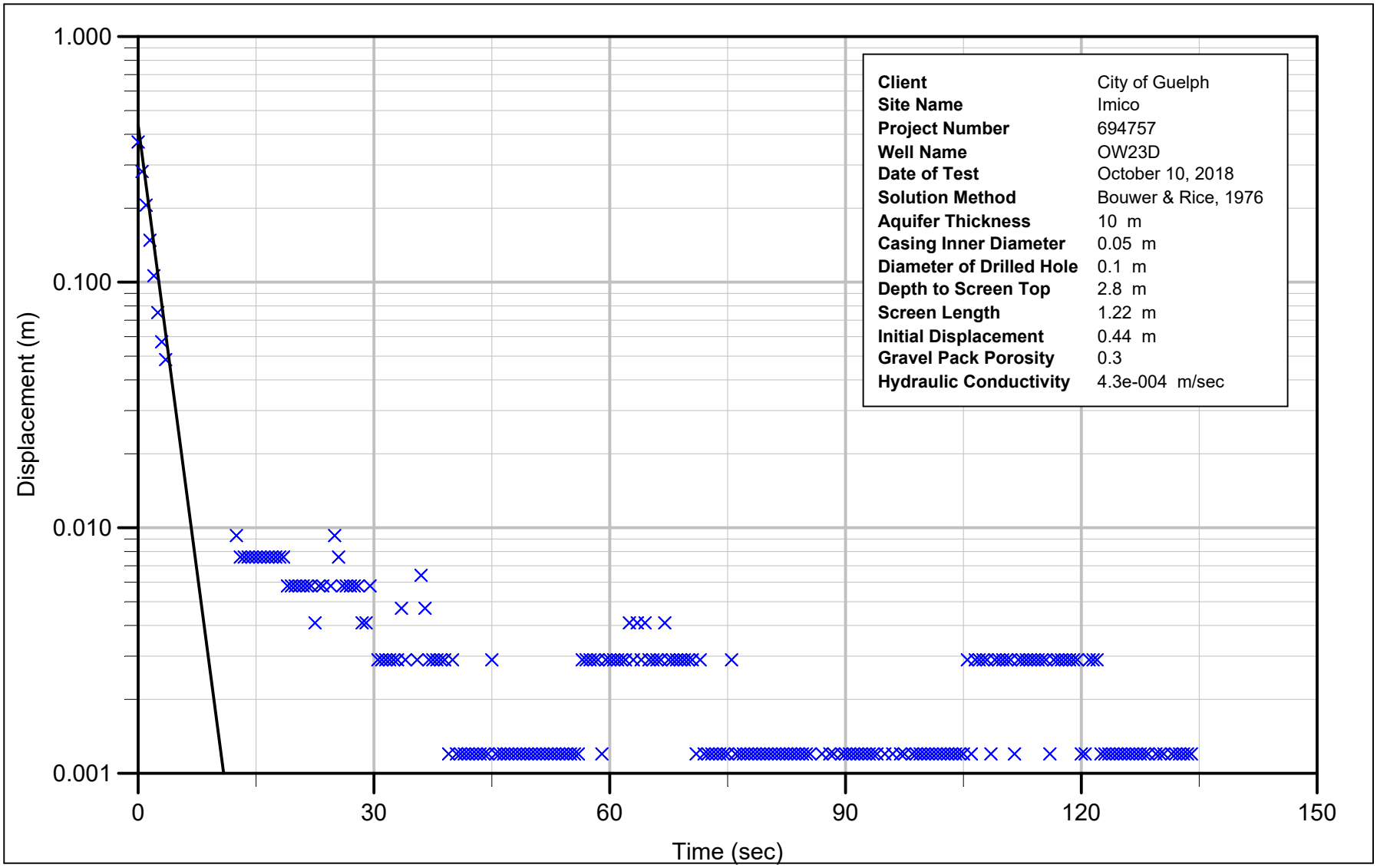


Figure F-14d - OW23D
Bouwer & Rice - Rising Head Test 1
Imico
City of Guelph
Guelph, Ontario

JACOBS

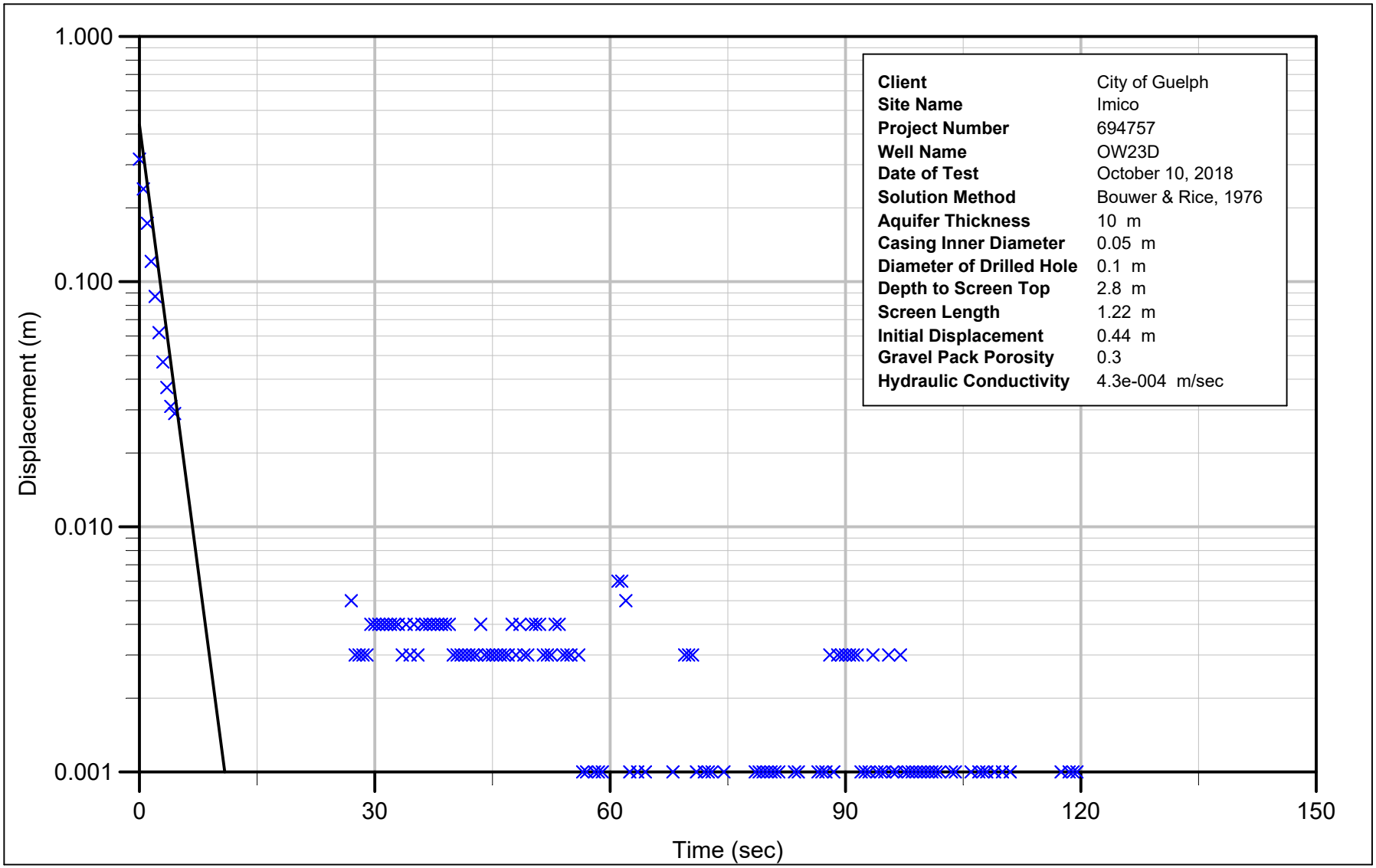


Figure F-14e - OW23D
Bouwer & Rice - Rising Head Test 2
Imico
City of Guelph
Guelph, Ontario

JACOBS

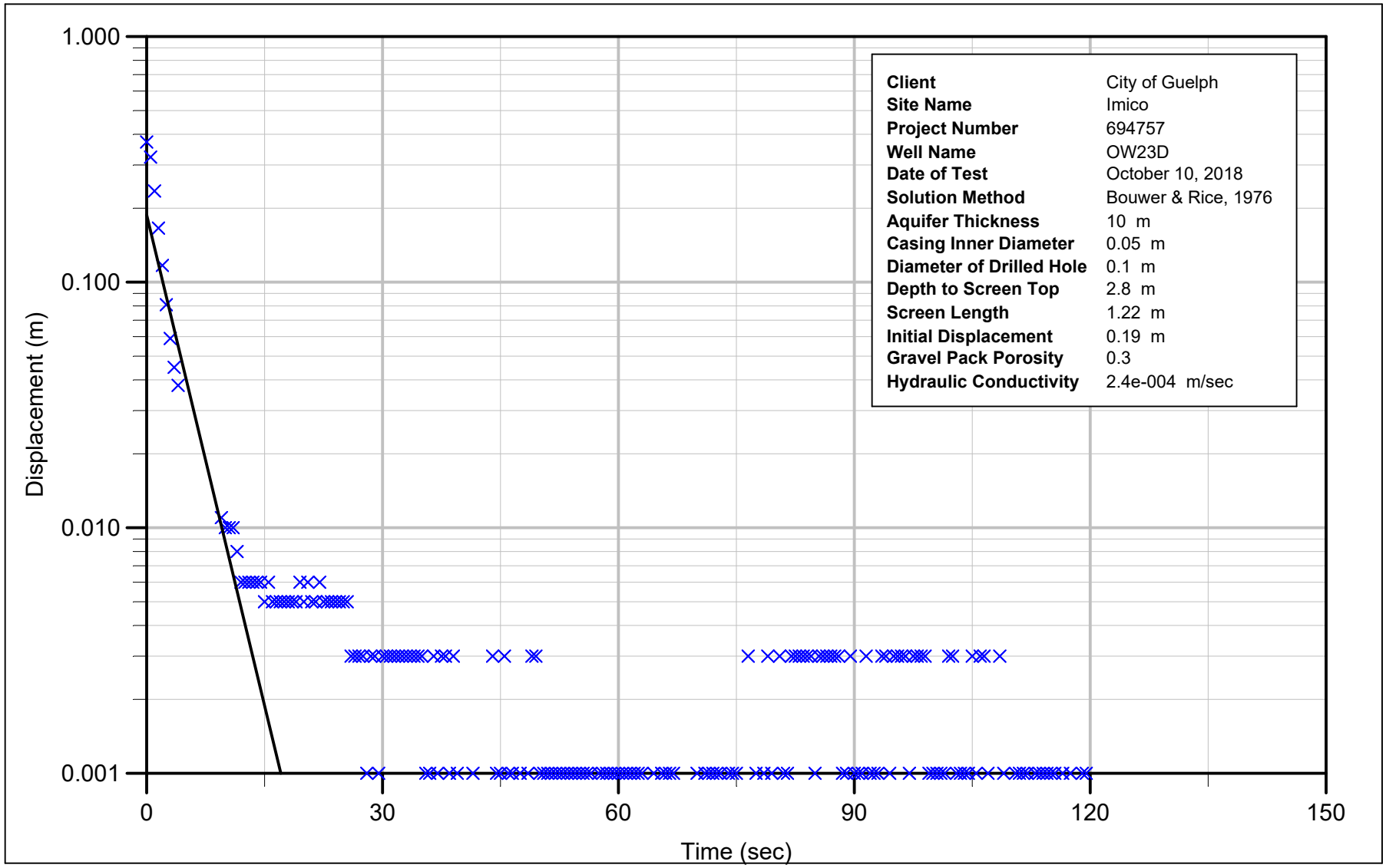
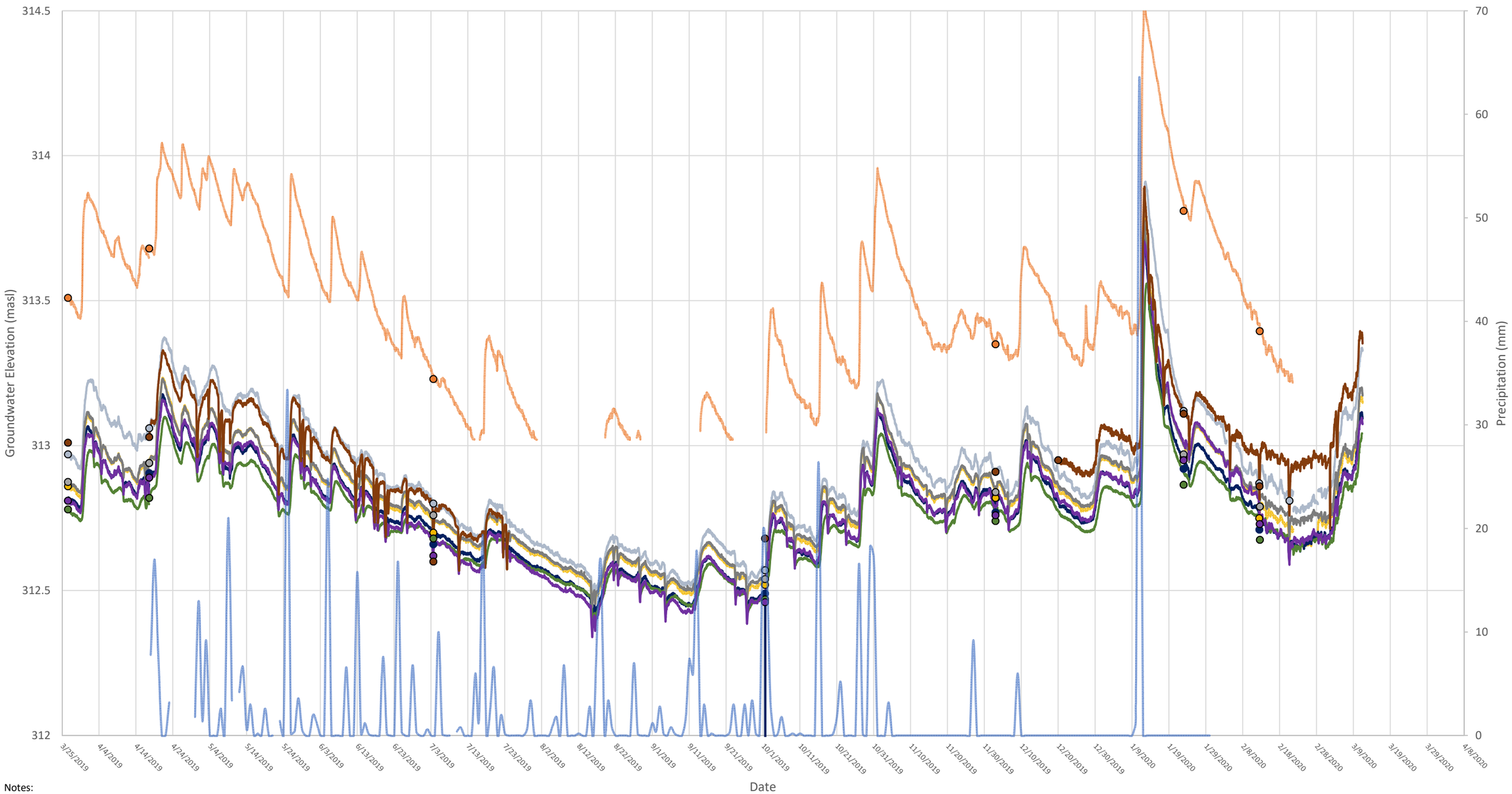


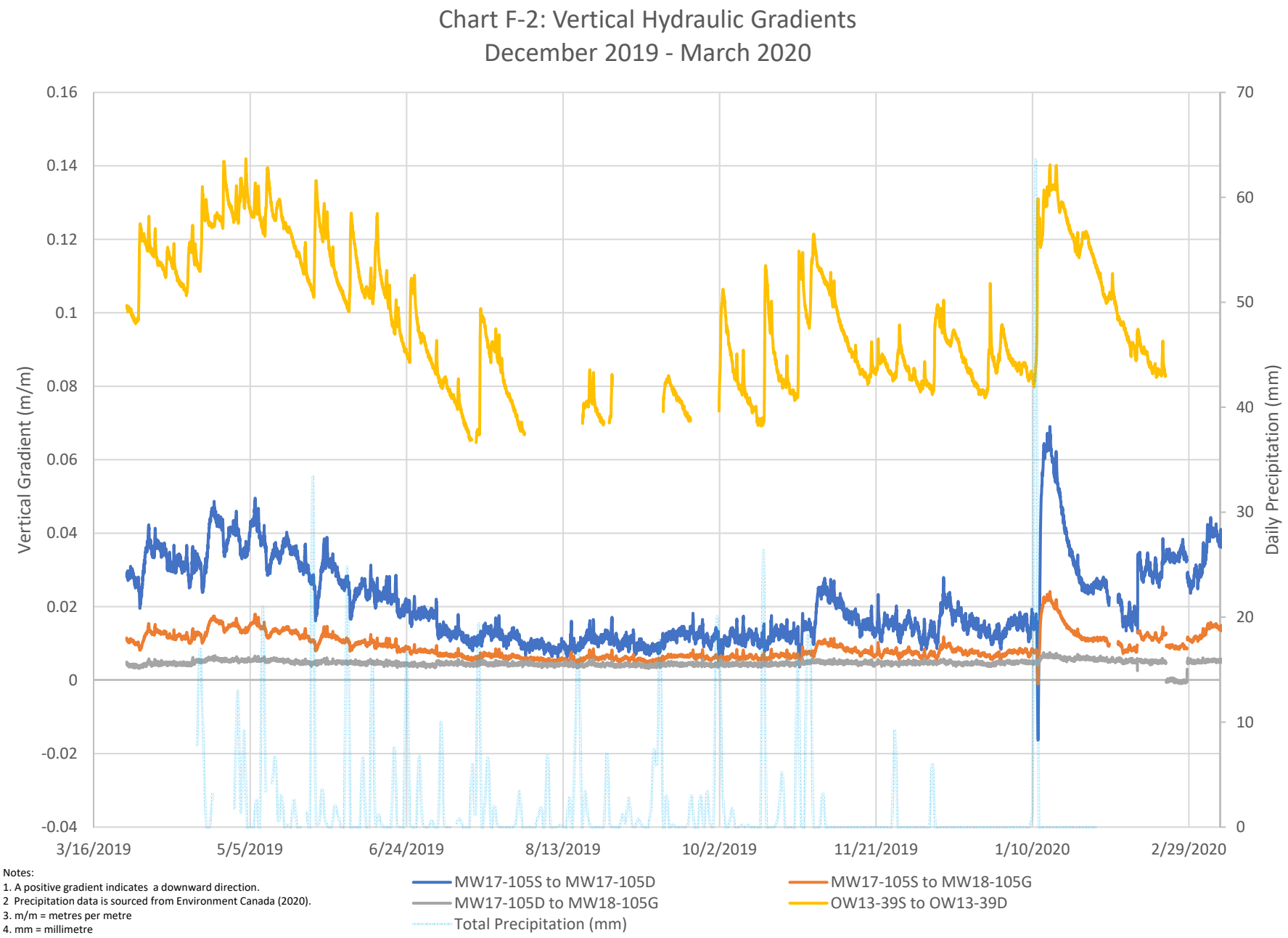
Figure F-14f - OW23D
Bouwer & Rice - Rising Head Test 3
Imico
City of Guelph
Guelph, Ontario

JACOBS

CHART F-1: HYDROGRAPHS & PRECIPITATION PLOT



Notes:
1. Precipitation data is sourced from Environment Canada (2020).
2. The transducer at OW31 experienced a malfunction beginning at July 13, 2019. The transducer was replaced on December 19, 2019. Data recorded during this period has been omitted.
3. The depth of the transducer at OW-31 after re-installation on Dececmber 19 was suspected to have been mis0reported. The installation depth was assumed using water levels taken by manual measurements.
4. masl = metres above sea level
5. mm - millimetres



Notes:
1. A positive gradient indicates a downward direction.
2 Precipitation data is sourced from Environment Canada (2020).
3. m/m = metres per metre
4. mm = millimetre

Appendix G
Laboratory Certificates of Analysis

CH2M HILL CANADA LIMITED
ATTN: MICHAEL SHIRY
72 VICTORIA ST SOUTH
SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 30-AUG-17
Report Date: 18-SEP-17 14:31 (MT)
Version: FINAL REV. 2

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L1983964
Project P.O. #: NOT SUBMITTED
Job Reference: 694757
C of C Numbers:
Legal Site Desc:

Comments: 18-SEPT-17:
PAH results included for -4.

Mathy Mahadeva
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1983964-1 OW18-II Sampled By: CLIENT on 29-AUG-17 @ 14:20 Matrix: WATER							
Physical Tests							
Conductivity	0.849		0.0030	mS/cm		31-AUG-17	R3816056
pH	7.34		0.10	pH units		31-AUG-17	R3816056
Anions and Nutrients							
Chloride (Cl)	11.2		0.50	mg/L		31-AUG-17	R3816951
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		07-SEP-17	R3822218
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					31-AUG-17	R3815538
Dissolved Metals Filtration Location	FIELD					31-AUG-17	R3815440
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	31-AUG-17	31-AUG-17	R3815794
Arsenic (As)-Dissolved	9.91		0.10	ug/L	31-AUG-17	31-AUG-17	R3815794
Barium (Ba)-Dissolved	226		0.10	ug/L	31-AUG-17	31-AUG-17	R3815794
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	31-AUG-17	31-AUG-17	R3815794
Boron (B)-Dissolved	125		10	ug/L	31-AUG-17	31-AUG-17	R3815794
Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	31-AUG-17	31-AUG-17	R3815794
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	31-AUG-17	31-AUG-17	R3815794
Cobalt (Co)-Dissolved	1.27		0.10	ug/L	31-AUG-17	31-AUG-17	R3815794
Copper (Cu)-Dissolved	0.26		0.20	ug/L	31-AUG-17	31-AUG-17	R3815794
Lead (Pb)-Dissolved	0.209		0.050	ug/L	31-AUG-17	31-AUG-17	R3815794
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	31-AUG-17	31-AUG-17	R3815778
Molybdenum (Mo)-Dissolved	1.65		0.050	ug/L	31-AUG-17	31-AUG-17	R3815794
Nickel (Ni)-Dissolved	4.81		0.50	ug/L	31-AUG-17	31-AUG-17	R3815794
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	31-AUG-17	31-AUG-17	R3815794
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	31-AUG-17	31-AUG-17	R3815794
Sodium (Na)-Dissolved	9620		500	ug/L	31-AUG-17	31-AUG-17	R3815794
Thallium (Tl)-Dissolved	0.078		0.010	ug/L	31-AUG-17	31-AUG-17	R3815794
Uranium (U)-Dissolved	3.58		0.010	ug/L	31-AUG-17	31-AUG-17	R3815794
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	31-AUG-17	31-AUG-17	R3815794
Zinc (Zn)-Dissolved	787		1.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		05-SEP-17	R3820294
Volatile Organic Compounds							
Acetone	<30		30	ug/L		31-AUG-17	R3815523
Benzene	2.44		0.50	ug/L		31-AUG-17	R3815523
Bromodichloromethane	<2.0		2.0	ug/L		31-AUG-17	R3815523
Bromoform	<5.0		5.0	ug/L		31-AUG-17	R3815523
Bromomethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
Carbon tetrachloride	<0.20		0.20	ug/L		31-AUG-17	R3815523
Chlorobenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
Dibromochloromethane	<2.0		2.0	ug/L		31-AUG-17	R3815523
Chloroform	<1.0		1.0	ug/L		31-AUG-17	R3815523
1,2-Dibromoethane	<0.20		0.20	ug/L		31-AUG-17	R3815523

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1983964-1 OW18-II Sampled By: CLIENT on 29-AUG-17 @ 14:20 Matrix: WATER							
Volatile Organic Compounds							
1,2-Dichlorobenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,3-Dichlorobenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,4-Dichlorobenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
Dichlorodifluoromethane	<2.0		2.0	ug/L		31-AUG-17	R3815523
1,1-Dichloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,2-Dichloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1-Dichloroethylene	1.39		0.50	ug/L		31-AUG-17	R3815523
cis-1,2-Dichloroethylene	93.2		0.50	ug/L		31-AUG-17	R3815523
trans-1,2-Dichloroethylene	2.57		0.50	ug/L		31-AUG-17	R3815523
Methylene Chloride	<5.0		5.0	ug/L		31-AUG-17	R3815523
1,2-Dichloropropane	<0.50		0.50	ug/L		31-AUG-17	R3815523
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		31-AUG-17	R3815523
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		31-AUG-17	R3815523
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		31-AUG-17	
Ethylbenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
n-Hexane	<0.50		0.50	ug/L		31-AUG-17	R3815523
Methyl Ethyl Ketone	<20		20	ug/L		31-AUG-17	R3815523
Methyl Isobutyl Ketone	<20		20	ug/L		31-AUG-17	R3815523
MTBE	<2.0		2.0	ug/L		31-AUG-17	R3815523
Styrene	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
Tetrachloroethylene	<0.50		0.50	ug/L		31-AUG-17	R3815523
Toluene	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1,1-Trichloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1,2-Trichloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
Trichloroethylene	2.70		0.50	ug/L		31-AUG-17	R3815523
Trichlorofluoromethane	<5.0		5.0	ug/L		31-AUG-17	R3815523
Vinyl chloride	35.0		0.50	ug/L		31-AUG-17	R3815523
o-Xylene	<0.30		0.30	ug/L		31-AUG-17	R3815523
m+p-Xylenes	<0.40		0.40	ug/L		31-AUG-17	R3815523
Xylenes (Total)	<0.50		0.50	ug/L		31-AUG-17	
Surrogate: 4-Bromofluorobenzene	96.2		70-130	%		31-AUG-17	R3815523
Surrogate: 1,4-Difluorobenzene	101.1		70-130	%		31-AUG-17	R3815523
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		31-AUG-17	R3815523
F1-BTEX	<25		25	ug/L		01-SEP-17	
F2 (C10-C16)	<100		100	ug/L	31-AUG-17	01-SEP-17	R3816822
F2-Naphth	<100		100	ug/L		01-SEP-17	
F3 (C16-C34)	<250		250	ug/L	31-AUG-17	01-SEP-17	R3816822
F3-PAH	<250		250	ug/L		01-SEP-17	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1983964-1 OW18-II Sampled By: CLIENT on 29-AUG-17 @ 14:20 Matrix: WATER							
Hydrocarbons							
F4 (C34-C50)	<250		250	ug/L	31-AUG-17	01-SEP-17	R3816822
Total Hydrocarbons (C6-C50)	<370		370	ug/L		01-SEP-17	
Chrom. to baseline at nC50	YES				31-AUG-17	01-SEP-17	R3816822
Surrogate: 2-Bromobenzotrifluoride	100.1		60-140	%	31-AUG-17	01-SEP-17	R3816822
Surrogate: 3,4-Dichlorotoluene	109.3		60-140	%		31-AUG-17	R3815523
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Acenaphthylene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Anthracene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Benzo(a)anthracene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Benzo(a)pyrene	<0.010		0.010	ug/L	31-AUG-17	01-SEP-17	R3816690
Benzo(b)fluoranthene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Benzo(k)fluoranthene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Chrysene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Fluoranthene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Fluorene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		01-SEP-17	
1-Methylnaphthalene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
2-Methylnaphthalene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Naphthalene	<0.050		0.050	ug/L	31-AUG-17	01-SEP-17	R3816690
Phenanthrene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Pyrene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Surrogate: d10-Acenaphthene	93.1		60-140	%	31-AUG-17	01-SEP-17	R3816690
Surrogate: d12-Chrysene	106.2		60-140	%	31-AUG-17	01-SEP-17	R3816690
Surrogate: d8-Naphthalene	92.0		60-140	%	31-AUG-17	01-SEP-17	R3816690
Surrogate: d10-Phenanthrene	109.4		60-140	%	31-AUG-17	01-SEP-17	R3816690
L1983964-2 OW18-I Sampled By: CLIENT on 29-AUG-17 @ 15:30 Matrix: WATER							
Physical Tests							
Conductivity	0.787		0.0030	mS/cm		31-AUG-17	R3816056
pH	7.34		0.10	pH units		31-AUG-17	R3816056
Anions and Nutrients							
Chloride (Cl)	5.50		0.50	mg/L		31-AUG-17	R3816951
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		07-SEP-17	R3822218
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					31-AUG-17	R3815538
Dissolved Metals Filtration Location	FIELD					31-AUG-17	R3815440

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1983964-2 OW18-I Sampled By: CLIENT on 29-AUG-17 @ 15:30 Matrix: WATER							
Dissolved Metals							
Antimony (Sb)-Dissolved	<1.0	DLHC	1.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Arsenic (As)-Dissolved	<1.0	DLHC	1.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Barium (Ba)-Dissolved	52.8	DLHC	1.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Beryllium (Be)-Dissolved	<1.0	DLHC	1.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Boron (B)-Dissolved	140	DLHC	100	ug/L	31-AUG-17	31-AUG-17	R3815794
Cadmium (Cd)-Dissolved	0.44	DLHC	0.10	ug/L	31-AUG-17	31-AUG-17	R3815794
Chromium (Cr)-Dissolved	<5.0	DLHC	5.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Cobalt (Co)-Dissolved	<1.0	DLHC	1.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Copper (Cu)-Dissolved	<2.0	DLHC	2.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Lead (Pb)-Dissolved	1.08	DLHC	0.50	ug/L	31-AUG-17	31-AUG-17	R3815794
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	31-AUG-17	31-AUG-17	R3815778
Molybdenum (Mo)-Dissolved	<0.50	DLHC	0.50	ug/L	31-AUG-17	31-AUG-17	R3815794
Nickel (Ni)-Dissolved	<5.0	DLHC	5.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Selenium (Se)-Dissolved	0.62	DLHC	0.50	ug/L	31-AUG-17	31-AUG-17	R3815794
Silver (Ag)-Dissolved	<0.50	DLHC	0.50	ug/L	31-AUG-17	31-AUG-17	R3815794
Sodium (Na)-Dissolved	6900	DLHC	5000	ug/L	31-AUG-17	31-AUG-17	R3815794
Thallium (Tl)-Dissolved	<0.10	DLHC	0.10	ug/L	31-AUG-17	31-AUG-17	R3815794
Uranium (U)-Dissolved	0.58	DLHC	0.10	ug/L	31-AUG-17	31-AUG-17	R3815794
Vanadium (V)-Dissolved	<5.0	DLHC	5.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Zinc (Zn)-Dissolved	1720	DLHC	10	ug/L	31-AUG-17	31-AUG-17	R3815794
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		05-SEP-17	R3820294
Volatile Organic Compounds							
Acetone	<30		30	ug/L		31-AUG-17	R3815523
Benzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
Bromodichloromethane	<2.0		2.0	ug/L		31-AUG-17	R3815523
Bromoform	<5.0		5.0	ug/L		31-AUG-17	R3815523
Bromomethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
Carbon tetrachloride	<0.20		0.20	ug/L		31-AUG-17	R3815523
Chlorobenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
Dibromochloromethane	<2.0		2.0	ug/L		31-AUG-17	R3815523
Chloroform	<1.0		1.0	ug/L		31-AUG-17	R3815523
1,2-Dibromoethane	<0.20		0.20	ug/L		31-AUG-17	R3815523
1,2-Dichlorobenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,3-Dichlorobenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,4-Dichlorobenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
Dichlorodifluoromethane	<2.0		2.0	ug/L		31-AUG-17	R3815523
1,1-Dichloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,2-Dichloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1-Dichloroethylene	<0.50		0.50	ug/L		31-AUG-17	R3815523
cis-1,2-Dichloroethylene	4.20		0.50	ug/L		31-AUG-17	R3815523

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1983964-2 OW18-I Sampled By: CLIENT on 29-AUG-17 @ 15:30 Matrix: WATER							
Volatile Organic Compounds							
trans-1,2-Dichloroethylene	1.06		0.50	ug/L		31-AUG-17	R3815523
Methylene Chloride	<5.0		5.0	ug/L		31-AUG-17	R3815523
1,2-Dichloropropane	<0.50		0.50	ug/L		31-AUG-17	R3815523
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		31-AUG-17	R3815523
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		31-AUG-17	R3815523
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		31-AUG-17	
Ethylbenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
n-Hexane	<0.50		0.50	ug/L		31-AUG-17	R3815523
Methyl Ethyl Ketone	<20		20	ug/L		31-AUG-17	R3815523
Methyl Isobutyl Ketone	<20		20	ug/L		31-AUG-17	R3815523
MTBE	<2.0		2.0	ug/L		31-AUG-17	R3815523
Styrene	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
Tetrachloroethylene	<0.50		0.50	ug/L		31-AUG-17	R3815523
Toluene	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1,1-Trichloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1,2-Trichloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
Trichloroethylene	13.0		0.50	ug/L		31-AUG-17	R3815523
Trichlorofluoromethane	<5.0		5.0	ug/L		31-AUG-17	R3815523
Vinyl chloride	<0.50		0.50	ug/L		31-AUG-17	R3815523
o-Xylene	<0.30		0.30	ug/L		31-AUG-17	R3815523
m+p-Xylenes	<0.40		0.40	ug/L		31-AUG-17	R3815523
Xylenes (Total)	<0.50		0.50	ug/L		31-AUG-17	
Surrogate: 4-Bromofluorobenzene	95.1		70-130	%		31-AUG-17	R3815523
Surrogate: 1,4-Difluorobenzene	101.3		70-130	%		31-AUG-17	R3815523
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		31-AUG-17	R3815523
F1-BTEX	<25		25	ug/L		01-SEP-17	
F2 (C10-C16)	<100		100	ug/L	31-AUG-17	01-SEP-17	R3816822
F2-Naphth	<100		100	ug/L		01-SEP-17	
F3 (C16-C34)	<250		250	ug/L	31-AUG-17	01-SEP-17	R3816822
F3-PAH	<250		250	ug/L		01-SEP-17	
F4 (C34-C50)	<250		250	ug/L	31-AUG-17	01-SEP-17	R3816822
Total Hydrocarbons (C6-C50)	<370		370	ug/L		01-SEP-17	
Chrom. to baseline at nC50	YES				31-AUG-17	01-SEP-17	R3816822
Surrogate: 2-Bromobenzotrifluoride	97.6		60-140	%	31-AUG-17	01-SEP-17	R3816822
Surrogate: 3,4-Dichlorotoluene	107.5		60-140	%		31-AUG-17	R3815523
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Acenaphthylene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1983964-2 OW18-I Sampled By: CLIENT on 29-AUG-17 @ 15:30 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Anthracene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Benzo(a)anthracene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Benzo(a)pyrene	<0.010		0.010	ug/L	31-AUG-17	01-SEP-17	R3816690
Benzo(b)fluoranthene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Benzo(k)fluoranthene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Chrysene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Fluoranthene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Fluorene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		01-SEP-17	
1-Methylnaphthalene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
2-Methylnaphthalene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Naphthalene	<0.050		0.050	ug/L	31-AUG-17	01-SEP-17	R3816690
Phenanthrene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Pyrene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Surrogate: d10-Acenaphthene	95.6		60-140	%	31-AUG-17	01-SEP-17	R3816690
Surrogate: d12-Chrysene	103.9		60-140	%	31-AUG-17	01-SEP-17	R3816690
Surrogate: d8-Naphthalene	94.6		60-140	%	31-AUG-17	01-SEP-17	R3816690
Surrogate: d10-Phenanthrene	109.5		60-140	%	31-AUG-17	01-SEP-17	R3816690
L1983964-3 OW14 Sampled By: CLIENT on 30-AUG-17 @ 09:45 Matrix: WATER							
Physical Tests							
Conductivity	0.860		0.0030	mS/cm		31-AUG-17	R3816056
pH	7.38		0.10	pH units		31-AUG-17	R3816056
Anions and Nutrients							
Chloride (Cl)	5.90		0.50	mg/L		31-AUG-17	R3816951
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		07-SEP-17	R3822218
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					31-AUG-17	R3815538
Dissolved Metals Filtration Location	FIELD					31-AUG-17	R3815440
Antimony (Sb)-Dissolved	<1.0	DLHC	1.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Arsenic (As)-Dissolved	<1.0	DLHC	1.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Barium (Ba)-Dissolved	94.4	DLHC	1.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Beryllium (Be)-Dissolved	<1.0	DLHC	1.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Boron (B)-Dissolved	130	DLHC	100	ug/L	31-AUG-17	31-AUG-17	R3815794
Cadmium (Cd)-Dissolved	<0.10	DLHC	0.10	ug/L	31-AUG-17	31-AUG-17	R3815794
Chromium (Cr)-Dissolved	<5.0	DLHC	5.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Cobalt (Co)-Dissolved	<1.0	DLHC	1.0	ug/L	31-AUG-17	31-AUG-17	R3815794

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1983964-3 OW14 Sampled By: CLIENT on 30-AUG-17 @ 09:45 Matrix: WATER							
Dissolved Metals							
Copper (Cu)-Dissolved	<2.0	DLHC	2.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Lead (Pb)-Dissolved	0.57	DLHC	0.50	ug/L	31-AUG-17	31-AUG-17	R3815794
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	31-AUG-17	31-AUG-17	R3815778
Molybdenum (Mo)-Dissolved	<0.50	DLHC	0.50	ug/L	31-AUG-17	31-AUG-17	R3815794
Nickel (Ni)-Dissolved	<5.0	DLHC	5.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Selenium (Se)-Dissolved	<0.50	DLHC	0.50	ug/L	31-AUG-17	31-AUG-17	R3815794
Silver (Ag)-Dissolved	<0.50	DLHC	0.50	ug/L	31-AUG-17	31-AUG-17	R3815794
Sodium (Na)-Dissolved	<5000	DLHC	5000	ug/L	31-AUG-17	31-AUG-17	R3815794
Thallium (Tl)-Dissolved	<0.10	DLHC	0.10	ug/L	31-AUG-17	31-AUG-17	R3815794
Uranium (U)-Dissolved	1.41	DLHC	0.10	ug/L	31-AUG-17	31-AUG-17	R3815794
Vanadium (V)-Dissolved	<5.0	DLHC	5.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Zinc (Zn)-Dissolved	1300	DLHC	10	ug/L	31-AUG-17	31-AUG-17	R3815794
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		05-SEP-17	R3820294
Volatile Organic Compounds							
Acetone	<30		30	ug/L		31-AUG-17	R3815523
Benzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
Bromodichloromethane	<2.0		2.0	ug/L		31-AUG-17	R3815523
Bromoform	<5.0		5.0	ug/L		31-AUG-17	R3815523
Bromomethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
Carbon tetrachloride	<0.20		0.20	ug/L		31-AUG-17	R3815523
Chlorobenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
Dibromochloromethane	<2.0		2.0	ug/L		31-AUG-17	R3815523
Chloroform	<1.0		1.0	ug/L		31-AUG-17	R3815523
1,2-Dibromoethane	<0.20		0.20	ug/L		31-AUG-17	R3815523
1,2-Dichlorobenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,3-Dichlorobenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,4-Dichlorobenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
Dichlorodifluoromethane	<2.0		2.0	ug/L		31-AUG-17	R3815523
1,1-Dichloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,2-Dichloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1-Dichloroethylene	<0.50		0.50	ug/L		31-AUG-17	R3815523
cis-1,2-Dichloroethylene	0.98		0.50	ug/L		31-AUG-17	R3815523
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		31-AUG-17	R3815523
Methylene Chloride	<5.0		5.0	ug/L		31-AUG-17	R3815523
1,2-Dichloropropane	<0.50		0.50	ug/L		31-AUG-17	R3815523
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		31-AUG-17	R3815523
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		31-AUG-17	R3815523
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		31-AUG-17	
1,4-Dioxane	<20		20	ug/L		31-AUG-17	R3815523
Ethylbenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1983964-3 OW14 Sampled By: CLIENT on 30-AUG-17 @ 09:45 Matrix: WATER							
Volatile Organic Compounds							
n-Hexane	<0.50		0.50	ug/L		31-AUG-17	R3815523
Methyl Ethyl Ketone	<20		20	ug/L		31-AUG-17	R3815523
Methyl Isobutyl Ketone	<20		20	ug/L		31-AUG-17	R3815523
MTBE	<2.0		2.0	ug/L		31-AUG-17	R3815523
Styrene	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
Tetrachloroethylene	<0.50		0.50	ug/L		31-AUG-17	R3815523
Toluene	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1,1-Trichloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1,2-Trichloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
Trichloroethylene	2.08		0.50	ug/L		31-AUG-17	R3815523
Trichlorofluoromethane	<5.0		5.0	ug/L		31-AUG-17	R3815523
Vinyl chloride	<0.50		0.50	ug/L		31-AUG-17	R3815523
o-Xylene	<0.30		0.30	ug/L		31-AUG-17	R3815523
m+p-Xylenes	<0.40		0.40	ug/L		31-AUG-17	R3815523
Xylenes (Total)	<0.50		0.50	ug/L		31-AUG-17	
Surrogate: 4-Bromofluorobenzene	94.3		70-130	%		31-AUG-17	R3815523
Surrogate: 1,4-Difluorobenzene	101.1		70-130	%		31-AUG-17	R3815523
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		31-AUG-17	R3815523
F1-BTEX	<25		25	ug/L		01-SEP-17	
F2 (C10-C16)	<100		100	ug/L	31-AUG-17	01-SEP-17	R3816822
F2-Naphth	<100		100	ug/L		01-SEP-17	
F3 (C16-C34)	<250		250	ug/L	31-AUG-17	01-SEP-17	R3816822
F3-PAH	<250		250	ug/L		01-SEP-17	
F4 (C34-C50)	<250		250	ug/L	31-AUG-17	01-SEP-17	R3816822
Total Hydrocarbons (C6-C50)	<370		370	ug/L		01-SEP-17	
Chrom. to baseline at nC50	YES				31-AUG-17	01-SEP-17	R3816822
Surrogate: 2-Bromobenzotrifluoride	99.4		60-140	%	31-AUG-17	01-SEP-17	R3816822
Surrogate: 3,4-Dichlorotoluene	101.7		60-140	%		31-AUG-17	R3815523
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Acenaphthylene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Anthracene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Benzo(a)anthracene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Benzo(a)pyrene	<0.010		0.010	ug/L	31-AUG-17	01-SEP-17	R3816690
Benzo(b)fluoranthene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Benzo(k)fluoranthene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Chrysene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1983964-3 OW14 Sampled By: CLIENT on 30-AUG-17 @ 09:45 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Fluoranthene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Fluorene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		01-SEP-17	
1-Methylnaphthalene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
2-Methylnaphthalene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Naphthalene	<0.050		0.050	ug/L	31-AUG-17	01-SEP-17	R3816690
Phenanthrene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Pyrene	<0.020		0.020	ug/L	31-AUG-17	01-SEP-17	R3816690
Surrogate: d10-Acenaphthene	96.2		60-140	%	31-AUG-17	01-SEP-17	R3816690
Surrogate: d12-Chrysene	101.5		60-140	%	31-AUG-17	01-SEP-17	R3816690
Surrogate: d8-Naphthalene	95.5		60-140	%	31-AUG-17	01-SEP-17	R3816690
Surrogate: d10-Phenanthrene	110.4		60-140	%	31-AUG-17	01-SEP-17	R3816690
L1983964-4 OW13 Sampled By: CLIENT on 30-AUG-17 @ 11:03 Matrix: WATER							
Physical Tests							
Conductivity	0.784		0.0030	mS/cm		31-AUG-17	R3816056
pH	7.34		0.10	pH units		31-AUG-17	R3816056
Anions and Nutrients							
Chloride (Cl)	10.9		0.50	mg/L		31-AUG-17	R3816951
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		07-SEP-17	R3822218
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					31-AUG-17	R3815538
Dissolved Metals Filtration Location	FIELD					31-AUG-17	R3815440
Antimony (Sb)-Dissolved	<1.0	DLHC	1.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Arsenic (As)-Dissolved	16.1	DLHC	1.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Barium (Ba)-Dissolved	152	DLHC	1.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Beryllium (Be)-Dissolved	<1.0	DLHC	1.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Boron (B)-Dissolved	110	DLHC	100	ug/L	31-AUG-17	31-AUG-17	R3815794
Cadmium (Cd)-Dissolved	<0.10	DLHC	0.10	ug/L	31-AUG-17	31-AUG-17	R3815794
Chromium (Cr)-Dissolved	<5.0	DLHC	5.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Cobalt (Co)-Dissolved	<1.0	DLHC	1.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Copper (Cu)-Dissolved	<2.0	DLHC	2.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Lead (Pb)-Dissolved	<0.50	DLHC	0.50	ug/L	31-AUG-17	31-AUG-17	R3815794
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	31-AUG-17	31-AUG-17	R3815778
Molybdenum (Mo)-Dissolved	0.99	DLHC	0.50	ug/L	31-AUG-17	31-AUG-17	R3815794
Nickel (Ni)-Dissolved	<5.0	DLHC	5.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Selenium (Se)-Dissolved	<0.50	DLHC	0.50	ug/L	31-AUG-17	31-AUG-17	R3815794
Silver (Ag)-Dissolved	<0.50	DLHC	0.50	ug/L	31-AUG-17	31-AUG-17	R3815794

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1983964-4 OW13 Sampled By: CLIENT on 30-AUG-17 @ 11:03 Matrix: WATER							
Dissolved Metals							
Sodium (Na)-Dissolved	9900	DLHC	5000	ug/L	31-AUG-17	31-AUG-17	R3815794
Thallium (Tl)-Dissolved	0.24	DLHC	0.10	ug/L	31-AUG-17	31-AUG-17	R3815794
Uranium (U)-Dissolved	0.74	DLHC	0.10	ug/L	31-AUG-17	31-AUG-17	R3815794
Vanadium (V)-Dissolved	<5.0	DLHC	5.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Zinc (Zn)-Dissolved	1010	DLHC	10	ug/L	31-AUG-17	31-AUG-17	R3815794
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		05-SEP-17	R3820294
Volatile Organic Compounds							
Acetone	<30		30	ug/L		31-AUG-17	R3815523
Benzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
Bromodichloromethane	<2.0		2.0	ug/L		31-AUG-17	R3815523
Bromoform	<5.0		5.0	ug/L		31-AUG-17	R3815523
Bromomethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
Carbon tetrachloride	<0.20		0.20	ug/L		31-AUG-17	R3815523
Chlorobenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
Dibromochloromethane	<2.0		2.0	ug/L		31-AUG-17	R3815523
Chloroform	<1.0		1.0	ug/L		31-AUG-17	R3815523
1,2-Dibromoethane	<0.20		0.20	ug/L		31-AUG-17	R3815523
1,2-Dichlorobenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,3-Dichlorobenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,4-Dichlorobenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
Dichlorodifluoromethane	<2.0		2.0	ug/L		31-AUG-17	R3815523
1,1-Dichloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,2-Dichloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1-Dichloroethylene	<0.50		0.50	ug/L		31-AUG-17	R3815523
cis-1,2-Dichloroethylene	4.88		0.50	ug/L		31-AUG-17	R3815523
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		31-AUG-17	R3815523
Methylene Chloride	<5.0		5.0	ug/L		31-AUG-17	R3815523
1,2-Dichloropropane	<0.50		0.50	ug/L		31-AUG-17	R3815523
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		31-AUG-17	R3815523
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		31-AUG-17	R3815523
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		31-AUG-17	
Ethylbenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
n-Hexane	<0.50		0.50	ug/L		31-AUG-17	R3815523
Methyl Ethyl Ketone	<20		20	ug/L		31-AUG-17	R3815523
Methyl Isobutyl Ketone	<20		20	ug/L		31-AUG-17	R3815523
MTBE	<2.0		2.0	ug/L		31-AUG-17	R3815523
Styrene	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
Tetrachloroethylene	<0.50		0.50	ug/L		31-AUG-17	R3815523

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1983964-4 OW13 Sampled By: CLIENT on 30-AUG-17 @ 11:03 Matrix: WATER							
Volatile Organic Compounds							
Toluene	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1,1-Trichloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1,2-Trichloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
Trichloroethylene	0.76		0.50	ug/L		31-AUG-17	R3815523
Trichlorofluoromethane	<5.0		5.0	ug/L		31-AUG-17	R3815523
Vinyl chloride	1.20		0.50	ug/L		31-AUG-17	R3815523
o-Xylene	<0.30		0.30	ug/L		31-AUG-17	R3815523
m+p-Xylenes	<0.40		0.40	ug/L		31-AUG-17	R3815523
Xylenes (Total)	<0.50		0.50	ug/L		31-AUG-17	
Surrogate: 4-Bromofluorobenzene	93.7		70-130	%		31-AUG-17	R3815523
Surrogate: 1,4-Difluorobenzene	100.6		70-130	%		31-AUG-17	R3815523
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		31-AUG-17	R3815523
F1-BTEX	<25		25	ug/L		08-SEP-17	
F2 (C10-C16)	<100		100	ug/L	01-SEP-17	01-SEP-17	R3818284
F3 (C16-C34)	<250		250	ug/L	01-SEP-17	01-SEP-17	R3818284
F3-PAH	<250		250	ug/L		08-SEP-17	
F4 (C34-C50)	<250		250	ug/L	01-SEP-17	01-SEP-17	R3818284
Total Hydrocarbons (C6-C50)	<370		370	ug/L		08-SEP-17	
Chrom. to baseline at nC50	YES				01-SEP-17	01-SEP-17	R3818284
Surrogate: 2-Bromobenzotrifluoride	96.0		60-140	%	01-SEP-17	01-SEP-17	R3818284
Surrogate: 3,4-Dichlorotoluene	104.1		60-140	%		31-AUG-17	R3815523
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	05-SEP-17	18-SEP-17	R3820716
Acenaphthylene	<0.020		0.020	ug/L	05-SEP-17	18-SEP-17	R3820716
Anthracene	<0.020		0.020	ug/L	05-SEP-17	18-SEP-17	R3820716
Benzo(a)anthracene	<0.020		0.020	ug/L	05-SEP-17	18-SEP-17	R3820716
Benzo(a)pyrene	<0.010		0.010	ug/L	05-SEP-17	18-SEP-17	R3820716
Benzo(b)fluoranthene	<0.020		0.020	ug/L	05-SEP-17	18-SEP-17	R3820716
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	05-SEP-17	18-SEP-17	R3820716
Benzo(k)fluoranthene	<0.020		0.020	ug/L	05-SEP-17	18-SEP-17	R3820716
Chrysene	<0.020		0.020	ug/L	05-SEP-17	18-SEP-17	R3820716
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	05-SEP-17	18-SEP-17	R3820716
Fluoranthene	<0.020		0.020	ug/L	05-SEP-17	18-SEP-17	R3820716
Fluorene	<0.020		0.020	ug/L	05-SEP-17	18-SEP-17	R3820716
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	05-SEP-17	18-SEP-17	R3820716
1+2-Methylnaphthalenes	<0.57		0.57	ug/L		08-SEP-17	
1-Methylnaphthalene	<0.020		0.020	ug/L	05-SEP-17	18-SEP-17	R3820716
2-Methylnaphthalene	<0.020		0.020	ug/L	05-SEP-17	18-SEP-17	R3820716
Naphthalene	<0.050		0.050	ug/L	05-SEP-17	18-SEP-17	R3820716
Phenanthrene	<0.020		0.020	ug/L	05-SEP-17	18-SEP-17	R3820716

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1983964-4 OW13 Sampled By: CLIENT on 30-AUG-17 @ 11:03 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Pyrene	<0.020		0.020	ug/L	05-SEP-17	18-SEP-17	R3820716
Surrogate: 2-Fluorobiphenyl	83.7		60-140	%	05-SEP-17	18-SEP-17	R3820716
Surrogate: d14-Terphenyl	107.5		60-140	%	05-SEP-17	18-SEP-17	R3820716
Semi-Volatile Organics							
Biphenyl	<0.40		0.40	ug/L	05-SEP-17	08-SEP-17	R3820445
4-Chloroaniline	<0.40		0.40	ug/L	05-SEP-17	08-SEP-17	R3820445
Bis(2-chloroethyl)ether	<0.40		0.40	ug/L	05-SEP-17	08-SEP-17	R3820445
Bis(2-chloroisopropyl)ether	<0.40		0.40	ug/L	05-SEP-17	08-SEP-17	R3820445
2-Chlorophenol	<0.30		0.30	ug/L	05-SEP-17	08-SEP-17	R3820445
3,3'-Dichlorobenzidine	<0.40		0.40	ug/L	05-SEP-17	08-SEP-17	R3820445
2,4-Dichlorophenol	<0.30		0.30	ug/L	05-SEP-17	08-SEP-17	R3820445
Diethylphthalate	<0.20		0.20	ug/L	05-SEP-17	08-SEP-17	R3820445
Dimethylphthalate	<0.20		0.20	ug/L	05-SEP-17	08-SEP-17	R3820445
2,4-Dimethylphenol	<0.50		0.50	ug/L	05-SEP-17	08-SEP-17	R3820445
2,4-Dinitrophenol	<1.0		1.0	ug/L	05-SEP-17	08-SEP-17	R3820445
2,4-Dinitrotoluene	<0.40		0.40	ug/L	05-SEP-17	08-SEP-17	R3820445
2,6-Dinitrotoluene	<0.40		0.40	ug/L	05-SEP-17	08-SEP-17	R3820445
2,4+2,6-Dinitrotoluene	<0.57		0.57	ug/L		08-SEP-17	
Bis(2-ethylhexyl)phthalate	<2.0		2.0	ug/L	05-SEP-17	08-SEP-17	R3820445
Pentachlorophenol	<0.50		0.50	ug/L	05-SEP-17	08-SEP-17	R3820445
Phenanthrene	<0.20		0.20	ug/L	05-SEP-17	08-SEP-17	R3820445
Phenol	<0.50		0.50	ug/L	05-SEP-17	08-SEP-17	R3820445
Pyrene	<0.20		0.20	ug/L	05-SEP-17	08-SEP-17	R3820445
1,2,4-Trichlorobenzene	<0.40		0.40	ug/L	05-SEP-17	08-SEP-17	R3820445
2,4,5-Trichlorophenol	<0.20		0.20	ug/L	05-SEP-17	08-SEP-17	R3820445
2,4,6-Trichlorophenol	<0.20		0.20	ug/L	05-SEP-17	08-SEP-17	R3820445
Surrogate: 2-Fluorobiphenyl	90.4		50-140	%	05-SEP-17	08-SEP-17	R3820445
Surrogate: Nitrobenzene d5	86.9		50-140	%	05-SEP-17	08-SEP-17	R3820445
Surrogate: Phenol d5	43.8		30-130	%	05-SEP-17	08-SEP-17	R3820445
Surrogate: p-Terphenyl d14	95.7		60-140	%	05-SEP-17	08-SEP-17	R3820445
Surrogate: 2,4,6-Tribromophenol	121.4		50-140	%	05-SEP-17	08-SEP-17	R3820445
L1983964-5 OW9-I Sampled By: CLIENT on 30-AUG-17 @ 12:10 Matrix: WATER							
Physical Tests							
Conductivity	0.784		0.0030	mS/cm		31-AUG-17	R3816056
pH	7.35		0.10	pH units		31-AUG-17	R3816056
Anions and Nutrients							
Chloride (Cl)	11.5		0.50	mg/L		31-AUG-17	R3816951
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		07-SEP-17	R3822218
Dissolved Metals							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1983964-5 OW9-I Sampled By: CLIENT on 30-AUG-17 @ 12:10 Matrix: WATER							
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					31-AUG-17	R3815538
Dissolved Metals Filtration Location	FIELD					31-AUG-17	R3815440
Antimony (Sb)-Dissolved	<1.0	DLHC	1.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Arsenic (As)-Dissolved	<1.0	DLHC	1.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Barium (Ba)-Dissolved	101	DLHC	1.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Beryllium (Be)-Dissolved	<1.0	DLHC	1.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Boron (B)-Dissolved	110	DLHC	100	ug/L	31-AUG-17	31-AUG-17	R3815794
Cadmium (Cd)-Dissolved	0.21	DLHC	0.10	ug/L	31-AUG-17	31-AUG-17	R3815794
Chromium (Cr)-Dissolved	<5.0	DLHC	5.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Cobalt (Co)-Dissolved	1.7	DLHC	1.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Copper (Cu)-Dissolved	<2.0	DLHC	2.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Lead (Pb)-Dissolved	<0.50	DLHC	0.50	ug/L	31-AUG-17	31-AUG-17	R3815794
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	31-AUG-17	31-AUG-17	R3815778
Molybdenum (Mo)-Dissolved	0.54	DLHC	0.50	ug/L	31-AUG-17	31-AUG-17	R3815794
Nickel (Ni)-Dissolved	<5.0	DLHC	5.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Selenium (Se)-Dissolved	<0.50	DLHC	0.50	ug/L	31-AUG-17	31-AUG-17	R3815794
Silver (Ag)-Dissolved	<0.50	DLHC	0.50	ug/L	31-AUG-17	31-AUG-17	R3815794
Sodium (Na)-Dissolved	7500	DLHC	5000	ug/L	31-AUG-17	31-AUG-17	R3815794
Thallium (Tl)-Dissolved	<0.10	DLHC	0.10	ug/L	31-AUG-17	31-AUG-17	R3815794
Uranium (U)-Dissolved	0.46	DLHC	0.10	ug/L	31-AUG-17	31-AUG-17	R3815794
Vanadium (V)-Dissolved	<5.0	DLHC	5.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Zinc (Zn)-Dissolved	1180	DLHC	10	ug/L	31-AUG-17	31-AUG-17	R3815794
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		05-SEP-17	R3820294
Volatile Organic Compounds							
Acetone	<30		30	ug/L		31-AUG-17	R3815523
Benzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
Bromodichloromethane	<2.0		2.0	ug/L		31-AUG-17	R3815523
Bromoform	<5.0		5.0	ug/L		31-AUG-17	R3815523
Bromomethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
Carbon tetrachloride	<0.20		0.20	ug/L		31-AUG-17	R3815523
Chlorobenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
Dibromochloromethane	<2.0		2.0	ug/L		31-AUG-17	R3815523
Chloroform	<1.0		1.0	ug/L		31-AUG-17	R3815523
1,2-Dibromoethane	<0.20		0.20	ug/L		31-AUG-17	R3815523
1,2-Dichlorobenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,3-Dichlorobenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,4-Dichlorobenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
Dichlorodifluoromethane	<2.0		2.0	ug/L		31-AUG-17	R3815523
1,1-Dichloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,2-Dichloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1983964-5 OW9-I Sampled By: CLIENT on 30-AUG-17 @ 12:10 Matrix: WATER							
Volatile Organic Compounds							
1,1-Dichloroethylene	<0.50		0.50	ug/L		31-AUG-17	R3815523
cis-1,2-Dichloroethylene	2.29		0.50	ug/L		31-AUG-17	R3815523
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		31-AUG-17	R3815523
Methylene Chloride	<5.0		5.0	ug/L		31-AUG-17	R3815523
1,2-Dichloropropane	<0.50		0.50	ug/L		31-AUG-17	R3815523
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		31-AUG-17	R3815523
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		31-AUG-17	R3815523
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		31-AUG-17	
Ethylbenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
n-Hexane	<0.50		0.50	ug/L		31-AUG-17	R3815523
Methyl Ethyl Ketone	<20		20	ug/L		31-AUG-17	R3815523
Methyl Isobutyl Ketone	<20		20	ug/L		31-AUG-17	R3815523
MTBE	<2.0		2.0	ug/L		31-AUG-17	R3815523
Styrene	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
Tetrachloroethylene	<0.50		0.50	ug/L		31-AUG-17	R3815523
Toluene	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1,1-Trichloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1,2-Trichloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
Trichloroethylene	0.74		0.50	ug/L		31-AUG-17	R3815523
Trichlorofluoromethane	<5.0		5.0	ug/L		31-AUG-17	R3815523
Vinyl chloride	0.55		0.50	ug/L		31-AUG-17	R3815523
o-Xylene	<0.30		0.30	ug/L		31-AUG-17	R3815523
m+p-Xylenes	<0.40		0.40	ug/L		31-AUG-17	R3815523
Xylenes (Total)	<0.50		0.50	ug/L		31-AUG-17	
Surrogate: 4-Bromofluorobenzene	94.0		70-130	%		31-AUG-17	R3815523
Surrogate: 1,4-Difluorobenzene	100.5		70-130	%		31-AUG-17	R3815523
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		31-AUG-17	R3815523
F1-BTEX	<25		25	ug/L		06-SEP-17	
F2 (C10-C16)	<100		100	ug/L	06-SEP-17	06-SEP-17	R3820710
F2-Naphth	<100		100	ug/L		06-SEP-17	
F3 (C16-C34)	<250		250	ug/L	06-SEP-17	06-SEP-17	R3820710
F3-PAH	<250		250	ug/L		06-SEP-17	
F4 (C34-C50)	<250		250	ug/L	06-SEP-17	06-SEP-17	R3820710
Total Hydrocarbons (C6-C50)	<370		370	ug/L		06-SEP-17	
Chrom. to baseline at nC50	YES				06-SEP-17	06-SEP-17	R3820710
Surrogate: 2-Bromobenzotrifluoride	92.6		60-140	%	06-SEP-17	06-SEP-17	R3820710
Surrogate: 3,4-Dichlorotoluene	103.6		60-140	%		31-AUG-17	R3815523
Polycyclic Aromatic Hydrocarbons							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1983964-5 OW9-I Sampled By: CLIENT on 30-AUG-17 @ 12:10 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Acenaphthylene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Anthracene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Benzo(a)anthracene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Benzo(a)pyrene	<0.010		0.010	ug/L	01-SEP-17	06-SEP-17	R3816955
Benzo(b)fluoranthene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Benzo(k)fluoranthene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Chrysene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Fluoranthene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Fluorene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		06-SEP-17	
1-Methylnaphthalene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
2-Methylnaphthalene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Naphthalene	<0.050		0.050	ug/L	01-SEP-17	06-SEP-17	R3816955
Phenanthrene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Pyrene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Surrogate: d10-Acenaphthene	90.9		60-140	%	01-SEP-17	06-SEP-17	R3816955
Surrogate: d12-Chrysene	80.8		60-140	%	01-SEP-17	06-SEP-17	R3816955
Surrogate: d8-Naphthalene	88.7		60-140	%	01-SEP-17	06-SEP-17	R3816955
Surrogate: d10-Phenanthrene	98.3		60-140	%	01-SEP-17	06-SEP-17	R3816955
L1983964-6 OW9-II Sampled By: CLIENT on 30-AUG-17 @ 13:50 Matrix: WATER							
Physical Tests							
Conductivity	0.877		0.0030	mS/cm		31-AUG-17	R3816056
pH	7.36		0.10	pH units		31-AUG-17	R3816056
Anions and Nutrients							
Chloride (Cl)	33.0		0.50	mg/L		31-AUG-17	R3816951
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		07-SEP-17	R3822218
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					31-AUG-17	R3815538
Dissolved Metals Filtration Location	FIELD					31-AUG-17	R3815440
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	31-AUG-17	31-AUG-17	R3815794
Arsenic (As)-Dissolved	24.3		0.10	ug/L	31-AUG-17	31-AUG-17	R3815794
Barium (Ba)-Dissolved	152		0.10	ug/L	31-AUG-17	31-AUG-17	R3815794
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	31-AUG-17	31-AUG-17	R3815794
Boron (B)-Dissolved	83		10	ug/L	31-AUG-17	31-AUG-17	R3815794
Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	31-AUG-17	31-AUG-17	R3815794

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1983964-6 OW9-II Sampled By: CLIENT on 30-AUG-17 @ 13:50 Matrix: WATER							
Dissolved Metals							
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	31-AUG-17	31-AUG-17	R3815794
Cobalt (Co)-Dissolved	0.48		0.10	ug/L	31-AUG-17	31-AUG-17	R3815794
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	31-AUG-17	31-AUG-17	R3815794
Lead (Pb)-Dissolved	9.41		0.050	ug/L	31-AUG-17	31-AUG-17	R3815794
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	31-AUG-17	31-AUG-17	R3815778
Molybdenum (Mo)-Dissolved	2.23		0.050	ug/L	31-AUG-17	31-AUG-17	R3815794
Nickel (Ni)-Dissolved	5.10		0.50	ug/L	31-AUG-17	31-AUG-17	R3815794
Selenium (Se)-Dissolved	0.059		0.050	ug/L	31-AUG-17	31-AUG-17	R3815794
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	31-AUG-17	31-AUG-17	R3815794
Sodium (Na)-Dissolved	15300		500	ug/L	31-AUG-17	31-AUG-17	R3815794
Thallium (Tl)-Dissolved	0.130		0.010	ug/L	31-AUG-17	31-AUG-17	R3815794
Uranium (U)-Dissolved	1.46		0.010	ug/L	31-AUG-17	31-AUG-17	R3815794
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	31-AUG-17	31-AUG-17	R3815794
Zinc (Zn)-Dissolved	639		1.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		05-SEP-17	R3820294
Volatile Organic Compounds							
Acetone	<30		30	ug/L		31-AUG-17	R3815523
Benzene	3.27		0.50	ug/L		31-AUG-17	R3815523
Bromodichloromethane	<2.0		2.0	ug/L		31-AUG-17	R3815523
Bromoform	<5.0		5.0	ug/L		31-AUG-17	R3815523
Bromomethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
Carbon tetrachloride	<0.20		0.20	ug/L		31-AUG-17	R3815523
Chlorobenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
Dibromochloromethane	<2.0		2.0	ug/L		31-AUG-17	R3815523
Chloroform	<1.0		1.0	ug/L		31-AUG-17	R3815523
1,2-Dibromoethane	<0.20		0.20	ug/L		31-AUG-17	R3815523
1,2-Dichlorobenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,3-Dichlorobenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,4-Dichlorobenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
Dichlorodifluoromethane	<2.0		2.0	ug/L		31-AUG-17	R3815523
1,1-Dichloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,2-Dichloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1-Dichloroethylene	<0.50		0.50	ug/L		31-AUG-17	R3815523
cis-1,2-Dichloroethylene	6.54		0.50	ug/L		31-AUG-17	R3815523
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		31-AUG-17	R3815523
Methylene Chloride	<5.0		5.0	ug/L		31-AUG-17	R3815523
1,2-Dichloropropane	<0.50		0.50	ug/L		31-AUG-17	R3815523
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		31-AUG-17	R3815523
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		31-AUG-17	R3815523
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		31-AUG-17	

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1983964-6 OW9-II Sampled By: CLIENT on 30-AUG-17 @ 13:50 Matrix: WATER							
Volatile Organic Compounds							
Ethylbenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
n-Hexane	<0.50		0.50	ug/L		31-AUG-17	R3815523
Methyl Ethyl Ketone	<20		20	ug/L		31-AUG-17	R3815523
Methyl Isobutyl Ketone	<20		20	ug/L		31-AUG-17	R3815523
MTBE	<2.0		2.0	ug/L		31-AUG-17	R3815523
Styrene	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
Tetrachloroethylene	<0.50		0.50	ug/L		31-AUG-17	R3815523
Toluene	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1,1-Trichloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1,2-Trichloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
Trichloroethylene	<0.50		0.50	ug/L		31-AUG-17	R3815523
Trichlorofluoromethane	<5.0		5.0	ug/L		31-AUG-17	R3815523
Vinyl chloride	7.48		0.50	ug/L		31-AUG-17	R3815523
o-Xylene	<0.30		0.30	ug/L		31-AUG-17	R3815523
m+p-Xylenes	<0.40		0.40	ug/L		31-AUG-17	R3815523
Xylenes (Total)	<0.50		0.50	ug/L		31-AUG-17	
Surrogate: 4-Bromofluorobenzene	94.8		70-130	%		31-AUG-17	R3815523
Surrogate: 1,4-Difluorobenzene	100.2		70-130	%		31-AUG-17	R3815523
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		31-AUG-17	R3815523
F1-BTEX	<25		25	ug/L		06-SEP-17	
F2 (C10-C16)	<100		100	ug/L	01-SEP-17	01-SEP-17	R3818284
F2-Naphth	<100		100	ug/L		06-SEP-17	
F3 (C16-C34)	<250		250	ug/L	01-SEP-17	01-SEP-17	R3818284
F3-PAH	<250		250	ug/L		06-SEP-17	
F4 (C34-C50)	<250		250	ug/L	01-SEP-17	01-SEP-17	R3818284
Total Hydrocarbons (C6-C50)	<370		370	ug/L		06-SEP-17	
Chrom. to baseline at nC50	YES				01-SEP-17	01-SEP-17	R3818284
Surrogate: 2-Bromobenzotrifluoride	98.2		60-140	%	01-SEP-17	01-SEP-17	R3818284
Surrogate: 3,4-Dichlorotoluene	105.6		60-140	%		31-AUG-17	R3815523
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Acenaphthylene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Anthracene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Benzo(a)anthracene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Benzo(a)pyrene	<0.010		0.010	ug/L	01-SEP-17	06-SEP-17	R3816955
Benzo(b)fluoranthene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Benzo(k)fluoranthene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1983964-6 OW9-II Sampled By: CLIENT on 30-AUG-17 @ 13:50 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Chrysene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Fluoranthene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Fluorene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		06-SEP-17	
1-Methylnaphthalene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
2-Methylnaphthalene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Naphthalene	<0.050		0.050	ug/L	01-SEP-17	06-SEP-17	R3816955
Phenanthrene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Pyrene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Surrogate: d10-Acenaphthene	93.5		60-140	%	01-SEP-17	06-SEP-17	R3816955
Surrogate: d12-Chrysene	83.4		60-140	%	01-SEP-17	06-SEP-17	R3816955
Surrogate: d8-Naphthalene	89.2		60-140	%	01-SEP-17	06-SEP-17	R3816955
Surrogate: d10-Phenanthrene	100.2		60-140	%	01-SEP-17	06-SEP-17	R3816955
L1983964-7 OW10 Sampled By: CLIENT on 30-AUG-17 @ 15:30 Matrix: WATER							
Physical Tests							
Conductivity	0.703		0.0030	mS/cm		31-AUG-17	R3816056
pH	7.58		0.10	pH units		31-AUG-17	R3816056
Anions and Nutrients							
Chloride (Cl)	6.62		0.50	mg/L		31-AUG-17	R3816951
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		07-SEP-17	R3822218
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					31-AUG-17	R3815538
Dissolved Metals Filtration Location	FIELD					31-AUG-17	R3815440
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	31-AUG-17	31-AUG-17	R3815794
Arsenic (As)-Dissolved	1.29		0.10	ug/L	31-AUG-17	31-AUG-17	R3815794
Barium (Ba)-Dissolved	40.1		0.10	ug/L	31-AUG-17	31-AUG-17	R3815794
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	31-AUG-17	31-AUG-17	R3815794
Boron (B)-Dissolved	55		10	ug/L	31-AUG-17	31-AUG-17	R3815794
Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	31-AUG-17	31-AUG-17	R3815794
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	31-AUG-17	31-AUG-17	R3815794
Cobalt (Co)-Dissolved	0.28		0.10	ug/L	31-AUG-17	31-AUG-17	R3815794
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	31-AUG-17	31-AUG-17	R3815794
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	31-AUG-17	31-AUG-17	R3815794
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	31-AUG-17	31-AUG-17	R3815778
Molybdenum (Mo)-Dissolved	0.267		0.050	ug/L	31-AUG-17	31-AUG-17	R3815794
Nickel (Ni)-Dissolved	<0.50		0.50	ug/L	31-AUG-17	31-AUG-17	R3815794
Selenium (Se)-Dissolved	0.190		0.050	ug/L	31-AUG-17	31-AUG-17	R3815794

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1983964-7 OW10 Sampled By: CLIENT on 30-AUG-17 @ 15:30 Matrix: WATER							
Dissolved Metals							
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	31-AUG-17	31-AUG-17	R3815794
Sodium (Na)-Dissolved	6230		500	ug/L	31-AUG-17	31-AUG-17	R3815794
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	31-AUG-17	31-AUG-17	R3815794
Uranium (U)-Dissolved	0.714		0.010	ug/L	31-AUG-17	31-AUG-17	R3815794
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	31-AUG-17	31-AUG-17	R3815794
Zinc (Zn)-Dissolved	39.4		1.0	ug/L	31-AUG-17	31-AUG-17	R3815794
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		05-SEP-17	R3820294
Volatile Organic Compounds							
Acetone	<30		30	ug/L		31-AUG-17	R3815523
Benzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
Bromodichloromethane	<2.0		2.0	ug/L		31-AUG-17	R3815523
Bromoform	<5.0		5.0	ug/L		31-AUG-17	R3815523
Bromomethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
Carbon tetrachloride	<0.20		0.20	ug/L		31-AUG-17	R3815523
Chlorobenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
Dibromochloromethane	<2.0		2.0	ug/L		31-AUG-17	R3815523
Chloroform	1.6		1.0	ug/L		31-AUG-17	R3815523
1,2-Dibromoethane	<0.20		0.20	ug/L		31-AUG-17	R3815523
1,2-Dichlorobenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,3-Dichlorobenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,4-Dichlorobenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
Dichlorodifluoromethane	<2.0		2.0	ug/L		31-AUG-17	R3815523
1,1-Dichloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,2-Dichloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1-Dichloroethylene	<0.50		0.50	ug/L		31-AUG-17	R3815523
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		31-AUG-17	R3815523
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		31-AUG-17	R3815523
Methylene Chloride	<5.0		5.0	ug/L		31-AUG-17	R3815523
1,2-Dichloropropane	<0.50		0.50	ug/L		31-AUG-17	R3815523
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		31-AUG-17	R3815523
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		31-AUG-17	R3815523
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		31-AUG-17	
Ethylbenzene	<0.50		0.50	ug/L		31-AUG-17	R3815523
n-Hexane	<0.50		0.50	ug/L		31-AUG-17	R3815523
Methyl Ethyl Ketone	<20		20	ug/L		31-AUG-17	R3815523
Methyl Isobutyl Ketone	<20		20	ug/L		31-AUG-17	R3815523
MTBE	<2.0		2.0	ug/L		31-AUG-17	R3815523
Styrene	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1983964-7 OW10 Sampled By: CLIENT on 30-AUG-17 @ 15:30 Matrix: WATER							
Volatile Organic Compounds							
Tetrachloroethylene	<0.50		0.50	ug/L		31-AUG-17	R3815523
Toluene	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1,1-Trichloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
1,1,2-Trichloroethane	<0.50		0.50	ug/L		31-AUG-17	R3815523
Trichloroethylene	<0.50		0.50	ug/L		31-AUG-17	R3815523
Trichlorofluoromethane	<5.0		5.0	ug/L		31-AUG-17	R3815523
Vinyl chloride	<0.50		0.50	ug/L		31-AUG-17	R3815523
o-Xylene	<0.30		0.30	ug/L		31-AUG-17	R3815523
m+p-Xylenes	<0.40		0.40	ug/L		31-AUG-17	R3815523
Xylenes (Total)	<0.50		0.50	ug/L		31-AUG-17	
Surrogate: 4-Bromofluorobenzene	93.8		70-130	%		31-AUG-17	R3815523
Surrogate: 1,4-Difluorobenzene	99.9		70-130	%		31-AUG-17	R3815523
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		31-AUG-17	R3815523
F1-BTEX	<25		25	ug/L		06-SEP-17	
F2 (C10-C16)	<100		100	ug/L	01-SEP-17	01-SEP-17	R3818284
F2-Naphth	<100		100	ug/L		06-SEP-17	
F3 (C16-C34)	<250		250	ug/L	01-SEP-17	01-SEP-17	R3818284
F3-PAH	<250		250	ug/L		06-SEP-17	
F4 (C34-C50)	<250		250	ug/L	01-SEP-17	01-SEP-17	R3818284
Total Hydrocarbons (C6-C50)	<370		370	ug/L		06-SEP-17	
Chrom. to baseline at nC50	YES				01-SEP-17	01-SEP-17	R3818284
Surrogate: 2-Bromobenzotrifluoride	101.2		60-140	%	01-SEP-17	01-SEP-17	R3818284
Surrogate: 3,4-Dichlorotoluene	108.9		60-140	%		31-AUG-17	R3815523
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	0.196		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Acenaphthylene	0.032		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Anthracene	0.030	R	0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Benzo(a)anthracene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Benzo(a)pyrene	<0.010		0.010	ug/L	01-SEP-17	06-SEP-17	R3816955
Benzo(b)fluoranthene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Benzo(k)fluoranthene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Chrysene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Fluoranthene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Fluorene	0.084		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		06-SEP-17	
1-Methylnaphthalene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
2-Methylnaphthalene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1983964-7 OW10 Sampled By: CLIENT on 30-AUG-17 @ 15:30 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Naphthalene	<0.050		0.050	ug/L	01-SEP-17	06-SEP-17	R3816955
Phenanthrene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Pyrene	<0.020		0.020	ug/L	01-SEP-17	06-SEP-17	R3816955
Surrogate: d10-Acenaphthene	95.2		60-140	%	01-SEP-17	06-SEP-17	R3816955
Surrogate: d12-Chrysene	98.5		60-140	%	01-SEP-17	06-SEP-17	R3816955
Surrogate: d8-Naphthalene	90.9		60-140	%	01-SEP-17	06-SEP-17	R3816955
Surrogate: d10-Phenanthrene	104.7		60-140	%	01-SEP-17	06-SEP-17	R3816955
L1983964-8 TRIP BLANK-1 Sampled By: CLIENT on 29-AUG-17 Matrix: WATER							
Volatile Organic Compounds							
Acetone	<30		30	ug/L		01-SEP-17	R3816635
Benzene	<0.50		0.50	ug/L		01-SEP-17	R3816635
Bromodichloromethane	<2.0		2.0	ug/L		01-SEP-17	R3816635
Bromoform	<5.0		5.0	ug/L		01-SEP-17	R3816635
Bromomethane	<0.50		0.50	ug/L		01-SEP-17	R3816635
Carbon tetrachloride	<0.20		0.20	ug/L		01-SEP-17	R3816635
Chlorobenzene	<0.50		0.50	ug/L		01-SEP-17	R3816635
Dibromochloromethane	<2.0		2.0	ug/L		01-SEP-17	R3816635
Chloroform	<1.0		1.0	ug/L		01-SEP-17	R3816635
1,2-Dibromoethane	<0.20		0.20	ug/L		01-SEP-17	R3816635
1,2-Dichlorobenzene	<0.50		0.50	ug/L		01-SEP-17	R3816635
1,3-Dichlorobenzene	<0.50		0.50	ug/L		01-SEP-17	R3816635
1,4-Dichlorobenzene	<0.50		0.50	ug/L		01-SEP-17	R3816635
Dichlorodifluoromethane	<2.0		2.0	ug/L		01-SEP-17	R3816635
1,1-Dichloroethane	<0.50		0.50	ug/L		01-SEP-17	R3816635
1,2-Dichloroethane	<0.50		0.50	ug/L		01-SEP-17	R3816635
1,1-Dichloroethylene	<0.50		0.50	ug/L		01-SEP-17	R3816635
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		01-SEP-17	R3816635
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		01-SEP-17	R3816635
Methylene Chloride	<5.0		5.0	ug/L		01-SEP-17	R3816635
1,2-Dichloropropane	<0.50		0.50	ug/L		01-SEP-17	R3816635
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		01-SEP-17	R3816635
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		01-SEP-17	R3816635
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		01-SEP-17	
Ethylbenzene	<0.50		0.50	ug/L		01-SEP-17	R3816635
n-Hexane	<0.50		0.50	ug/L		01-SEP-17	R3816635
Methyl Ethyl Ketone	<20		20	ug/L		01-SEP-17	R3816635
Methyl Isobutyl Ketone	<20		20	ug/L		01-SEP-17	R3816635
MTBE	<2.0		2.0	ug/L		01-SEP-17	R3816635
Styrene	<0.50		0.50	ug/L		01-SEP-17	R3816635
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		01-SEP-17	R3816635

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1983964-8 TRIP BLANK-1 Sampled By: CLIENT on 29-AUG-17 Matrix: WATER							
Volatile Organic Compounds							
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		01-SEP-17	R3816635
Tetrachloroethylene	<0.50		0.50	ug/L		01-SEP-17	R3816635
Toluene	<0.50		0.50	ug/L		01-SEP-17	R3816635
1,1,1-Trichloroethane	<0.50		0.50	ug/L		01-SEP-17	R3816635
1,1,2-Trichloroethane	<0.50		0.50	ug/L		01-SEP-17	R3816635
Trichloroethylene	<0.50		0.50	ug/L		01-SEP-17	R3816635
Trichlorofluoromethane	<5.0		5.0	ug/L		01-SEP-17	R3816635
Vinyl chloride	<0.50		0.50	ug/L		01-SEP-17	R3816635
o-Xylene	<0.30		0.30	ug/L		01-SEP-17	R3816635
m+p-Xylenes	<0.40		0.40	ug/L		01-SEP-17	R3816635
Xylenes (Total)	<0.50		0.50	ug/L		01-SEP-17	
Surrogate: 4-Bromofluorobenzene	93.4		70-130	%		01-SEP-17	R3816635
Surrogate: 1,4-Difluorobenzene	100.3		70-130	%		01-SEP-17	R3816635
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		01-SEP-17	R3816635
Surrogate: 3,4-Dichlorotoluene	131.5		60-140	%		01-SEP-17	R3816635

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Laboratory Control Sample	Pentachlorophenol	LCS-H	L1983964-4
Matrix Spike	Chloride (Cl)	MS-B	L1983964-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1983964-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Boron (B)-Dissolved	MS-B	L1983964-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1983964-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Uranium (U)-Dissolved	MS-B	L1983964-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Zinc (Zn)-Dissolved	MS-B	L1983964-1, -2, -3, -4, -5, -6, -7

Sample Parameter Qualifier key listed:

Qualifier	Description
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
LCS-H	Lab Control Sample recovery was above ALS DQO. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
R	The ion abundance ratio(s) did not meet the acceptance criteria. Value is an estimated maximum.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
1,4-DIOXANE-WT	Water	1,4-Dioxane by Headspace GC/MS	SW846 8260

An aliquot of the sample is analyzed directly by headspace technology, followed by GC/MS using isotopic dilution.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

625-511-WT	Water	ABN,CP,PAH-O.Reg 153/04	SW846 8270 (511)

Ground water sample extraction is carried out at a pH <2 (acid extractables) and pH>11 (base neutral extractables). Extracts are dried, concentrated and exchanged into a solvent compatible with the cleanup. Analysis is by GC/MS. Depending on the analytical GC/MS column used benzo(j)fluoranthene may chromatographically co-elute with benzo(b)fluoranthene or benzo(k)fluoranthene.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Water	Cyanide (WAD)-O.Reg 153/04	APHA 4500CN I-Weak acid Dist Colorimet

Weak acid dissociable cyanide (WAD) is determined by undergoing a distillation procedure. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-R511-WT	Water	Hex Chrom-O.Reg 153/04 (July 2011)	EPA 7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

DINITROTOL-CALC-WT	Water	ABN-Calculated Parameters	SW846 8270
EC-R511-WT	Water	Conductivity-O.Reg 153/04 (July 2011)	APHA 2510 B

Water samples can be measured directly by immersing the conductivity cell into the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-511-WT	Water	F1-O.Reg 153/04 (July 2011)	MOE DECPH-E3421/CCME TIER 1

Fraction F1 is determined by purging a volume of a ground water sample followed by GC/FID analysis.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-F4-511-CALC-WT	Water	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-L

Reference Information

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Water	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Water	F2-F4-O.Reg 153/04 (July 2011)	MOE DECPH-E3398/CCME TIER 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from water using a hexane micro-extraction technique. Instrumental analysis is by GC-FID, as per the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Tier 1 Method, CCME, 2001.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

HG-D-UG/L-CVAA-WT	Water	Diss. Mercury in Water by CVAAS (ug/L)	EPA 1631E (mod)

Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8

The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT	Water	PAH-Calculated Parameters	SW846 8270

PAH-511-WT	Water	PAH-O. Reg 153/04 (July 2011)	SW846 3510/8270

Aqueous samples, fortified with surrogates, are extracted using liquid/liquid extraction technique. The sample extracts are concentrated and then analyzed using GC/MS. Depending on the analytical GC/MS column used benzo(j)fluoranthene may chromatographically co-elute with benzo(b)fluoranthene or benzo(k)fluoranthene.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PH-WT	Water	pH	APHA 4500 H-Electrode

Water samples are analyzed directly by a calibrated pH meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Holdtime for samples under this regulation is 28 days

VOC-1,3-DCP-CALC-WT	Water	Regulation 153 VOCs	SW8260B/SW8270C

VOC-511-HS-WT	Water	VOC by GCMS HS O.Reg 153/04 (July 2011)	SW846 8260

Reference Information

Liquid samples are analyzed by headspace GC/MSD.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L1983964 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
1,4-DIOXANE-WT	**Water**							
Batch R3815523								
WG2603485-4 DUP		**WG2603485-3**						
1,4-Dioxane		30	30		ug/L	0.1	30	31-AUG-17
WG2603485-1 LCS								
1,4-Dioxane			105.2		%		60-140	31-AUG-17
WG2603485-2 MB								
1,4-Dioxane			<20		ug/L		20	31-AUG-17
WG2603485-5 MS		**WG2603485-3**						
1,4-Dioxane			98.4		%		50-140	31-AUG-17
625-511-WT	**Water**							
Batch R3820445								
WG2608322-2 LCS								
1,2,4-Trichlorobenzene			84.0		%		50-140	06-SEP-17
2-Chlorophenol			97.1		%		50-140	06-SEP-17
2,4-Dichlorophenol			113.6		%		50-140	06-SEP-17
2,4-Dimethylphenol			102.5		%		30-130	06-SEP-17
2,4-Dinitrophenol			115.5		%		50-140	06-SEP-17
2,4-Dinitrotoluene			108.4		%		50-140	06-SEP-17
2,4,5-Trichlorophenol			124.5		%		50-140	06-SEP-17
2,4,6-Trichlorophenol			116.9		%		50-140	06-SEP-17
2,6-Dinitrotoluene			104.0		%		50-140	06-SEP-17
3,3'-Dichlorobenzidine			88.2		%		30-130	06-SEP-17
4-Chloroaniline			64.2		%		30-130	06-SEP-17
Biphenyl			87.8		%		50-140	06-SEP-17
Bis(2-chloroethyl)ether			88.5		%		50-140	06-SEP-17
Bis(2-chloroisopropyl)ether			85.2		%		50-140	06-SEP-17
Bis(2-ethylhexyl)phthalate			118.5		%		50-140	06-SEP-17
Diethylphthalate			88.3		%		50-140	06-SEP-17
Dimethylphthalate			83.7		%		50-140	06-SEP-17
Pentachlorophenol			148.6	LCS-H	%		50-140	08-SEP-17
Phenanthrene			88.1		%		50-140	06-SEP-17
Phenol			59.8		%		30-130	06-SEP-17
Pyrene			95.0		%		50-140	06-SEP-17
WG2608322-3 LCSD		**WG2608322-2**						
1,2,4-Trichlorobenzene		84.0	86.1		%	2.4	50	06-SEP-17
2-Chlorophenol		97.1	100.4		%	3.4	50	06-SEP-17

Quality Control Report

Workorder: L1983964 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Water**							
Batch R3820445								
WG2608322-3 LCSD		**WG2608322-2**						
2,4-Dichlorophenol		113.6	115.0		%	1.2	50	06-SEP-17
2,4-Dimethylphenol		102.5	114.5		%	11	50	06-SEP-17
2,4-Dinitrophenol		115.5	119.0		%	3.0	50	06-SEP-17
2,4-Dinitrotoluene		108.4	114.0		%	5.1	50	06-SEP-17
2,4,5-Trichlorophenol		124.5	131.7		%	5.6	50	06-SEP-17
2,4,6-Trichlorophenol		116.9	124.5		%	6.3	50	06-SEP-17
2,6-Dinitrotoluene		104.0	110.7		%	6.2	50	06-SEP-17
3,3'-Dichlorobenzidine		88.2	87.4		%	0.9	50	06-SEP-17
4-Chloroaniline		64.2	83.7		%	26	50	06-SEP-17
Biphenyl		87.8	91.9		%	4.6	50	06-SEP-17
Bis(2-chloroethyl)ether		88.5	90.5		%	2.3	50	06-SEP-17
Bis(2-chloroisopropyl)ether		85.2	88.3		%	3.6	50	06-SEP-17
Bis(2-ethylhexyl)phthalate		118.5	123.9		%	4.4	50	06-SEP-17
Diethylphthalate		88.3	93.5		%	5.7	50	06-SEP-17
Dimethylphthalate		83.7	87.6		%	4.5	50	06-SEP-17
Pentachlorophenol		148.6	149.0		%	0.3	50	08-SEP-17
Phenanthrene		88.1	91.7		%	4.0	50	06-SEP-17
Phenol		59.8	64.6		%	7.6	50	06-SEP-17
Pyrene		95.0	106.6		%	12	50	06-SEP-17
WG2608322-1 MB								
1,2,4-Trichlorobenzene			<0.40		ug/L		0.4	06-SEP-17
2-Chlorophenol			<0.30		ug/L		0.3	06-SEP-17
2,4-Dichlorophenol			<0.30		ug/L		0.3	06-SEP-17
2,4-Dimethylphenol			<0.50		ug/L		0.5	06-SEP-17
2,4-Dinitrophenol			<1.0		ug/L		1	06-SEP-17
2,4-Dinitrotoluene			<0.40		ug/L		0.4	06-SEP-17
2,4,5-Trichlorophenol			<0.20		ug/L		0.2	06-SEP-17
2,4,6-Trichlorophenol			<0.20		ug/L		0.2	06-SEP-17
2,6-Dinitrotoluene			<0.40		ug/L		0.4	06-SEP-17
3,3'-Dichlorobenzidine			<0.40		ug/L		0.4	06-SEP-17
4-Chloroaniline			<0.40		ug/L		0.4	06-SEP-17
Biphenyl			<0.40		ug/L		0.4	06-SEP-17
Bis(2-chloroethyl)ether			<0.40		ug/L		0.4	06-SEP-17

Quality Control Report

Workorder: L1983964 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Water**							
Batch R3820445								
WG2608322-1 MB								
Bis(2-chloroisopropyl)ether			<0.40		ug/L		0.4	06-SEP-17
Bis(2-ethylhexyl)phthalate			<2.0		ug/L		2	06-SEP-17
Diethylphthalate			<0.20		ug/L		0.2	06-SEP-17
Dimethylphthalate			<0.20		ug/L		0.2	06-SEP-17
Pentachlorophenol			<0.50		ug/L		0.5	06-SEP-17
Phenanthrene			<0.20		ug/L		0.2	06-SEP-17
Phenol			<0.50		ug/L		0.5	06-SEP-17
Pyrene			<0.20		ug/L		0.2	06-SEP-17
Surrogate: 2-Fluorobiphenyl			94.5		%		50-140	06-SEP-17
Surrogate: 2,4,6-Tribromophenol			101.3		%		50-140	06-SEP-17
Surrogate: Nitrobenzene d5			92.5		%		50-140	06-SEP-17
Surrogate: p-Terphenyl d14			122.2		%		60-140	06-SEP-17
Surrogate: Phenol d5			44.4		%		30-130	06-SEP-17
CL-IC-N-WT	**Water**							
Batch R3816951								
WG2606002-4 DUP		**WG2606002-3**						
Chloride (Cl)		155	158		mg/L	1.3	20	31-AUG-17
WG2606002-9 DUP		**L1983964-2**						
Chloride (Cl)		5.50	5.42		mg/L	1.5	20	31-AUG-17
WG2606002-2 LCS								
Chloride (Cl)			99.3		%		90-110	31-AUG-17
WG2606002-7 LCS								
Chloride (Cl)			99.5		%		90-110	31-AUG-17
WG2606002-1 MB								
Chloride (Cl)			<0.50		mg/L		0.5	31-AUG-17
WG2606002-6 MB								
Chloride (Cl)			<0.50		mg/L		0.5	31-AUG-17
WG2606002-10 MS		**L1983964-2**						
Chloride (Cl)			99.6		%		75-125	31-AUG-17
WG2606002-5 MS		**WG2606002-3**						
Chloride (Cl)			N/A	MS-B	%		-	31-AUG-17
CN-WAD-R511-WT	**Water**							

Quality Control Report

Workorder: L1983964 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-WAD-R511-WT	**Water**							
Batch R3822218								
WG2610880-3 DUP		**L1983964-1**						
Cyanide, Weak Acid Diss		<2.0	<2.0	RPD-NA	ug/L	N/A	20	07-SEP-17
WG2610880-2 LCS								
Cyanide, Weak Acid Diss			112.6		%		80-120	07-SEP-17
WG2610880-1 MB								
Cyanide, Weak Acid Diss			<2.0		ug/L		2	07-SEP-17
WG2610880-4 MS		**L1983964-1**						
Cyanide, Weak Acid Diss			102.3		%		70-130	07-SEP-17
CR-CR6-IC-R511-WT	**Water**							
Batch R3820294								
WG2605936-4 DUP		**WG2605936-3**						
Chromium, Hexavalent		<1.0	<1.0	RPD-NA	ug/L	N/A	20	05-SEP-17
WG2605936-2 LCS								
Chromium, Hexavalent			101.5		%		80-120	05-SEP-17
WG2605936-1 MB								
Chromium, Hexavalent			<1.0		ug/L		1	05-SEP-17
WG2605936-5 MS		**WG2605936-3**						
Chromium, Hexavalent			100.5		%		70-130	05-SEP-17
EC-R511-WT	**Water**							
Batch R3816056								
WG2605713-4 DUP		**WG2605713-3**						
Conductivity		0.283	0.285		mS/cm	0.7	10	31-AUG-17
WG2605713-8 DUP		**WG2605713-7**						
Conductivity		0.783	0.784		mS/cm	0.1	10	31-AUG-17
WG2605713-2 LCS								
Conductivity			101.2		%		90-110	31-AUG-17
WG2605713-6 LCS								
Conductivity			101.9		%		90-110	31-AUG-17
WG2605713-1 MB								
Conductivity			<0.0030		mS/cm		0.003	31-AUG-17
WG2605713-5 MB								
Conductivity			<0.0030		mS/cm		0.003	31-AUG-17
F1-511-WT	**Water**							
Batch R3816635								
WG2603487-4 DUP		**WG2603487-3**						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	01-SEP-17
WG2603487-1 LCS								

Quality Control Report

Workorder: L1983964 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-511-WT	**Water**							
Batch R3816635								
WG2603487-1 LCS								
F1 (C6-C10)			93.1		%		80-120	01-SEP-17
WG2603487-2 MB								
F1 (C6-C10)			<25		ug/L		25	01-SEP-17
Surrogate: 3,4-Dichlorotoluene			116.9		%		60-140	01-SEP-17
WG2603487-5 MS		**WG2603487-3**						
F1 (C6-C10)			84.5		%		60-140	01-SEP-17
F1-HS-511-WT	**Water**							
Batch R3815523								
WG2603485-4 DUP		**WG2603485-3**						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	31-AUG-17
WG2603485-1 LCS								
F1 (C6-C10)			94.6		%		80-120	31-AUG-17
WG2603485-2 MB								
F1 (C6-C10)			<25		ug/L		25	31-AUG-17
Surrogate: 3,4-Dichlorotoluene			117.9		%		60-140	31-AUG-17
WG2603485-5 MS		**WG2603485-3**						
F1 (C6-C10)			84.8		%		60-140	31-AUG-17
F2-F4-511-WT	**Water**							
Batch R3816822								
WG2605575-2 LCS								
F2 (C10-C16)			90.0		%		70-130	01-SEP-17
F3 (C16-C34)			95.1		%		70-130	01-SEP-17
F4 (C34-C50)			102.6		%		70-130	01-SEP-17
WG2605575-3 LCSD		**WG2605575-2**						
F2 (C10-C16)		90.0	99.3		%	9.9	50	01-SEP-17
F3 (C16-C34)		95.1	102.5		%	7.5	50	01-SEP-17
F4 (C34-C50)		102.6	110.7		%	7.6	50	01-SEP-17
WG2605575-1 MB								
F2 (C10-C16)			<100		ug/L		100	01-SEP-17
F3 (C16-C34)			<250		ug/L		250	01-SEP-17
F4 (C34-C50)			<250		ug/L		250	01-SEP-17
Surrogate: 2-Bromobenzotrifluoride			100.0		%		60-140	01-SEP-17
Batch R3818284								
WG2606707-2 LCS								
F2 (C10-C16)			104.0		%		70-130	01-SEP-17

Quality Control Report

Workorder: L1983964 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-511-WT	**Water**							
Batch R3818284								
WG2606707-2 LCS								
F3 (C16-C34)			108.7		%		70-130	01-SEP-17
F4 (C34-C50)			112.7		%		70-130	01-SEP-17
WG2606707-3 LCSD		**WG2606707-2**						
F2 (C10-C16)		104.0	101.5		%	2.5	50	01-SEP-17
F3 (C16-C34)		108.7	106.0		%	2.6	50	01-SEP-17
F4 (C34-C50)		112.7	110.1		%	2.3	50	01-SEP-17
WG2606707-1 MB								
F2 (C10-C16)			<100		ug/L		100	01-SEP-17
F3 (C16-C34)			<250		ug/L		250	01-SEP-17
F4 (C34-C50)			<250		ug/L		250	01-SEP-17
Surrogate: 2-Bromobenzotrifluoride			87.3		%		60-140	01-SEP-17
Batch R3820710								
WG2609119-2 LCS								
F2 (C10-C16)			110.5		%		70-130	06-SEP-17
F3 (C16-C34)			108.0		%		70-130	06-SEP-17
F4 (C34-C50)			118.0		%		70-130	06-SEP-17
WG2609119-3 LCSD		**WG2609119-2**						
F2 (C10-C16)		110.5	97.0		%	13	50	06-SEP-17
F3 (C16-C34)		108.0	101.8		%	6.0	50	06-SEP-17
F4 (C34-C50)		118.0	107.4		%	9.4	50	06-SEP-17
WG2609119-1 MB								
F2 (C10-C16)			<100		ug/L		100	06-SEP-17
F3 (C16-C34)			<250		ug/L		250	06-SEP-17
F4 (C34-C50)			<250		ug/L		250	06-SEP-17
Surrogate: 2-Bromobenzotrifluoride			94.1		%		60-140	06-SEP-17
HG-D-UG/L-CVAA-WT	**Water**							
Batch R3815778								
WG2605761-4 DUP		**WG2605761-3**						
Mercury (Hg)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	31-AUG-17
WG2605761-2 LCS								
Mercury (Hg)-Dissolved			100.0		%		80-120	31-AUG-17
WG2605761-1 MB								
Mercury (Hg)-Dissolved			<0.010		ug/L		0.01	31-AUG-17
WG2605761-6 MS		**WG2605761-5**						
Mercury (Hg)-Dissolved			91.7		%		70-130	31-AUG-17

Quality Control Report

Workorder: L1983964 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R3815794								
WG2605597-14 DUP		**WG2605597-13**						
Antimony (Sb)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	31-AUG-17
Arsenic (As)-Dissolved		9.91	10.1		ug/L	1.6	20	31-AUG-17
Barium (Ba)-Dissolved		226	216		ug/L	4.6	20	31-AUG-17
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	31-AUG-17
Boron (B)-Dissolved		125	125		ug/L	0.0	20	31-AUG-17
Cadmium (Cd)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	31-AUG-17
Chromium (Cr)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	31-AUG-17
Cobalt (Co)-Dissolved		1.27	1.28		ug/L	0.8	20	31-AUG-17
Copper (Cu)-Dissolved		0.26	0.26		ug/L	2.1	20	31-AUG-17
Lead (Pb)-Dissolved		0.209	0.208		ug/L	0.9	20	31-AUG-17
Molybdenum (Mo)-Dissolved		1.65	1.66		ug/L	0.8	20	31-AUG-17
Nickel (Ni)-Dissolved		4.81	4.84		ug/L	0.7	20	31-AUG-17
Selenium (Se)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	31-AUG-17
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	31-AUG-17
Sodium (Na)-Dissolved		9620	9640		ug/L	0.2	20	31-AUG-17
Thallium (Tl)-Dissolved		0.078	0.078		ug/L	0.5	20	31-AUG-17
Uranium (U)-Dissolved		3.58	3.58		ug/L	0.1	20	31-AUG-17
Vanadium (V)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	31-AUG-17
Zinc (Zn)-Dissolved		787	785		ug/L	0.3	20	31-AUG-17
WG2605597-12 LCS								
Antimony (Sb)-Dissolved			98.0		%		80-120	31-AUG-17
Arsenic (As)-Dissolved			100.4		%		80-120	31-AUG-17
Barium (Ba)-Dissolved			99.0		%		80-120	31-AUG-17
Beryllium (Be)-Dissolved			98.2		%		80-120	31-AUG-17
Boron (B)-Dissolved			97.8		%		80-120	31-AUG-17
Cadmium (Cd)-Dissolved			97.8		%		80-120	31-AUG-17
Chromium (Cr)-Dissolved			99.2		%		80-120	31-AUG-17
Cobalt (Co)-Dissolved			98.4		%		80-120	31-AUG-17
Copper (Cu)-Dissolved			96.7		%		80-120	31-AUG-17
Lead (Pb)-Dissolved			102.4		%		80-120	31-AUG-17
Molybdenum (Mo)-Dissolved			97.3		%		80-120	31-AUG-17
Nickel (Ni)-Dissolved			97.8		%		80-120	31-AUG-17
Selenium (Se)-Dissolved			96.7		%		80-120	31-AUG-17

Quality Control Report

Workorder: L1983964 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R3815794								
WG2605597-12 LCS								
Silver (Ag)-Dissolved			99.1		%		80-120	31-AUG-17
Sodium (Na)-Dissolved			99.6		%		80-120	31-AUG-17
Thallium (Tl)-Dissolved			97.1		%		80-120	31-AUG-17
Uranium (U)-Dissolved			100.3		%		80-120	31-AUG-17
Vanadium (V)-Dissolved			100.1		%		80-120	31-AUG-17
Zinc (Zn)-Dissolved			94.3		%		80-120	31-AUG-17
WG2605597-11 MB								
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	31-AUG-17
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	31-AUG-17
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	31-AUG-17
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	31-AUG-17
Boron (B)-Dissolved			<10		ug/L		10	31-AUG-17
Cadmium (Cd)-Dissolved			<0.010		ug/L		0.01	31-AUG-17
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	31-AUG-17
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	31-AUG-17
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	31-AUG-17
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	31-AUG-17
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	31-AUG-17
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	31-AUG-17
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	31-AUG-17
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	31-AUG-17
Sodium (Na)-Dissolved			<500		ug/L		500	31-AUG-17
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	31-AUG-17
Uranium (U)-Dissolved			<0.010		ug/L		0.01	31-AUG-17
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	31-AUG-17
Zinc (Zn)-Dissolved			<1.0		ug/L		1	31-AUG-17
WG2605597-15 MS		**WG2605597-13**						
Antimony (Sb)-Dissolved			93.9		%		70-130	31-AUG-17
Arsenic (As)-Dissolved			78.8		%		70-130	31-AUG-17
Barium (Ba)-Dissolved			N/A	MS-B	%		-	31-AUG-17
Beryllium (Be)-Dissolved			92.6		%		70-130	31-AUG-17
Boron (B)-Dissolved			N/A	MS-B	%		-	31-AUG-17
Cadmium (Cd)-Dissolved			94.6		%		70-130	31-AUG-17
Chromium (Cr)-Dissolved			94.3		%		70-130	31-AUG-17

Quality Control Report

Workorder: L1983964 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R3815794								
WG2605597-15 MS		**WG2605597-13**						
Cobalt (Co)-Dissolved			83.1		%		70-130	31-AUG-17
Copper (Cu)-Dissolved			90.0		%		70-130	31-AUG-17
Lead (Pb)-Dissolved			95.7		%		70-130	31-AUG-17
Molybdenum (Mo)-Dissolved			82.9		%		70-130	31-AUG-17
Nickel (Ni)-Dissolved			74.5		%		70-130	31-AUG-17
Selenium (Se)-Dissolved			95.9		%		70-130	31-AUG-17
Silver (Ag)-Dissolved			95.3		%		70-130	31-AUG-17
Sodium (Na)-Dissolved			N/A	MS-B	%		-	31-AUG-17
Thallium (Tl)-Dissolved			93.3		%		70-130	31-AUG-17
Uranium (U)-Dissolved			N/A	MS-B	%		-	31-AUG-17
Vanadium (V)-Dissolved			95.6		%		70-130	31-AUG-17
Zinc (Zn)-Dissolved			N/A	MS-B	%		-	31-AUG-17
PAH-511-WT	**Water**							
Batch R3816690								
WG2605575-2 LCS								
1-Methylnaphthalene			80.4		%		50-140	01-SEP-17
2-Methylnaphthalene			83.2		%		50-140	01-SEP-17
Acenaphthene			84.5		%		50-140	01-SEP-17
Acenaphthylene			89.5		%		50-140	01-SEP-17
Anthracene			94.0		%		50-140	01-SEP-17
Benzo(a)anthracene			114.9		%		50-140	01-SEP-17
Benzo(a)pyrene			104.9		%		50-140	01-SEP-17
Benzo(b)fluoranthene			101.4		%		50-140	01-SEP-17
Benzo(g,h,i)perylene			98.6		%		50-140	01-SEP-17
Benzo(k)fluoranthene			105.5		%		50-140	01-SEP-17
Chrysene			107.6		%		50-140	01-SEP-17
Dibenzo(ah)anthracene			111.0		%		50-140	01-SEP-17
Fluoranthene			94.9		%		50-140	01-SEP-17
Fluorene			93.9		%		50-140	01-SEP-17
Indeno(1,2,3-cd)pyrene			99.7		%		50-140	01-SEP-17
Naphthalene			87.4		%		50-140	01-SEP-17
Phenanthrene			96.1		%		50-140	01-SEP-17
Pyrene			101.9		%		50-140	01-SEP-17
WG2605575-3 LCSD		**WG2605575-2**						

Quality Control Report

Workorder: L1983964 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R3816690								
WG2605575-3 LCSD		**WG2605575-2**						
1-Methylnaphthalene		80.4	84.2		%	4.6	50	01-SEP-17
2-Methylnaphthalene		83.2	86.0		%	3.3	50	01-SEP-17
Acenaphthene		84.5	88.2		%	4.3	50	01-SEP-17
Acenaphthylene		89.5	93.2		%	4.0	50	01-SEP-17
Anthracene		94.0	97.7		%	3.8	50	01-SEP-17
Benzo(a)anthracene		114.9	118.0		%	2.7	50	01-SEP-17
Benzo(a)pyrene		104.9	111.6		%	6.2	50	01-SEP-17
Benzo(b)fluoranthene		101.4	105.9		%	4.3	50	01-SEP-17
Benzo(g,h,i)perylene		98.6	102.2		%	3.7	50	01-SEP-17
Benzo(k)fluoranthene		105.5	109.1		%	3.4	50	01-SEP-17
Chrysene		107.6	113.8		%	5.6	50	01-SEP-17
Dibenzo(ah)anthracene		111.0	113.4		%	2.1	50	01-SEP-17
Fluoranthene		94.9	98.9		%	4.1	50	01-SEP-17
Fluorene		93.9	98.7		%	5.0	50	01-SEP-17
Indeno(1,2,3-cd)pyrene		99.7	103.9		%	4.2	50	01-SEP-17
Naphthalene		87.4	90.1		%	3.1	50	01-SEP-17
Phenanthrene		96.1	99.6		%	3.6	50	01-SEP-17
Pyrene		101.9	106.5		%	4.4	50	01-SEP-17
WG2605575-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	01-SEP-17
2-Methylnaphthalene			<0.020		ug/L		0.02	01-SEP-17
Acenaphthene			<0.020		ug/L		0.02	01-SEP-17
Acenaphthylene			<0.020		ug/L		0.02	01-SEP-17
Anthracene			<0.020		ug/L		0.02	01-SEP-17
Benzo(a)anthracene			<0.020		ug/L		0.02	01-SEP-17
Benzo(a)pyrene			<0.010		ug/L		0.01	01-SEP-17
Benzo(b)fluoranthene			<0.020		ug/L		0.02	01-SEP-17
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	01-SEP-17
Benzo(k)fluoranthene			<0.020		ug/L		0.02	01-SEP-17
Chrysene			<0.020		ug/L		0.02	01-SEP-17
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	01-SEP-17
Fluoranthene			<0.020		ug/L		0.02	01-SEP-17
Fluorene			<0.020		ug/L		0.02	01-SEP-17

Quality Control Report

Workorder: L1983964 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R3816690								
WG2605575-1 MB								
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	01-SEP-17
Naphthalene			<0.050		ug/L		0.05	01-SEP-17
Phenanthrene			<0.020		ug/L		0.02	01-SEP-17
Pyrene			<0.020		ug/L		0.02	01-SEP-17
Surrogate: d8-Naphthalene			93.2		%		60-140	01-SEP-17
Surrogate: d10-Phenanthrene			105.7		%		60-140	01-SEP-17
Surrogate: d12-Chrysene			108.9		%		60-140	01-SEP-17
Surrogate: d10-Acenaphthene			93.0		%		60-140	01-SEP-17
Batch R3816955								
WG2606707-2 LCS								
1-Methylnaphthalene			89.1		%		50-140	01-SEP-17
2-Methylnaphthalene			91.9		%		50-140	01-SEP-17
Acenaphthene			93.5		%		50-140	01-SEP-17
Acenaphthylene			99.3		%		50-140	01-SEP-17
Anthracene			101.0		%		50-140	01-SEP-17
Benzo(a)anthracene			118.0		%		50-140	01-SEP-17
Benzo(a)pyrene			114.6		%		50-140	01-SEP-17
Benzo(b)fluoranthene			108.7		%		50-140	01-SEP-17
Benzo(g,h,i)perylene			106.6		%		50-140	01-SEP-17
Benzo(k)fluoranthene			116.9		%		50-140	01-SEP-17
Chrysene			117.2		%		50-140	01-SEP-17
Dibenzo(ah)anthracene			116.2		%		50-140	01-SEP-17
Fluoranthene			104.9		%		50-140	01-SEP-17
Fluorene			102.8		%		50-140	01-SEP-17
Indeno(1,2,3-cd)pyrene			101.8		%		50-140	01-SEP-17
Naphthalene			96.4		%		50-140	01-SEP-17
Phenanthrene			105.1		%		50-140	01-SEP-17
Pyrene			112.0		%		50-140	01-SEP-17
WG2606707-3 LCSD		**WG2606707-2**						
1-Methylnaphthalene		89.1	76.0		%	16	50	01-SEP-17
2-Methylnaphthalene		91.9	78.6		%	16	50	01-SEP-17
Acenaphthene		93.5	80.6		%	15	50	01-SEP-17
Acenaphthylene		99.3	85.8		%	15	50	01-SEP-17
Anthracene		101.0	88.1		%	14	50	01-SEP-17

Quality Control Report

Workorder: L1983964 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R3816955								
WG2606707-3 LCSD		**WG2606707-2**						
Benzo(a)anthracene		118.0	102.3		%	14	50	01-SEP-17
Benzo(a)pyrene		114.6	99.8		%	14	50	01-SEP-17
Benzo(b)fluoranthene		108.7	94.4		%	14	50	01-SEP-17
Benzo(g,h,i)perylene		106.6	94.0		%	13	50	01-SEP-17
Benzo(k)fluoranthene		116.9	103.4		%	12	50	01-SEP-17
Chrysene		117.2	97.8		%	18	50	01-SEP-17
Dibenzo(ah)anthracene		116.2	105.1		%	10	50	01-SEP-17
Fluoranthene		104.9	91.0		%	14	50	01-SEP-17
Fluorene		102.8	89.4		%	14	50	01-SEP-17
Indeno(1,2,3-cd)pyrene		101.8	89.8		%	13	50	01-SEP-17
Naphthalene		96.4	83.5		%	14	50	01-SEP-17
Phenanthrene		105.1	91.7		%	14	50	01-SEP-17
Pyrene		112.0	96.4		%	15	50	01-SEP-17
WG2606707-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	01-SEP-17
2-Methylnaphthalene			<0.020		ug/L		0.02	01-SEP-17
Acenaphthene			<0.020		ug/L		0.02	01-SEP-17
Acenaphthylene			<0.020		ug/L		0.02	01-SEP-17
Anthracene			<0.020		ug/L		0.02	01-SEP-17
Benzo(a)anthracene			<0.020		ug/L		0.02	01-SEP-17
Benzo(a)pyrene			<0.010		ug/L		0.01	01-SEP-17
Benzo(b)fluoranthene			<0.020		ug/L		0.02	01-SEP-17
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	01-SEP-17
Benzo(k)fluoranthene			<0.020		ug/L		0.02	01-SEP-17
Chrysene			<0.020		ug/L		0.02	01-SEP-17
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	01-SEP-17
Fluoranthene			<0.020		ug/L		0.02	01-SEP-17
Fluorene			<0.020		ug/L		0.02	01-SEP-17
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	01-SEP-17
Naphthalene			<0.050		ug/L		0.05	01-SEP-17
Phenanthrene			<0.020		ug/L		0.02	01-SEP-17
Pyrene			<0.020		ug/L		0.02	01-SEP-17
Surrogate: d8-Naphthalene			87.8		%		60-140	01-SEP-17

Quality Control Report

Workorder: L1983964 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R3816955								
WG2606707-1 MB								
Surrogate: d10-Phenanthrene			96.9		%		60-140	01-SEP-17
Surrogate: d12-Chrysene			97.6		%		60-140	01-SEP-17
Surrogate: d10-Acenaphthene			86.2		%		60-140	01-SEP-17
Batch R3820716								
WG2608322-2 LCS								
1-Methylnaphthalene			82.2		%		50-140	06-SEP-17
2-Methylnaphthalene			79.3		%		50-140	06-SEP-17
Acenaphthene			76.3		%		50-140	06-SEP-17
Acenaphthylene			78.4		%		50-140	06-SEP-17
Anthracene			78.7		%		50-140	06-SEP-17
Benzo(a)anthracene			83.4		%		50-140	06-SEP-17
Benzo(a)pyrene			83.1		%		50-140	06-SEP-17
Benzo(b)fluoranthene			87.9		%		50-140	06-SEP-17
Benzo(g,h,i)perylene			68.6		%		50-140	06-SEP-17
Benzo(k)fluoranthene			85.3		%		50-140	06-SEP-17
Chrysene			92.6		%		50-140	06-SEP-17
Dibenzo(ah)anthracene			73.3		%		50-140	06-SEP-17
Fluoranthene			81.6		%		50-140	06-SEP-17
Fluorene			83.0		%		50-140	06-SEP-17
Indeno(1,2,3-cd)pyrene			70.4		%		50-140	06-SEP-17
Naphthalene			79.4		%		50-140	06-SEP-17
Phenanthrene			76.4		%		50-140	06-SEP-17
Pyrene			80.1		%		50-140	06-SEP-17
WG2608322-3 LCSD		**WG2608322-2**						
1-Methylnaphthalene		82.2	84.0		%	2.2	50	06-SEP-17
2-Methylnaphthalene		79.3	82.1		%	3.5	50	06-SEP-17
Acenaphthene		76.3	78.9		%	3.4	50	06-SEP-17
Acenaphthylene		78.4	80.8		%	3.0	50	06-SEP-17
Anthracene		78.7	80.3		%	1.9	50	06-SEP-17
Benzo(a)anthracene		83.4	85.5		%	2.5	50	06-SEP-17
Benzo(a)pyrene		83.1	85.1		%	2.4	50	06-SEP-17
Benzo(b)fluoranthene		87.9	88.9		%	1.2	50	06-SEP-17
Benzo(g,h,i)perylene		68.6	67.7		%	1.3	50	06-SEP-17
Benzo(k)fluoranthene		85.3	89.8		%	5.2	50	06-SEP-17

Quality Control Report

Workorder: L1983964 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R3820716								
WG2608322-3 LCSD		**WG2608322-2**						
Chrysene		92.6	95.6		%	3.2	50	06-SEP-17
Dibenzo(ah)anthracene		73.3	73.5		%	0.2	50	06-SEP-17
Fluoranthene		81.6	84.1		%	3.0	50	06-SEP-17
Fluorene		83.0	85.5		%	3.0	50	06-SEP-17
Indeno(1,2,3-cd)pyrene		70.4	69.9		%	0.8	50	06-SEP-17
Naphthalene		79.4	82.2		%	3.5	50	06-SEP-17
Phenanthrene		76.4	79.0		%	3.4	50	06-SEP-17
Pyrene		80.1	81.4		%	1.7	50	06-SEP-17
WG2608322-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	06-SEP-17
2-Methylnaphthalene			<0.020		ug/L		0.02	06-SEP-17
Acenaphthene			<0.020		ug/L		0.02	06-SEP-17
Acenaphthylene			<0.020		ug/L		0.02	06-SEP-17
Anthracene			<0.020		ug/L		0.02	06-SEP-17
Benzo(a)anthracene			<0.020		ug/L		0.02	06-SEP-17
Benzo(a)pyrene			<0.010		ug/L		0.01	06-SEP-17
Benzo(b)fluoranthene			<0.020		ug/L		0.02	06-SEP-17
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	06-SEP-17
Benzo(k)fluoranthene			<0.020		ug/L		0.02	06-SEP-17
Chrysene			<0.020		ug/L		0.02	06-SEP-17
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	06-SEP-17
Fluoranthene			<0.020		ug/L		0.02	06-SEP-17
Fluorene			<0.020		ug/L		0.02	06-SEP-17
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	06-SEP-17
Naphthalene			<0.050		ug/L		0.05	06-SEP-17
Phenanthrene			<0.020		ug/L		0.02	06-SEP-17
Pyrene			<0.020		ug/L		0.02	06-SEP-17
Surrogate: 2-Fluorobiphenyl			83.2		%		60-140	06-SEP-17
Surrogate: d14-Terphenyl			101.5		%		60-140	06-SEP-17
PH-WT	**Water**							
Batch R3816056								
WG2605713-4 DUP		**WG2605713-3**						
pH		7.75	7.72	J	pH units	0.03	0.2	31-AUG-17
WG2605713-8 DUP		**WG2605713-7**						

Quality Control Report

Workorder: L1983964 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH-WT	**Water**							
Batch R3816056								
WG2605713-8 DUP		**WG2605713-7**						
pH		7.34	7.35	J	pH units	0.00	0.2	31-AUG-17
WG2605713-2 LCS								
pH			6.99		pH units		6.9-7.1	31-AUG-17
WG2605713-6 LCS								
pH			6.98		pH units		6.9-7.1	31-AUG-17
VOC-511-HS-WT	**Water**							
Batch R3815523								
WG2603485-4 DUP		**WG2603485-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-AUG-17
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-AUG-17
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-AUG-17
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-AUG-17
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-AUG-17
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-AUG-17
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	31-AUG-17
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-AUG-17
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-AUG-17
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-AUG-17
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-AUG-17
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-AUG-17
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	31-AUG-17
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-AUG-17
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	31-AUG-17
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	31-AUG-17
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-AUG-17
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	31-AUG-17
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-AUG-17
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	31-AUG-17
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-AUG-17
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	31-AUG-17
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	31-AUG-17
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	31-AUG-17
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-AUG-17

Quality Control Report

Workorder: L1983964 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3815523								
WG2603485-4 DUP		**WG2603485-3**						
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-AUG-17
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	31-AUG-17
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	31-AUG-17
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	31-AUG-17
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	31-AUG-17
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	31-AUG-17
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	31-AUG-17
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-AUG-17
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-AUG-17
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-AUG-17
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-AUG-17
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	31-AUG-17
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-AUG-17
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	31-AUG-17
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-AUG-17
WG2603485-1 LCS								
1,1,1,2-Tetrachloroethane			89.1		%		70-130	31-AUG-17
1,1,2,2-Tetrachloroethane			92.0		%		70-130	31-AUG-17
1,1,1-Trichloroethane			94.5		%		70-130	31-AUG-17
1,1,2-Trichloroethane			91.4		%		70-130	31-AUG-17
1,1-Dichloroethane			98.4		%		70-130	31-AUG-17
1,1-Dichloroethylene			90.4		%		70-130	31-AUG-17
1,2-Dibromoethane			91.5		%		70-130	31-AUG-17
1,2-Dichlorobenzene			94.3		%		70-130	31-AUG-17
1,2-Dichloroethane			99.4		%		70-130	31-AUG-17
1,2-Dichloropropane			98.8		%		70-130	31-AUG-17
1,3-Dichlorobenzene			93.5		%		70-130	31-AUG-17
1,4-Dichlorobenzene			98.2		%		70-130	31-AUG-17
Acetone			115.5		%		60-140	31-AUG-17
Benzene			99.9		%		70-130	31-AUG-17
Bromodichloromethane			94.2		%		70-130	31-AUG-17
Bromoform			85.8		%		70-130	31-AUG-17
Bromomethane			93.2		%		60-140	31-AUG-17

Quality Control Report

Workorder: L1983964 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3815523								
WG2603485-1 LCS								
Carbon tetrachloride			94.9		%		70-130	31-AUG-17
Chlorobenzene			93.9		%		70-130	31-AUG-17
Chloroform			98.8		%		70-130	31-AUG-17
cis-1,2-Dichloroethylene			96.1		%		70-130	31-AUG-17
cis-1,3-Dichloropropene			90.9		%		70-130	31-AUG-17
Dibromochloromethane			96.0		%		70-130	31-AUG-17
Dichlorodifluoromethane			68.6		%		50-140	31-AUG-17
Ethylbenzene			85.1		%		70-130	31-AUG-17
n-Hexane			108.3		%		70-130	31-AUG-17
m+p-Xylenes			89.2		%		70-130	31-AUG-17
Methyl Ethyl Ketone			98.1		%		60-140	31-AUG-17
Methyl Isobutyl Ketone			88.5		%		60-140	31-AUG-17
Methylene Chloride			103.4		%		70-130	31-AUG-17
MTBE			92.8		%		70-130	31-AUG-17
o-Xylene			86.2		%		70-130	31-AUG-17
Styrene			83.9		%		70-130	31-AUG-17
Tetrachloroethylene			89.6		%		70-130	31-AUG-17
Toluene			86.9		%		70-130	31-AUG-17
trans-1,2-Dichloroethylene			99.2		%		70-130	31-AUG-17
trans-1,3-Dichloropropene			81.7		%		70-130	31-AUG-17
Trichloroethylene			96.4		%		70-130	31-AUG-17
Trichlorofluoromethane			94.8		%		60-140	31-AUG-17
Vinyl chloride			85.9		%		60-140	31-AUG-17
WG2603485-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	31-AUG-17
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	31-AUG-17
1,1,1-Trichloroethane			<0.50		ug/L		0.5	31-AUG-17
1,1,2-Trichloroethane			<0.50		ug/L		0.5	31-AUG-17
1,1-Dichloroethane			<0.50		ug/L		0.5	31-AUG-17
1,1-Dichloroethylene			<0.50		ug/L		0.5	31-AUG-17
1,2-Dibromoethane			<0.20		ug/L		0.2	31-AUG-17
1,2-Dichlorobenzene			<0.50		ug/L		0.5	31-AUG-17
1,2-Dichloroethane			<0.50		ug/L		0.5	31-AUG-17
1,2-Dichloropropane			<0.50		ug/L		0.5	31-AUG-17

Quality Control Report

Workorder: L1983964 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3815523								
WG2603485-2 MB								
1,3-Dichlorobenzene			<0.50		ug/L		0.5	31-AUG-17
1,4-Dichlorobenzene			<0.50		ug/L		0.5	31-AUG-17
Acetone			<30		ug/L		30	31-AUG-17
Benzene			<0.50		ug/L		0.5	31-AUG-17
Bromodichloromethane			<2.0		ug/L		2	31-AUG-17
Bromoform			<5.0		ug/L		5	31-AUG-17
Bromomethane			<0.50		ug/L		0.5	31-AUG-17
Carbon tetrachloride			<0.20		ug/L		0.2	31-AUG-17
Chlorobenzene			<0.50		ug/L		0.5	31-AUG-17
Chloroform			<1.0		ug/L		1	31-AUG-17
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	31-AUG-17
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	31-AUG-17
Dibromochloromethane			<2.0		ug/L		2	31-AUG-17
Dichlorodifluoromethane			<2.0		ug/L		2	31-AUG-17
Ethylbenzene			<0.50		ug/L		0.5	31-AUG-17
n-Hexane			<0.50		ug/L		0.5	31-AUG-17
m+p-Xylenes			<0.40		ug/L		0.4	31-AUG-17
Methyl Ethyl Ketone			<20		ug/L		20	31-AUG-17
Methyl Isobutyl Ketone			<20		ug/L		20	31-AUG-17
Methylene Chloride			<5.0		ug/L		5	31-AUG-17
MTBE			<2.0		ug/L		2	31-AUG-17
o-Xylene			<0.30		ug/L		0.3	31-AUG-17
Styrene			<0.50		ug/L		0.5	31-AUG-17
Tetrachloroethylene			<0.50		ug/L		0.5	31-AUG-17
Toluene			<0.50		ug/L		0.5	31-AUG-17
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	31-AUG-17
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	31-AUG-17
Trichloroethylene			<0.50		ug/L		0.5	31-AUG-17
Trichlorofluoromethane			<5.0		ug/L		5	31-AUG-17
Vinyl chloride			<0.50		ug/L		0.5	31-AUG-17
Surrogate: 1,4-Difluorobenzene			100.5		%		70-130	31-AUG-17
Surrogate: 4-Bromofluorobenzene			91.9		%		70-130	31-AUG-17
WG2603485-5 MS		**WG2603485-3**						
1,1,1,2-Tetrachloroethane			89.0		%		50-140	31-AUG-17

Quality Control Report

Workorder: L1983964 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3815523								
WG2603485-5 MS		**WG2603485-3**						
1,1,2,2-Tetrachloroethane			98.0		%		50-140	31-AUG-17
1,1,1-Trichloroethane			90.9		%		50-140	31-AUG-17
1,1,2-Trichloroethane			94.2		%		50-140	31-AUG-17
1,1-Dichloroethane			97.5		%		50-140	31-AUG-17
1,1-Dichloroethylene			84.5		%		50-140	31-AUG-17
1,2-Dibromoethane			95.2		%		50-140	31-AUG-17
1,2-Dichlorobenzene			94.1		%		50-140	31-AUG-17
1,2-Dichloroethane			103.8		%		50-140	31-AUG-17
1,2-Dichloropropane			100.2		%		50-140	31-AUG-17
1,3-Dichlorobenzene			91.7		%		50-140	31-AUG-17
1,4-Dichlorobenzene			97.3		%		50-140	31-AUG-17
Acetone			121.9		%		50-140	31-AUG-17
Benzene			99.1		%		50-140	31-AUG-17
Bromodichloromethane			96.8		%		50-140	31-AUG-17
Bromoform			89.9		%		50-140	31-AUG-17
Bromomethane			90.5		%		50-140	31-AUG-17
Carbon tetrachloride			89.3		%		50-140	31-AUG-17
Chlorobenzene			93.3		%		50-140	31-AUG-17
Chloroform			99.2		%		50-140	31-AUG-17
cis-1,2-Dichloroethylene			96.4		%		50-140	31-AUG-17
cis-1,3-Dichloropropene			96.7		%		50-140	31-AUG-17
Dibromochloromethane			98.5		%		50-140	31-AUG-17
Dichlorodifluoromethane			54.4		%		50-140	31-AUG-17
Ethylbenzene			81.6		%		50-140	31-AUG-17
n-Hexane			94.1		%		50-140	31-AUG-17
m+p-Xylenes			86.9		%		50-140	31-AUG-17
Methyl Ethyl Ketone			104.1		%		50-140	31-AUG-17
Methyl Isobutyl Ketone			97.2		%		50-140	31-AUG-17
Methylene Chloride			104.2		%		50-140	31-AUG-17
MTBE			93.2		%		50-140	31-AUG-17
o-Xylene			84.0		%		50-140	31-AUG-17
Styrene			83.7		%		50-140	31-AUG-17
Tetrachloroethylene			85.5		%		50-140	31-AUG-17

Quality Control Report

Workorder: L1983964 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3815523								
WG2603485-5 MS		**WG2603485-3**						
Toluene			84.0		%		50-140	31-AUG-17
trans-1,2-Dichloroethylene			96.8		%		50-140	31-AUG-17
trans-1,3-Dichloropropene			87.0		%		50-140	31-AUG-17
Trichloroethylene			95.0		%		50-140	31-AUG-17
Trichlorofluoromethane			84.3		%		50-140	31-AUG-17
Vinyl chloride			77.7		%		50-140	31-AUG-17
Batch R3816635								
WG2603487-4 DUP		**WG2603487-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	01-SEP-17
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	01-SEP-17
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	01-SEP-17
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	01-SEP-17
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	01-SEP-17
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	01-SEP-17
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	01-SEP-17
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	01-SEP-17
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	01-SEP-17
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	01-SEP-17
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	01-SEP-17
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	01-SEP-17
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	01-SEP-17
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	01-SEP-17
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	01-SEP-17
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	01-SEP-17
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	01-SEP-17
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	01-SEP-17
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	01-SEP-17
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	01-SEP-17
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	01-SEP-17
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	01-SEP-17
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	01-SEP-17
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	01-SEP-17
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	01-SEP-17

Quality Control Report

Workorder: L1983964 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3816635								
WG2603487-4 DUP		**WG2603487-3**						
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	01-SEP-17
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	01-SEP-17
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	01-SEP-17
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	01-SEP-17
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	01-SEP-17
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	01-SEP-17
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	01-SEP-17
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	01-SEP-17
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	01-SEP-17
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	01-SEP-17
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	01-SEP-17
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	01-SEP-17
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	01-SEP-17
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	01-SEP-17
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	01-SEP-17
WG2603487-1 LCS								
1,1,1,2-Tetrachloroethane			87.9		%		70-130	01-SEP-17
1,1,2,2-Tetrachloroethane			86.5		%		70-130	01-SEP-17
1,1,1-Trichloroethane			96.0		%		70-130	01-SEP-17
1,1,2-Trichloroethane			86.1		%		70-130	01-SEP-17
1,1-Dichloroethane			97.4		%		70-130	01-SEP-17
1,1-Dichloroethylene			92.7		%		70-130	01-SEP-17
1,2-Dibromoethane			84.9		%		70-130	01-SEP-17
1,2-Dichlorobenzene			93.7		%		70-130	01-SEP-17
1,2-Dichloroethane			92.5		%		70-130	01-SEP-17
1,2-Dichloropropane			95.0		%		70-130	01-SEP-17
1,3-Dichlorobenzene			96.6		%		70-130	01-SEP-17
1,4-Dichlorobenzene			98.6		%		70-130	01-SEP-17
Acetone			105.1		%		60-140	01-SEP-17
Benzene			99.0		%		70-130	01-SEP-17
Bromodichloromethane			90.3		%		70-130	01-SEP-17
Bromoform			81.0		%		70-130	01-SEP-17
Bromomethane			92.0		%		60-140	01-SEP-17

Quality Control Report

Workorder: L1983964 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3816635								
WG2603487-1 LCS								
Carbon tetrachloride			96.7		%		70-130	01-SEP-17
Chlorobenzene			94.1		%		70-130	01-SEP-17
Chloroform			97.3		%		70-130	01-SEP-17
cis-1,2-Dichloroethylene			94.6		%		70-130	01-SEP-17
cis-1,3-Dichloropropene			87.6		%		70-130	01-SEP-17
Dibromochloromethane			91.4		%		70-130	01-SEP-17
Dichlorodifluoromethane			69.2		%		50-140	01-SEP-17
Ethylbenzene			87.1		%		70-130	01-SEP-17
n-Hexane			111.9		%		70-130	01-SEP-17
m+p-Xylenes			92.0		%		70-130	01-SEP-17
Methyl Ethyl Ketone			86.1		%		60-140	01-SEP-17
Methyl Isobutyl Ketone			77.8		%		60-140	01-SEP-17
Methylene Chloride			99.5		%		70-130	01-SEP-17
MTBE			93.1		%		70-130	01-SEP-17
o-Xylene			87.5		%		70-130	01-SEP-17
Styrene			83.4		%		70-130	01-SEP-17
Tetrachloroethylene			94.1		%		70-130	01-SEP-17
Toluene			88.7		%		70-130	01-SEP-17
trans-1,2-Dichloroethylene			100.9		%		70-130	01-SEP-17
trans-1,3-Dichloropropene			78.5		%		70-130	01-SEP-17
Trichloroethylene			97.8		%		70-130	01-SEP-17
Trichlorofluoromethane			97.2		%		60-140	01-SEP-17
Vinyl chloride			87.7		%		60-140	01-SEP-17
WG2603487-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	01-SEP-17
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	01-SEP-17
1,1,1-Trichloroethane			<0.50		ug/L		0.5	01-SEP-17
1,1,2-Trichloroethane			<0.50		ug/L		0.5	01-SEP-17
1,1-Dichloroethane			<0.50		ug/L		0.5	01-SEP-17
1,1-Dichloroethylene			<0.50		ug/L		0.5	01-SEP-17
1,2-Dibromoethane			<0.20		ug/L		0.2	01-SEP-17
1,2-Dichlorobenzene			<0.50		ug/L		0.5	01-SEP-17
1,2-Dichloroethane			<0.50		ug/L		0.5	01-SEP-17
1,2-Dichloropropane			<0.50		ug/L		0.5	01-SEP-17

Quality Control Report

Workorder: L1983964 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3816635								
WG2603487-2 MB								
1,3-Dichlorobenzene			<0.50		ug/L		0.5	01-SEP-17
1,4-Dichlorobenzene			<0.50		ug/L		0.5	01-SEP-17
Acetone			<30		ug/L		30	01-SEP-17
Benzene			<0.50		ug/L		0.5	01-SEP-17
Bromodichloromethane			<2.0		ug/L		2	01-SEP-17
Bromoform			<5.0		ug/L		5	01-SEP-17
Bromomethane			<0.50		ug/L		0.5	01-SEP-17
Carbon tetrachloride			<0.20		ug/L		0.2	01-SEP-17
Chlorobenzene			<0.50		ug/L		0.5	01-SEP-17
Chloroform			<1.0		ug/L		1	01-SEP-17
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	01-SEP-17
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	01-SEP-17
Dibromochloromethane			<2.0		ug/L		2	01-SEP-17
Dichlorodifluoromethane			<2.0		ug/L		2	01-SEP-17
Ethylbenzene			<0.50		ug/L		0.5	01-SEP-17
n-Hexane			<0.50		ug/L		0.5	01-SEP-17
m+p-Xylenes			<0.40		ug/L		0.4	01-SEP-17
Methyl Ethyl Ketone			<20		ug/L		20	01-SEP-17
Methyl Isobutyl Ketone			<20		ug/L		20	01-SEP-17
Methylene Chloride			<5.0		ug/L		5	01-SEP-17
MTBE			<2.0		ug/L		2	01-SEP-17
o-Xylene			<0.30		ug/L		0.3	01-SEP-17
Styrene			<0.50		ug/L		0.5	01-SEP-17
Tetrachloroethylene			<0.50		ug/L		0.5	01-SEP-17
Toluene			<0.50		ug/L		0.5	01-SEP-17
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	01-SEP-17
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	01-SEP-17
Trichloroethylene			<0.50		ug/L		0.5	01-SEP-17
Trichlorofluoromethane			<5.0		ug/L		5	01-SEP-17
Vinyl chloride			<0.50		ug/L		0.5	01-SEP-17
Surrogate: 1,4-Difluorobenzene			101.0		%		70-130	01-SEP-17
Surrogate: 4-Bromofluorobenzene			91.1		%		70-130	01-SEP-17
WG2603487-5 MS		**WG2603487-3**						
1,1,1,2-Tetrachloroethane			88.7		%		50-140	01-SEP-17

Quality Control Report

Workorder: L1983964 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3816635								
WG2603487-5 MS		**WG2603487-3**						
1,1,2,2-Tetrachloroethane			101.5		%		50-140	01-SEP-17
1,1,1-Trichloroethane			92.6		%		50-140	01-SEP-17
1,1,2-Trichloroethane			95.4		%		50-140	01-SEP-17
1,1-Dichloroethane			100.9		%		50-140	01-SEP-17
1,1-Dichloroethylene			86.6		%		50-140	01-SEP-17
1,2-Dibromoethane			96.5		%		50-140	01-SEP-17
1,2-Dichlorobenzene			95.0		%		50-140	01-SEP-17
1,2-Dichloroethane			108.5		%		50-140	01-SEP-17
1,2-Dichloropropane			103.6		%		50-140	01-SEP-17
1,3-Dichlorobenzene			93.3		%		50-140	01-SEP-17
1,4-Dichlorobenzene			97.2		%		50-140	01-SEP-17
Acetone			127.4		%		50-140	01-SEP-17
Benzene			101.6		%		50-140	01-SEP-17
Bromodichloromethane			100.4		%		50-140	01-SEP-17
Bromoform			91.1		%		50-140	01-SEP-17
Bromomethane			91.9		%		50-140	01-SEP-17
Carbon tetrachloride			91.6		%		50-140	01-SEP-17
Chlorobenzene			93.5		%		50-140	01-SEP-17
Chloroform			102.7		%		50-140	01-SEP-17
cis-1,2-Dichloroethylene			98.9		%		50-140	01-SEP-17
cis-1,3-Dichloropropene			97.9		%		50-140	01-SEP-17
Dibromochloromethane			99.3		%		50-140	01-SEP-17
Dichlorodifluoromethane			56.4		%		50-140	01-SEP-17
Ethylbenzene			78.9		%		50-140	01-SEP-17
n-Hexane			97.5		%		50-140	01-SEP-17
m+p-Xylenes			85.2		%		50-140	01-SEP-17
Methyl Ethyl Ketone			109.2		%		50-140	01-SEP-17
Methyl Isobutyl Ketone			99.3		%		50-140	01-SEP-17
Methylene Chloride			108.6		%		50-140	01-SEP-17
MTBE			93.0		%		50-140	01-SEP-17
o-Xylene			81.7		%		50-140	01-SEP-17
Styrene			81.7		%		50-140	01-SEP-17
Tetrachloroethylene			83.1		%		50-140	01-SEP-17

Quality Control Report

Workorder: L1983964 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3816635								
WG2603487-5 MS		**WG2603487-3**						
Toluene			82.3		%		50-140	01-SEP-17
trans-1,2-Dichloroethylene			99.2		%		50-140	01-SEP-17
trans-1,3-Dichloropropene			84.4		%		50-140	01-SEP-17
Trichloroethylene			95.5		%		50-140	01-SEP-17
Trichlorofluoromethane			86.8		%		50-140	01-SEP-17
Vinyl chloride			78.8		%		50-140	01-SEP-17

Quality Control Report

Workorder: L1983964 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9
Contact: MICHAEL SHIRY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
LCS-H	Lab Control Sample recovery was above ALS DQO. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

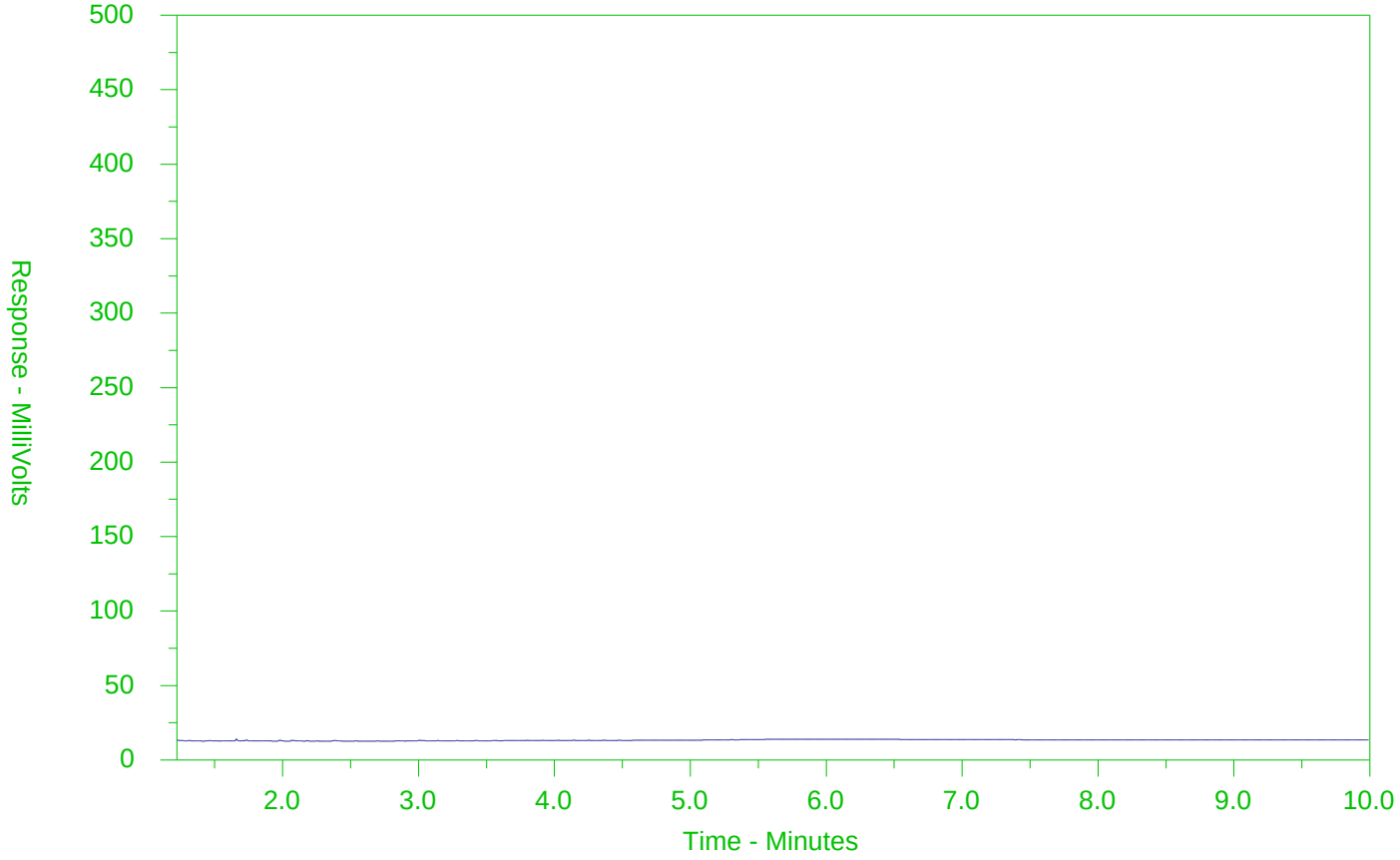
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1983964-1
Client Sample ID: OW18-11



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

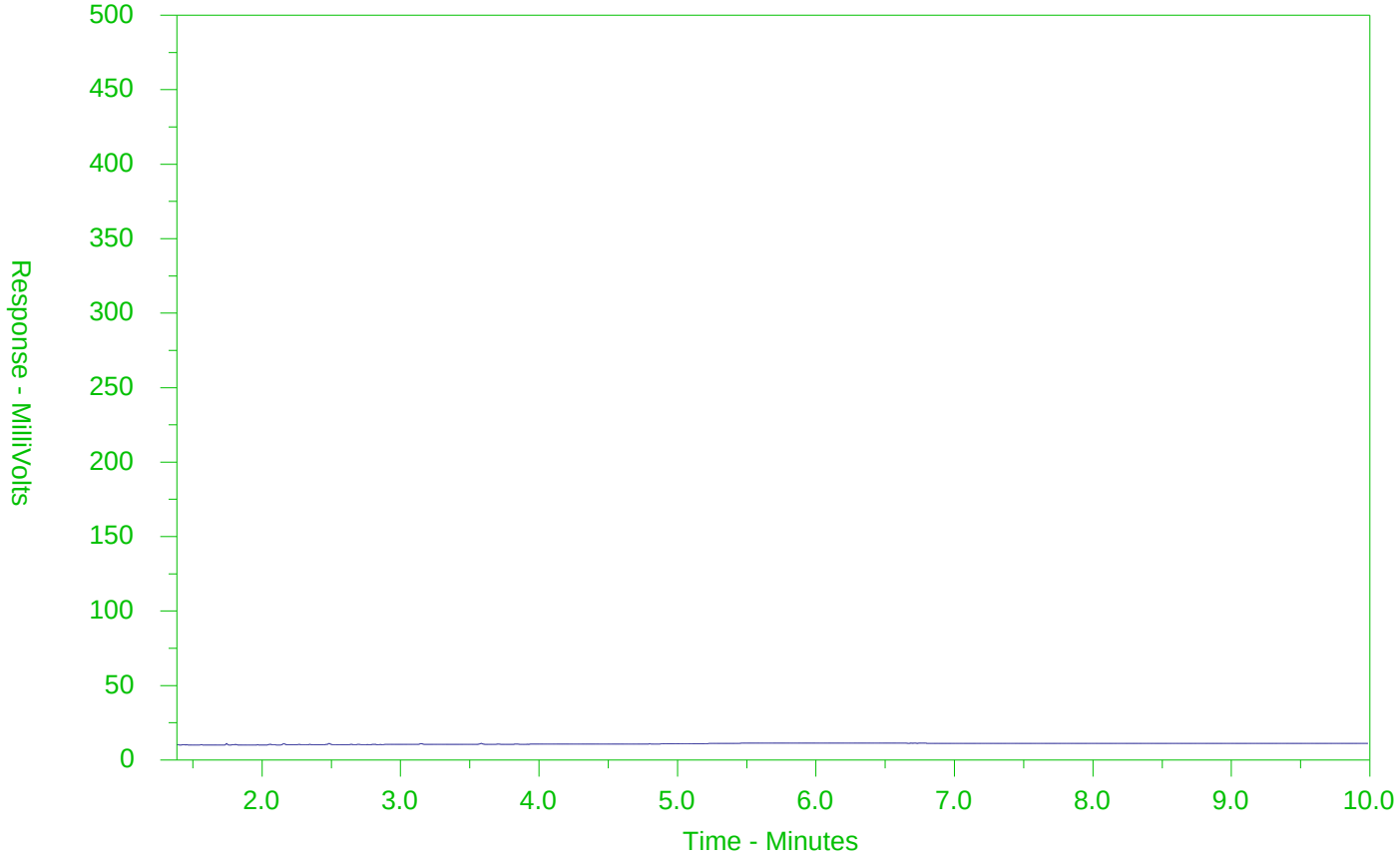
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1983964-2
Client Sample ID: OW18-1



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

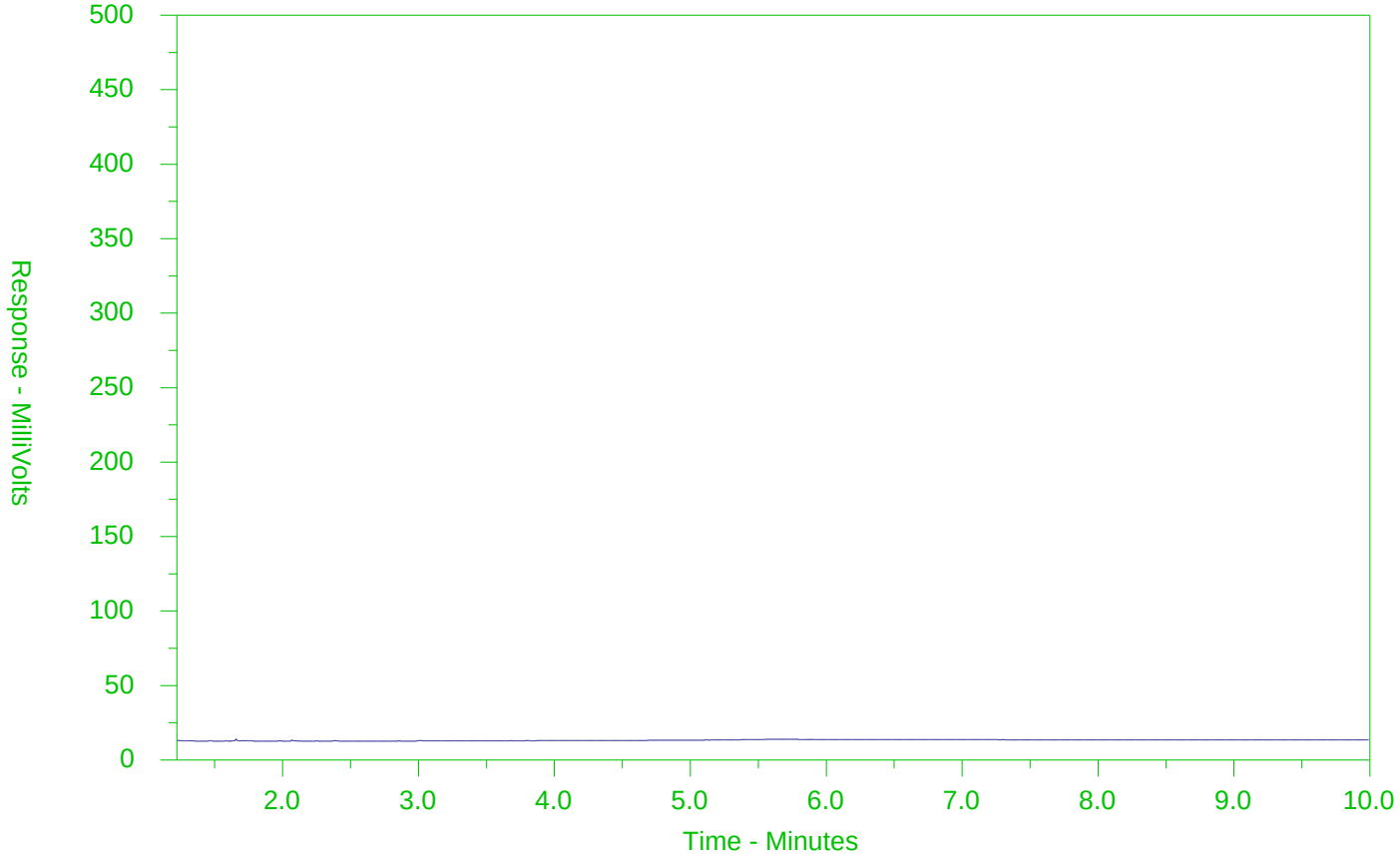
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1983964-3
Client Sample ID: OW14



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

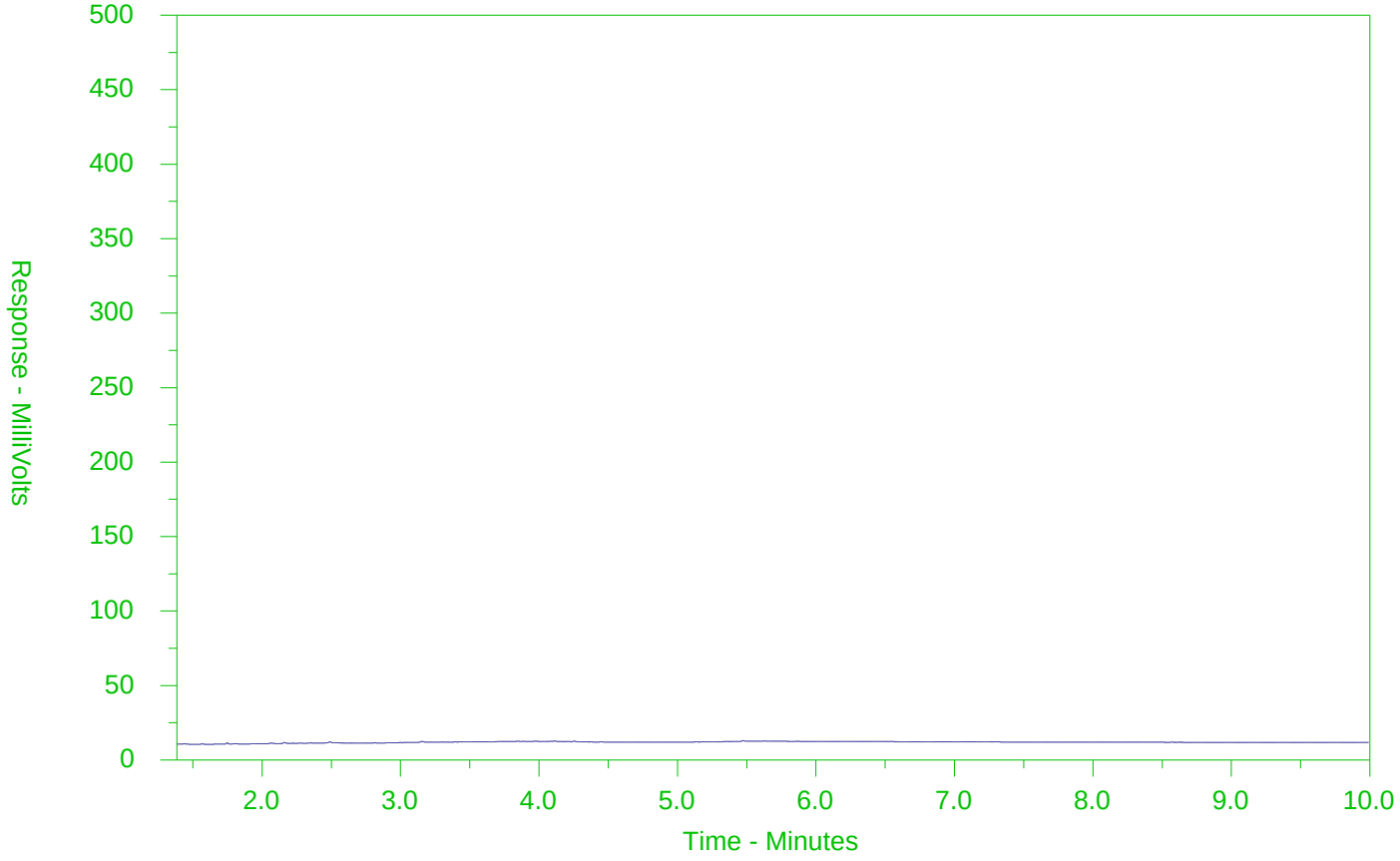
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1983964-4
Client Sample ID: OW13



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

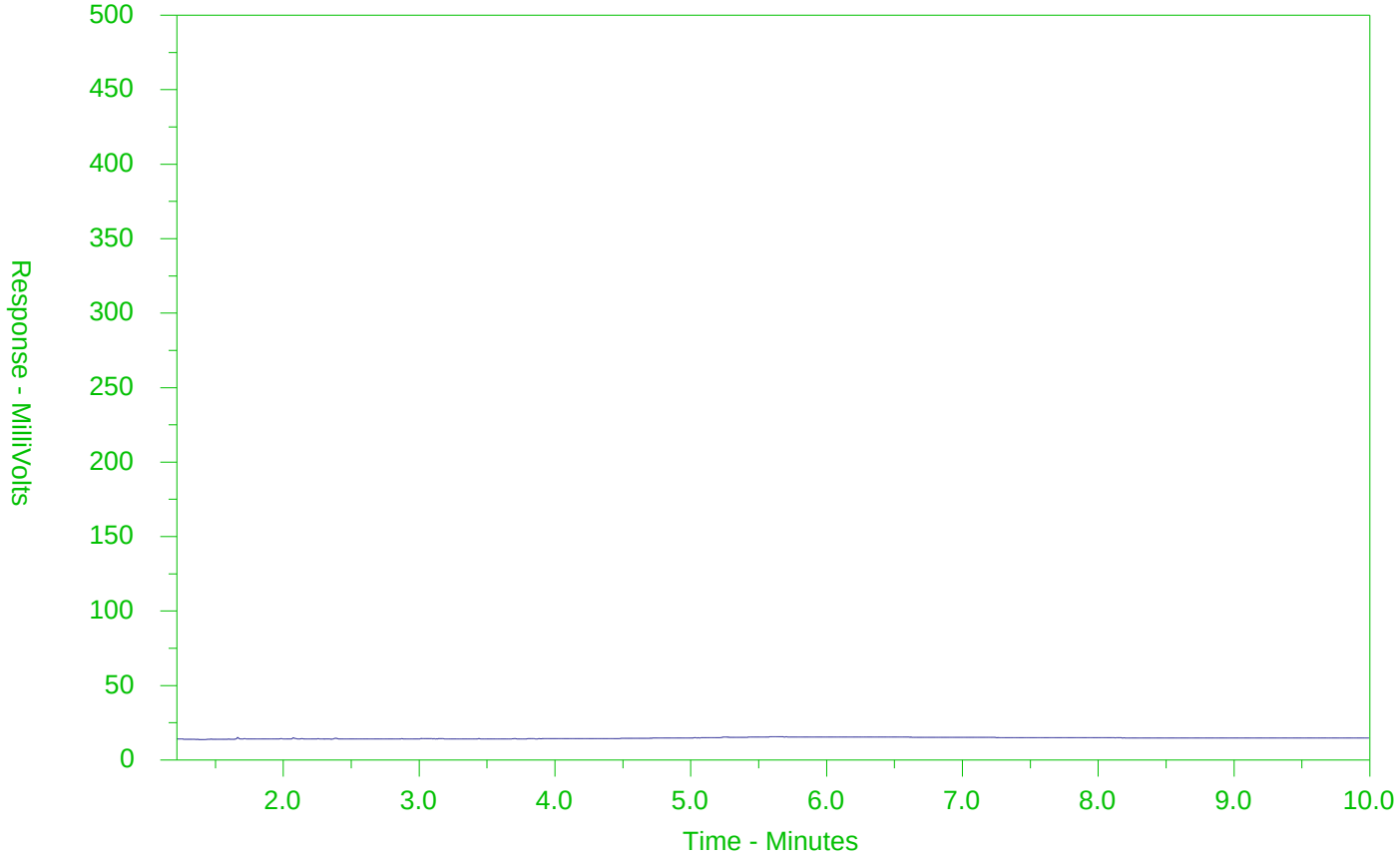
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1983964-5
Client Sample ID: OW9-I



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

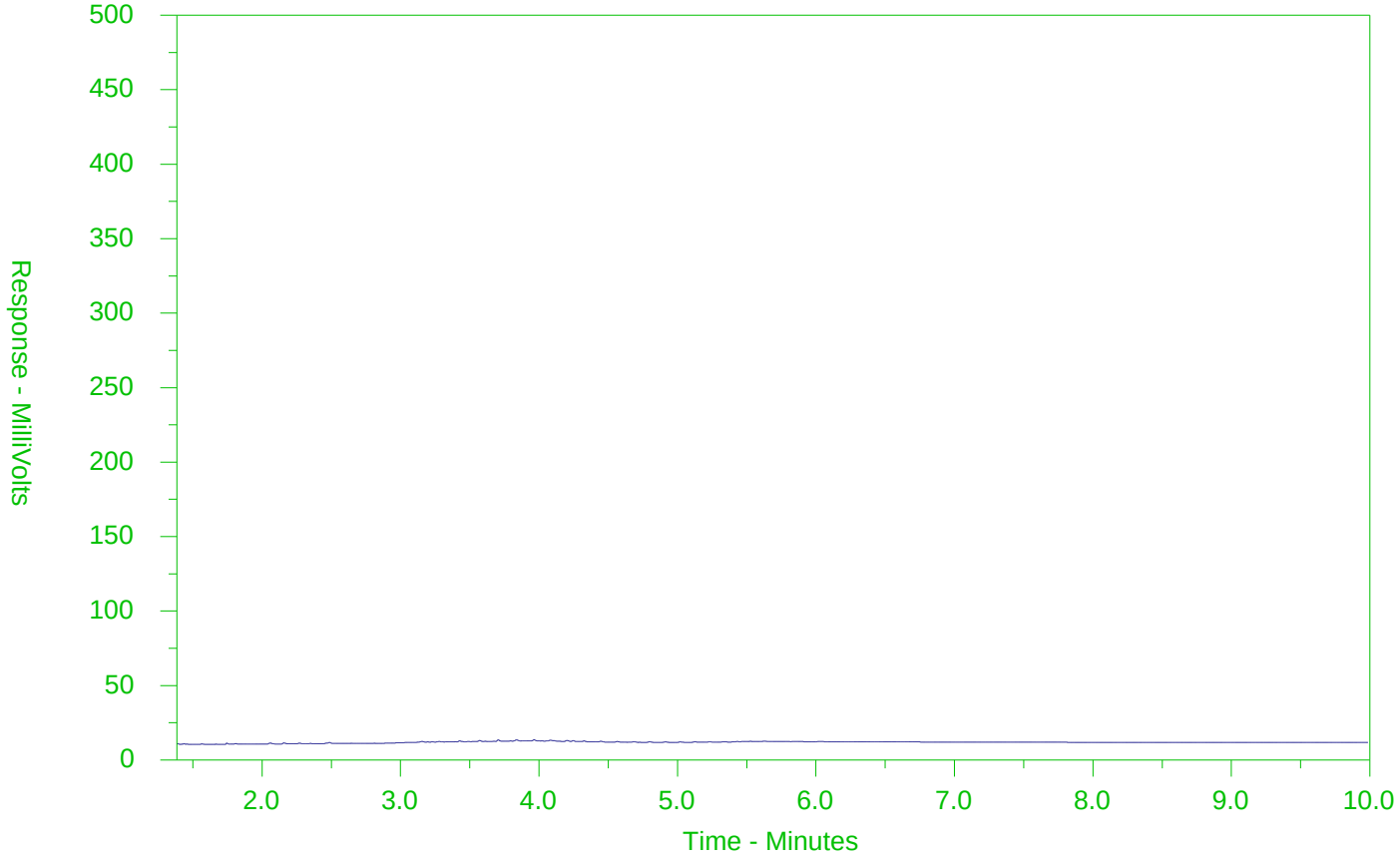
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1983964-6
Client Sample ID: OW9-11



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

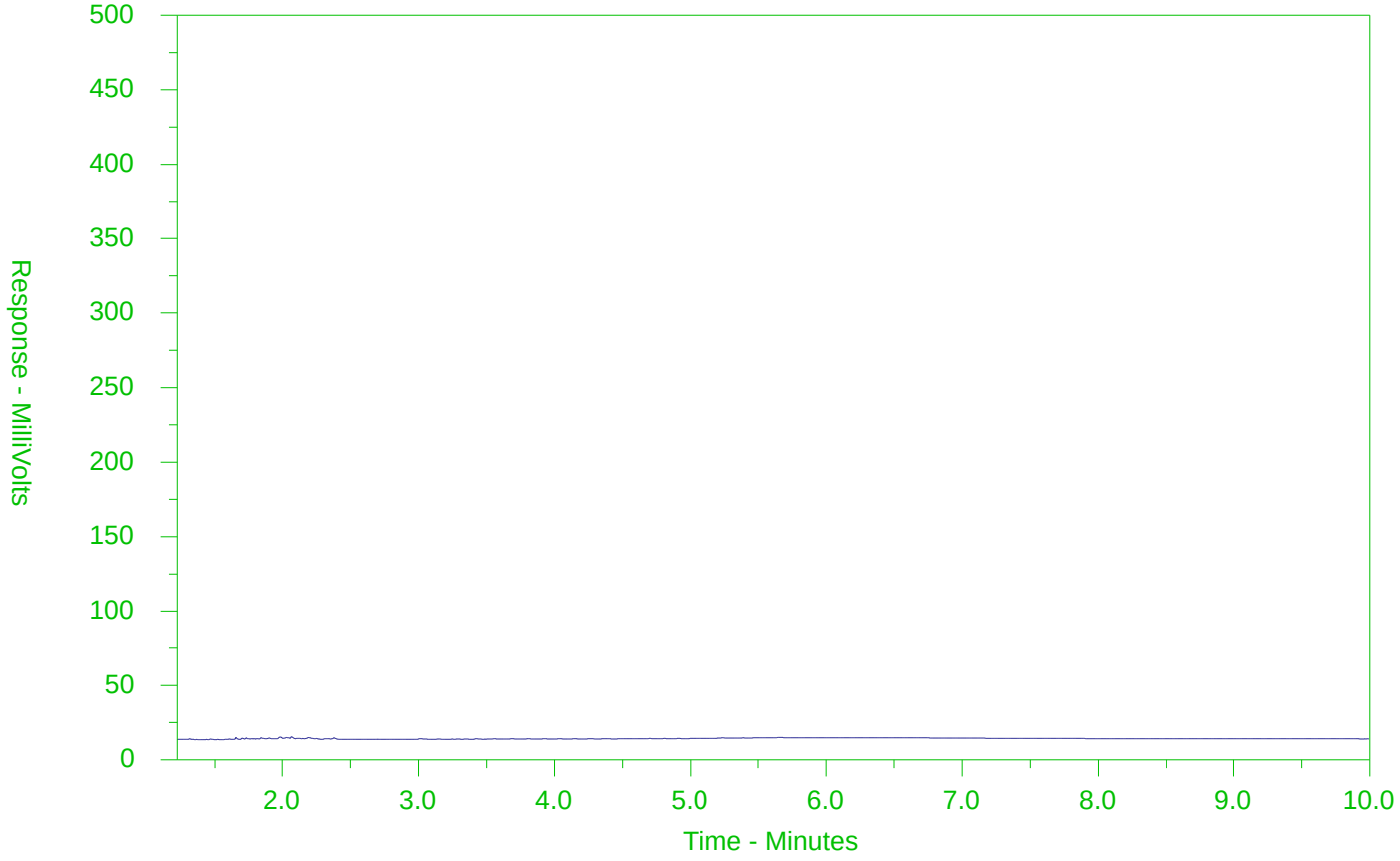
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1983964-7
Client Sample ID: OW10



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L1983964-COFC

COC Number: 15 -

Page 1 of 1

Report To	Contact and company name below will appear on the final report	Report Format / Distribution	Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply
Company:	CH2M Hill Kitchener	Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)	Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply
Contact:	Michael Shiry / Peter Mamo	Quality Control (QC) Report with Report ☑ YES ☐ NO	PRIORITY (Business Days): 4 day [P4] ☐ / 3 day [P3] ☐ / 2 day [P2] ☐
Phone:	289 971 1779	☐ Compare Results to Criteria on Report - provide details below if box checked	EMERGENCY: 1 Business day [E1] ☐ / Same Day, Weekend or Statutory holiday [E0] ☐
	Company address below will appear on the final report	Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	
Street:	300-72 Victoria St. South	Email 1 or Fax: Michael.Shiry@ch2m.com	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
City/Province:	Kitchener, ON	Email 2: Peter.Mamo@ch2m.com	For tests that can not be performed according to the service level selected, you will be contacted.
Postal Code:	N2G 4Y9	Email 3:	
Invoice To	Same as Report To ☐ YES ☐ NO	Invoice Distribution	Analysis Request
	Copy of Invoice with Report ☐ YES ☐ NO	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below
Company:	CH2M Hill Kitchener	Email 1 or Fax	
Contact:	Accounts Payable	Email 2	
Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:	Q62156	AFE/Cost Center: / PO#	
Job #:	694757	Major/Minor Code: / Routing Code:	
PO / AFE:		Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (lab use only)	L1983964 AK SDC	ALS Contact: Mathy / Sampler:	

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Metals & Inorganics	SVOC	PAH	VOC, BTX, F1	F2-F4	1,4 Dioxane	PCB	VOC,F1 (Trip Blank)						Number of Containers
					F													
	OW18-11	29-Aug-17	14:20	Water	✓		✓	✓	✓									12
	OW18-1	29-Aug-17	15:30		✓		✓	✓	✓									12
	OW14	30-Aug-17	09:45		✓		✓	✓	✓	✓								15
	OW13		11:03		✓	✓		✓	✓									13
	OW9-1		12:10		✓		✓	✓	✓									12
	OW9-11		13:50		✓		✓	✓	✓									12
	OW10	30-Aug-17	15:30	Water	✓		✓	✓	✓									12
	Trip Blank-1	29-Aug-17	—	Water								✓						2

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☐ NO	
Are samples for human drinking water use? ☐ YES ☐ NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☒ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
			2.5		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Peter Mamo	Date: 30/08/2017	Time: 1705	Received by:	Date:	Time:	Received by: RW	Date: Aug 30 2017	Time: 17:05

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

CH2M HILL CANADA LIMITED
ATTN: MICHAEL SHIRY
72 VICTORIA ST SOUTH
SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 01-SEP-17
Report Date: 12-SEP-17 13:48 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L1985429
Project P.O. #: NOT SUBMITTED
Job Reference: 694757
C of C Numbers:
Legal Site Desc:

Mathy Mahadeva
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-1 OW26S Sampled By: CLIENT on 31-AUG-17 @ 15:30 Matrix: WATER							
Physical Tests							
Conductivity	0.891		0.0030	mS/cm		05-SEP-17	R3819367
pH	7.38		0.10	pH units		05-SEP-17	R3819367
Anions and Nutrients							
Chloride (Cl)	80.6		0.50	mg/L		07-SEP-17	R3822437
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		11-SEP-17	R3824290
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					05-SEP-17	R3818464
Dissolved Metals Filtration Location	FIELD					05-SEP-17	R3818131
Antimony (Sb)-Dissolved	0.39		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Arsenic (As)-Dissolved	0.49		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Barium (Ba)-Dissolved	64.1		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Boron (B)-Dissolved	76		10	ug/L	05-SEP-17	06-SEP-17	R3821118
Cadmium (Cd)-Dissolved	0.783		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118
Chromium (Cr)-Dissolved	0.55		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Cobalt (Co)-Dissolved	0.83		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Copper (Cu)-Dissolved	9.68		0.20	ug/L	05-SEP-17	06-SEP-17	R3821118
Lead (Pb)-Dissolved	0.204		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	05-SEP-17	05-SEP-17	R3819124
Molybdenum (Mo)-Dissolved	2.64		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Nickel (Ni)-Dissolved	5.39		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Selenium (Se)-Dissolved	0.264		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Sodium (Na)-Dissolved	48300		500	ug/L	05-SEP-17	06-SEP-17	R3821118
Thallium (Tl)-Dissolved	0.128		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118
Uranium (U)-Dissolved	3.53		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Zinc (Zn)-Dissolved	722		1.0	ug/L	05-SEP-17	06-SEP-17	R3821118
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		05-SEP-17	R3820294
Volatile Organic Compounds							
Acetone	<30		30	ug/L		06-SEP-17	R3820370
Benzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Bromodichloromethane	<2.0		2.0	ug/L		06-SEP-17	R3820370
Bromoform	<5.0		5.0	ug/L		06-SEP-17	R3820370
Bromomethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
Carbon tetrachloride	<0.20		0.20	ug/L		06-SEP-17	R3820370
Chlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Dibromochloromethane	<2.0		2.0	ug/L		06-SEP-17	R3820370
Chloroform	1.4		1.0	ug/L		06-SEP-17	R3820370
1,2-Dibromoethane	<0.20		0.20	ug/L		06-SEP-17	R3820370

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-1 OW26S Sampled By: CLIENT on 31-AUG-17 @ 15:30 Matrix: WATER							
Volatile Organic Compounds							
1,2-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,3-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,4-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Dichlorodifluoromethane	<2.0		2.0	ug/L		06-SEP-17	R3820370
1,1-Dichloroethane	3.37		0.50	ug/L		06-SEP-17	R3820370
1,2-Dichloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1-Dichloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3820370
cis-1,2-Dichloroethylene	0.52	AIN	0.50	ug/L		06-SEP-17	R3820370
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Methylene Chloride	<5.0		5.0	ug/L		06-SEP-17	R3820370
1,2-Dichloropropane	<0.50		0.50	ug/L		06-SEP-17	R3820370
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		06-SEP-17	R3820370
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		06-SEP-17	R3820370
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		06-SEP-17	
1,4-Dioxane	<20		20	ug/L		06-SEP-17	R3820370
Ethylbenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
n-Hexane	<0.50		0.50	ug/L		06-SEP-17	R3820370
Methyl Ethyl Ketone	<20		20	ug/L		06-SEP-17	R3820370
Methyl Isobutyl Ketone	<20		20	ug/L		06-SEP-17	R3820370
MTBE	<2.0		2.0	ug/L		06-SEP-17	R3820370
Styrene	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
Tetrachloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Toluene	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1,1-Trichloroethane	1.44		0.50	ug/L		06-SEP-17	R3820370
1,1,2-Trichloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
Trichloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Trichlorofluoromethane	<5.0		5.0	ug/L		06-SEP-17	R3820370
Vinyl chloride	<0.50		0.50	ug/L		06-SEP-17	R3820370
o-Xylene	<0.30		0.30	ug/L		06-SEP-17	R3820370
m+p-Xylenes	<0.40		0.40	ug/L		06-SEP-17	R3820370
Xylenes (Total)	<0.50		0.50	ug/L		06-SEP-17	
Surrogate: 4-Bromofluorobenzene	95.1		70-130	%		06-SEP-17	R3820370
Surrogate: 1,4-Difluorobenzene	100.9		70-130	%		06-SEP-17	R3820370
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		06-SEP-17	R3820370
F1-BTEX	<25		25	ug/L		06-SEP-17	
F2 (C10-C16)	<100		100	ug/L	06-SEP-17	06-SEP-17	R3820710
F3 (C16-C34)	<250		250	ug/L	06-SEP-17	06-SEP-17	R3820710
F4 (C34-C50)	<250		250	ug/L	06-SEP-17	06-SEP-17	R3820710

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-1 OW26S Sampled By: CLIENT on 31-AUG-17 @ 15:30 Matrix: WATER							
Hydrocarbons							
Total Hydrocarbons (C6-C50)	<370		370	ug/L		06-SEP-17	
Chrom. to baseline at nC50	YES				06-SEP-17	06-SEP-17	R3820710
Surrogate: 2-Bromobenzotrifluoride	98.7		60-140	%	06-SEP-17	06-SEP-17	R3820710
Surrogate: 3,4-Dichlorotoluene	93.2		60-140	%		06-SEP-17	R3820370
Polychlorinated Biphenyls							
Aroclor 1242	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824408
Aroclor 1248	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824408
Aroclor 1254	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824408
Aroclor 1260	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824408
Total PCBs	<0.040		0.040	ug/L	11-SEP-17	12-SEP-17	R3824408
Surrogate: 2-fluorobiphenyl	75.1		50-150	%	11-SEP-17	12-SEP-17	R3824408
L1985429-2 OW26D Sampled By: CLIENT on 31-AUG-17 @ 16:38 Matrix: WATER							
Physical Tests							
Conductivity	1.13		0.0030	mS/cm		05-SEP-17	R3819367
pH	7.43	PEHT	0.10	pH units		05-SEP-17	R3819367
Anions and Nutrients							
Chloride (Cl)	162		0.50	mg/L		07-SEP-17	R3822437
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		11-SEP-17	R3824290
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					05-SEP-17	R3818464
Dissolved Metals Filtration Location	FIELD					05-SEP-17	R3818131
Antimony (Sb)-Dissolved	0.12		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Arsenic (As)-Dissolved	8.32		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Barium (Ba)-Dissolved	80.0		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Boron (B)-Dissolved	67		10	ug/L	05-SEP-17	06-SEP-17	R3821118
Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	05-SEP-17	06-SEP-17	R3821118
Lead (Pb)-Dissolved	0.120		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	05-SEP-17	05-SEP-17	R3819124
Molybdenum (Mo)-Dissolved	5.05		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Nickel (Ni)-Dissolved	1.22		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Selenium (Se)-Dissolved	0.173		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Sodium (Na)-Dissolved	99200		500	ug/L	05-SEP-17	06-SEP-17	R3821118
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118
Uranium (U)-Dissolved	3.76		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-2 OW26D Sampled By: CLIENT on 31-AUG-17 @ 16:38 Matrix: WATER							
Dissolved Metals							
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Zinc (Zn)-Dissolved	239		1.0	ug/L	05-SEP-17	06-SEP-17	R3821118
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		05-SEP-17	R3820294
Volatile Organic Compounds							
Acetone	<30		30	ug/L		06-SEP-17	R3820370
Benzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Bromodichloromethane	<2.0		2.0	ug/L		06-SEP-17	R3820370
Bromoform	<5.0		5.0	ug/L		06-SEP-17	R3820370
Bromomethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
Carbon tetrachloride	<0.20		0.20	ug/L		06-SEP-17	R3820370
Chlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Dibromochloromethane	<2.0		2.0	ug/L		06-SEP-17	R3820370
Chloroform	<1.0		1.0	ug/L		06-SEP-17	R3820370
1,2-Dibromoethane	<0.20		0.20	ug/L		06-SEP-17	R3820370
1,2-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,3-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,4-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Dichlorodifluoromethane	<2.0		2.0	ug/L		06-SEP-17	R3820370
1,1-Dichloroethane	1.35		0.50	ug/L		06-SEP-17	R3820370
1,2-Dichloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1-Dichloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3820370
cis-1,2-Dichloroethylene	2.39		0.50	ug/L		06-SEP-17	R3820370
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Methylene Chloride	<5.0		5.0	ug/L		06-SEP-17	R3820370
1,2-Dichloropropane	<0.50		0.50	ug/L		06-SEP-17	R3820370
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		06-SEP-17	R3820370
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		06-SEP-17	R3820370
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		06-SEP-17	
1,4-Dioxane	<20		20	ug/L		06-SEP-17	R3820370
Ethylbenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
n-Hexane	<0.50		0.50	ug/L		06-SEP-17	R3820370
Methyl Ethyl Ketone	<20		20	ug/L		06-SEP-17	R3820370
Methyl Isobutyl Ketone	<20		20	ug/L		06-SEP-17	R3820370
MTBE	<2.0		2.0	ug/L		06-SEP-17	R3820370
Styrene	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
Tetrachloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Toluene	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1,1-Trichloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-2 OW26D Sampled By: CLIENT on 31-AUG-17 @ 16:38 Matrix: WATER							
Volatile Organic Compounds							
1,1,2-Trichloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
Trichloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Trichlorofluoromethane	<5.0		5.0	ug/L		06-SEP-17	R3820370
Vinyl chloride	<0.50		0.50	ug/L		06-SEP-17	R3820370
o-Xylene	<0.30		0.30	ug/L		06-SEP-17	R3820370
m+p-Xylenes	<0.40		0.40	ug/L		06-SEP-17	R3820370
Xylenes (Total)	<0.50		0.50	ug/L		06-SEP-17	
Surrogate: 4-Bromofluorobenzene	94.7		70-130	%		06-SEP-17	R3820370
Surrogate: 1,4-Difluorobenzene	99.7		70-130	%		06-SEP-17	R3820370
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		06-SEP-17	R3820370
F1-BTEX	<25		25	ug/L		06-SEP-17	
F2 (C10-C16)	<100		100	ug/L	06-SEP-17	06-SEP-17	R3820710
F3 (C16-C34)	<250		250	ug/L	06-SEP-17	06-SEP-17	R3820710
F4 (C34-C50)	<250		250	ug/L	06-SEP-17	06-SEP-17	R3820710
Total Hydrocarbons (C6-C50)	<370		370	ug/L		06-SEP-17	
Chrom. to baseline at nC50	YES				06-SEP-17	06-SEP-17	R3820710
Surrogate: 2-Bromobenzotrifluoride	97.8		60-140	%	06-SEP-17	06-SEP-17	R3820710
Surrogate: 3,4-Dichlorotoluene	92.6		60-140	%		06-SEP-17	R3820370
L1985429-3 OW07-34D Sampled By: CLIENT on 01-SEP-17 @ 09:00 Matrix: WATER							
Physical Tests							
Conductivity	1.10		0.0030	mS/cm		05-SEP-17	R3819367
pH	7.34	PEHT	0.10	pH units		05-SEP-17	R3819367
Anions and Nutrients							
Chloride (Cl)	161		0.50	mg/L		07-SEP-17	R3822437
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		11-SEP-17	R3824290
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					05-SEP-17	R3818464
Dissolved Metals Filtration Location	FIELD					05-SEP-17	R3818131
Antimony (Sb)-Dissolved	0.13		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Arsenic (As)-Dissolved	3.62		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Barium (Ba)-Dissolved	52.2		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Boron (B)-Dissolved	59		10	ug/L	05-SEP-17	06-SEP-17	R3821118
Cadmium (Cd)-Dissolved	0.021		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Copper (Cu)-Dissolved	0.25		0.20	ug/L	05-SEP-17	06-SEP-17	R3821118
Lead (Pb)-Dissolved	8.26		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-3 OW07-34D Sampled By: CLIENT on 01-SEP-17 @ 09:00 Matrix: WATER							
Dissolved Metals							
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	05-SEP-17	05-SEP-17	R3819124
Molybdenum (Mo)-Dissolved	4.19		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Nickel (Ni)-Dissolved	3.96		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Selenium (Se)-Dissolved	0.211		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Sodium (Na)-Dissolved	90600		500	ug/L	05-SEP-17	06-SEP-17	R3821118
Thallium (Tl)-Dissolved	0.012		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118
Uranium (U)-Dissolved	5.96		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Zinc (Zn)-Dissolved	626		1.0	ug/L	05-SEP-17	06-SEP-17	R3821118
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		05-SEP-17	R3820294
Volatile Organic Compounds							
Acetone	<30		30	ug/L		06-SEP-17	R3820370
Benzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Bromodichloromethane	<2.0		2.0	ug/L		06-SEP-17	R3820370
Bromoform	<5.0		5.0	ug/L		06-SEP-17	R3820370
Bromomethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
Carbon tetrachloride	<0.20		0.20	ug/L		06-SEP-17	R3820370
Chlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Dibromochloromethane	<2.0		2.0	ug/L		06-SEP-17	R3820370
Chloroform	<1.0		1.0	ug/L		06-SEP-17	R3820370
1,2-Dibromoethane	<0.20		0.20	ug/L		06-SEP-17	R3820370
1,2-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,3-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,4-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Dichlorodifluoromethane	<2.0		2.0	ug/L		06-SEP-17	R3820370
1,1-Dichloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,2-Dichloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1-Dichloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3820370
cis-1,2-Dichloroethylene	0.85		0.50	ug/L		06-SEP-17	R3820370
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Methylene Chloride	<5.0		5.0	ug/L		06-SEP-17	R3820370
1,2-Dichloropropane	<0.50		0.50	ug/L		06-SEP-17	R3820370
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		06-SEP-17	R3820370
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		06-SEP-17	R3820370
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		06-SEP-17	
1,4-Dioxane	<20		20	ug/L		06-SEP-17	R3820370
Ethylbenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
n-Hexane	<0.50		0.50	ug/L		06-SEP-17	R3820370
Methyl Ethyl Ketone	<20		20	ug/L		06-SEP-17	R3820370

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-3 OW07-34D Sampled By: CLIENT on 01-SEP-17 @ 09:00 Matrix: WATER							
Volatile Organic Compounds							
Methyl Isobutyl Ketone	<20		20	ug/L		06-SEP-17	R3820370
MTBE	<2.0		2.0	ug/L		06-SEP-17	R3820370
Styrene	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
Tetrachloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Toluene	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1,1-Trichloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1,2-Trichloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
Trichloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Trichlorofluoromethane	<5.0		5.0	ug/L		06-SEP-17	R3820370
Vinyl chloride	<0.50		0.50	ug/L		06-SEP-17	R3820370
o-Xylene	<0.30		0.30	ug/L		06-SEP-17	R3820370
m+p-Xylenes	<0.40		0.40	ug/L		06-SEP-17	R3820370
Xylenes (Total)	<0.50		0.50	ug/L		06-SEP-17	
Surrogate: 4-Bromofluorobenzene	96.0		70-130	%		06-SEP-17	R3820370
Surrogate: 1,4-Difluorobenzene	100.0		70-130	%		06-SEP-17	R3820370
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		06-SEP-17	R3820370
F1-BTEX	<25		25	ug/L		06-SEP-17	
F2 (C10-C16)	<100		100	ug/L	06-SEP-17	06-SEP-17	R3820710
F3 (C16-C34)	<250		250	ug/L	06-SEP-17	06-SEP-17	R3820710
F4 (C34-C50)	<250		250	ug/L	06-SEP-17	06-SEP-17	R3820710
Total Hydrocarbons (C6-C50)	<370		370	ug/L		06-SEP-17	
Chrom. to baseline at nC50	YES				06-SEP-17	06-SEP-17	R3820710
Surrogate: 2-Bromobenzotrifluoride	94.9		60-140	%	06-SEP-17	06-SEP-17	R3820710
Surrogate: 3,4-Dichlorotoluene	91.7		60-140	%		06-SEP-17	R3820370
L1985429-4 OW07-34S Sampled By: CLIENT on 01-SEP-17 @ 10:07 Matrix: WATER							
Physical Tests							
Conductivity	0.966		0.0030	mS/cm		05-SEP-17	R3819367
pH	7.36		0.10	pH units		05-SEP-17	R3819367
Anions and Nutrients							
Chloride (Cl)	112		0.50	mg/L		07-SEP-17	R3822437
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		11-SEP-17	R3824290
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					05-SEP-17	R3818464
Dissolved Metals Filtration Location	FIELD					05-SEP-17	R3818131
Antimony (Sb)-Dissolved	0.48		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Arsenic (As)-Dissolved	0.81		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-4 OW07-34S Sampled By: CLIENT on 01-SEP-17 @ 10:07 Matrix: WATER							
Dissolved Metals							
Barium (Ba)-Dissolved	58.7		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Boron (B)-Dissolved	81		10	ug/L	05-SEP-17	06-SEP-17	R3821118
Cadmium (Cd)-Dissolved	0.537		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Cobalt (Co)-Dissolved	0.35		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Copper (Cu)-Dissolved	4.36		0.20	ug/L	05-SEP-17	06-SEP-17	R3821118
Lead (Pb)-Dissolved	0.112		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	05-SEP-17	05-SEP-17	R3819124
Molybdenum (Mo)-Dissolved	2.73		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Nickel (Ni)-Dissolved	5.53		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Selenium (Se)-Dissolved	0.218		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Sodium (Na)-Dissolved	62000		500	ug/L	05-SEP-17	06-SEP-17	R3821118
Thallium (Tl)-Dissolved	0.178		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118
Uranium (U)-Dissolved	3.59		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Zinc (Zn)-Dissolved	552		1.0	ug/L	05-SEP-17	06-SEP-17	R3821118
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		05-SEP-17	R3820294
Volatile Organic Compounds							
Acetone	<30		30	ug/L		06-SEP-17	R3820370
Benzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Bromodichloromethane	<2.0		2.0	ug/L		06-SEP-17	R3820370
Bromoform	<5.0		5.0	ug/L		06-SEP-17	R3820370
Bromomethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
Carbon tetrachloride	<0.20		0.20	ug/L		06-SEP-17	R3820370
Chlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Dibromochloromethane	<2.0		2.0	ug/L		06-SEP-17	R3820370
Chloroform	<1.0		1.0	ug/L		06-SEP-17	R3820370
1,2-Dibromoethane	<0.20		0.20	ug/L		06-SEP-17	R3820370
1,2-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,3-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,4-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Dichlorodifluoromethane	<2.0		2.0	ug/L		06-SEP-17	R3820370
1,1-Dichloroethane	2.11		0.50	ug/L		06-SEP-17	R3820370
1,2-Dichloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1-Dichloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3820370
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3820370
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Methylene Chloride	<5.0		5.0	ug/L		06-SEP-17	R3820370

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-4 OW07-34S Sampled By: CLIENT on 01-SEP-17 @ 10:07 Matrix: WATER							
Volatile Organic Compounds							
1,2-Dichloropropane	<0.50		0.50	ug/L		06-SEP-17	R3820370
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		06-SEP-17	R3820370
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		06-SEP-17	R3820370
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		06-SEP-17	
Ethylbenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
n-Hexane	<0.50		0.50	ug/L		06-SEP-17	R3820370
Methyl Ethyl Ketone	<20		20	ug/L		06-SEP-17	R3820370
Methyl Isobutyl Ketone	<20		20	ug/L		06-SEP-17	R3820370
MTBE	<2.0		2.0	ug/L		06-SEP-17	R3820370
Styrene	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
Tetrachloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Toluene	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1,1-Trichloroethane	1.19		0.50	ug/L		06-SEP-17	R3820370
1,1,2-Trichloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
Trichloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Trichlorofluoromethane	<5.0		5.0	ug/L		06-SEP-17	R3820370
Vinyl chloride	<0.50		0.50	ug/L		06-SEP-17	R3820370
o-Xylene	<0.30		0.30	ug/L		06-SEP-17	R3820370
m+p-Xylenes	<0.40		0.40	ug/L		06-SEP-17	R3820370
Xylenes (Total)	<0.50		0.50	ug/L		06-SEP-17	
Surrogate: 4-Bromofluorobenzene	94.4		70-130	%		06-SEP-17	R3820370
Surrogate: 1,4-Difluorobenzene	99.9		70-130	%		06-SEP-17	R3820370
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		06-SEP-17	R3820370
F1-BTEX	<25		25	ug/L		08-SEP-17	
F2 (C10-C16)	<100		100	ug/L	06-SEP-17	06-SEP-17	R3820710
F2-Naphth	<100		100	ug/L		08-SEP-17	
F3 (C16-C34)	<250		250	ug/L	06-SEP-17	06-SEP-17	R3820710
F3-PAH	<250		250	ug/L		08-SEP-17	
F4 (C34-C50)	<250		250	ug/L	06-SEP-17	06-SEP-17	R3820710
Total Hydrocarbons (C6-C50)	<370		370	ug/L		08-SEP-17	
Chrom. to baseline at nC50	YES				06-SEP-17	06-SEP-17	R3820710
Surrogate: 2-Bromobenzotrifluoride	105.9		60-140	%	06-SEP-17	06-SEP-17	R3820710
Surrogate: 3,4-Dichlorotoluene	90.6		60-140	%		06-SEP-17	R3820370
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3822028
Acenaphthylene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3822028
Anthracene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3822028
Benzo(a)anthracene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3822028

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-4 OW07-34S Sampled By: CLIENT on 01-SEP-17 @ 10:07 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Benzo(a)pyrene	<0.010		0.010	ug/L	06-SEP-17	08-SEP-17	R3822028
Benzo(b)fluoranthene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3822028
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3822028
Benzo(k)fluoranthene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3822028
Chrysene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3822028
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3822028
Fluoranthene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3822028
Fluorene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3822028
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3822028
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		08-SEP-17	
1-Methylnaphthalene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3822028
2-Methylnaphthalene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3822028
Naphthalene	<0.050		0.050	ug/L	06-SEP-17	08-SEP-17	R3822028
Phenanthrene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3822028
Pyrene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3822028
Surrogate: d10-Acenaphthene	94.6		60-140	%	06-SEP-17	08-SEP-17	R3822028
Surrogate: d12-Chrysene	102.2		60-140	%	06-SEP-17	08-SEP-17	R3822028
Surrogate: d8-Naphthalene	89.1		60-140	%	06-SEP-17	08-SEP-17	R3822028
Surrogate: d10-Phenanthrene	108.3		60-140	%	06-SEP-17	08-SEP-17	R3822028
Polychlorinated Biphenyls							
Aroclor 1242	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824408
Aroclor 1248	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824408
Aroclor 1254	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824408
Aroclor 1260	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824408
Total PCBs	<0.040		0.040	ug/L	11-SEP-17	12-SEP-17	R3824408
Surrogate: 2-fluorobiphenyl	74.3		50-150	%	11-SEP-17	12-SEP-17	R3824408
L1985429-5 OW25 Sampled By: CLIENT on 01-SEP-17 @ 11:03 Matrix: WATER							
Physical Tests							
Conductivity	0.757		0.0030	mS/cm		05-SEP-17	R3819367
pH	7.44		0.10	pH units		05-SEP-17	R3819367
Anions and Nutrients							
Chloride (Cl)	24.1		0.50	mg/L		07-SEP-17	R3822437
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		11-SEP-17	R3824290
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					05-SEP-17	R3818464
Dissolved Metals Filtration Location	FIELD					05-SEP-17	R3818131
Antimony (Sb)-Dissolved	0.12		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Arsenic (As)-Dissolved	1.96		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Barium (Ba)-Dissolved	36.4		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-5 OW25 Sampled By: CLIENT on 01-SEP-17 @ 11:03 Matrix: WATER							
Dissolved Metals							
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Boron (B)-Dissolved	65		10	ug/L	05-SEP-17	06-SEP-17	R3821118
Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Copper (Cu)-Dissolved	0.26		0.20	ug/L	05-SEP-17	06-SEP-17	R3821118
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	05-SEP-17	05-SEP-17	R3819124
Molybdenum (Mo)-Dissolved	0.735		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Nickel (Ni)-Dissolved	1.51		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Selenium (Se)-Dissolved	0.092		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Sodium (Na)-Dissolved	16600		500	ug/L	05-SEP-17	06-SEP-17	R3821118
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118
Uranium (U)-Dissolved	1.43		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Zinc (Zn)-Dissolved	48.5		1.0	ug/L	05-SEP-17	06-SEP-17	R3821118
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		05-SEP-17	R3820294
Volatile Organic Compounds							
Acetone	<30		30	ug/L		06-SEP-17	R3820370
Benzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Bromodichloromethane	<2.0		2.0	ug/L		06-SEP-17	R3820370
Bromoform	<5.0		5.0	ug/L		06-SEP-17	R3820370
Bromomethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
Carbon tetrachloride	<0.20		0.20	ug/L		06-SEP-17	R3820370
Chlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Dibromochloromethane	<2.0		2.0	ug/L		06-SEP-17	R3820370
Chloroform	<1.0		1.0	ug/L		06-SEP-17	R3820370
1,2-Dibromoethane	<0.20		0.20	ug/L		06-SEP-17	R3820370
1,2-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,3-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,4-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Dichlorodifluoromethane	<2.0		2.0	ug/L		06-SEP-17	R3820370
1,1-Dichloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,2-Dichloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1-Dichloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3820370
cis-1,2-Dichloroethylene	2.43		0.50	ug/L		06-SEP-17	R3820370
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Methylene Chloride	<5.0		5.0	ug/L		06-SEP-17	R3820370
1,2-Dichloropropane	<0.50		0.50	ug/L		06-SEP-17	R3820370

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-5 OW25 Sampled By: CLIENT on 01-SEP-17 @ 11:03 Matrix: WATER							
Volatile Organic Compounds							
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		06-SEP-17	R3820370
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		06-SEP-17	R3820370
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		06-SEP-17	
Ethylbenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
n-Hexane	<0.50		0.50	ug/L		06-SEP-17	R3820370
Methyl Ethyl Ketone	<20		20	ug/L		06-SEP-17	R3820370
Methyl Isobutyl Ketone	<20		20	ug/L		06-SEP-17	R3820370
MTBE	<2.0		2.0	ug/L		06-SEP-17	R3820370
Styrene	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
Tetrachloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Toluene	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1,1-Trichloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1,2-Trichloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
Trichloroethylene	2.57		0.50	ug/L		06-SEP-17	R3820370
Trichlorofluoromethane	<5.0		5.0	ug/L		06-SEP-17	R3820370
Vinyl chloride	0.67		0.50	ug/L		06-SEP-17	R3820370
o-Xylene	<0.30		0.30	ug/L		06-SEP-17	R3820370
m+p-Xylenes	<0.40		0.40	ug/L		06-SEP-17	R3820370
Xylenes (Total)	<0.50		0.50	ug/L		06-SEP-17	
Surrogate: 4-Bromofluorobenzene	94.2		70-130	%		06-SEP-17	R3820370
Surrogate: 1,4-Difluorobenzene	100.3		70-130	%		06-SEP-17	R3820370
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		06-SEP-17	R3820370
F1-BTEX	<25		25	ug/L		08-SEP-17	
F2 (C10-C16)	<100		100	ug/L	06-SEP-17	06-SEP-17	R3820710
F2-Naphth	<100		100	ug/L		08-SEP-17	
F3 (C16-C34)	<250		250	ug/L	06-SEP-17	06-SEP-17	R3820710
F3-PAH	<250		250	ug/L		08-SEP-17	
F4 (C34-C50)	<250		250	ug/L	06-SEP-17	06-SEP-17	R3820710
Total Hydrocarbons (C6-C50)	<370		370	ug/L		08-SEP-17	
Chrom. to baseline at nC50	YES				06-SEP-17	06-SEP-17	R3820710
Surrogate: 2-Bromobenzotrifluoride	98.3		60-140	%	06-SEP-17	06-SEP-17	R3820710
Surrogate: 3,4-Dichlorotoluene	89.5		60-140	%		06-SEP-17	R3820370
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3822028
Acenaphthylene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3822028
Anthracene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3822028
Benzo(a)anthracene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3822028
Benzo(a)pyrene	<0.010		0.010	ug/L	06-SEP-17	08-SEP-17	R3822028

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-5 OW25 Sampled By: CLIENT on 01-SEP-17 @ 11:03 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Benzo(b)fluoranthene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3822028
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3822028
Benzo(k)fluoranthene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3822028
Chrysene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3822028
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3822028
Fluoranthene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3822028
Fluorene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3822028
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3822028
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		08-SEP-17	
1-Methylnaphthalene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3822028
2-Methylnaphthalene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3822028
Naphthalene	<0.050		0.050	ug/L	06-SEP-17	08-SEP-17	R3822028
Phenanthrene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3822028
Pyrene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3822028
Surrogate: d10-Acenaphthene	87.9		60-140	%	06-SEP-17	08-SEP-17	R3822028
Surrogate: d12-Chrysene	98.6		60-140	%	06-SEP-17	08-SEP-17	R3822028
Surrogate: d8-Naphthalene	81.9		60-140	%	06-SEP-17	08-SEP-17	R3822028
Surrogate: d10-Phenanthrene	102.8		60-140	%	06-SEP-17	08-SEP-17	R3822028
Polychlorinated Biphenyls							
Aroclor 1242	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824408
Aroclor 1248	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824408
Aroclor 1254	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824408
Aroclor 1260	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824408
Total PCBs	<0.040		0.040	ug/L	11-SEP-17	12-SEP-17	R3824408
Surrogate: 2-fluorobiphenyl	64.7		50-150	%	11-SEP-17	12-SEP-17	R3824408
L1985429-6 OW07-33 Sampled By: CLIENT on 31-AUG-17 @ 12:13 Matrix: WATER							
Physical Tests							
Conductivity	1.16		0.0030	mS/cm		05-SEP-17	R3819367
pH	7.34	PEHT	0.10	pH units		05-SEP-17	R3819367
Anions and Nutrients							
Chloride (Cl)	181		0.50	mg/L		07-SEP-17	R3822437
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		11-SEP-17	R3824290
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					05-SEP-17	R3818464
Dissolved Metals Filtration Location	FIELD					05-SEP-17	R3818131
Antimony (Sb)-Dissolved	0.38		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Arsenic (As)-Dissolved	0.67		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Barium (Ba)-Dissolved	51.3		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-6 OW07-33 Sampled By: CLIENT on 31-AUG-17 @ 12:13 Matrix: WATER							
Dissolved Metals							
Boron (B)-Dissolved	64		10	ug/L	05-SEP-17	06-SEP-17	R3821118
Cadmium (Cd)-Dissolved	0.673		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Cobalt (Co)-Dissolved	1.08		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Copper (Cu)-Dissolved	5.70		0.20	ug/L	05-SEP-17	06-SEP-17	R3821118
Lead (Pb)-Dissolved	15.0		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	05-SEP-17	05-SEP-17	R3819124
Molybdenum (Mo)-Dissolved	3.20		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Nickel (Ni)-Dissolved	5.50		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Selenium (Se)-Dissolved	0.506		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Sodium (Na)-Dissolved	99800		500	ug/L	05-SEP-17	06-SEP-17	R3821118
Thallium (Tl)-Dissolved	0.111		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118
Uranium (U)-Dissolved	5.05		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Zinc (Zn)-Dissolved	637		1.0	ug/L	05-SEP-17	06-SEP-17	R3821118
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		05-SEP-17	R3820294
Volatile Organic Compounds							
Acetone	<30		30	ug/L		06-SEP-17	R3820370
Benzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Bromodichloromethane	<2.0		2.0	ug/L		06-SEP-17	R3820370
Bromoform	<5.0		5.0	ug/L		06-SEP-17	R3820370
Bromomethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
Carbon tetrachloride	<0.20		0.20	ug/L		06-SEP-17	R3820370
Chlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Dibromochloromethane	<2.0		2.0	ug/L		06-SEP-17	R3820370
Chloroform	<1.0		1.0	ug/L		06-SEP-17	R3820370
1,2-Dibromoethane	<0.20		0.20	ug/L		06-SEP-17	R3820370
1,2-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,3-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,4-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Dichlorodifluoromethane	<2.0		2.0	ug/L		06-SEP-17	R3820370
1,1-Dichloroethane	1.71		0.50	ug/L		06-SEP-17	R3820370
1,2-Dichloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1-Dichloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3820370
cis-1,2-Dichloroethylene	0.60	AIN	0.50	ug/L		06-SEP-17	R3820370
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Methylene Chloride	<5.0		5.0	ug/L		06-SEP-17	R3820370
1,2-Dichloropropane	<0.50		0.50	ug/L		06-SEP-17	R3820370
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		06-SEP-17	R3820370

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-6 OW07-33 Sampled By: CLIENT on 31-AUG-17 @ 12:13 Matrix: WATER							
Volatile Organic Compounds							
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		06-SEP-17	R3820370
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		06-SEP-17	
1,4-Dioxane	<20		20	ug/L		06-SEP-17	R3820370
Ethylbenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
n-Hexane	<0.50		0.50	ug/L		06-SEP-17	R3820370
Methyl Ethyl Ketone	<20		20	ug/L		06-SEP-17	R3820370
Methyl Isobutyl Ketone	<20		20	ug/L		06-SEP-17	R3820370
MTBE	<2.0		2.0	ug/L		06-SEP-17	R3820370
Styrene	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
Tetrachloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Toluene	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1,1-Trichloroethane	1.92		0.50	ug/L		06-SEP-17	R3820370
1,1,2-Trichloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
Trichloroethylene	0.89		0.50	ug/L		06-SEP-17	R3820370
Trichlorofluoromethane	<5.0		5.0	ug/L		06-SEP-17	R3820370
Vinyl chloride	<0.50		0.50	ug/L		06-SEP-17	R3820370
o-Xylene	<0.30		0.30	ug/L		06-SEP-17	R3820370
m+p-Xylenes	<0.40		0.40	ug/L		06-SEP-17	R3820370
Xylenes (Total)	<0.50		0.50	ug/L		06-SEP-17	
Surrogate: 4-Bromofluorobenzene	95.1		70-130	%		06-SEP-17	R3820370
Surrogate: 1,4-Difluorobenzene	100.0		70-130	%		06-SEP-17	R3820370
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		06-SEP-17	R3820370
F1-BTEX	<25		25	ug/L		12-SEP-17	
F2 (C10-C16)	<100		100	ug/L	06-SEP-17	06-SEP-17	R3821126
F2-Naphth	<100		100	ug/L		12-SEP-17	
F3 (C16-C34)	<250		250	ug/L	06-SEP-17	06-SEP-17	R3821126
F3-PAH	<250		250	ug/L		12-SEP-17	
F4 (C34-C50)	<250		250	ug/L	06-SEP-17	06-SEP-17	R3821126
Total Hydrocarbons (C6-C50)	<370		370	ug/L		12-SEP-17	
Chrom. to baseline at nC50	YES			ppm	06-SEP-17	06-SEP-17	R3821126
Surrogate: 2-Bromobenzotrifluoride	99.3		60-140	%	06-SEP-17	06-SEP-17	R3821126
Surrogate: 3,4-Dichlorotoluene	90.5		60-140	%		06-SEP-17	R3820370
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Acenaphthylene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Anthracene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Benzo(a)anthracene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Benzo(a)pyrene	<0.010		0.010	ug/L	06-SEP-17	11-SEP-17	R3823800

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-6 OW07-33 Sampled By: CLIENT on 31-AUG-17 @ 12:13 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Benzo(b)fluoranthene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Benzo(k)fluoranthene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Chrysene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Fluoranthene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Fluorene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		12-SEP-17	
1-Methylnaphthalene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
2-Methylnaphthalene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Naphthalene	<0.050		0.050	ug/L	06-SEP-17	11-SEP-17	R3823800
Phenanthrene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Pyrene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Surrogate: d10-Acenaphthene	93.2		60-140	%	06-SEP-17	11-SEP-17	R3823800
Surrogate: d12-Chrysene	97.7		60-140	%	06-SEP-17	11-SEP-17	R3823800
Surrogate: d8-Naphthalene	88.0		60-140	%	06-SEP-17	11-SEP-17	R3823800
Surrogate: d10-Phenanthrene	107.8		60-140	%	06-SEP-17	11-SEP-17	R3823800
Semi-Volatile Organics							
Biphenyl	<0.40		0.40	ug/L	08-SEP-17	12-SEP-17	R3823758
4-Chloroaniline	<0.40		0.40	ug/L	08-SEP-17	12-SEP-17	R3823758
Bis(2-chloroethyl)ether	<0.40		0.40	ug/L	08-SEP-17	12-SEP-17	R3823758
Bis(2-chloroisopropyl)ether	<0.40		0.40	ug/L	08-SEP-17	12-SEP-17	R3823758
2-Chlorophenol	<0.30		0.30	ug/L	08-SEP-17	12-SEP-17	R3823758
3,3'-Dichlorobenzidine	<0.40		0.40	ug/L	08-SEP-17	12-SEP-17	R3823758
2,4-Dichlorophenol	<0.30		0.30	ug/L	08-SEP-17	12-SEP-17	R3823758
Diethylphthalate	<0.20		0.20	ug/L	08-SEP-17	12-SEP-17	R3823758
Dimethylphthalate	<0.20		0.20	ug/L	08-SEP-17	12-SEP-17	R3823758
2,4-Dimethylphenol	<0.50		0.50	ug/L	08-SEP-17	12-SEP-17	R3823758
2,4-Dinitrophenol	<1.0		1.0	ug/L	08-SEP-17	12-SEP-17	R3823758
2,4-Dinitrotoluene	<0.40		0.40	ug/L	08-SEP-17	12-SEP-17	R3823758
2,6-Dinitrotoluene	<0.40		0.40	ug/L	08-SEP-17	12-SEP-17	R3823758
2,4+2,6-Dinitrotoluene	<0.57		0.57	ug/L		12-SEP-17	
Bis(2-ethylhexyl)phthalate	<2.0		2.0	ug/L	08-SEP-17	12-SEP-17	R3823758
Pentachlorophenol	<0.50		0.50	ug/L	08-SEP-17	12-SEP-17	R3823758
Phenanthrene	<0.20		0.20	ug/L	08-SEP-17	12-SEP-17	R3823758
Phenol	<0.50		0.50	ug/L	08-SEP-17	12-SEP-17	R3823758
Pyrene	<0.20		0.20	ug/L	08-SEP-17	12-SEP-17	R3823758
1,2,4-Trichlorobenzene	<0.40		0.40	ug/L	08-SEP-17	12-SEP-17	R3823758
2,4,5-Trichlorophenol	<0.20		0.20	ug/L	08-SEP-17	12-SEP-17	R3823758
2,4,6-Trichlorophenol	<0.20		0.20	ug/L	08-SEP-17	12-SEP-17	R3823758

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-6 OW07-33 Sampled By: CLIENT on 31-AUG-17 @ 12:13 Matrix: WATER							
Semi-Volatile Organics							
Surrogate: 2-Fluorobiphenyl	103.0		50-140	%	08-SEP-17	12-SEP-17	R3823758
Surrogate: Nitrobenzene d5	100.3		50-140	%	08-SEP-17	12-SEP-17	R3823758
Surrogate: Phenol d5	52.9		30-130	%	08-SEP-17	12-SEP-17	R3823758
Surrogate: p-Terphenyl d14	92.2		60-140	%	08-SEP-17	12-SEP-17	R3823758
Surrogate: 2,4,6-Tribromophenol	132.7		50-140	%	08-SEP-17	12-SEP-17	R3823758
Polychlorinated Biphenyls							
Aroclor 1242	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824408
Aroclor 1248	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824408
Aroclor 1254	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824408
Aroclor 1260	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824408
Total PCBs	<0.040		0.040	ug/L	11-SEP-17	12-SEP-17	R3824408
Surrogate: 2-fluorobiphenyl	67.4		50-150	%	11-SEP-17	12-SEP-17	R3824408
L1985429-7 DUP1 Sampled By: CLIENT on 01-SEP-17 Matrix: WATER							
Physical Tests							
Conductivity	1.16		0.0030	mS/cm		05-SEP-17	R3819367
pH	7.34		0.10	pH units		05-SEP-17	R3819367
Anions and Nutrients							
Chloride (Cl)	182		0.50	mg/L		07-SEP-17	R3822437
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		11-SEP-17	R3824290
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					05-SEP-17	R3818464
Dissolved Metals Filtration Location	FIELD					05-SEP-17	R3818131
Antimony (Sb)-Dissolved	0.39		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Arsenic (As)-Dissolved	0.70		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Barium (Ba)-Dissolved	51.9		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Boron (B)-Dissolved	65		10	ug/L	05-SEP-17	06-SEP-17	R3821118
Cadmium (Cd)-Dissolved	0.691		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Cobalt (Co)-Dissolved	1.07		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Copper (Cu)-Dissolved	5.73		0.20	ug/L	05-SEP-17	06-SEP-17	R3821118
Lead (Pb)-Dissolved	15.6		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	05-SEP-17	05-SEP-17	R3819124
Molybdenum (Mo)-Dissolved	3.16		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Nickel (Ni)-Dissolved	5.48		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Selenium (Se)-Dissolved	0.509		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Sodium (Na)-Dissolved	99800		500	ug/L	05-SEP-17	06-SEP-17	R3821118
Thallium (Tl)-Dissolved	0.114		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-7 DUP1 Sampled By: CLIENT on 01-SEP-17 Matrix: WATER							
Dissolved Metals							
Uranium (U)-Dissolved	5.18		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Zinc (Zn)-Dissolved	639		1.0	ug/L	05-SEP-17	06-SEP-17	R3821118
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		05-SEP-17	R3820294
Volatile Organic Compounds							
Acetone	<30		30	ug/L		06-SEP-17	R3820370
Benzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Bromodichloromethane	<2.0		2.0	ug/L		06-SEP-17	R3820370
Bromoform	<5.0		5.0	ug/L		06-SEP-17	R3820370
Bromomethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
Carbon tetrachloride	<0.20		0.20	ug/L		06-SEP-17	R3820370
Chlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Dibromochloromethane	<2.0		2.0	ug/L		06-SEP-17	R3820370
Chloroform	<1.0		1.0	ug/L		06-SEP-17	R3820370
1,2-Dibromoethane	<0.20		0.20	ug/L		06-SEP-17	R3820370
1,2-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,3-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,4-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Dichlorodifluoromethane	<2.0		2.0	ug/L		06-SEP-17	R3820370
1,1-Dichloroethane	1.55		0.50	ug/L		06-SEP-17	R3820370
1,2-Dichloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1-Dichloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3820370
cis-1,2-Dichloroethylene	0.57	AIN	0.50	ug/L		06-SEP-17	R3820370
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Methylene Chloride	<5.0		5.0	ug/L		06-SEP-17	R3820370
1,2-Dichloropropane	<0.50		0.50	ug/L		06-SEP-17	R3820370
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		06-SEP-17	R3820370
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		06-SEP-17	R3820370
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		06-SEP-17	
1,4-Dioxane	<20		20	ug/L		06-SEP-17	R3820370
Ethylbenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
n-Hexane	<0.50		0.50	ug/L		06-SEP-17	R3820370
Methyl Ethyl Ketone	<20		20	ug/L		06-SEP-17	R3820370
Methyl Isobutyl Ketone	<20		20	ug/L		06-SEP-17	R3820370
MTBE	<2.0		2.0	ug/L		06-SEP-17	R3820370
Styrene	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
Tetrachloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Toluene	<0.50		0.50	ug/L		06-SEP-17	R3820370

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-7 DUP1 Sampled By: CLIENT on 01-SEP-17 Matrix: WATER							
Volatile Organic Compounds							
1,1,1-Trichloroethane	1.82		0.50	ug/L		06-SEP-17	R3820370
1,1,2-Trichloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
Trichloroethylene	0.86		0.50	ug/L		06-SEP-17	R3820370
Trichlorofluoromethane	<5.0		5.0	ug/L		06-SEP-17	R3820370
Vinyl chloride	<0.50		0.50	ug/L		06-SEP-17	R3820370
o-Xylene	<0.30		0.30	ug/L		06-SEP-17	R3820370
m+p-Xylenes	<0.40		0.40	ug/L		06-SEP-17	R3820370
Xylenes (Total)	<0.50		0.50	ug/L		06-SEP-17	
Surrogate: 4-Bromofluorobenzene	94.4		70-130	%		06-SEP-17	R3820370
Surrogate: 1,4-Difluorobenzene	100.1		70-130	%		06-SEP-17	R3820370
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		06-SEP-17	R3820370
F1-BTEX	<25		25	ug/L		12-SEP-17	
F2 (C10-C16)	<100		100	ug/L	06-SEP-17	06-SEP-17	R3821126
F2-Naphth	<100		100	ug/L		12-SEP-17	
F3 (C16-C34)	<250		250	ug/L	06-SEP-17	06-SEP-17	R3821126
F3-PAH	<250		250	ug/L		12-SEP-17	
F4 (C34-C50)	<250		250	ug/L	06-SEP-17	06-SEP-17	R3821126
Total Hydrocarbons (C6-C50)	<370		370	ug/L		12-SEP-17	
Chrom. to baseline at nC50	YES			ppm	06-SEP-17	06-SEP-17	R3821126
Surrogate: 2-Bromobenzotrifluoride	92.2		60-140	%	06-SEP-17	06-SEP-17	R3821126
Surrogate: 3,4-Dichlorotoluene	94.0		60-140	%		06-SEP-17	R3820370
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Acenaphthylene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Anthracene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Benzo(a)anthracene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Benzo(a)pyrene	<0.010		0.010	ug/L	06-SEP-17	11-SEP-17	R3823800
Benzo(b)fluoranthene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Benzo(k)fluoranthene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Chrysene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Fluoranthene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Fluorene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		12-SEP-17	
1-Methylnaphthalene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
2-Methylnaphthalene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Naphthalene	<0.050		0.050	ug/L	06-SEP-17	11-SEP-17	R3823800
Phenanthrene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-7 DUP1 Sampled By: CLIENT on 01-SEP-17 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Pyrene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Surrogate: d10-Acenaphthene	94.1		60-140	%	06-SEP-17	11-SEP-17	R3823800
Surrogate: d12-Chrysene	99.9		60-140	%	06-SEP-17	11-SEP-17	R3823800
Surrogate: d8-Naphthalene	88.4		60-140	%	06-SEP-17	11-SEP-17	R3823800
Surrogate: d10-Phenanthrene	109.0		60-140	%	06-SEP-17	11-SEP-17	R3823800
Semi-Volatile Organics							
Biphenyl	<0.40		0.40	ug/L	08-SEP-17	12-SEP-17	R3823758
4-Chloroaniline	<0.40		0.40	ug/L	08-SEP-17	12-SEP-17	R3823758
Bis(2-chloroethyl)ether	<0.40		0.40	ug/L	08-SEP-17	12-SEP-17	R3823758
Bis(2-chloroisopropyl)ether	<0.40		0.40	ug/L	08-SEP-17	12-SEP-17	R3823758
2-Chlorophenol	<0.30		0.30	ug/L	08-SEP-17	12-SEP-17	R3823758
3,3'-Dichlorobenzidine	<0.40		0.40	ug/L	08-SEP-17	12-SEP-17	R3823758
2,4-Dichlorophenol	<0.30		0.30	ug/L	08-SEP-17	12-SEP-17	R3823758
Diethylphthalate	<0.20		0.20	ug/L	08-SEP-17	12-SEP-17	R3823758
Dimethylphthalate	<0.20		0.20	ug/L	08-SEP-17	12-SEP-17	R3823758
2,4-Dimethylphenol	<0.50		0.50	ug/L	08-SEP-17	12-SEP-17	R3823758
2,4-Dinitrophenol	<1.0		1.0	ug/L	08-SEP-17	12-SEP-17	R3823758
2,4-Dinitrotoluene	<0.40		0.40	ug/L	08-SEP-17	12-SEP-17	R3823758
2,6-Dinitrotoluene	<0.40		0.40	ug/L	08-SEP-17	12-SEP-17	R3823758
2,4+2,6-Dinitrotoluene	<0.57		0.57	ug/L		12-SEP-17	
Bis(2-ethylhexyl)phthalate	<2.0		2.0	ug/L	08-SEP-17	12-SEP-17	R3823758
Pentachlorophenol	<0.50		0.50	ug/L	08-SEP-17	12-SEP-17	R3823758
Phenanthrene	<0.20		0.20	ug/L	08-SEP-17	12-SEP-17	R3823758
Phenol	<0.50		0.50	ug/L	08-SEP-17	12-SEP-17	R3823758
Pyrene	<0.20		0.20	ug/L	08-SEP-17	12-SEP-17	R3823758
1,2,4-Trichlorobenzene	<0.40		0.40	ug/L	08-SEP-17	12-SEP-17	R3823758
2,4,5-Trichlorophenol	<0.20		0.20	ug/L	08-SEP-17	12-SEP-17	R3823758
2,4,6-Trichlorophenol	<0.20		0.20	ug/L	08-SEP-17	12-SEP-17	R3823758
Surrogate: 2-Fluorobiphenyl	99.4		50-140	%	08-SEP-17	12-SEP-17	R3823758
Surrogate: Nitrobenzene d5	96.4		50-140	%	08-SEP-17	12-SEP-17	R3823758
Surrogate: Phenol d5	49.0		30-130	%	08-SEP-17	12-SEP-17	R3823758
Surrogate: p-Terphenyl d14	87.7		60-140	%	08-SEP-17	12-SEP-17	R3823758
Surrogate: 2,4,6-Tribromophenol	123.2		50-140	%	08-SEP-17	12-SEP-17	R3823758
Polychlorinated Biphenyls							
Aroclor 1242	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824408
Aroclor 1248	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824408
Aroclor 1254	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824408
Aroclor 1260	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824408
Total PCBs	<0.040		0.040	ug/L	11-SEP-17	12-SEP-17	R3824408
Surrogate: 2-fluorobiphenyl	75.6		50-150	%	11-SEP-17	12-SEP-17	R3824408
L1985429-8 OW11-I CLIENT on 01-SEP-17 @ 13:55							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-8 OW11-I Sampled By: CLIENT on 01-SEP-17 @ 13:55 Matrix: WATER							
Physical Tests							
Conductivity	0.594		0.0030	mS/cm		05-SEP-17	R3819367
pH	7.61		0.10	pH units		05-SEP-17	R3819367
Anions and Nutrients							
Chloride (Cl)	3.03		0.50	mg/L		07-SEP-17	R3822437
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		11-SEP-17	R3824290
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					05-SEP-17	R3818464
Dissolved Metals Filtration Location	FIELD					05-SEP-17	R3818131
Antimony (Sb)-Dissolved	0.13		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Arsenic (As)-Dissolved	0.18		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Barium (Ba)-Dissolved	46.4		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Boron (B)-Dissolved	80		10	ug/L	05-SEP-17	06-SEP-17	R3821118
Cadmium (Cd)-Dissolved	0.099		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Copper (Cu)-Dissolved	1.52		0.20	ug/L	05-SEP-17	06-SEP-17	R3821118
Lead (Pb)-Dissolved	8.09		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	05-SEP-17	05-SEP-17	R3819124
Molybdenum (Mo)-Dissolved	0.165		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Nickel (Ni)-Dissolved	<0.50		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Selenium (Se)-Dissolved	2.26		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Sodium (Na)-Dissolved	3000		500	ug/L	05-SEP-17	06-SEP-17	R3821118
Thallium (Tl)-Dissolved	0.062		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118
Uranium (U)-Dissolved	1.25		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Zinc (Zn)-Dissolved	56.9		1.0	ug/L	05-SEP-17	06-SEP-17	R3821118
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		05-SEP-17	R3820294
Volatile Organic Compounds							
Acetone	<30		30	ug/L		06-SEP-17	R3820370
Benzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Bromodichloromethane	<2.0		2.0	ug/L		06-SEP-17	R3820370
Bromoform	<5.0		5.0	ug/L		06-SEP-17	R3820370
Bromomethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
Carbon tetrachloride	<0.20		0.20	ug/L		06-SEP-17	R3820370
Chlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Dibromochloromethane	<2.0		2.0	ug/L		06-SEP-17	R3820370
Chloroform	<1.0		1.0	ug/L		06-SEP-17	R3820370
1,2-Dibromoethane	<0.20		0.20	ug/L		06-SEP-17	R3820370

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-8 OW11-I Sampled By: CLIENT on 01-SEP-17 @ 13:55 Matrix: WATER							
Volatile Organic Compounds							
1,2-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,3-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,4-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Dichlorodifluoromethane	<2.0		2.0	ug/L		06-SEP-17	R3820370
1,1-Dichloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,2-Dichloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1-Dichloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3820370
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3820370
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Methylene Chloride	<5.0		5.0	ug/L		06-SEP-17	R3820370
1,2-Dichloropropane	<0.50		0.50	ug/L		06-SEP-17	R3820370
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		06-SEP-17	R3820370
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		06-SEP-17	R3820370
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		06-SEP-17	
Ethylbenzene	<0.50		0.50	ug/L		06-SEP-17	R3820370
n-Hexane	<0.50		0.50	ug/L		06-SEP-17	R3820370
Methyl Ethyl Ketone	<20		20	ug/L		06-SEP-17	R3820370
Methyl Isobutyl Ketone	<20		20	ug/L		06-SEP-17	R3820370
MTBE	<2.0		2.0	ug/L		06-SEP-17	R3820370
Styrene	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
Tetrachloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Toluene	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1,1-Trichloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
1,1,2-Trichloroethane	<0.50		0.50	ug/L		06-SEP-17	R3820370
Trichloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3820370
Trichlorofluoromethane	<5.0		5.0	ug/L		06-SEP-17	R3820370
Vinyl chloride	<0.50		0.50	ug/L		06-SEP-17	R3820370
o-Xylene	<0.30		0.30	ug/L		06-SEP-17	R3820370
m+p-Xylenes	<0.40		0.40	ug/L		06-SEP-17	R3820370
Xylenes (Total)	<0.50		0.50	ug/L		06-SEP-17	
Surrogate: 4-Bromofluorobenzene	94.5		70-130	%		06-SEP-17	R3820370
Surrogate: 1,4-Difluorobenzene	101.3		70-130	%		06-SEP-17	R3820370
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		06-SEP-17	R3820370
F1-BTEX	<25		25	ug/L		11-SEP-17	
F2 (C10-C16)	<100		100	ug/L	06-SEP-17	06-SEP-17	R3821126
F2-Naphth	<100		100	ug/L		11-SEP-17	
F3 (C16-C34)	<250		250	ug/L	06-SEP-17	06-SEP-17	R3821126
F3-PAH	<250		250	ug/L		11-SEP-17	

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-8 OW11-I Sampled By: CLIENT on 01-SEP-17 @ 13:55 Matrix: WATER							
Hydrocarbons							
F4 (C34-C50)	<250		250	ug/L	06-SEP-17	06-SEP-17	R3821126
Total Hydrocarbons (C6-C50)	<370		370	ug/L		11-SEP-17	
Chrom. to baseline at nC50	YES			ppm	06-SEP-17	06-SEP-17	R3821126
Surrogate: 2-Bromobenzotrifluoride	110.1		60-140	%	06-SEP-17	06-SEP-17	R3821126
Surrogate: 3,4-Dichlorotoluene	94.1		60-140	%		06-SEP-17	R3820370
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Acenaphthylene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Anthracene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Benzo(a)anthracene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Benzo(a)pyrene	<0.010		0.010	ug/L	06-SEP-17	11-SEP-17	R3823800
Benzo(b)fluoranthene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Benzo(k)fluoranthene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Chrysene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Fluoranthene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Fluorene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		11-SEP-17	
1-Methylnaphthalene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
2-Methylnaphthalene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Naphthalene	<0.050		0.050	ug/L	06-SEP-17	11-SEP-17	R3823800
Phenanthrene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Pyrene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Surrogate: d10-Acenaphthene	92.1		60-140	%	06-SEP-17	11-SEP-17	R3823800
Surrogate: d12-Chrysene	103.9		60-140	%	06-SEP-17	11-SEP-17	R3823800
Surrogate: d8-Naphthalene	88.0		60-140	%	06-SEP-17	11-SEP-17	R3823800
Surrogate: d10-Phenanthrene	106.1		60-140	%	06-SEP-17	11-SEP-17	R3823800
L1985429-9 DUP2 Sampled By: CLIENT on 01-SEP-17 Matrix: WATER							
Physical Tests							
Conductivity	0.591		0.0030	mS/cm		05-SEP-17	R3819367
pH	7.60		0.10	pH units		05-SEP-17	R3819367
Anions and Nutrients							
Chloride (Cl)	2.92		0.50	mg/L		07-SEP-17	R3822437
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		11-SEP-17	R3824290
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					05-SEP-17	R3818464
Dissolved Metals Filtration Location	FIELD					05-SEP-17	R3818131

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-9 DUP2 Sampled By: CLIENT on 01-SEP-17 Matrix: WATER							
Dissolved Metals							
Antimony (Sb)-Dissolved	0.13		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Arsenic (As)-Dissolved	0.19		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Barium (Ba)-Dissolved	46.5		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Boron (B)-Dissolved	80		10	ug/L	05-SEP-17	06-SEP-17	R3821118
Cadmium (Cd)-Dissolved	0.100		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Copper (Cu)-Dissolved	1.53		0.20	ug/L	05-SEP-17	06-SEP-17	R3821118
Lead (Pb)-Dissolved	7.69		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	05-SEP-17	05-SEP-17	R3819124
Molybdenum (Mo)-Dissolved	0.172		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Nickel (Ni)-Dissolved	<0.50		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Selenium (Se)-Dissolved	2.14		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Sodium (Na)-Dissolved	2900		500	ug/L	05-SEP-17	06-SEP-17	R3821118
Thallium (Tl)-Dissolved	0.065		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118
Uranium (U)-Dissolved	1.38		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Zinc (Zn)-Dissolved	55.8		1.0	ug/L	05-SEP-17	06-SEP-17	R3821118
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		05-SEP-17	R3820294
Volatile Organic Compounds							
Acetone	<30		30	ug/L		06-SEP-17	R3818645
Benzene	<0.50		0.50	ug/L		06-SEP-17	R3818645
Bromodichloromethane	<2.0		2.0	ug/L		06-SEP-17	R3818645
Bromoform	<5.0		5.0	ug/L		06-SEP-17	R3818645
Bromomethane	<0.50		0.50	ug/L		06-SEP-17	R3818645
Carbon tetrachloride	<0.20		0.20	ug/L		06-SEP-17	R3818645
Chlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3818645
Dibromochloromethane	<2.0		2.0	ug/L		06-SEP-17	R3818645
Chloroform	<1.0		1.0	ug/L		06-SEP-17	R3818645
1,2-Dibromoethane	<0.20		0.20	ug/L		06-SEP-17	R3818645
1,2-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3818645
1,3-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3818645
1,4-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3818645
Dichlorodifluoromethane	<2.0		2.0	ug/L		06-SEP-17	R3818645
1,1-Dichloroethane	<0.50		0.50	ug/L		06-SEP-17	R3818645
1,2-Dichloroethane	<0.50		0.50	ug/L		06-SEP-17	R3818645
1,1-Dichloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3818645
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3818645

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-9 DUP2 Sampled By: CLIENT on 01-SEP-17 Matrix: WATER							
Volatile Organic Compounds							
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3818645
Methylene Chloride	<5.0		5.0	ug/L		06-SEP-17	R3818645
1,2-Dichloropropane	<0.50		0.50	ug/L		06-SEP-17	R3818645
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		06-SEP-17	R3818645
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		06-SEP-17	R3818645
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		06-SEP-17	
Ethylbenzene	<0.50		0.50	ug/L		06-SEP-17	R3818645
n-Hexane	<0.50		0.50	ug/L		06-SEP-17	R3818645
Methyl Ethyl Ketone	<20		20	ug/L		06-SEP-17	R3818645
Methyl Isobutyl Ketone	<20		20	ug/L		06-SEP-17	R3818645
MTBE	<2.0		2.0	ug/L		06-SEP-17	R3818645
Styrene	<0.50		0.50	ug/L		06-SEP-17	R3818645
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		06-SEP-17	R3818645
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		06-SEP-17	R3818645
Tetrachloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3818645
Toluene	<0.50		0.50	ug/L		06-SEP-17	R3818645
1,1,1-Trichloroethane	<0.50		0.50	ug/L		06-SEP-17	R3818645
1,1,2-Trichloroethane	<0.50		0.50	ug/L		06-SEP-17	R3818645
Trichloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3818645
Trichlorofluoromethane	<5.0		5.0	ug/L		06-SEP-17	R3818645
Vinyl chloride	<0.50		0.50	ug/L		06-SEP-17	R3818645
o-Xylene	<0.30		0.30	ug/L		06-SEP-17	R3818645
m+p-Xylenes	<0.40		0.40	ug/L		06-SEP-17	R3818645
Xylenes (Total)	<0.50		0.50	ug/L		06-SEP-17	
Surrogate: 4-Bromofluorobenzene	95.9		70-130	%		06-SEP-17	R3818645
Surrogate: 1,4-Difluorobenzene	100.5		70-130	%		06-SEP-17	R3818645
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		06-SEP-17	R3818645
F1-BTEX	<25		25	ug/L		11-SEP-17	
F2 (C10-C16)	<100		100	ug/L	06-SEP-17	06-SEP-17	R3821126
F2-Naphth	<100		100	ug/L		11-SEP-17	
F3 (C16-C34)	<250		250	ug/L	06-SEP-17	06-SEP-17	R3821126
F3-PAH	<250		250	ug/L		11-SEP-17	
F4 (C34-C50)	<250		250	ug/L	06-SEP-17	06-SEP-17	R3821126
Total Hydrocarbons (C6-C50)	<370		370	ug/L		11-SEP-17	
Chrom. to baseline at nC50	YES			ppm	06-SEP-17	06-SEP-17	R3821126
Surrogate: 2-Bromobenzotrifluoride	99.6		60-140	%	06-SEP-17	06-SEP-17	R3821126
Surrogate: 3,4-Dichlorotoluene	96.2		60-140	%		06-SEP-17	R3818645
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Acenaphthylene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-9 DUP2 Sampled By: CLIENT on 01-SEP-17 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Anthracene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Benzo(a)anthracene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Benzo(a)pyrene	<0.010		0.010	ug/L	06-SEP-17	11-SEP-17	R3823800
Benzo(b)fluoranthene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Benzo(k)fluoranthene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Chrysene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Fluoranthene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Fluorene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		11-SEP-17	
1-Methylnaphthalene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
2-Methylnaphthalene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Naphthalene	<0.050		0.050	ug/L	06-SEP-17	11-SEP-17	R3823800
Phenanthrene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Pyrene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Surrogate: d10-Acenaphthene	96.5		60-140	%	06-SEP-17	11-SEP-17	R3823800
Surrogate: d12-Chrysene	102.0		60-140	%	06-SEP-17	11-SEP-17	R3823800
Surrogate: d8-Naphthalene	93.4		60-140	%	06-SEP-17	11-SEP-17	R3823800
Surrogate: d10-Phenanthrene	109.1		60-140	%	06-SEP-17	11-SEP-17	R3823800
L1985429-10 OW11-II Sampled By: CLIENT on 01-SEP-17 @ 16:00 Matrix: WATER							
Physical Tests							
Conductivity	0.819		0.0030	mS/cm		05-SEP-17	R3819367
pH	7.57		0.10	pH units		05-SEP-17	R3819367
Anions and Nutrients							
Chloride (Cl)	65.6		0.50	mg/L		07-SEP-17	R3822437
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		11-SEP-17	R3824290
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					05-SEP-17	R3818464
Dissolved Metals Filtration Location	FIELD					05-SEP-17	R3818131
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Arsenic (As)-Dissolved	1.78		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Barium (Ba)-Dissolved	137		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Boron (B)-Dissolved	143		10	ug/L	05-SEP-17	06-SEP-17	R3821118
Cadmium (Cd)-Dissolved	0.363		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Cobalt (Co)-Dissolved	5.74		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-10 OW11-II Sampled By: CLIENT on 01-SEP-17 @ 16:00 Matrix: WATER							
Dissolved Metals							
Copper (Cu)-Dissolved	0.73		0.20	ug/L	05-SEP-17	06-SEP-17	R3821118
Lead (Pb)-Dissolved	1.60		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	05-SEP-17	05-SEP-17	R3819124
Molybdenum (Mo)-Dissolved	1.41		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Nickel (Ni)-Dissolved	2.74		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Selenium (Se)-Dissolved	0.086		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Sodium (Na)-Dissolved	48400		500	ug/L	05-SEP-17	06-SEP-17	R3821118
Thallium (Tl)-Dissolved	0.265		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118
Uranium (U)-Dissolved	1.06		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Zinc (Zn)-Dissolved	435		1.0	ug/L	05-SEP-17	06-SEP-17	R3821118
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		07-SEP-17	R3821991
Volatile Organic Compounds							
Acetone	<30		30	ug/L		06-SEP-17	R3818645
Benzene	<0.50		0.50	ug/L		06-SEP-17	R3818645
Bromodichloromethane	<2.0		2.0	ug/L		06-SEP-17	R3818645
Bromoform	<5.0		5.0	ug/L		06-SEP-17	R3818645
Bromomethane	<0.50		0.50	ug/L		06-SEP-17	R3818645
Carbon tetrachloride	<0.20		0.20	ug/L		06-SEP-17	R3818645
Chlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3818645
Dibromochloromethane	<2.0		2.0	ug/L		06-SEP-17	R3818645
Chloroform	<1.0		1.0	ug/L		06-SEP-17	R3818645
1,2-Dibromoethane	<0.20		0.20	ug/L		06-SEP-17	R3818645
1,2-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3818645
1,3-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3818645
1,4-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3818645
Dichlorodifluoromethane	<2.0		2.0	ug/L		06-SEP-17	R3818645
1,1-Dichloroethane	29.5		0.50	ug/L		06-SEP-17	R3818645
1,2-Dichloroethane	<0.50		0.50	ug/L		06-SEP-17	R3818645
1,1-Dichloroethylene	0.74		0.50	ug/L		06-SEP-17	R3818645
cis-1,2-Dichloroethylene	1.01		0.50	ug/L		06-SEP-17	R3818645
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3818645
Methylene Chloride	<5.0		5.0	ug/L		06-SEP-17	R3818645
1,2-Dichloropropane	<0.50		0.50	ug/L		06-SEP-17	R3818645
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		06-SEP-17	R3818645
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		06-SEP-17	R3818645
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		06-SEP-17	
Ethylbenzene	<0.50		0.50	ug/L		06-SEP-17	R3818645
n-Hexane	<0.50		0.50	ug/L		06-SEP-17	R3818645

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-10 OW11-II Sampled By: CLIENT on 01-SEP-17 @ 16:00 Matrix: WATER							
Volatile Organic Compounds							
Methyl Ethyl Ketone	<20		20	ug/L		06-SEP-17	R3818645
Methyl Isobutyl Ketone	<20		20	ug/L		06-SEP-17	R3818645
MTBE	<2.0		2.0	ug/L		06-SEP-17	R3818645
Styrene	<0.50		0.50	ug/L		06-SEP-17	R3818645
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		06-SEP-17	R3818645
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		06-SEP-17	R3818645
Tetrachloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3818645
Toluene	<0.50		0.50	ug/L		06-SEP-17	R3818645
1,1,1-Trichloroethane	37.1		0.50	ug/L		06-SEP-17	R3818645
1,1,2-Trichloroethane	<0.50		0.50	ug/L		06-SEP-17	R3818645
Trichloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3818645
Trichlorofluoromethane	<5.0		5.0	ug/L		06-SEP-17	R3818645
Vinyl chloride	0.87		0.50	ug/L		06-SEP-17	R3818645
o-Xylene	<0.30		0.30	ug/L		06-SEP-17	R3818645
m+p-Xylenes	<0.40		0.40	ug/L		06-SEP-17	R3818645
Xylenes (Total)	<0.50		0.50	ug/L		06-SEP-17	
Surrogate: 4-Bromofluorobenzene	96.1		70-130	%		06-SEP-17	R3818645
Surrogate: 1,4-Difluorobenzene	99.8		70-130	%		06-SEP-17	R3818645
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		06-SEP-17	R3818645
F1-BTEX	<25		25	ug/L		11-SEP-17	
F2 (C10-C16)	<100		100	ug/L	06-SEP-17	06-SEP-17	R3821126
F2-Naphth	<100		100	ug/L		11-SEP-17	
F3 (C16-C34)	<250		250	ug/L	06-SEP-17	06-SEP-17	R3821126
F3-PAH	<250		250	ug/L		11-SEP-17	
F4 (C34-C50)	<250		250	ug/L	06-SEP-17	06-SEP-17	R3821126
Total Hydrocarbons (C6-C50)	<370		370	ug/L		11-SEP-17	
Chrom. to baseline at nC50	YES			ppm	06-SEP-17	06-SEP-17	R3821126
Surrogate: 2-Bromobenzotrifluoride	100.4		60-140	%	06-SEP-17	06-SEP-17	R3821126
Surrogate: 3,4-Dichlorotoluene	97.1		60-140	%		06-SEP-17	R3818645
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Acenaphthylene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Anthracene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Benzo(a)anthracene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Benzo(a)pyrene	<0.010		0.010	ug/L	06-SEP-17	11-SEP-17	R3823800
Benzo(b)fluoranthene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Benzo(k)fluoranthene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Chrysene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-10 OW11-II Sampled By: CLIENT on 01-SEP-17 @ 16:00 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Fluoranthene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Fluorene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		11-SEP-17	
1-Methylnaphthalene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
2-Methylnaphthalene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Naphthalene	<0.050		0.050	ug/L	06-SEP-17	11-SEP-17	R3823800
Phenanthrene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Pyrene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Surrogate: d10-Acenaphthene	90.8		60-140	%	06-SEP-17	11-SEP-17	R3823800
Surrogate: d12-Chrysene	95.7		60-140	%	06-SEP-17	11-SEP-17	R3823800
Surrogate: d8-Naphthalene	85.8		60-140	%	06-SEP-17	11-SEP-17	R3823800
Surrogate: d10-Phenanthrene	104.5		60-140	%	06-SEP-17	11-SEP-17	R3823800
L1985429-11 DUP3 Sampled By: CLIENT on 01-SEP-17 Matrix: WATER							
Physical Tests							
Conductivity	0.822		0.0030	mS/cm		05-SEP-17	R3819367
pH	7.60		0.10	pH units		05-SEP-17	R3819367
Anions and Nutrients							
Chloride (Cl)	66.1		0.50	mg/L		07-SEP-17	R3822437
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		11-SEP-17	R3824290
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					05-SEP-17	R3818464
Dissolved Metals Filtration Location	FIELD					05-SEP-17	R3818131
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Arsenic (As)-Dissolved	1.91		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Barium (Ba)-Dissolved	140		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Boron (B)-Dissolved	135		10	ug/L	05-SEP-17	06-SEP-17	R3821118
Cadmium (Cd)-Dissolved	0.354		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Cobalt (Co)-Dissolved	5.79		0.10	ug/L	05-SEP-17	06-SEP-17	R3821118
Copper (Cu)-Dissolved	0.64		0.20	ug/L	05-SEP-17	06-SEP-17	R3821118
Lead (Pb)-Dissolved	1.68		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	05-SEP-17	05-SEP-17	R3819124
Molybdenum (Mo)-Dissolved	1.34		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Nickel (Ni)-Dissolved	2.70		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Selenium (Se)-Dissolved	0.078		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	05-SEP-17	06-SEP-17	R3821118
Sodium (Na)-Dissolved	50200		500	ug/L	05-SEP-17	06-SEP-17	R3821118

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-11 DUP3 Sampled By: CLIENT on 01-SEP-17 Matrix: WATER							
Dissolved Metals							
Thallium (Tl)-Dissolved	0.282		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118
Uranium (U)-Dissolved	1.07		0.010	ug/L	05-SEP-17	06-SEP-17	R3821118
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	05-SEP-17	06-SEP-17	R3821118
Zinc (Zn)-Dissolved	435		1.0	ug/L	05-SEP-17	06-SEP-17	R3821118
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		07-SEP-17	R3821991
Volatile Organic Compounds							
Acetone	<30		30	ug/L		06-SEP-17	R3818645
Benzene	<0.50		0.50	ug/L		06-SEP-17	R3818645
Bromodichloromethane	<2.0		2.0	ug/L		06-SEP-17	R3818645
Bromoform	<5.0		5.0	ug/L		06-SEP-17	R3818645
Bromomethane	<0.50		0.50	ug/L		06-SEP-17	R3818645
Carbon tetrachloride	<0.20		0.20	ug/L		06-SEP-17	R3818645
Chlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3818645
Dibromochloromethane	<2.0		2.0	ug/L		06-SEP-17	R3818645
Chloroform	<1.0		1.0	ug/L		06-SEP-17	R3818645
1,2-Dibromoethane	<0.20		0.20	ug/L		06-SEP-17	R3818645
1,2-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3818645
1,3-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3818645
1,4-Dichlorobenzene	<0.50		0.50	ug/L		06-SEP-17	R3818645
Dichlorodifluoromethane	<2.0		2.0	ug/L		06-SEP-17	R3818645
1,1-Dichloroethane	28.1		0.50	ug/L		06-SEP-17	R3818645
1,2-Dichloroethane	<0.50		0.50	ug/L		06-SEP-17	R3818645
1,1-Dichloroethylene	0.67		0.50	ug/L		06-SEP-17	R3818645
cis-1,2-Dichloroethylene	0.96		0.50	ug/L		06-SEP-17	R3818645
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3818645
Methylene Chloride	<5.0		5.0	ug/L		06-SEP-17	R3818645
1,2-Dichloropropane	<0.50		0.50	ug/L		06-SEP-17	R3818645
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		06-SEP-17	R3818645
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		06-SEP-17	R3818645
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		06-SEP-17	
Ethylbenzene	<0.50		0.50	ug/L		06-SEP-17	R3818645
n-Hexane	<0.50		0.50	ug/L		06-SEP-17	R3818645
Methyl Ethyl Ketone	<20		20	ug/L		06-SEP-17	R3818645
Methyl Isobutyl Ketone	<20		20	ug/L		06-SEP-17	R3818645
MTBE	<2.0		2.0	ug/L		06-SEP-17	R3818645
Styrene	<0.50		0.50	ug/L		06-SEP-17	R3818645
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		06-SEP-17	R3818645
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		06-SEP-17	R3818645
Tetrachloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3818645
Toluene	<0.50		0.50	ug/L		06-SEP-17	R3818645

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-11 DUP3 Sampled By: CLIENT on 01-SEP-17 Matrix: WATER							
Volatile Organic Compounds							
1,1,1-Trichloroethane	34.5		0.50	ug/L		06-SEP-17	R3818645
1,1,2-Trichloroethane	<0.50		0.50	ug/L		06-SEP-17	R3818645
Trichloroethylene	<0.50		0.50	ug/L		06-SEP-17	R3818645
Trichlorofluoromethane	<5.0		5.0	ug/L		06-SEP-17	R3818645
Vinyl chloride	0.77		0.50	ug/L		06-SEP-17	R3818645
o-Xylene	<0.30		0.30	ug/L		06-SEP-17	R3818645
m+p-Xylenes	<0.40		0.40	ug/L		06-SEP-17	R3818645
Xylenes (Total)	<0.50		0.50	ug/L		06-SEP-17	
Surrogate: 4-Bromofluorobenzene	94.8		70-130	%		06-SEP-17	R3818645
Surrogate: 1,4-Difluorobenzene	100.1		70-130	%		06-SEP-17	R3818645
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		06-SEP-17	R3818645
F1-BTEX	<25		25	ug/L		11-SEP-17	
F2 (C10-C16)	<100		100	ug/L	06-SEP-17	06-SEP-17	R3821126
F2-Naphth	<100		100	ug/L		11-SEP-17	
F3 (C16-C34)	<250		250	ug/L	06-SEP-17	06-SEP-17	R3821126
F3-PAH	<250		250	ug/L		11-SEP-17	
F4 (C34-C50)	<250		250	ug/L	06-SEP-17	06-SEP-17	R3821126
Total Hydrocarbons (C6-C50)	<370		370	ug/L		11-SEP-17	
Chrom. to baseline at nC50	YES			ppm	06-SEP-17	06-SEP-17	R3821126
Surrogate: 2-Bromobenzotrifluoride	96.0		60-140	%	06-SEP-17	06-SEP-17	R3821126
Surrogate: 3,4-Dichlorotoluene	101.7		60-140	%		06-SEP-17	R3818645
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Acenaphthylene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Anthracene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Benzo(a)anthracene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Benzo(a)pyrene	<0.010		0.010	ug/L	06-SEP-17	11-SEP-17	R3823800
Benzo(b)fluoranthene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Benzo(k)fluoranthene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Chrysene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Fluoranthene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Fluorene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		11-SEP-17	
1-Methylnaphthalene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
2-Methylnaphthalene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Naphthalene	<0.050		0.050	ug/L	06-SEP-17	11-SEP-17	R3823800
Phenanthrene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-11 DUP3 Sampled By: CLIENT on 01-SEP-17 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Pyrene	<0.020		0.020	ug/L	06-SEP-17	11-SEP-17	R3823800
Surrogate: d10-Acenaphthene	91.3		60-140	%	06-SEP-17	11-SEP-17	R3823800
Surrogate: d12-Chrysene	99.6		60-140	%	06-SEP-17	11-SEP-17	R3823800
Surrogate: d8-Naphthalene	84.6		60-140	%	06-SEP-17	11-SEP-17	R3823800
Surrogate: d10-Phenanthrene	106.5		60-140	%	06-SEP-17	11-SEP-17	R3823800
L1985429-12 TRIP BLANK 2 Sampled By: CLIENT on 01-SEP-17 Matrix: WATER							
Volatile Organic Compounds							
Acetone	<30		30	ug/L		07-SEP-17	R3821109
Benzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Bromodichloromethane	<2.0		2.0	ug/L		07-SEP-17	R3821109
Bromoform	<5.0		5.0	ug/L		07-SEP-17	R3821109
Bromomethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
Carbon tetrachloride	<0.20		0.20	ug/L		07-SEP-17	R3821109
Chlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Dibromochloromethane	<2.0		2.0	ug/L		07-SEP-17	R3821109
Chloroform	<1.0		1.0	ug/L		07-SEP-17	R3821109
1,2-Dibromoethane	<0.20		0.20	ug/L		07-SEP-17	R3821109
1,2-Dichlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,3-Dichlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,4-Dichlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Dichlorodifluoromethane	<2.0		2.0	ug/L		07-SEP-17	R3821109
1,1-Dichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,2-Dichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1-Dichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Methylene Chloride	<5.0		5.0	ug/L		07-SEP-17	R3821109
1,2-Dichloropropane	<0.50		0.50	ug/L		07-SEP-17	R3821109
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		07-SEP-17	R3821109
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		07-SEP-17	R3821109
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		07-SEP-17	
Ethylbenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
n-Hexane	<0.50		0.50	ug/L		07-SEP-17	R3821109
Methyl Ethyl Ketone	<20		20	ug/L		07-SEP-17	R3821109
Methyl Isobutyl Ketone	<20		20	ug/L		07-SEP-17	R3821109
MTBE	<2.0		2.0	ug/L		07-SEP-17	R3821109
Styrene	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
Tetrachloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-12 TRIP BLANK 2 Sampled By: CLIENT on 01-SEP-17 Matrix: WATER							
Volatile Organic Compounds							
Toluene	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1,1-Trichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1,2-Trichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
Trichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Trichlorofluoromethane	<5.0		5.0	ug/L		07-SEP-17	R3821109
Vinyl chloride	<0.50		0.50	ug/L		07-SEP-17	R3821109
o-Xylene	<0.30		0.30	ug/L		07-SEP-17	R3821109
m+p-Xylenes	<0.40		0.40	ug/L		07-SEP-17	R3821109
Xylenes (Total)	<0.50		0.50	ug/L		07-SEP-17	
Surrogate: 4-Bromofluorobenzene	93.1		70-130	%		07-SEP-17	R3821109
Surrogate: 1,4-Difluorobenzene	99.8		70-130	%		07-SEP-17	R3821109
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		07-SEP-17	R3821109
F1-BTEX	<25		25	ug/L		07-SEP-17	
Surrogate: 3,4-Dichlorotoluene	92.7		60-140	%		07-SEP-17	R3821109
L1985429-13 TRIP BLANK 3 Sampled By: CLIENT on 01-SEP-17 Matrix: WATER							
Volatile Organic Compounds							
Acetone	<30		30	ug/L		07-SEP-17	R3821109
Benzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Bromodichloromethane	<2.0		2.0	ug/L		07-SEP-17	R3821109
Bromoform	<5.0		5.0	ug/L		07-SEP-17	R3821109
Bromomethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
Carbon tetrachloride	<0.20		0.20	ug/L		07-SEP-17	R3821109
Chlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Dibromochloromethane	<2.0		2.0	ug/L		07-SEP-17	R3821109
Chloroform	<1.0		1.0	ug/L		07-SEP-17	R3821109
1,2-Dibromoethane	<0.20		0.20	ug/L		07-SEP-17	R3821109
1,2-Dichlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,3-Dichlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,4-Dichlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Dichlorodifluoromethane	<2.0		2.0	ug/L		07-SEP-17	R3821109
1,1-Dichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,2-Dichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1-Dichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Methylene Chloride	<5.0		5.0	ug/L		07-SEP-17	R3821109
1,2-Dichloropropane	<0.50		0.50	ug/L		07-SEP-17	R3821109
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		07-SEP-17	R3821109
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		07-SEP-17	R3821109

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1985429-13 TRIP BLANK 3 Sampled By: CLIENT on 01-SEP-17 Matrix: WATER							
Volatile Organic Compounds							
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		07-SEP-17	
Ethylbenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
n-Hexane	<0.50		0.50	ug/L		07-SEP-17	R3821109
Methyl Ethyl Ketone	<20		20	ug/L		07-SEP-17	R3821109
Methyl Isobutyl Ketone	<20		20	ug/L		07-SEP-17	R3821109
MTBE	<2.0		2.0	ug/L		07-SEP-17	R3821109
Styrene	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
Tetrachloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Toluene	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1,1-Trichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1,2-Trichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
Trichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Trichlorofluoromethane	<5.0		5.0	ug/L		07-SEP-17	R3821109
Vinyl chloride	<0.50		0.50	ug/L		07-SEP-17	R3821109
o-Xylene	<0.30		0.30	ug/L		07-SEP-17	R3821109
m+p-Xylenes	<0.40		0.40	ug/L		07-SEP-17	R3821109
Xylenes (Total)	<0.50		0.50	ug/L		07-SEP-17	
Surrogate: 4-Bromofluorobenzene	92.6		70-130	%		07-SEP-17	R3821109
Surrogate: 1,4-Difluorobenzene	100.1		70-130	%		07-SEP-17	R3821109
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		07-SEP-17	R3821109
F1-BTEX	<25		25	ug/L		07-SEP-17	
Surrogate: 3,4-Dichlorotoluene	99.3		60-140	%		07-SEP-17	R3821109

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Laboratory Control Sample	Pentachlorophenol	LCS-H	L1985429-6, -7
Matrix Spike	Chloride (Cl)	MS-B	L1985429-1, -10, -11, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1985429-1, -10, -11, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Boron (B)-Dissolved	MS-B	L1985429-1, -10, -11, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1985429-1, -10, -11, -2, -3, -4, -5, -6, -7, -8, -9

Sample Parameter Qualifier key listed:

Qualifier	Description
AIN	Approximate Result: Interference Suspected
LCS-H	Lab Control Sample recovery was above ALS DQO. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
PEHT	Parameter Exceeded Recommended Holding Time Prior to Analysis

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
1,4-DIOXANE-WT	Water	1,4-Dioxane by Headspace GC/MS	SW846 8260

An aliquot of the sample is analyzed directly by headspace technology, followed by GC/MS using isotopic dilution.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

625-511-WT	Water	ABN,CP,PAH-O.Reg 153/04	SW846 8270 (511)

Ground water sample extraction is carried out at a pH <2 (acid extractables) and pH>11 (base neutral extractables). Extracts are dried, concentrated and exchanged into a solvent compatible with the cleanup. Analysis is by GC/MS. Depending on the analytical GC/MS column used benzo(j)fluoranthene may chromatographically co-elute with benzo(b)fluoranthene or benzo(k)fluoranthene.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Water	Cyanide (WAD)-O.Reg 153/04	APHA 4500CN I-Weak acid Dist Colorimet

Weak acid dissociable cyanide (WAD) is determined by undergoing a distillation procedure. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-R511-WT	Water	Hex Chrom-O.Reg 153/04 (July 2011)	EPA 7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

DINITROTOL-CALC-WT	Water	ABN-Calculated Parameters	SW846 8270
EC-R511-WT	Water	Conductivity-O.Reg 153/04 (July 2011)	APHA 2510 B

Water samples can be measured directly by immersing the conductivity cell into the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-F4-511-CALC-WT	Water	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-L

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH

Reference Information

represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Water	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Water	F2-F4-O.Reg 153/04 (July 2011)	MOE DECPH-E3398/CCME TIER 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from water using a hexane micro-extraction technique. Instrumental analysis is by GC-FID, as per the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Tier 1 Method, CCME, 2001.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

HG-D-UG/L-CVAA-WT	Water	Diss. Mercury in Water by CVAAS (ug/L)	EPA 1631E (mod)

Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8

The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT	Water	PAH-Calculated Parameters	SW846 8270

PAH-511-WT	Water	PAH-O. Reg 153/04 (July 2011)	SW846 3510/8270

Aqueous samples, fortified with surrogates, are extracted using liquid/liquid extraction technique. The sample extracts are concentrated and then analyzed using GC/MS. Depending on the analytical GC/MS column used benzo(j)fluoranthene may chromatographically co-elute with benzo(b)fluoranthene or benzo(k)fluoranthene.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PCB-511-WT	Water	PCB-O. Reg 153/04 (July 2011)	SW846 3510/8082

Aqueous samples are extracted, then concentrated, reconstituted, and analyzed by GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

PH-WT	Water	pH	APHA 4500 H-Electrode

Water samples are analyzed directly by a calibrated pH meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Holdtime for samples under this regulation is 28 days

VOC-1,3-DCP-CALC-WT	Water	Regulation 153 VOCs	SW8260B/SW8270C

VOC-511-HS-WT	Water	VOC by GCMS HS O.Reg 153/04 (July 2011)	SW846 8260

Liquid samples are analyzed by headspace GC/MSD.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental

Reference Information

Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L1985429 Report Date: 12-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
1,4-DIOXANE-WT	**Water**							
Batch R3820370								
WG2603492-4 DUP		**WG2603492-3**						
1,4-Dioxane		<20	<20	RPD-NA	ug/L	N/A	30	06-SEP-17
WG2603492-1 LCS								
1,4-Dioxane			103.8		%		60-140	06-SEP-17
WG2603492-2 MB								
1,4-Dioxane			<20		ug/L		20	06-SEP-17
WG2603492-5 MS		**WG2603492-3**						
1,4-Dioxane			91.1		%		50-140	06-SEP-17
625-511-WT	**Water**							
Batch R3823758								
WG2611207-2 LCS								
1,2,4-Trichlorobenzene			81.9		%		50-140	11-SEP-17
2-Chlorophenol			84.8		%		50-140	11-SEP-17
2,4-Dichlorophenol			97.8		%		50-140	11-SEP-17
2,4-Dimethylphenol			95.1		%		30-130	11-SEP-17
2,4-Dinitrophenol			138.2		%		50-140	11-SEP-17
2,4-Dinitrotoluene			105.3		%		50-140	11-SEP-17
2,4,5-Trichlorophenol			109.6		%		50-140	11-SEP-17
2,4,6-Trichlorophenol			103.4		%		50-140	11-SEP-17
2,6-Dinitrotoluene			97.5		%		50-140	11-SEP-17
3,3'-Dichlorobenzidine			81.4		%		30-130	11-SEP-17
4-Chloroaniline			49.1		%		30-130	11-SEP-17
Biphenyl			91.9		%		50-140	11-SEP-17
Bis(2-chloroethyl)ether			90.0		%		50-140	11-SEP-17
Bis(2-chloroisopropyl)ether			88.9		%		50-140	11-SEP-17
Bis(2-ethylhexyl)phthalate			73.1		%		50-140	11-SEP-17
Diethylphthalate			86.5		%		50-140	11-SEP-17
Dimethylphthalate			84.8		%		50-140	11-SEP-17
Pentachlorophenol			140.1	LCS-H	%		50-140	11-SEP-17
Phenanthrene			94.4		%		50-140	11-SEP-17
Phenol			48.7		%		30-130	11-SEP-17
Pyrene			77.1		%		50-140	11-SEP-17
WG2611207-3 LCSD		**WG2611207-2**						
1,2,4-Trichlorobenzene		81.9	83.6		%	2.0	50	11-SEP-17
2-Chlorophenol		84.8	91.2		%	7.3	50	11-SEP-17

Quality Control Report

Workorder: L1985429 Report Date: 12-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Water**							
Batch R3823758								
WG2611207-3 LCSD		**WG2611207-2**						
2,4-Dichlorophenol		97.8	103.9		%	6.0	50	11-SEP-17
2,4-Dimethylphenol		95.1	112.5		%	17	50	11-SEP-17
2,4-Dinitrophenol		138.2	130.5		%	5.7	50	11-SEP-17
2,4-Dinitrotoluene		105.3	109.1		%	3.5	50	11-SEP-17
2,4,5-Trichlorophenol		109.6	117.8		%	7.2	50	11-SEP-17
2,4,6-Trichlorophenol		103.4	109.4		%	5.6	50	11-SEP-17
2,6-Dinitrotoluene		97.5	104.3		%	6.7	50	11-SEP-17
3,3'-Dichlorobenzidine		81.4	76.1		%	6.8	50	11-SEP-17
4-Chloroaniline		49.1	72.5		%	38	50	11-SEP-17
Biphenyl		91.9	95.2		%	3.5	50	11-SEP-17
Bis(2-chloroethyl)ether		90.0	93.2		%	3.5	50	11-SEP-17
Bis(2-chloroisopropyl)ether		88.9	90.8		%	2.2	50	11-SEP-17
Bis(2-ethylhexyl)phthalate		73.1	78.5		%	7.2	50	11-SEP-17
Diethylphthalate		86.5	91.5		%	5.7	50	11-SEP-17
Dimethylphthalate		84.8	89.1		%	4.9	50	11-SEP-17
Pentachlorophenol		140.1	142.1		%	1.4	50	11-SEP-17
Phenanthrene		94.4	99.0		%	4.7	50	11-SEP-17
Phenol		48.7	51.6		%	5.9	50	11-SEP-17
Pyrene		77.1	86.2		%	11	50	11-SEP-17
WG2611207-1 MB								
1,2,4-Trichlorobenzene			<0.40		ug/L		0.4	11-SEP-17
2-Chlorophenol			<0.30		ug/L		0.3	11-SEP-17
2,4-Dichlorophenol			<0.30		ug/L		0.3	11-SEP-17
2,4-Dimethylphenol			<0.50		ug/L		0.5	11-SEP-17
2,4-Dinitrophenol			<1.0		ug/L		1	11-SEP-17
2,4-Dinitrotoluene			<0.40		ug/L		0.4	11-SEP-17
2,4,5-Trichlorophenol			<0.20		ug/L		0.2	11-SEP-17
2,4,6-Trichlorophenol			<0.20		ug/L		0.2	11-SEP-17
2,6-Dinitrotoluene			<0.40		ug/L		0.4	11-SEP-17
3,3'-Dichlorobenzidine			<0.40		ug/L		0.4	11-SEP-17
4-Chloroaniline			<0.40		ug/L		0.4	11-SEP-17
Biphenyl			<0.40		ug/L		0.4	11-SEP-17
Bis(2-chloroethyl)ether			<0.40		ug/L		0.4	11-SEP-17

Quality Control Report

Workorder: L1985429 Report Date: 12-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Water**							
Batch R3823758								
WG2611207-1 MB								
Bis(2-chloroisopropyl)ether			<0.40		ug/L		0.4	11-SEP-17
Bis(2-ethylhexyl)phthalate			<2.0		ug/L		2	11-SEP-17
Diethylphthalate			<0.20		ug/L		0.2	11-SEP-17
Dimethylphthalate			<0.20		ug/L		0.2	11-SEP-17
Pentachlorophenol			<0.50		ug/L		0.5	11-SEP-17
Phenanthrene			<0.20		ug/L		0.2	11-SEP-17
Phenol			<0.50		ug/L		0.5	11-SEP-17
Pyrene			<0.20		ug/L		0.2	11-SEP-17
Surrogate: 2-Fluorobiphenyl			98.5		%		50-140	11-SEP-17
Surrogate: 2,4,6-Tribromophenol			99.9		%		50-140	11-SEP-17
Surrogate: Nitrobenzene d5			99.0		%		50-140	11-SEP-17
Surrogate: p-Terphenyl d14			91.2		%		60-140	11-SEP-17
Surrogate: Phenol d5			46.1		%		30-130	11-SEP-17
CL-IC-N-WT	**Water**							
Batch R3822437								
WG2610799-4 DUP		**L1985429-2**						
Chloride (Cl)		162	162		mg/L	0.1	20	07-SEP-17
WG2610799-2 LCS								
Chloride (Cl)			103.1		%		90-110	07-SEP-17
WG2610799-1 MB								
Chloride (Cl)			<0.50		mg/L		0.5	07-SEP-17
WG2610799-5 MS		**L1985429-2**						
Chloride (Cl)			N/A	MS-B	%		-	07-SEP-17
CN-WAD-R511-WT	**Water**							
Batch R3824290								
WG2612840-3 DUP		**L1985429-1**						
Cyanide, Weak Acid Diss		<2.0	<2.0	RPD-NA	ug/L	N/A	20	11-SEP-17
WG2612840-2 LCS								
Cyanide, Weak Acid Diss			105.9		%		80-120	11-SEP-17
WG2612840-1 MB								
Cyanide, Weak Acid Diss			<2.0		ug/L		2	11-SEP-17
WG2612840-4 MS		**L1985429-1**						
Cyanide, Weak Acid Diss			100.7		%		70-130	11-SEP-17
CR-CR6-IC-R511-WT	**Water**							

Quality Control Report

Workorder: L1985429 Report Date: 12-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CR-CR6-IC-R511-WT	**Water**							
Batch R3820294								
WG2605936-9 DUP		**WG2605936-8**						
Chromium, Hexavalent		<1.0	<1.0	RPD-NA	ug/L	N/A	20	05-SEP-17
WG2605936-7 LCS								
Chromium, Hexavalent			101.5		%		80-120	05-SEP-17
WG2605936-6 MB								
Chromium, Hexavalent			<1.0		ug/L		1	05-SEP-17
WG2605936-10 MS		**WG2605936-8**						
Chromium, Hexavalent			98.0		%		70-130	05-SEP-17
Batch R3821991								
WG2610623-4 DUP		**WG2610623-3**						
Chromium, Hexavalent		<1.0	<1.0	RPD-NA	ug/L	N/A	20	07-SEP-17
WG2610623-2 LCS								
Chromium, Hexavalent			101.6		%		80-120	07-SEP-17
WG2610623-1 MB								
Chromium, Hexavalent			<1.0		ug/L		1	07-SEP-17
WG2610623-5 MS		**WG2610623-3**						
Chromium, Hexavalent			98.1		%		70-130	07-SEP-17
EC-R511-WT	**Water**							
Batch R3819367								
WG2608464-4 DUP		**WG2608464-3**						
Conductivity		1.28	1.28		mS/cm	0.0	10	05-SEP-17
WG2608464-8 DUP		**WG2608464-7**						
Conductivity		2.96	2.95		mS/cm	0.3	10	05-SEP-17
WG2608464-2 LCS								
Conductivity			101.6		%		90-110	05-SEP-17
WG2608464-6 LCS								
Conductivity			101.3		%		90-110	05-SEP-17
WG2608464-1 MB								
Conductivity			<0.0030		mS/cm		0.003	05-SEP-17
WG2608464-5 MB								
Conductivity			<0.0030		mS/cm		0.003	05-SEP-17
F1-HS-511-WT	**Water**							
Batch R3818645								
WG2604829-4 DUP		**WG2604829-3**						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	06-SEP-17
WG2604829-1 LCS								
F1 (C6-C10)			101.5		%		80-120	05-SEP-17
WG2604829-2 MB								

Quality Control Report

Workorder: L1985429 Report Date: 12-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT	**Water**							
Batch R3818645								
WG2604829-2 MB								
F1 (C6-C10)			<25		ug/L		25	05-SEP-17
Surrogate: 3,4-Dichlorotoluene			107.4		%		60-140	05-SEP-17
WG2604829-5 MS		**WG2604829-3**						
F1 (C6-C10)			89.3		%		60-140	06-SEP-17
Batch R3820370								
WG2603492-4 DUP		**WG2603492-3**						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	06-SEP-17
WG2603492-1 LCS								
F1 (C6-C10)			106.3		%		80-120	06-SEP-17
WG2603492-2 MB								
F1 (C6-C10)			<25		ug/L		25	06-SEP-17
Surrogate: 3,4-Dichlorotoluene			83.2		%		60-140	06-SEP-17
WG2603492-5 MS		**WG2603492-3**						
F1 (C6-C10)			83.7		%		60-140	06-SEP-17
Batch R3821109								
WG2594557-4 DUP		**WG2594557-3**						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	07-SEP-17
WG2594557-1 LCS								
F1 (C6-C10)			104.7		%		80-120	07-SEP-17
WG2594557-2 MB								
F1 (C6-C10)			<25		ug/L		25	07-SEP-17
Surrogate: 3,4-Dichlorotoluene			77.9		%		60-140	07-SEP-17
WG2594557-5 MS		**WG2594557-3**						
F1 (C6-C10)			94.8		%		60-140	07-SEP-17
F2-F4-511-WT	**Water**							
Batch R3820710								
WG2609119-2 LCS								
F2 (C10-C16)			110.5		%		70-130	06-SEP-17
F3 (C16-C34)			108.0		%		70-130	06-SEP-17
F4 (C34-C50)			118.0		%		70-130	06-SEP-17
WG2609119-3 LCSD		**WG2609119-2**						
F2 (C10-C16)		110.5	97.0		%	13	50	06-SEP-17
F3 (C16-C34)		108.0	101.8		%	6.0	50	06-SEP-17
F4 (C34-C50)		118.0	107.4		%	9.4	50	06-SEP-17
WG2609119-1 MB								
F2 (C10-C16)			<100		ug/L		100	06-SEP-17

Quality Control Report

Workorder: L1985429 Report Date: 12-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-511-WT	**Water**							
Batch R3820710								
WG2609119-1 MB								
F3 (C16-C34)			<250		ug/L		250	06-SEP-17
F4 (C34-C50)			<250		ug/L		250	06-SEP-17
Surrogate: 2-Bromobenzotrifluoride			94.1		%		60-140	06-SEP-17
Batch R3821126								
WG2609122-2 LCS								
F2 (C10-C16)			113.5		%		70-130	06-SEP-17
F3 (C16-C34)			113.8		%		70-130	06-SEP-17
F4 (C34-C50)			120.2		%		70-130	06-SEP-17
WG2609122-3 LCSD		**WG2609122-2**						
F2 (C10-C16)		113.5	104.2		%	8.6	50	06-SEP-17
F3 (C16-C34)		113.8	106.5		%	6.5	50	06-SEP-17
F4 (C34-C50)		120.2	111.8		%	7.2	50	06-SEP-17
WG2609122-1 MB								
F2 (C10-C16)			<100		ug/L		100	06-SEP-17
F3 (C16-C34)			<250		ug/L		250	06-SEP-17
F4 (C34-C50)			<250		ug/L		250	06-SEP-17
Surrogate: 2-Bromobenzotrifluoride			101.5		%		60-140	06-SEP-17
HG-D-UG/L-CVAA-WT	**Water**							
Batch R3819124								
WG2608450-4 DUP		**WG2608450-3**						
Mercury (Hg)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	05-SEP-17
WG2608450-2 LCS								
Mercury (Hg)-Dissolved			97.9		%		80-120	05-SEP-17
WG2608450-1 MB								
Mercury (Hg)-Dissolved			<0.010		ug/L		0.01	05-SEP-17
WG2608450-6 MS		**WG2608450-5**						
Mercury (Hg)-Dissolved			93.0		%		70-130	05-SEP-17
MET-D-UG/L-MS-WT	**Water**							
Batch R3821118								
WG2608295-4 DUP		**WG2608295-3**						
Antimony (Sb)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	06-SEP-17
Arsenic (As)-Dissolved		2.45	2.54		ug/L	3.6	20	06-SEP-17
Barium (Ba)-Dissolved		636	687		ug/L	7.7	20	06-SEP-17
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	06-SEP-17
Boron (B)-Dissolved		280	277		ug/L	1.0	20	06-SEP-17

Quality Control Report

Workorder: L1985429 Report Date: 12-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch	**R3821118**							
WG2608295-4 DUP		**WG2608295-3**						
Cadmium (Cd)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	06-SEP-17
Chromium (Cr)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	06-SEP-17
Cobalt (Co)-Dissolved		1.88	2.01		ug/L	6.6	20	06-SEP-17
Copper (Cu)-Dissolved		0.58	0.59		ug/L	1.8	20	06-SEP-17
Lead (Pb)-Dissolved		0.316	0.311		ug/L	1.5	20	06-SEP-17
Molybdenum (Mo)-Dissolved		0.198	0.200		ug/L	1.3	20	06-SEP-17
Nickel (Ni)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	06-SEP-17
Selenium (Se)-Dissolved		0.160	0.136		ug/L	16	20	06-SEP-17
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	06-SEP-17
Sodium (Na)-Dissolved		111000	109000		ug/L	1.0	20	06-SEP-17
Thallium (Tl)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	06-SEP-17
Uranium (U)-Dissolved		0.194	0.196		ug/L	1.1	20	06-SEP-17
Vanadium (V)-Dissolved		0.68	0.72		ug/L	5.3	20	06-SEP-17
Zinc (Zn)-Dissolved		2.9	3.0		ug/L	2.4	20	06-SEP-17
WG2608295-2 LCS								
Antimony (Sb)-Dissolved			94.0		%		80-120	06-SEP-17
Arsenic (As)-Dissolved			101.2		%		80-120	06-SEP-17
Barium (Ba)-Dissolved			105.1		%		80-120	06-SEP-17
Beryllium (Be)-Dissolved			100.9		%		80-120	06-SEP-17
Boron (B)-Dissolved			101.7		%		80-120	06-SEP-17
Cadmium (Cd)-Dissolved			98.5		%		80-120	06-SEP-17
Chromium (Cr)-Dissolved			101.9		%		80-120	06-SEP-17
Cobalt (Co)-Dissolved			100.4		%		80-120	06-SEP-17
Copper (Cu)-Dissolved			98.8		%		80-120	06-SEP-17
Lead (Pb)-Dissolved			102.4		%		80-120	06-SEP-17
Molybdenum (Mo)-Dissolved			99.8		%		80-120	06-SEP-17
Nickel (Ni)-Dissolved			99.98		%		80-120	06-SEP-17
Selenium (Se)-Dissolved			97.1		%		80-120	06-SEP-17
Silver (Ag)-Dissolved			96.5		%		80-120	06-SEP-17
Sodium (Na)-Dissolved			102.1		%		80-120	06-SEP-17
Thallium (Tl)-Dissolved			101.4		%		80-120	06-SEP-17
Uranium (U)-Dissolved			101.6		%		80-120	06-SEP-17
Vanadium (V)-Dissolved			102.9		%		80-120	06-SEP-17

Quality Control Report

Workorder: L1985429 Report Date: 12-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch	**R3821118**							
WG2608295-2 LCS								
Zinc (Zn)-Dissolved			95.2		%		80-120	06-SEP-17
WG2608295-1 MB								
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	06-SEP-17
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	06-SEP-17
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	06-SEP-17
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	06-SEP-17
Boron (B)-Dissolved			<10		ug/L		10	06-SEP-17
Cadmium (Cd)-Dissolved			<0.010		ug/L		0.01	06-SEP-17
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	06-SEP-17
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	06-SEP-17
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	06-SEP-17
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	06-SEP-17
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	06-SEP-17
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	06-SEP-17
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	06-SEP-17
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	06-SEP-17
Sodium (Na)-Dissolved			<500		ug/L		500	06-SEP-17
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	06-SEP-17
Uranium (U)-Dissolved			<0.010		ug/L		0.01	06-SEP-17
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	06-SEP-17
Zinc (Zn)-Dissolved			<1.0		ug/L		1	06-SEP-17
WG2608295-5 MS		**WG2608295-3**						
Antimony (Sb)-Dissolved			97.5		%		70-130	06-SEP-17
Arsenic (As)-Dissolved			97.2		%		70-130	06-SEP-17
Barium (Ba)-Dissolved			N/A	MS-B	%		-	06-SEP-17
Beryllium (Be)-Dissolved			99.0		%		70-130	06-SEP-17
Boron (B)-Dissolved			N/A	MS-B	%		-	06-SEP-17
Cadmium (Cd)-Dissolved			90.2		%		70-130	06-SEP-17
Chromium (Cr)-Dissolved			94.8		%		70-130	06-SEP-17
Cobalt (Co)-Dissolved			89.0		%		70-130	06-SEP-17
Copper (Cu)-Dissolved			86.2		%		70-130	06-SEP-17
Lead (Pb)-Dissolved			94.7		%		70-130	06-SEP-17
Molybdenum (Mo)-Dissolved			96.8		%		70-130	06-SEP-17
Nickel (Ni)-Dissolved			88.2		%		70-130	06-SEP-17

Quality Control Report

Workorder: L1985429 Report Date: 12-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R3821118								
WG2608295-5 MS		**WG2608295-3**						
Selenium (Se)-Dissolved			98.5		%		70-130	06-SEP-17
Silver (Ag)-Dissolved			73.2		%		70-130	07-SEP-17
Sodium (Na)-Dissolved			N/A	MS-B	%		-	06-SEP-17
Thallium (Tl)-Dissolved			95.9		%		70-130	06-SEP-17
Uranium (U)-Dissolved			96.0		%		70-130	06-SEP-17
Vanadium (V)-Dissolved			98.4		%		70-130	06-SEP-17
Zinc (Zn)-Dissolved			85.6		%		70-130	06-SEP-17
PAH-511-WT	**Water**							
Batch R3822028								
WG2609119-2 LCS								
1-Methylnaphthalene			85.1		%		50-140	08-SEP-17
2-Methylnaphthalene			85.1		%		50-140	08-SEP-17
Acenaphthene			92.6		%		50-140	08-SEP-17
Acenaphthylene			92.6		%		50-140	08-SEP-17
Anthracene			89.8		%		50-140	08-SEP-17
Benzo(a)anthracene			85.8		%		50-140	08-SEP-17
Benzo(a)pyrene			87.0		%		50-140	08-SEP-17
Benzo(b)fluoranthene			79.1		%		50-140	08-SEP-17
Benzo(g,h,i)perylene			105.9		%		50-140	08-SEP-17
Benzo(k)fluoranthene			91.3		%		50-140	08-SEP-17
Chrysene			93.3		%		50-140	08-SEP-17
Dibenzo(ah)anthracene			98.3		%		50-140	08-SEP-17
Fluoranthene			97.9		%		50-140	08-SEP-17
Fluorene			94.3		%		50-140	08-SEP-17
Indeno(1,2,3-cd)pyrene			81.0		%		50-140	08-SEP-17
Naphthalene			90.2		%		50-140	08-SEP-17
Phenanthrene			92.7		%		50-140	08-SEP-17
Pyrene			99.3		%		50-140	08-SEP-17
WG2609119-3 LCSD		**WG2609119-2**						
1-Methylnaphthalene		85.1	85.6		%	0.6	50	08-SEP-17
2-Methylnaphthalene		85.1	86.2		%	1.2	50	08-SEP-17
Acenaphthene		92.6	94.6		%	2.1	50	08-SEP-17
Acenaphthylene		92.6	94.2		%	1.7	50	08-SEP-17
Anthracene		89.8	84.5		%	6.1	50	08-SEP-17

Quality Control Report

Workorder: L1985429 Report Date: 12-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R3822028								
WG2609119-3 LCSD		**WG2609119-2**						
Benzo(a)anthracene		85.8	82.4		%	4.1	50	08-SEP-17
Benzo(a)pyrene		87.0	94.6		%	8.3	50	08-SEP-17
Benzo(b)fluoranthene		79.1	77.9		%	1.5	50	08-SEP-17
Benzo(g,h,i)perylene		105.9	84.9		%	22	50	08-SEP-17
Benzo(k)fluoranthene		91.3	109.8		%	18	50	08-SEP-17
Chrysene		93.3	110.7		%	17	50	08-SEP-17
Dibenzo(ah)anthracene		98.3	95.1		%	3.3	50	08-SEP-17
Fluoranthene		97.9	100.3		%	2.4	50	08-SEP-17
Fluorene		94.3	94.2		%	0.2	50	08-SEP-17
Indeno(1,2,3-cd)pyrene		81.0	95.3		%	16	50	08-SEP-17
Naphthalene		90.2	92.3		%	2.3	50	08-SEP-17
Phenanthrene		92.7	93.2		%	0.5	50	08-SEP-17
Pyrene		99.3	99.3		%	0.0	50	08-SEP-17
WG2609119-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	08-SEP-17
2-Methylnaphthalene			<0.020		ug/L		0.02	08-SEP-17
Acenaphthene			<0.020		ug/L		0.02	08-SEP-17
Acenaphthylene			<0.020		ug/L		0.02	08-SEP-17
Anthracene			<0.020		ug/L		0.02	08-SEP-17
Benzo(a)anthracene			<0.020		ug/L		0.02	08-SEP-17
Benzo(a)pyrene			<0.010		ug/L		0.01	08-SEP-17
Benzo(b)fluoranthene			<0.020		ug/L		0.02	08-SEP-17
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	08-SEP-17
Benzo(k)fluoranthene			<0.020		ug/L		0.02	08-SEP-17
Chrysene			<0.020		ug/L		0.02	08-SEP-17
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	08-SEP-17
Fluoranthene			<0.020		ug/L		0.02	08-SEP-17
Fluorene			<0.020		ug/L		0.02	08-SEP-17
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	08-SEP-17
Naphthalene			<0.050		ug/L		0.05	08-SEP-17
Phenanthrene			<0.020		ug/L		0.02	08-SEP-17
Pyrene			<0.020		ug/L		0.02	08-SEP-17
Surrogate: d8-Naphthalene			94.6		%		60-140	08-SEP-17

Quality Control Report

Workorder: L1985429 Report Date: 12-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R3822028								
WG2609119-1 MB								
Surrogate: d10-Phenanthrene			95.2		%		60-140	08-SEP-17
Surrogate: d12-Chrysene			90.2		%		60-140	08-SEP-17
Surrogate: d10-Acenaphthene			95.7		%		60-140	08-SEP-17
Batch R3823800								
WG2609122-2 LCS								
1-Methylnaphthalene			87.9		%		50-140	11-SEP-17
2-Methylnaphthalene			87.5		%		50-140	11-SEP-17
Acenaphthene			93.3		%		50-140	11-SEP-17
Acenaphthylene			101.3		%		50-140	11-SEP-17
Anthracene			102.1		%		50-140	11-SEP-17
Benzo(a)anthracene			109.3		%		50-140	11-SEP-17
Benzo(a)pyrene			106.7		%		50-140	11-SEP-17
Benzo(b)fluoranthene			109.4		%		50-140	11-SEP-17
Benzo(g,h,i)perylene			113.8		%		50-140	11-SEP-17
Benzo(k)fluoranthene			113.7		%		50-140	11-SEP-17
Chrysene			108.1		%		50-140	11-SEP-17
Dibenzo(ah)anthracene			120.6		%		50-140	11-SEP-17
Fluoranthene			108.4		%		50-140	11-SEP-17
Fluorene			101.5		%		50-140	11-SEP-17
Indeno(1,2,3-cd)pyrene			116.5		%		50-140	11-SEP-17
Naphthalene			92.1		%		50-140	11-SEP-17
Phenanthrene			107.3		%		50-140	11-SEP-17
Pyrene			109.8		%		50-140	11-SEP-17
WG2609122-3 LCSD		**WG2609122-2**						
1-Methylnaphthalene		87.9	90.9		%	3.3	50	11-SEP-17
2-Methylnaphthalene		87.5	90.8		%	3.7	50	11-SEP-17
Acenaphthene		93.3	97.0		%	3.9	50	11-SEP-17
Acenaphthylene		101.3	105.5		%	4.1	50	11-SEP-17
Anthracene		102.1	107.9		%	5.6	50	11-SEP-17
Benzo(a)anthracene		109.3	104.6		%	4.3	50	11-SEP-17
Benzo(a)pyrene		106.7	113.8		%	6.5	50	11-SEP-17
Benzo(b)fluoranthene		109.4	117.6		%	7.2	50	11-SEP-17
Benzo(g,h,i)perylene		113.8	113.8		%	0.0	50	11-SEP-17
Benzo(k)fluoranthene		113.7	117.6		%	3.4	50	11-SEP-17

Quality Control Report

Workorder: L1985429 Report Date: 12-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R3823800								
WG2609122-3 LCSD		**WG2609122-2**						
Chrysene		108.1	99.6		%	8.2	50	11-SEP-17
Dibenzo(ah)anthracene		120.6	118.7		%	1.5	50	11-SEP-17
Fluoranthene		108.4	114.2		%	5.2	50	11-SEP-17
Fluorene		101.5	105.3		%	3.6	50	11-SEP-17
Indeno(1,2,3-cd)pyrene		116.5	116.6		%	0.1	50	11-SEP-17
Naphthalene		92.1	95.3		%	3.4	50	11-SEP-17
Phenanthrene		107.3	112.3		%	4.6	50	11-SEP-17
Pyrene		109.8	117.9		%	7.1	50	11-SEP-17
WG2609122-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	11-SEP-17
2-Methylnaphthalene			<0.020		ug/L		0.02	11-SEP-17
Acenaphthene			<0.020		ug/L		0.02	11-SEP-17
Acenaphthylene			<0.020		ug/L		0.02	11-SEP-17
Anthracene			<0.020		ug/L		0.02	11-SEP-17
Benzo(a)anthracene			<0.020		ug/L		0.02	11-SEP-17
Benzo(a)pyrene			<0.010		ug/L		0.01	11-SEP-17
Benzo(b)fluoranthene			<0.020		ug/L		0.02	11-SEP-17
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	11-SEP-17
Benzo(k)fluoranthene			<0.020		ug/L		0.02	11-SEP-17
Chrysene			<0.020		ug/L		0.02	11-SEP-17
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	11-SEP-17
Fluoranthene			<0.020		ug/L		0.02	11-SEP-17
Fluorene			<0.020		ug/L		0.02	11-SEP-17
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	11-SEP-17
Naphthalene			<0.050		ug/L		0.05	11-SEP-17
Phenanthrene			<0.020		ug/L		0.02	11-SEP-17
Pyrene			<0.020		ug/L		0.02	11-SEP-17
Surrogate: d8-Naphthalene			92.6		%		60-140	11-SEP-17
Surrogate: d10-Phenanthrene			106.5		%		60-140	11-SEP-17
Surrogate: d12-Chrysene			102.6		%		60-140	11-SEP-17
Surrogate: d10-Acenaphthene			95.1		%		60-140	11-SEP-17
PCB-511-WT	**Water**							

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Workorder: L1985429 Report Date: 12-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PCB-511-WT	**Water**							
Batch R3824408								
WG2611650-2 LCS								
Aroclor 1242			81.7		%		60-140	12-SEP-17
Aroclor 1248			81.9		%		60-140	12-SEP-17
Aroclor 1254			85.9		%		60-140	12-SEP-17
Aroclor 1260			86.1		%		60-140	12-SEP-17
WG2611650-3 LCSD		**WG2611650-2**						
Aroclor 1242		81.7	78.9		%	3.4	50	12-SEP-17
Aroclor 1248		81.9	81.9		%	0.0	50	12-SEP-17
Aroclor 1254		85.9	97.7		%	13	50	12-SEP-17
Aroclor 1260		86.1	99.7		%	15	50	12-SEP-17
WG2611650-1 MB								
Aroclor 1242			<0.020		ug/L		0.02	12-SEP-17
Aroclor 1248			<0.020		ug/L		0.02	12-SEP-17
Aroclor 1254			<0.020		ug/L		0.02	12-SEP-17
Aroclor 1260			<0.020		ug/L		0.02	12-SEP-17
Surrogate: 2-fluorobiphenyl			69.1		%		50-150	12-SEP-17
PH-WT	**Water**							
Batch R3819367								
WG2608464-4 DUP		**WG2608464-3**						
pH		7.85	7.83	J	pH units	0.02	0.2	05-SEP-17
WG2608464-8 DUP		**WG2608464-7**						
pH		8.33	8.35	J	pH units	0.01	0.2	05-SEP-17
WG2608464-2 LCS								
pH			6.99		pH units		6.9-7.1	05-SEP-17
WG2608464-6 LCS								
pH			6.98		pH units		6.9-7.1	05-SEP-17
VOC-511-HS-WT	**Water**							
Batch R3818645								
WG2604829-4 DUP		**WG2604829-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17

Quality Control Report

Workorder: L1985429 Report Date: 12-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3818645								
WG2604829-4 DUP		**WG2604829-3**						
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	06-SEP-17
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	06-SEP-17
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	06-SEP-17
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	06-SEP-17
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	06-SEP-17
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	06-SEP-17
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	06-SEP-17
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	06-SEP-17
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	06-SEP-17
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	06-SEP-17
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	06-SEP-17
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	06-SEP-17
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	06-SEP-17
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	06-SEP-17
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	06-SEP-17
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	06-SEP-17
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
Trichlorofluoromethane		<5.0	<5.0		ug/L			06-SEP-17

Quality Control Report

Workorder: L1985429 Report Date: 12-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3818645								
WG2604829-4 DUP		**WG2604829-3**						
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	06-SEP-17
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
WG2604829-1 LCS								
1,1,1,2-Tetrachloroethane			89.2		%		70-130	05-SEP-17
1,1,2,2-Tetrachloroethane			85.3		%		70-130	05-SEP-17
1,1,1-Trichloroethane			93.0		%		70-130	05-SEP-17
1,1,2-Trichloroethane			92.0		%		70-130	05-SEP-17
1,1-Dichloroethane			95.5		%		70-130	05-SEP-17
1,1-Dichloroethylene			88.4		%		70-130	05-SEP-17
1,2-Dibromoethane			89.4		%		70-130	05-SEP-17
1,2-Dichlorobenzene			91.1		%		70-130	05-SEP-17
1,2-Dichloroethane			95.2		%		70-130	05-SEP-17
1,2-Dichloropropane			94.5		%		70-130	05-SEP-17
1,3-Dichlorobenzene			90.3		%		70-130	05-SEP-17
1,4-Dichlorobenzene			92.8		%		70-130	05-SEP-17
Acetone			108.7		%		60-140	05-SEP-17
Benzene			96.2		%		70-130	05-SEP-17
Bromodichloromethane			89.8		%		70-130	05-SEP-17
Bromoform			85.0		%		70-130	05-SEP-17
Bromomethane			98.9		%		60-140	05-SEP-17
Carbon tetrachloride			92.5		%		70-130	05-SEP-17
Chlorobenzene			92.8		%		70-130	05-SEP-17
Chloroform			95.3		%		70-130	05-SEP-17
cis-1,2-Dichloroethylene			93.0		%		70-130	05-SEP-17
cis-1,3-Dichloropropene			93.3		%		70-130	05-SEP-17
Dibromochloromethane			91.8		%		70-130	05-SEP-17
Dichlorodifluoromethane			85.5		%		50-140	05-SEP-17
Ethylbenzene			87.9		%		70-130	05-SEP-17
n-Hexane			107.2		%		70-130	05-SEP-17
m+p-Xylenes			90.7		%		70-130	05-SEP-17
Methyl Ethyl Ketone			99.6		%		60-140	05-SEP-17
Methyl Isobutyl Ketone			95.6		%		60-140	05-SEP-17
Methylene Chloride			96.7		%		70-130	05-SEP-17
MTBE			93.0		%		70-130	05-SEP-17

Quality Control Report

Workorder: L1985429 Report Date: 12-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch	**R3818645**							
WG2604829-1	**LCS**							
o-Xylene			88.0		%		70-130	05-SEP-17
Styrene			83.3		%		70-130	05-SEP-17
Tetrachloroethylene			92.5		%		70-130	05-SEP-17
Toluene			91.1		%		70-130	05-SEP-17
trans-1,2-Dichloroethylene			96.1		%		70-130	05-SEP-17
trans-1,3-Dichloropropene			92.0		%		70-130	05-SEP-17
Trichloroethylene			93.1		%		70-130	05-SEP-17
Trichlorofluoromethane			95.9		%		60-140	05-SEP-17
Vinyl chloride			91.2		%		60-140	05-SEP-17
WG2604829-2	**MB**							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	05-SEP-17
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	05-SEP-17
1,1,1-Trichloroethane			<0.50		ug/L		0.5	05-SEP-17
1,1,2-Trichloroethane			<0.50		ug/L		0.5	05-SEP-17
1,1-Dichloroethane			<0.50		ug/L		0.5	05-SEP-17
1,1-Dichloroethylene			<0.50		ug/L		0.5	05-SEP-17
1,2-Dibromoethane			<0.20		ug/L		0.2	05-SEP-17
1,2-Dichlorobenzene			<0.50		ug/L		0.5	05-SEP-17
1,2-Dichloroethane			<0.50		ug/L		0.5	05-SEP-17
1,2-Dichloropropane			<0.50		ug/L		0.5	05-SEP-17
1,3-Dichlorobenzene			<0.50		ug/L		0.5	05-SEP-17
1,4-Dichlorobenzene			<0.50		ug/L		0.5	05-SEP-17
Acetone			<30		ug/L		30	05-SEP-17
Benzene			<0.50		ug/L		0.5	05-SEP-17
Bromodichloromethane			<2.0		ug/L		2	05-SEP-17
Bromoform			<5.0		ug/L		5	05-SEP-17
Bromomethane			<0.50		ug/L		0.5	05-SEP-17
Carbon tetrachloride			<0.20		ug/L		0.2	05-SEP-17
Chlorobenzene			<0.50		ug/L		0.5	05-SEP-17
Chloroform			<1.0		ug/L		1	05-SEP-17
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	05-SEP-17
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	05-SEP-17
Dibromochloromethane			<2.0		ug/L		2	05-SEP-17
Dichlorodifluoromethane			<2.0		ug/L		2	05-SEP-17

Quality Control Report

Workorder: L1985429 Report Date: 12-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch	**R3818645**							
WG2604829-2	**MB**							
Ethylbenzene			<0.50		ug/L		0.5	05-SEP-17
n-Hexane			<0.50		ug/L		0.5	05-SEP-17
m+p-Xylenes			<0.40		ug/L		0.4	05-SEP-17
Methyl Ethyl Ketone			<20		ug/L		20	05-SEP-17
Methyl Isobutyl Ketone			<20		ug/L		20	05-SEP-17
Methylene Chloride			<5.0		ug/L		5	05-SEP-17
MTBE			<2.0		ug/L		2	05-SEP-17
o-Xylene			<0.30		ug/L		0.3	05-SEP-17
Styrene			<0.50		ug/L		0.5	05-SEP-17
Tetrachloroethylene			<0.50		ug/L		0.5	05-SEP-17
Toluene			<0.50		ug/L		0.5	05-SEP-17
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	05-SEP-17
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	05-SEP-17
Trichloroethylene			<0.50		ug/L		0.5	05-SEP-17
Trichlorofluoromethane			<5.0		ug/L		5	05-SEP-17
Vinyl chloride			<0.50		ug/L		0.5	05-SEP-17
Surrogate: 1,4-Difluorobenzene			101.1		%		70-130	05-SEP-17
Surrogate: 4-Bromofluorobenzene			96.1		%		70-130	05-SEP-17
WG2604829-5	**MS**	**WG2604829-3**						
1,1,1,2-Tetrachloroethane			87.8		%		50-140	06-SEP-17
1,1,2,2-Tetrachloroethane			78.1		%		50-140	06-SEP-17
1,1,1-Trichloroethane			96.1		%		50-140	06-SEP-17
1,1,2-Trichloroethane			85.7		%		50-140	06-SEP-17
1,1-Dichloroethane			94.8		%		50-140	06-SEP-17
1,1-Dichloroethylene			88.3		%		50-140	06-SEP-17
1,2-Dibromoethane			82.2		%		50-140	06-SEP-17
1,2-Dichlorobenzene			90.9		%		50-140	06-SEP-17
1,2-Dichloroethane			88.9		%		50-140	06-SEP-17
1,2-Dichloropropane			91.3		%		50-140	06-SEP-17
1,3-Dichlorobenzene			92.9		%		50-140	06-SEP-17
1,4-Dichlorobenzene			94.1		%		50-140	06-SEP-17
Acetone			97.7		%		50-140	06-SEP-17
Benzene			95.5		%		50-140	06-SEP-17
Bromodichloromethane			86.6		%		50-140	06-SEP-17

Quality Control Report

Workorder: L1985429 Report Date: 12-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3818645								
WG2604829-5 MS		**WG2604829-3**						
Bromoform			76.9		%		50-140	06-SEP-17
Bromomethane			90.4		%		50-140	06-SEP-17
Carbon tetrachloride			95.9		%		50-140	06-SEP-17
Chlorobenzene			92.3		%		50-140	06-SEP-17
Chloroform			94.9		%		50-140	06-SEP-17
cis-1,2-Dichloroethylene			91.2		%		50-140	06-SEP-17
cis-1,3-Dichloropropene			88.6		%		50-140	06-SEP-17
Dibromochloromethane			86.8		%		50-140	06-SEP-17
Dichlorodifluoromethane			78.1		%		50-140	06-SEP-17
Ethylbenzene			89.4		%		50-140	06-SEP-17
n-Hexane			107.2		%		50-140	06-SEP-17
m+p-Xylenes			92.4		%		50-140	06-SEP-17
Methyl Ethyl Ketone			86.5		%		50-140	06-SEP-17
Methyl Isobutyl Ketone			79.7		%		50-140	06-SEP-17
Methylene Chloride			93.5		%		50-140	06-SEP-17
MTBE			93.5		%		50-140	06-SEP-17
o-Xylene			88.2		%		50-140	06-SEP-17
Styrene			80.1		%		50-140	06-SEP-17
Tetrachloroethylene			94.9		%		50-140	06-SEP-17
Toluene			91.5		%		50-140	06-SEP-17
trans-1,2-Dichloroethylene			95.2		%		50-140	06-SEP-17
trans-1,3-Dichloropropene			87.0		%		50-140	06-SEP-17
Trichloroethylene			94.3		%		50-140	06-SEP-17
Trichlorofluoromethane			96.5		%		50-140	06-SEP-17
Vinyl chloride			85.9		%		50-140	06-SEP-17
Batch R3820370								
WG2603492-4 DUP		**WG2603492-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17

Quality Control Report

Workorder: L1985429 Report Date: 12-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3820370								
WG2603492-4 DUP		**WG2603492-3**						
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	06-SEP-17
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	06-SEP-17
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	06-SEP-17
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	06-SEP-17
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	06-SEP-17
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	06-SEP-17
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	06-SEP-17
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	06-SEP-17
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	06-SEP-17
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	06-SEP-17
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	06-SEP-17
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	06-SEP-17
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	06-SEP-17
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	06-SEP-17
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	06-SEP-17
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	06-SEP-17
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
Trichlorofluoromethane		<5.0	<5.0		ug/L			06-SEP-17

Quality Control Report

Workorder: L1985429 Report Date: 12-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3820370								
WG2603492-4 DUP		**WG2603492-3**						
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	06-SEP-17
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-SEP-17
WG2603492-1 LCS								
1,1,1,2-Tetrachloroethane			85.6		%		70-130	06-SEP-17
1,1,2,2-Tetrachloroethane			83.0		%		70-130	06-SEP-17
1,1,1-Trichloroethane			91.5		%		70-130	06-SEP-17
1,1,2-Trichloroethane			86.5		%		70-130	06-SEP-17
1,1-Dichloroethane			92.4		%		70-130	06-SEP-17
1,1-Dichloroethylene			87.0		%		70-130	06-SEP-17
1,2-Dibromoethane			86.4		%		70-130	06-SEP-17
1,2-Dichlorobenzene			88.5		%		70-130	06-SEP-17
1,2-Dichloroethane			92.7		%		70-130	06-SEP-17
1,2-Dichloropropane			91.8		%		70-130	06-SEP-17
1,3-Dichlorobenzene			89.0		%		70-130	06-SEP-17
1,4-Dichlorobenzene			92.4		%		70-130	06-SEP-17
Acetone			111.9		%		60-140	06-SEP-17
Benzene			93.8		%		70-130	06-SEP-17
Bromodichloromethane			87.0		%		70-130	06-SEP-17
Bromoform			81.8		%		70-130	06-SEP-17
Bromomethane			93.2		%		60-140	06-SEP-17
Carbon tetrachloride			91.7		%		70-130	06-SEP-17
Chlorobenzene			88.8		%		70-130	06-SEP-17
Chloroform			92.8		%		70-130	06-SEP-17
cis-1,2-Dichloroethylene			90.5		%		70-130	06-SEP-17
cis-1,3-Dichloropropene			84.2		%		70-130	06-SEP-17
Dibromochloromethane			91.0		%		70-130	06-SEP-17
Dichlorodifluoromethane			93.6		%		50-140	06-SEP-17
Ethylbenzene			90.1		%		70-130	06-SEP-17
n-Hexane			104.9		%		70-130	06-SEP-17
m+p-Xylenes			91.5		%		70-130	06-SEP-17
Methyl Ethyl Ketone			93.2		%		60-140	06-SEP-17
Methyl Isobutyl Ketone			89.0		%		60-140	06-SEP-17
Methylene Chloride			96.7		%		70-130	06-SEP-17
MTBE			90.0		%		70-130	06-SEP-17

Quality Control Report

Workorder: L1985429 Report Date: 12-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3820370								
WG2603492-1 LCS								
o-Xylene			90.9		%		70-130	06-SEP-17
Styrene			90.2		%		70-130	06-SEP-17
Tetrachloroethylene			86.9		%		70-130	06-SEP-17
Toluene			84.4		%		70-130	06-SEP-17
trans-1,2-Dichloroethylene			94.1		%		70-130	06-SEP-17
trans-1,3-Dichloropropene			87.9		%		70-130	06-SEP-17
Trichloroethylene			90.3		%		70-130	06-SEP-17
Trichlorofluoromethane			95.8		%		60-140	06-SEP-17
Vinyl chloride			92.8		%		60-140	06-SEP-17
WG2603492-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	06-SEP-17
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	06-SEP-17
1,1,1-Trichloroethane			<0.50		ug/L		0.5	06-SEP-17
1,1,2-Trichloroethane			<0.50		ug/L		0.5	06-SEP-17
1,1-Dichloroethane			<0.50		ug/L		0.5	06-SEP-17
1,1-Dichloroethylene			<0.50		ug/L		0.5	06-SEP-17
1,2-Dibromoethane			<0.20		ug/L		0.2	06-SEP-17
1,2-Dichlorobenzene			<0.50		ug/L		0.5	06-SEP-17
1,2-Dichloroethane			<0.50		ug/L		0.5	06-SEP-17
1,2-Dichloropropane			<0.50		ug/L		0.5	06-SEP-17
1,3-Dichlorobenzene			<0.50		ug/L		0.5	06-SEP-17
1,4-Dichlorobenzene			<0.50		ug/L		0.5	06-SEP-17
Acetone			<30		ug/L		30	06-SEP-17
Benzene			<0.50		ug/L		0.5	06-SEP-17
Bromodichloromethane			<2.0		ug/L		2	06-SEP-17
Bromoform			<5.0		ug/L		5	06-SEP-17
Bromomethane			<0.50		ug/L		0.5	06-SEP-17
Carbon tetrachloride			<0.20		ug/L		0.2	06-SEP-17
Chlorobenzene			<0.50		ug/L		0.5	06-SEP-17
Chloroform			<1.0		ug/L		1	06-SEP-17
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	06-SEP-17
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	06-SEP-17
Dibromochloromethane			<2.0		ug/L		2	06-SEP-17
Dichlorodifluoromethane			<2.0		ug/L		2	06-SEP-17

Quality Control Report

Workorder: L1985429 Report Date: 12-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3820370								
WG2603492-2 MB								
Ethylbenzene			<0.50		ug/L		0.5	06-SEP-17
n-Hexane			<0.50		ug/L		0.5	06-SEP-17
m+p-Xylenes			<0.40		ug/L		0.4	06-SEP-17
Methyl Ethyl Ketone			<20		ug/L		20	06-SEP-17
Methyl Isobutyl Ketone			<20		ug/L		20	06-SEP-17
Methylene Chloride			<5.0		ug/L		5	06-SEP-17
MTBE			<2.0		ug/L		2	06-SEP-17
o-Xylene			<0.30		ug/L		0.3	06-SEP-17
Styrene			<0.50		ug/L		0.5	06-SEP-17
Tetrachloroethylene			<0.50		ug/L		0.5	06-SEP-17
Toluene			<0.50		ug/L		0.5	06-SEP-17
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	06-SEP-17
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	06-SEP-17
Trichloroethylene			<0.50		ug/L		0.5	06-SEP-17
Trichlorofluoromethane			<5.0		ug/L		5	06-SEP-17
Vinyl chloride			<0.50		ug/L		0.5	06-SEP-17
Surrogate: 1,4-Difluorobenzene			99.6		%		70-130	06-SEP-17
Surrogate: 4-Bromofluorobenzene			94.9		%		70-130	06-SEP-17
WG2603492-5 MS		**WG2603492-3**						
1,1,1,2-Tetrachloroethane			89.3		%		50-140	06-SEP-17
1,1,2,2-Tetrachloroethane			98.4		%		50-140	06-SEP-17
1,1,1-Trichloroethane			92.7		%		50-140	06-SEP-17
1,1,2-Trichloroethane			95.6		%		50-140	06-SEP-17
1,1-Dichloroethane			97.8		%		50-140	06-SEP-17
1,1-Dichloroethylene			86.4		%		50-140	06-SEP-17
1,2-Dibromoethane			96.5		%		50-140	06-SEP-17
1,2-Dichlorobenzene			90.6		%		50-140	06-SEP-17
1,2-Dichloroethane			105.1		%		50-140	06-SEP-17
1,2-Dichloropropane			99.3		%		50-140	06-SEP-17
1,3-Dichlorobenzene			87.2		%		50-140	06-SEP-17
1,4-Dichlorobenzene			92.3		%		50-140	06-SEP-17
Acetone			121.1		%		50-140	06-SEP-17
Benzene			98.9		%		50-140	06-SEP-17
Bromodichloromethane			97.0		%		50-140	06-SEP-17

Quality Control Report

Workorder: L1985429 Report Date: 12-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3820370								
WG2603492-5 MS		**WG2603492-3**						
Bromoform			93.2		%		50-140	06-SEP-17
Bromomethane			99.4		%		50-140	06-SEP-17
Carbon tetrachloride			92.1		%		50-140	06-SEP-17
Chlorobenzene			91.7		%		50-140	06-SEP-17
Chloroform			99.8		%		50-140	06-SEP-17
cis-1,2-Dichloroethylene			96.4		%		50-140	06-SEP-17
cis-1,3-Dichloropropene			99.2		%		50-140	06-SEP-17
Dibromochloromethane			99.8		%		50-140	06-SEP-17
Dichlorodifluoromethane			77.2		%		50-140	06-SEP-17
Ethylbenzene			86.9		%		50-140	06-SEP-17
n-Hexane			99.4		%		50-140	06-SEP-17
m+p-Xylenes			90.1		%		50-140	06-SEP-17
Methyl Ethyl Ketone			108.6		%		50-140	06-SEP-17
Methyl Isobutyl Ketone			108.1		%		50-140	06-SEP-17
Methylene Chloride			106.0		%		50-140	06-SEP-17
MTBE			93.2		%		50-140	06-SEP-17
o-Xylene			89.8		%		50-140	06-SEP-17
Styrene			91.6		%		50-140	06-SEP-17
Tetrachloroethylene			83.6		%		50-140	06-SEP-17
Toluene			82.4		%		50-140	06-SEP-17
trans-1,2-Dichloroethylene			96.4		%		50-140	06-SEP-17
trans-1,3-Dichloropropene			101.2		%		50-140	06-SEP-17
Trichloroethylene			92.3		%		50-140	06-SEP-17
Trichlorofluoromethane			92.8		%		50-140	06-SEP-17
Vinyl chloride			87.5		%		50-140	06-SEP-17
Batch R3821109								
WG2594557-4 DUP		**WG2594557-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17

Quality Control Report

Workorder: L1985429 Report Date: 12-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3821109								
WG2594557-4 DUP		**WG2594557-3**						
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	07-SEP-17
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
1,2-Dichloropropane		1.24	1.24		ug/L	0.0	30	07-SEP-17
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	07-SEP-17
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	07-SEP-17
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	07-SEP-17
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	07-SEP-17
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	07-SEP-17
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	07-SEP-17
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	07-SEP-17
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	07-SEP-17
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
m+p-Xylenes		0.63	0.65		ug/L	3.1	30	07-SEP-17
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	07-SEP-17
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	07-SEP-17
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	07-SEP-17
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	07-SEP-17
o-Xylene		0.33	0.33		ug/L	0.0	30	07-SEP-17
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
Toluene		1.17	1.22		ug/L	4.2	30	07-SEP-17
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	07-SEP-17
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
Trichlorofluoromethane		<5.0	<5.0		ug/L			07-SEP-17

Quality Control Report

Workorder: L1985429 Report Date: 12-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3821109								
WG2594557-4 DUP		**WG2594557-3**						
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	07-SEP-17
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
WG2594557-1 LCS								
1,1,1,2-Tetrachloroethane			89.5		%		70-130	07-SEP-17
1,1,2,2-Tetrachloroethane			100.5		%		70-130	07-SEP-17
1,1,1-Trichloroethane			88.9		%		70-130	07-SEP-17
1,1,2-Trichloroethane			97.6		%		70-130	07-SEP-17
1,1-Dichloroethane			96.6		%		70-130	07-SEP-17
1,1-Dichloroethylene			85.2		%		70-130	07-SEP-17
1,2-Dibromoethane			99.6		%		70-130	07-SEP-17
1,2-Dichlorobenzene			90.3		%		70-130	07-SEP-17
1,2-Dichloroethane			92.2		%		70-130	07-SEP-17
1,2-Dichloropropane			100.4		%		70-130	07-SEP-17
1,3-Dichlorobenzene			86.7		%		70-130	07-SEP-17
1,4-Dichlorobenzene			89.6		%		70-130	07-SEP-17
Acetone			114.0		%		60-140	07-SEP-17
Benzene			97.7		%		70-130	07-SEP-17
Bromodichloromethane			96.3		%		70-130	07-SEP-17
Bromoform			94.5		%		70-130	07-SEP-17
Bromomethane			102.6		%		60-140	07-SEP-17
Carbon tetrachloride			86.9		%		70-130	07-SEP-17
Chlorobenzene			91.1		%		70-130	07-SEP-17
Chloroform			95.8		%		70-130	07-SEP-17
cis-1,2-Dichloroethylene			94.9		%		70-130	07-SEP-17
cis-1,3-Dichloropropene			101.9		%		70-130	07-SEP-17
Dibromochloromethane			98.8		%		70-130	07-SEP-17
Dichlorodifluoromethane			86.0		%		50-140	07-SEP-17
Ethylbenzene			82.4		%		70-130	07-SEP-17
n-Hexane			103.2		%		70-130	07-SEP-17
m+p-Xylenes			85.6		%		70-130	07-SEP-17
Methyl Ethyl Ketone			102.2		%		60-140	07-SEP-17
Methyl Isobutyl Ketone			92.5		%		60-140	07-SEP-17
Methylene Chloride			95.3		%		70-130	07-SEP-17
MTBE			93.0		%		70-130	07-SEP-17

Quality Control Report

Workorder: L1985429 Report Date: 12-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch	**R3821109**							
WG2594557-1	**LCS**							
o-Xylene			84.6		%		70-130	07-SEP-17
Styrene			84.8		%		70-130	07-SEP-17
Tetrachloroethylene			83.2		%		70-130	07-SEP-17
Toluene			86.3		%		70-130	07-SEP-17
trans-1,2-Dichloroethylene			94.9		%		70-130	07-SEP-17
trans-1,3-Dichloropropene			97.5		%		70-130	07-SEP-17
Trichloroethylene			91.0		%		70-130	07-SEP-17
Trichlorofluoromethane			89.6		%		60-140	07-SEP-17
Vinyl chloride			90.9		%		60-140	07-SEP-17
WG2594557-2	**MB**							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	07-SEP-17
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	07-SEP-17
1,1,1-Trichloroethane			<0.50		ug/L		0.5	07-SEP-17
1,1,2-Trichloroethane			<0.50		ug/L		0.5	07-SEP-17
1,1-Dichloroethane			<0.50		ug/L		0.5	07-SEP-17
1,1-Dichloroethylene			<0.50		ug/L		0.5	07-SEP-17
1,2-Dibromoethane			<0.20		ug/L		0.2	07-SEP-17
1,2-Dichlorobenzene			<0.50		ug/L		0.5	07-SEP-17
1,2-Dichloroethane			<0.50		ug/L		0.5	07-SEP-17
1,2-Dichloropropane			<0.50		ug/L		0.5	07-SEP-17
1,3-Dichlorobenzene			<0.50		ug/L		0.5	07-SEP-17
1,4-Dichlorobenzene			<0.50		ug/L		0.5	07-SEP-17
Acetone			<30		ug/L		30	07-SEP-17
Benzene			<0.50		ug/L		0.5	07-SEP-17
Bromodichloromethane			<2.0		ug/L		2	07-SEP-17
Bromoform			<5.0		ug/L		5	07-SEP-17
Bromomethane			<0.50		ug/L		0.5	07-SEP-17
Carbon tetrachloride			<0.20		ug/L		0.2	07-SEP-17
Chlorobenzene			<0.50		ug/L		0.5	07-SEP-17
Chloroform			<1.0		ug/L		1	07-SEP-17
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	07-SEP-17
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	07-SEP-17
Dibromochloromethane			<2.0		ug/L		2	07-SEP-17
Dichlorodifluoromethane			<2.0		ug/L		2	07-SEP-17

Quality Control Report

Workorder: L1985429 Report Date: 12-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3821109								
WG2594557-2 MB								
Ethylbenzene			<0.50		ug/L		0.5	07-SEP-17
n-Hexane			<0.50		ug/L		0.5	07-SEP-17
m+p-Xylenes			<0.40		ug/L		0.4	07-SEP-17
Methyl Ethyl Ketone			<20		ug/L		20	07-SEP-17
Methyl Isobutyl Ketone			<20		ug/L		20	07-SEP-17
Methylene Chloride			<5.0		ug/L		5	07-SEP-17
MTBE			<2.0		ug/L		2	07-SEP-17
o-Xylene			<0.30		ug/L		0.3	07-SEP-17
Styrene			<0.50		ug/L		0.5	07-SEP-17
Tetrachloroethylene			<0.50		ug/L		0.5	07-SEP-17
Toluene			<0.50		ug/L		0.5	07-SEP-17
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	07-SEP-17
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	07-SEP-17
Trichloroethylene			<0.50		ug/L		0.5	07-SEP-17
Trichlorofluoromethane			<5.0		ug/L		5	07-SEP-17
Vinyl chloride			<0.50		ug/L		0.5	07-SEP-17
Surrogate: 1,4-Difluorobenzene			100.3		%		70-130	07-SEP-17
Surrogate: 4-Bromofluorobenzene			91.3		%		70-130	07-SEP-17
WG2594557-5 MS		**WG2594557-3**						
1,1,1,2-Tetrachloroethane			89.2		%		50-140	07-SEP-17
1,1,2,2-Tetrachloroethane			82.8		%		50-140	07-SEP-17
1,1,1-Trichloroethane			93.7		%		50-140	07-SEP-17
1,1,2-Trichloroethane			87.5		%		50-140	07-SEP-17
1,1-Dichloroethane			96.4		%		50-140	07-SEP-17
1,1-Dichloroethylene			88.6		%		50-140	07-SEP-17
1,2-Dibromoethane			86.4		%		50-140	07-SEP-17
1,2-Dichlorobenzene			90.2		%		50-140	07-SEP-17
1,2-Dichloroethane			81.4		%		50-140	07-SEP-17
1,2-Dichloropropane			94.7		%		50-140	07-SEP-17
1,3-Dichlorobenzene			90.9		%		50-140	07-SEP-17
1,4-Dichlorobenzene			92.6		%		50-140	07-SEP-17
Acetone			88.9		%		50-140	07-SEP-17
Benzene			96.5		%		50-140	07-SEP-17
Bromodichloromethane			91.2		%		50-140	07-SEP-17

Quality Control Report

Workorder: L1985429 Report Date: 12-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3821109								
WG2594557-5 MS		**WG2594557-3**						
Bromoform			81.6		%		50-140	07-SEP-17
Bromomethane			97.6		%		50-140	07-SEP-17
Carbon tetrachloride			93.2		%		50-140	07-SEP-17
Chlorobenzene			90.8		%		50-140	07-SEP-17
Chloroform			94.7		%		50-140	07-SEP-17
cis-1,2-Dichloroethylene			92.5		%		50-140	07-SEP-17
cis-1,3-Dichloropropene			88.4		%		50-140	07-SEP-17
Dibromochloromethane			91.4		%		50-140	07-SEP-17
Dichlorodifluoromethane			86.6		%		50-140	07-SEP-17
Ethylbenzene			85.7		%		50-140	07-SEP-17
n-Hexane			108.0		%		50-140	07-SEP-17
m+p-Xylenes			89.2		%		50-140	07-SEP-17
Methyl Ethyl Ketone			72.7		%		50-140	07-SEP-17
Methyl Isobutyl Ketone			67.0		%		50-140	07-SEP-17
Methylene Chloride			89.5		%		50-140	07-SEP-17
MTBE			93.0		%		50-140	07-SEP-17
o-Xylene			85.3		%		50-140	07-SEP-17
Styrene			79.7		%		50-140	07-SEP-17
Tetrachloroethylene			89.4		%		50-140	07-SEP-17
Toluene			88.7		%		50-140	07-SEP-17
trans-1,2-Dichloroethylene			95.1		%		50-140	07-SEP-17
trans-1,3-Dichloropropene			83.1		%		50-140	07-SEP-17
Trichloroethylene			93.4		%		50-140	07-SEP-17
Trichlorofluoromethane			94.9		%		50-140	07-SEP-17
Vinyl chloride			92.0		%		50-140	07-SEP-17

Quality Control Report

Workorder: L1985429 Report Date: 12-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9
Contact: MICHAEL SHIRY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
LCS-H	Lab Control Sample recovery was above ALS DQO. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

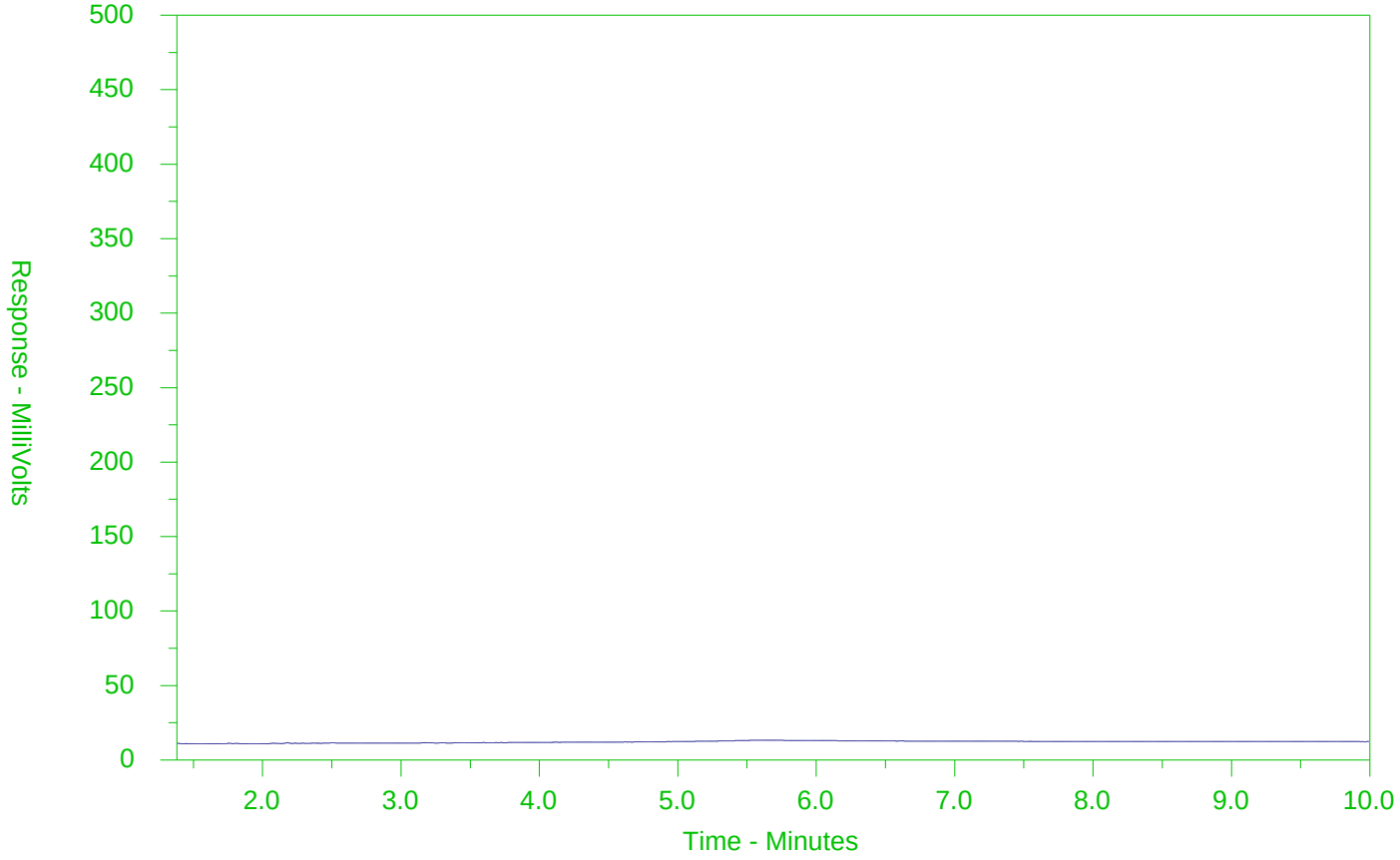
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1985429-1
Client Sample ID: OW26S



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

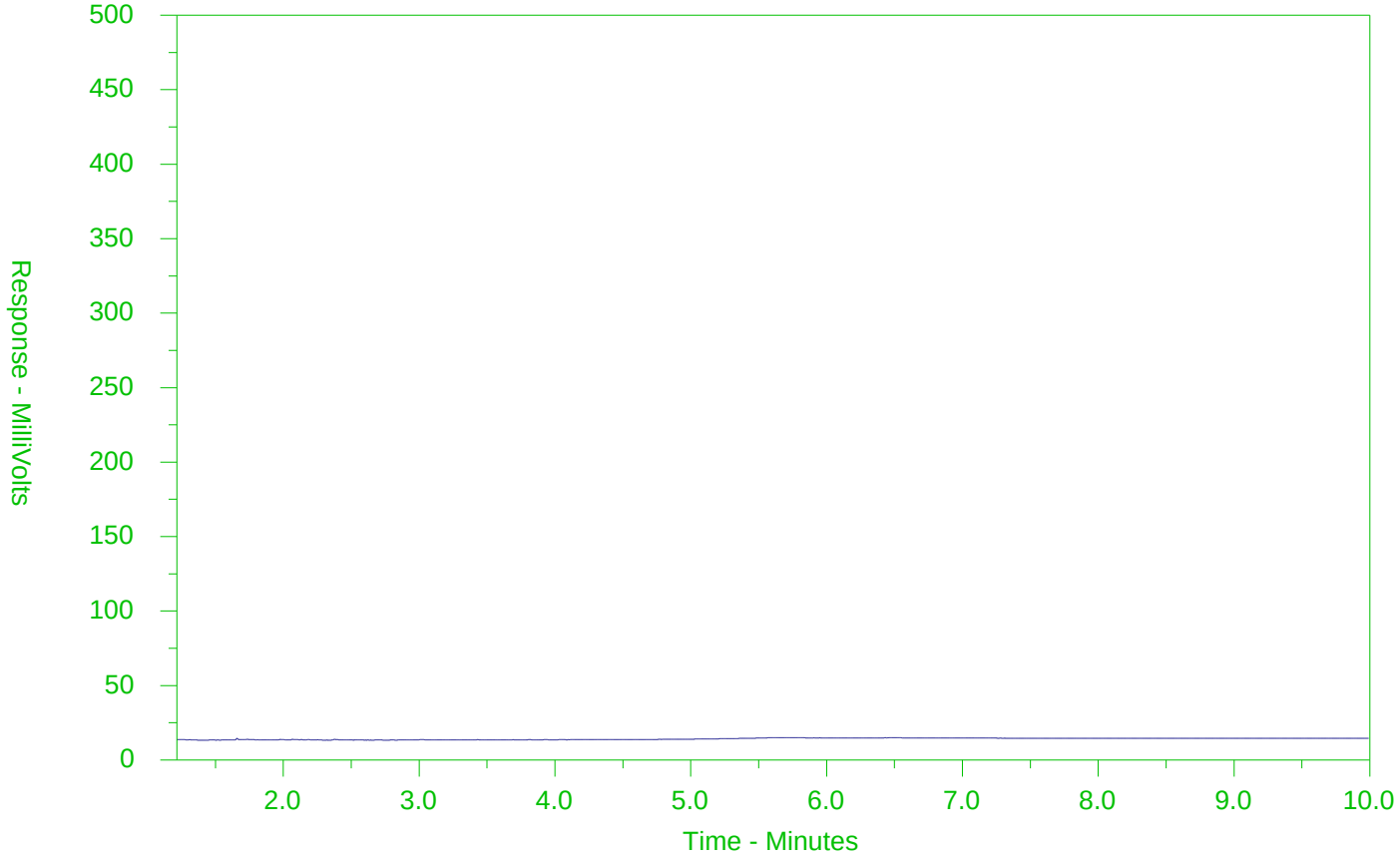
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1985429-2
Client Sample ID: OW26D



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

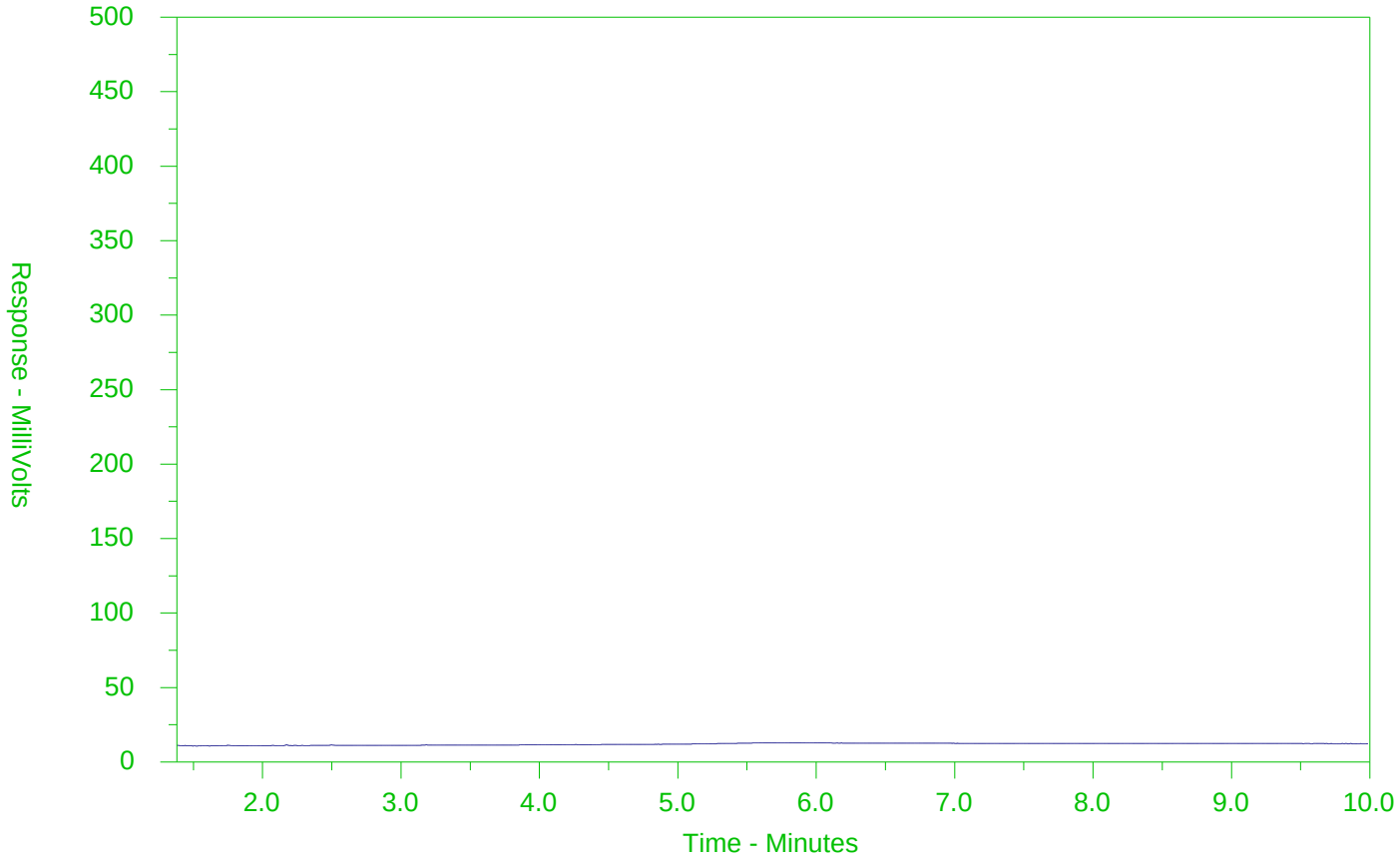
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1985429-3
Client Sample ID: OW07-34D



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

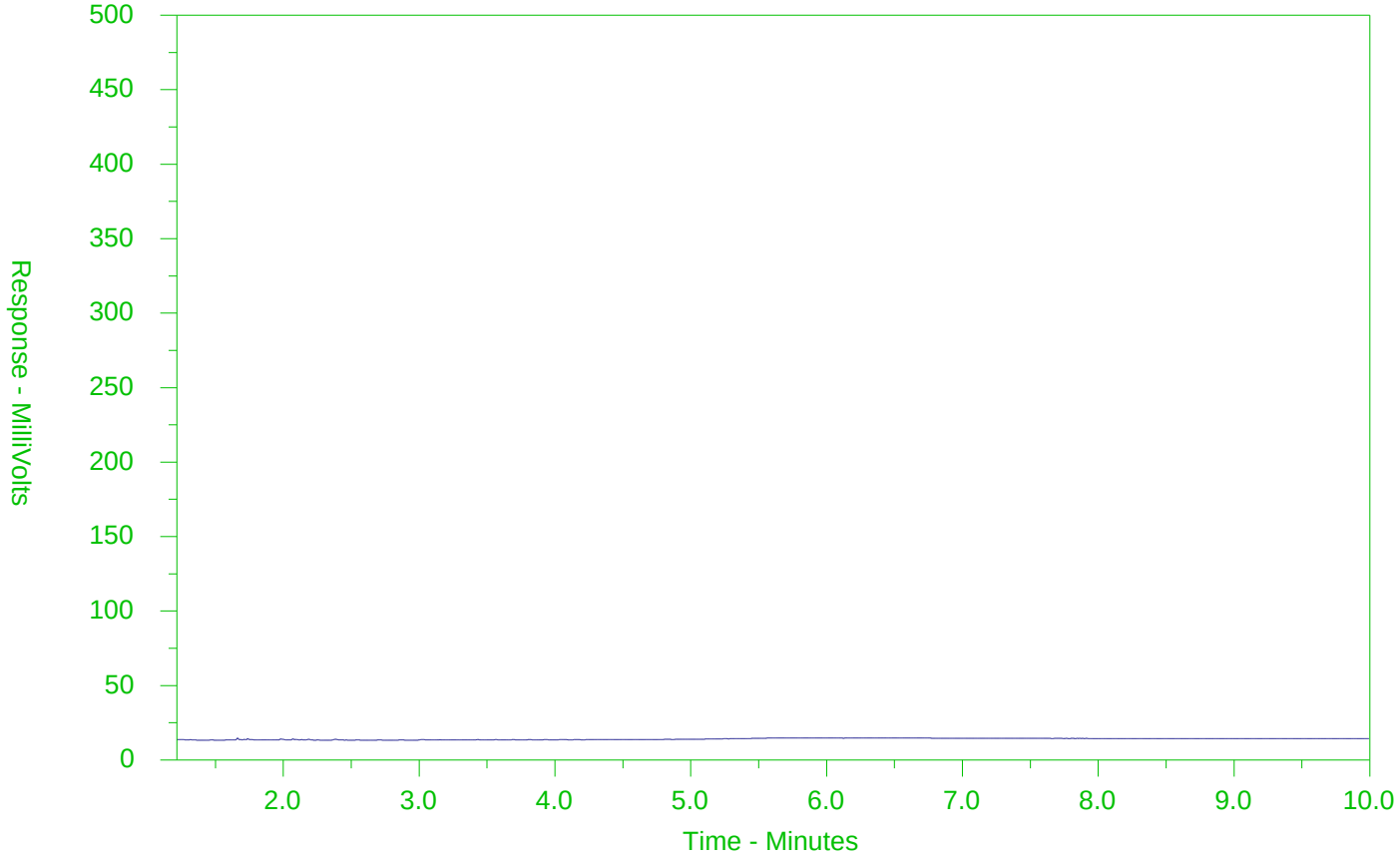
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1985429-4
Client Sample ID: OW07-34S



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

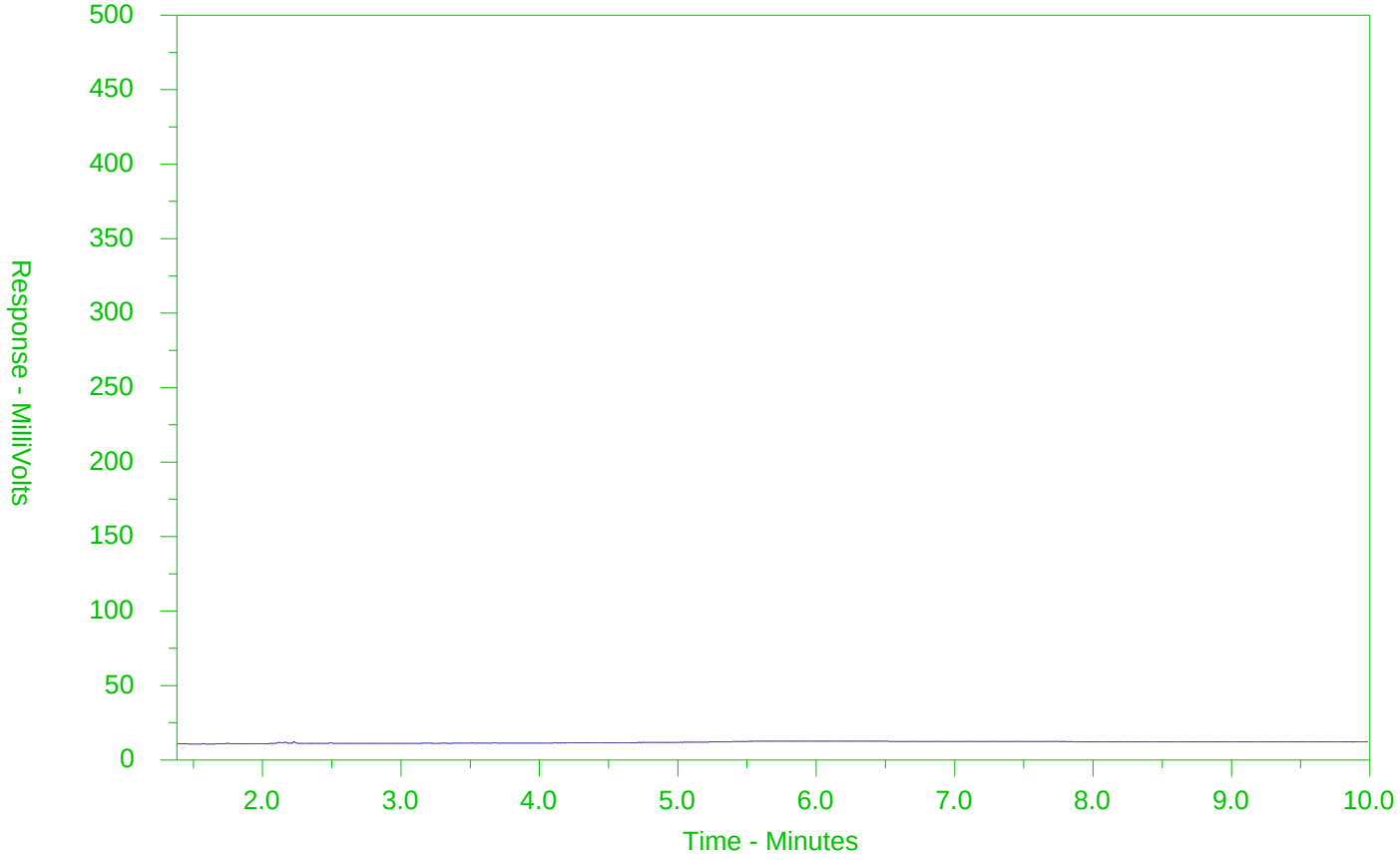
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1985429-5
Client Sample ID: OW25



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

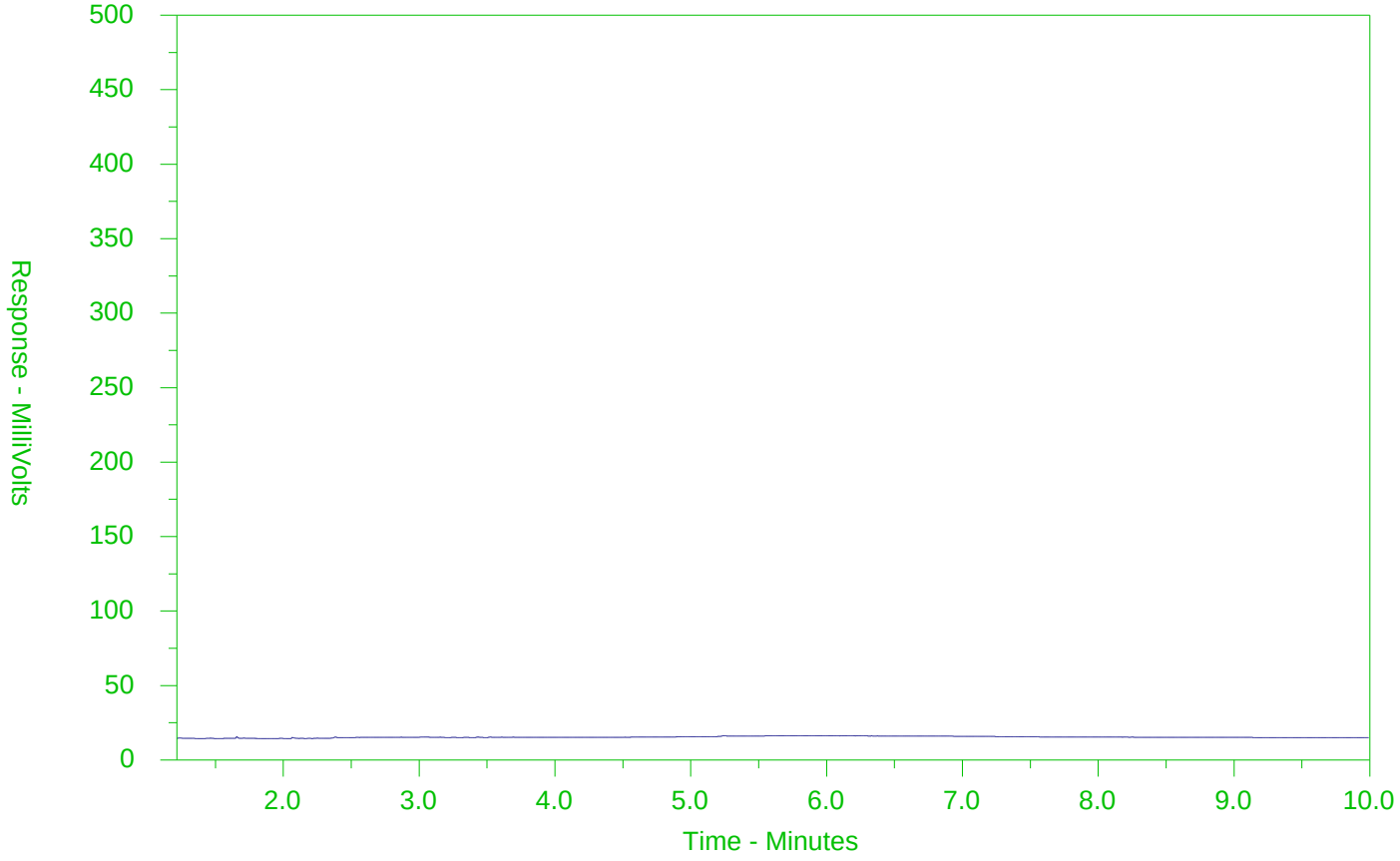
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1985429-6
Client Sample ID: OW07-33



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

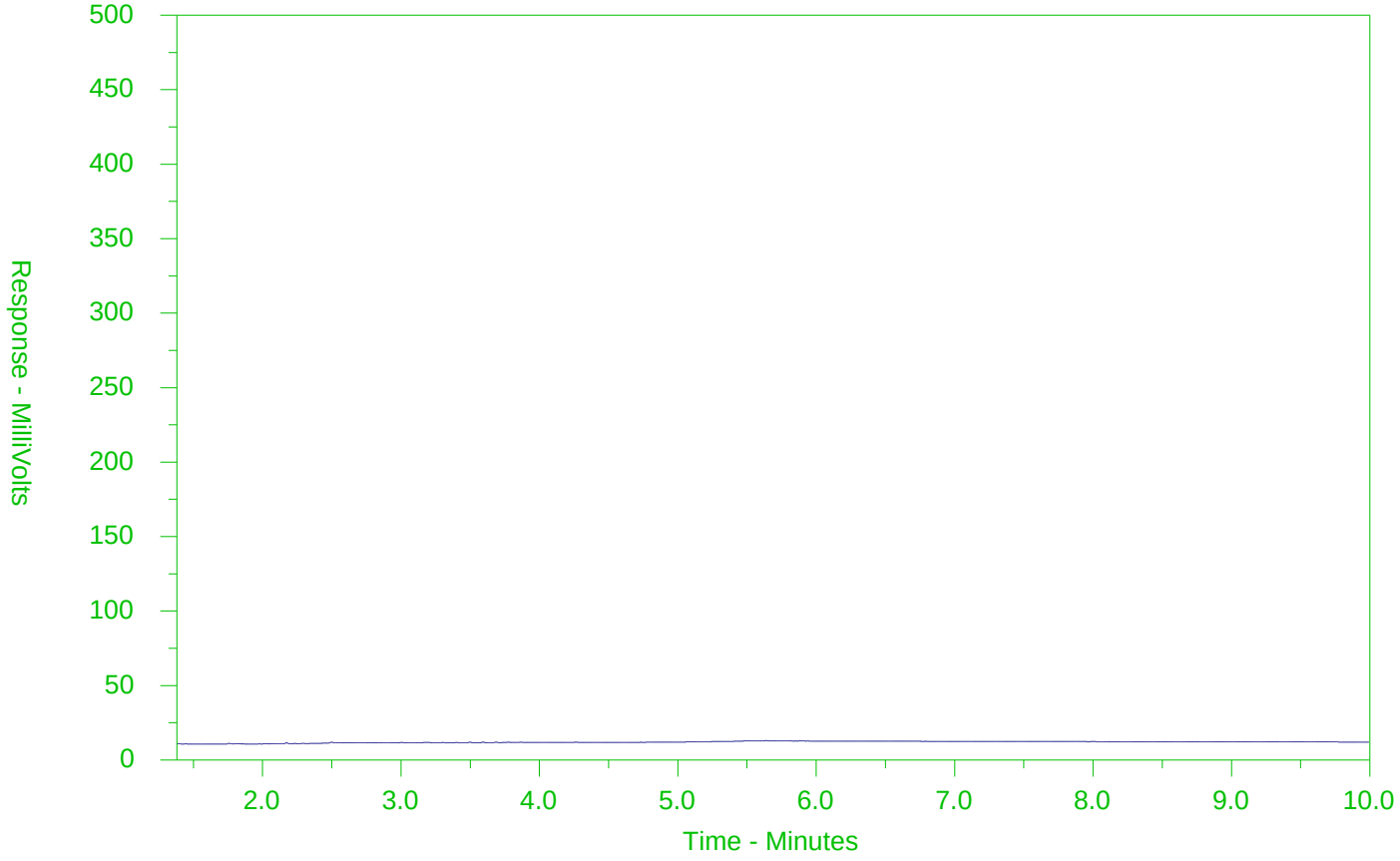
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1985429-7
Client Sample ID: DUP1



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

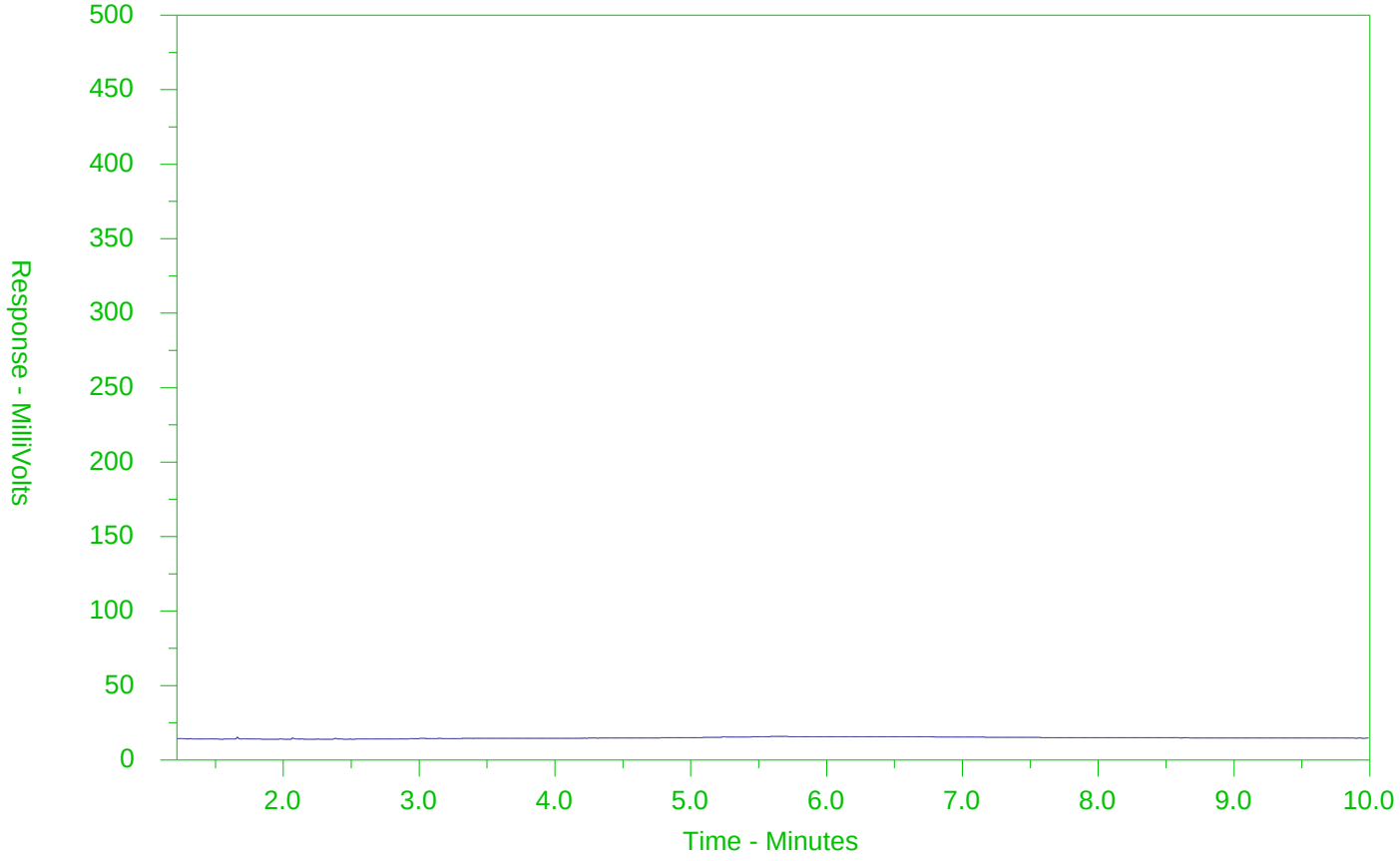
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1985429-8
Client Sample ID: OW11-I



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

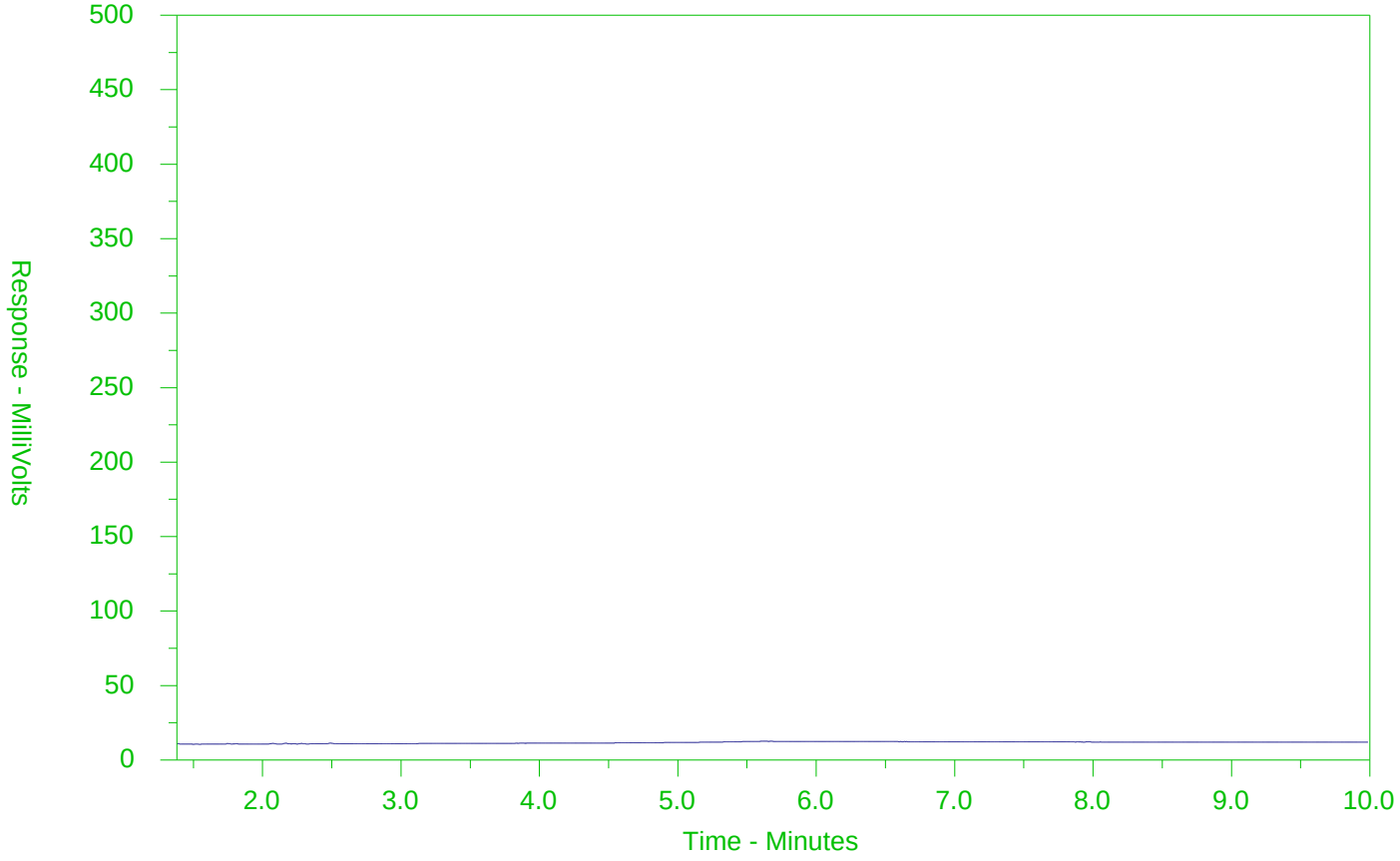
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1985429-9
Client Sample ID: DUP2



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

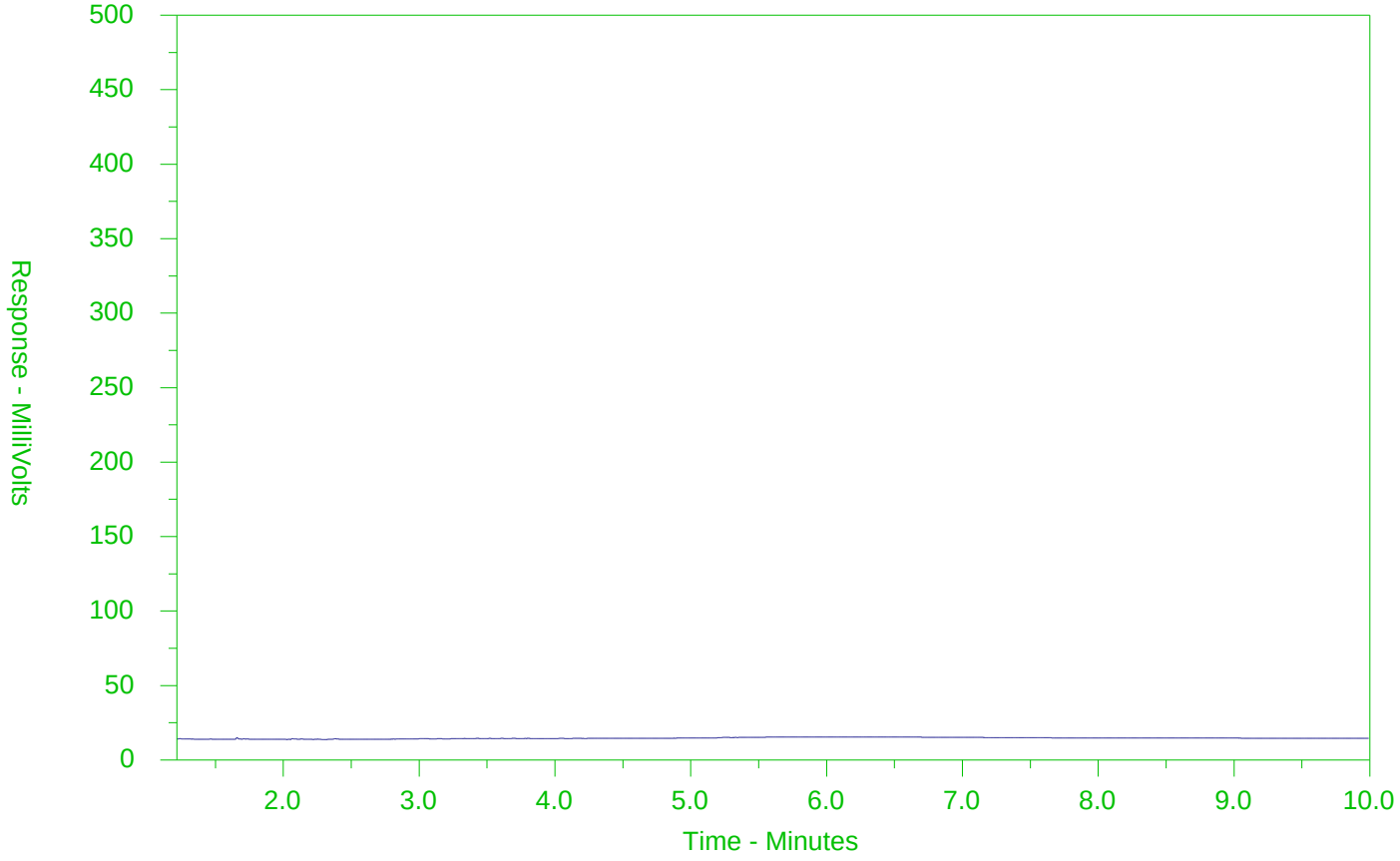
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1985429-10
Client Sample ID: OW11-II



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

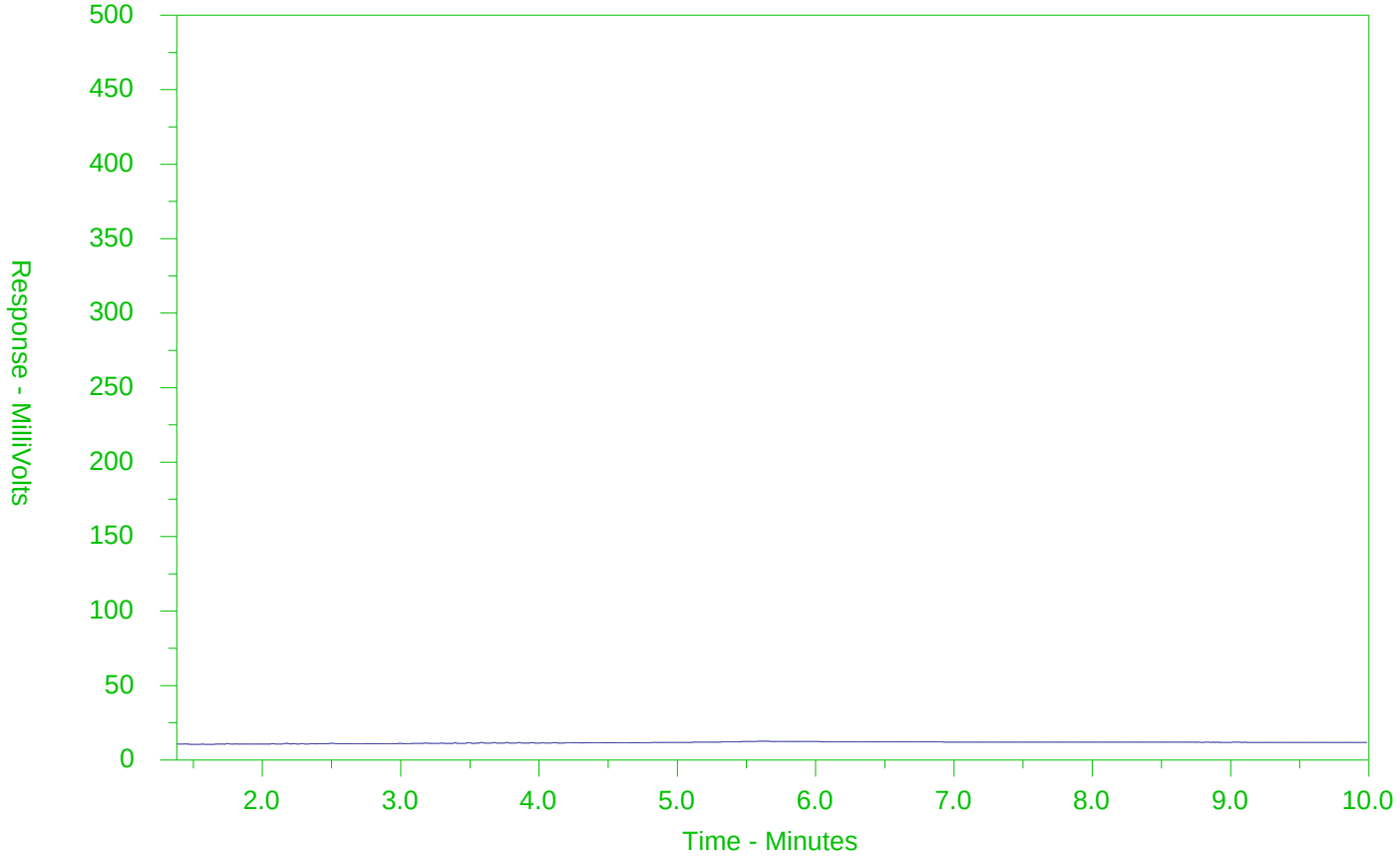
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1985429-11
Client Sample ID: DUP3



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L1985429-COFC

COC Number: 15 -

Report To	Contact and company name below will appear on the final report
Company:	CH2M Hill Kitchener
Contact:	Michael Shiry / Peter Mamo
Phone:	289 971 1779
	Company address below will appear on the final report
Street:	300-72 Victoria St. South
City/Province:	Kitchener, ON
Postal Code:	N2G 4Y9
Invoice To	Same as Report To ☐ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	CH2M Hill Kitchener
Contact:	Accounts Payable

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: Michael.Shiry@ch2m.com

Email 2: Peter.Mamo@ch2m.com

Email 3:

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax:

Email 2:

Project Information

ALS Account # / Quote #: Q62156

Job #: 694757

PO / AFE:

LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center:

PO#:

Major/Minor Code:

Routing Code:

Requisitioner:

Location:

ALS Lab Work Order # (lab use only): L1985429 RW

ALS Contact: Mathy

Sampler:

Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
4 day [P4]	☐	1 Business day [E1]	☐
3 day [P3]	☐	Same Day, Weekend or Statutory holiday [E0]	☐
2 day [P2]	☐		

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Metals & Inorganics (F)	SVOC	PAH	VOC, BTX, F1	F2-F4	1,4 Dioxane	PCB	VOC,F1 (Trip Blank)						Number of Containers
1	OW26S	31-Aug-17	15:30	Water	✓			✓	✓	✓	✓							15
2	OW26D	31-Aug-17	16:38		✓			✓	✓	✓								13
3	OW07-34D	01-Sep-17	09:00		✓			✓	✓	✓								13
4	OW07-34S	01-Sep-17	10:07		✓		✓	✓	✓		✓							14
5	OW25	01-Sep-17	11:03		✓		✓	✓	✓		✓							14
6	OW07-33	01-Sep-17	12:13		✓	✓		✓	✓	✓	✓							18
7	Dup 1	—	—		✓	✓		✓	✓	✓	✓							18
8	OW11-1	01-Sep-17	13:55		✓		✓	✓	✓									12
9	Dup 2	—	—		✓		✓	✓	✓									12
10	OW11-11	01-Sep-17	16:00		✓		✓	✓	✓									12
11	Dup 3	—	—		✓		✓	✓	✓									12
12	Trip Blank 2	01-Sep-17	—	Water								✓						2

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human drinking water use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
			9.3	6.8	

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
Peter Mamo	01/09/17	1750

INITIAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:
DA	01/09/17	1755

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L1985429-COFC

COC Number: 15 -

Report To	Contact and company name below will appear on the final report
Company:	CH2M Hill Kitchener
Contact:	Michael Shiry / Peter Mamo
Phone:	289 971 1779
	Company address below will appear on the final report
Street:	300-72 Victoria St. South
City/Province:	Kitchener, ON
Postal Code:	N2G 4Y9
Invoice To	Same as Report To ☐ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	CH2M Hill Kitchener
Contact:	Accounts Payable

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: Michael.Shiry@ch2m.com

Email 2: Peter.Mamo@ch2m.com

Email 3:

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax:

Email 2:

Project Information

ALS Account # / Quote #: Q62156

Job #: 694757

PO / AFE:

LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center:

PO#:

Major/Minor Code:

Routing Code:

Requisitioner:

Location:

ALS Lab Work Order # (lab use only): L1985429 RW

ALS Contact: Mathy

Sampler:

Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
4 day [P4]	☐	1 Business day [E1]	☐
3 day [P3]	☐	Same Day, Weekend or Statutory holiday [E0]	☐
2 day [P2]	☐		

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Metals & Inorganics	SVOC	PAH	VOC, BTX, F1	F2-F4	1,4 Dioxane	PCB	VOC,F1 (Trip Blank)						Number of Containers
13	Trip Blank 3	01-Sep-17	—	Water								✓						2

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human drinking water use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C	
			9.3	6.3

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Peter Mamo	Date: 01/09/2017	Time: 1750	Received by:	Date:	Time:	Received by:	Date: 01/09/17	Time: 17:55

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

DA

CH2M HILL CANADA LIMITED
ATTN: MICHAEL SHIRY
72 VICTORIA ST SOUTH
SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 05-SEP-17
Report Date: 15-SEP-17 06:54 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L1986110
Project P.O. #: NOT SUBMITTED
Job Reference: 694757
C of C Numbers:
Legal Site Desc:

Mathy Mahadeva
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1986110-1 OW12 Sampled By: CLIENT on 05-SEP-17 @ 09:30 Matrix: WATER							
Physical Tests							
Conductivity	0.589		0.0030	mS/cm		06-SEP-17	R3820599
pH	7.51		0.10	pH units		06-SEP-17	R3820599
Anions and Nutrients							
Chloride (Cl)	1.84		0.50	mg/L		08-SEP-17	R3823730
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		12-SEP-17	R3827207
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					06-SEP-17	R3820347
Dissolved Metals Filtration Location	FIELD					06-SEP-17	R3820231
Antimony (Sb)-Dissolved	0.37		0.10	ug/L	06-SEP-17	06-SEP-17	R3821118
Arsenic (As)-Dissolved	0.20		0.10	ug/L	06-SEP-17	06-SEP-17	R3821118
Barium (Ba)-Dissolved	44.4		0.10	ug/L	06-SEP-17	06-SEP-17	R3821118
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	06-SEP-17	06-SEP-17	R3821118
Boron (B)-Dissolved	74		10	ug/L	06-SEP-17	06-SEP-17	R3821118
Cadmium (Cd)-Dissolved	1.33		0.010	ug/L	06-SEP-17	06-SEP-17	R3821118
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	06-SEP-17	06-SEP-17	R3821118
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	06-SEP-17	06-SEP-17	R3821118
Copper (Cu)-Dissolved	3.29		0.20	ug/L	06-SEP-17	06-SEP-17	R3821118
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	06-SEP-17	06-SEP-17	R3821118
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	06-SEP-17	06-SEP-17	R3820537
Molybdenum (Mo)-Dissolved	0.650		0.050	ug/L	06-SEP-17	06-SEP-17	R3821118
Nickel (Ni)-Dissolved	1.85		0.50	ug/L	06-SEP-17	06-SEP-17	R3821118
Selenium (Se)-Dissolved	0.802		0.050	ug/L	06-SEP-17	06-SEP-17	R3821118
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	06-SEP-17	06-SEP-17	R3821118
Sodium (Na)-Dissolved	2990		500	ug/L	06-SEP-17	06-SEP-17	R3821118
Thallium (Tl)-Dissolved	0.120		0.010	ug/L	06-SEP-17	06-SEP-17	R3821118
Uranium (U)-Dissolved	1.39		0.010	ug/L	06-SEP-17	06-SEP-17	R3821118
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	06-SEP-17	06-SEP-17	R3821118
Zinc (Zn)-Dissolved	367		1.0	ug/L	06-SEP-17	06-SEP-17	R3821118
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		07-SEP-17	R3821991
Volatile Organic Compounds							
Acetone	<30		30	ug/L		07-SEP-17	R3821109
Benzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Bromodichloromethane	<2.0		2.0	ug/L		07-SEP-17	R3821109
Bromoform	<5.0		5.0	ug/L		07-SEP-17	R3821109
Bromomethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
Carbon tetrachloride	<0.20		0.20	ug/L		07-SEP-17	R3821109
Chlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Dibromochloromethane	<2.0		2.0	ug/L		07-SEP-17	R3821109
Chloroform	<1.0		1.0	ug/L		07-SEP-17	R3821109
1,2-Dibromoethane	<0.20		0.20	ug/L		07-SEP-17	R3821109

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1986110-1 OW12 Sampled By: CLIENT on 05-SEP-17 @ 09:30 Matrix: WATER							
Volatile Organic Compounds							
1,2-Dichlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,3-Dichlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,4-Dichlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Dichlorodifluoromethane	<2.0		2.0	ug/L		07-SEP-17	R3821109
1,1-Dichloroethane	2.26		0.50	ug/L		07-SEP-17	R3821109
1,2-Dichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1-Dichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
cis-1,2-Dichloroethylene	<0.95	DLQ	0.95	ug/L		07-SEP-17	R3821109
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Methylene Chloride	<5.0		5.0	ug/L		07-SEP-17	R3821109
1,2-Dichloropropane	<0.50		0.50	ug/L		07-SEP-17	R3821109
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		07-SEP-17	R3821109
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		07-SEP-17	R3821109
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		07-SEP-17	
1,4-Dioxane	<20		20	ug/L		07-SEP-17	R3821109
Ethylbenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
n-Hexane	<0.50		0.50	ug/L		07-SEP-17	R3821109
Methyl Ethyl Ketone	<20		20	ug/L		07-SEP-17	R3821109
Methyl Isobutyl Ketone	<20		20	ug/L		07-SEP-17	R3821109
MTBE	<2.0		2.0	ug/L		07-SEP-17	R3821109
Styrene	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
Tetrachloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Toluene	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1,1-Trichloroethane	11.7		0.50	ug/L		07-SEP-17	R3821109
1,1,2-Trichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
Trichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Trichlorofluoromethane	<5.0		5.0	ug/L		07-SEP-17	R3821109
Vinyl chloride	<0.50		0.50	ug/L		07-SEP-17	R3821109
o-Xylene	<0.30		0.30	ug/L		07-SEP-17	R3821109
m+p-Xylenes	<0.40		0.40	ug/L		07-SEP-17	R3821109
Xylenes (Total)	<0.50		0.50	ug/L		07-SEP-17	
Surrogate: 4-Bromofluorobenzene	91.0		70-130	%		07-SEP-17	R3821109
Surrogate: 1,4-Difluorobenzene	99.1		70-130	%		07-SEP-17	R3821109
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		07-SEP-17	R3821109
F1-BTEX	<25		25	ug/L		08-SEP-17	
F2 (C10-C16)	<100		100	ug/L	14-SEP-17	14-SEP-17	R3828769
F3a (C16-C22)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828769
F3 (C16-C34)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828769

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1986110-1 OW12 Sampled By: CLIENT on 05-SEP-17 @ 09:30 Matrix: WATER							
Hydrocarbons							
F3b (C22-C34)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828769
F4 (C34-C50)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828769
Chrom. to baseline at nC50	YES				14-SEP-17	14-SEP-17	R3828769
Surrogate: 2-Bromobenzotrifluoride	104.3		60-140	%	14-SEP-17	14-SEP-17	R3828769
Surrogate: 3,4-Dichlorotoluene	84.7		60-140	%		07-SEP-17	R3821109
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Acenaphthylene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Anthracene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Benzo(a)anthracene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Benzo(a)pyrene	<0.010		0.010	ug/L	06-SEP-17	08-SEP-17	R3821704
Benzo(b)fluoranthene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Benzo(k)fluoranthene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Chrysene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Fluoranthene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Fluorene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		08-SEP-17	
1-Methylnaphthalene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
2-Methylnaphthalene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Naphthalene	<0.050		0.050	ug/L	06-SEP-17	08-SEP-17	R3821704
Phenanthrene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Pyrene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Surrogate: d10-Acenaphthene	94.1		60-140	%	06-SEP-17	08-SEP-17	R3821704
Surrogate: d12-Chrysene	94.9		60-140	%	06-SEP-17	08-SEP-17	R3821704
Surrogate: d8-Naphthalene	94.5		60-140	%	06-SEP-17	08-SEP-17	R3821704
Surrogate: d10-Phenanthrene	103.4		60-140	%	06-SEP-17	08-SEP-17	R3821704
L1986110-2 OW16 Sampled By: CLIENT on 05-SEP-17 @ 11:15 Matrix: WATER							
Physical Tests							
Conductivity	0.532		0.0030	mS/cm		06-SEP-17	R3820599
pH	7.42		0.10	pH units		06-SEP-17	R3820599
Anions and Nutrients							
Chloride (Cl)	3.27		0.50	mg/L		08-SEP-17	R3823730
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		12-SEP-17	R3827207
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					06-SEP-17	R3820347
Dissolved Metals Filtration Location	FIELD					06-SEP-17	R3820231

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1986110-2 OW16 Sampled By: CLIENT on 05-SEP-17 @ 11:15 Matrix: WATER							
Dissolved Metals							
Antimony (Sb)-Dissolved	0.20		0.10	ug/L	06-SEP-17	06-SEP-17	R3821118
Arsenic (As)-Dissolved	0.58		0.10	ug/L	06-SEP-17	06-SEP-17	R3821118
Barium (Ba)-Dissolved	31.8		0.10	ug/L	06-SEP-17	06-SEP-17	R3821118
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	06-SEP-17	06-SEP-17	R3821118
Boron (B)-Dissolved	63		10	ug/L	06-SEP-17	06-SEP-17	R3821118
Cadmium (Cd)-Dissolved	0.969		0.010	ug/L	06-SEP-17	06-SEP-17	R3821118
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	06-SEP-17	06-SEP-17	R3821118
Cobalt (Co)-Dissolved	0.93		0.10	ug/L	06-SEP-17	06-SEP-17	R3821118
Copper (Cu)-Dissolved	8.00		0.20	ug/L	06-SEP-17	06-SEP-17	R3821118
Lead (Pb)-Dissolved	3.25		0.050	ug/L	06-SEP-17	06-SEP-17	R3821118
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	06-SEP-17	06-SEP-17	R3820537
Molybdenum (Mo)-Dissolved	1.70		0.050	ug/L	06-SEP-17	06-SEP-17	R3821118
Nickel (Ni)-Dissolved	6.70		0.50	ug/L	06-SEP-17	06-SEP-17	R3821118
Selenium (Se)-Dissolved	0.079		0.050	ug/L	06-SEP-17	06-SEP-17	R3821118
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	06-SEP-17	06-SEP-17	R3821118
Sodium (Na)-Dissolved	2860		500	ug/L	06-SEP-17	06-SEP-17	R3821118
Thallium (Tl)-Dissolved	0.157		0.010	ug/L	06-SEP-17	06-SEP-17	R3821118
Uranium (U)-Dissolved	0.826		0.010	ug/L	06-SEP-17	06-SEP-17	R3821118
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	06-SEP-17	06-SEP-17	R3821118
Zinc (Zn)-Dissolved	349		1.0	ug/L	06-SEP-17	06-SEP-17	R3821118
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		07-SEP-17	R3821991
Volatile Organic Compounds							
Acetone	<30		30	ug/L		07-SEP-17	R3821109
Benzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Bromodichloromethane	<2.0		2.0	ug/L		07-SEP-17	R3821109
Bromoform	<5.0		5.0	ug/L		07-SEP-17	R3821109
Bromomethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
Carbon tetrachloride	<0.20		0.20	ug/L		07-SEP-17	R3821109
Chlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Dibromochloromethane	<2.0		2.0	ug/L		07-SEP-17	R3821109
Chloroform	<1.0		1.0	ug/L		07-SEP-17	R3821109
1,2-Dibromoethane	<0.20		0.20	ug/L		07-SEP-17	R3821109
1,2-Dichlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,3-Dichlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,4-Dichlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Dichlorodifluoromethane	<2.0		2.0	ug/L		07-SEP-17	R3821109
1,1-Dichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,2-Dichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1-Dichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1986110-2 OW16 Sampled By: CLIENT on 05-SEP-17 @ 11:15 Matrix: WATER							
Volatile Organic Compounds							
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Methylene Chloride	<5.0		5.0	ug/L		07-SEP-17	R3821109
1,2-Dichloropropane	<0.50		0.50	ug/L		07-SEP-17	R3821109
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		07-SEP-17	R3821109
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		07-SEP-17	R3821109
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		07-SEP-17	
Ethylbenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
n-Hexane	<0.50		0.50	ug/L		07-SEP-17	R3821109
Methyl Ethyl Ketone	<20		20	ug/L		07-SEP-17	R3821109
Methyl Isobutyl Ketone	<20		20	ug/L		07-SEP-17	R3821109
MTBE	<2.0		2.0	ug/L		07-SEP-17	R3821109
Styrene	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
Tetrachloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Toluene	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1,1-Trichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1,2-Trichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
Trichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Trichlorofluoromethane	<5.0		5.0	ug/L		07-SEP-17	R3821109
Vinyl chloride	<0.50		0.50	ug/L		07-SEP-17	R3821109
o-Xylene	<0.30		0.30	ug/L		07-SEP-17	R3821109
m+p-Xylenes	<0.40		0.40	ug/L		07-SEP-17	R3821109
Xylenes (Total)	<0.50		0.50	ug/L		07-SEP-17	
Surrogate: 4-Bromofluorobenzene	90.2		70-130	%		07-SEP-17	R3821109
Surrogate: 1,4-Difluorobenzene	99.1		70-130	%		07-SEP-17	R3821109
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		07-SEP-17	R3821109
F1-BTEX	<25		25	ug/L		08-SEP-17	
F2 (C10-C16)	<100		100	ug/L	14-SEP-17	14-SEP-17	R3828769
F3a (C16-C22)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828769
F3 (C16-C34)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828769
F3b (C22-C34)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828769
F4 (C34-C50)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828769
Chrom. to baseline at nC50	YES				14-SEP-17	14-SEP-17	R3828769
Surrogate: 2-Bromobenzotrifluoride	109.1		60-140	%	14-SEP-17	14-SEP-17	R3828769
Surrogate: 3,4-Dichlorotoluene	87.0		60-140	%		07-SEP-17	R3821109
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Acenaphthylene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Anthracene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1986110-2 OW16 Sampled By: CLIENT on 05-SEP-17 @ 11:15 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Benzo(a)anthracene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Benzo(a)pyrene	<0.010		0.010	ug/L	06-SEP-17	08-SEP-17	R3821704
Benzo(b)fluoranthene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Benzo(k)fluoranthene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Chrysene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Fluoranthene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Fluorene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		08-SEP-17	
1-Methylnaphthalene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
2-Methylnaphthalene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Naphthalene	<0.050		0.050	ug/L	06-SEP-17	08-SEP-17	R3821704
Phenanthrene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Pyrene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Surrogate: d10-Acenaphthene	91.4		60-140	%	06-SEP-17	08-SEP-17	R3821704
Surrogate: d12-Chrysene	93.5		60-140	%	06-SEP-17	08-SEP-17	R3821704
Surrogate: d8-Naphthalene	91.5		60-140	%	06-SEP-17	08-SEP-17	R3821704
Surrogate: d10-Phenanthrene	102.9		60-140	%	06-SEP-17	08-SEP-17	R3821704
Polychlorinated Biphenyls							
Aroclor 1242	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824408
Aroclor 1248	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824408
Aroclor 1254	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824408
Aroclor 1260	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824408
Total PCBs	<0.040		0.040	ug/L	11-SEP-17	12-SEP-17	R3824408
Surrogate: 2-fluorobiphenyl	73.9		50-150	%	11-SEP-17	12-SEP-17	R3824408
L1986110-3 OW15 Sampled By: CLIENT on 05-SEP-17 @ 11:45 Matrix: WATER							
Physical Tests							
Conductivity	0.571		0.0030	mS/cm		06-SEP-17	R3820599
pH	7.38		0.10	pH units		06-SEP-17	R3820599
Anions and Nutrients							
Chloride (Cl)	14.8		0.50	mg/L		08-SEP-17	R3823730
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		12-SEP-17	R3827207
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					06-SEP-17	R3820347
Dissolved Metals Filtration Location	FIELD					06-SEP-17	R3820231
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	06-SEP-17	06-SEP-17	R3821118
Arsenic (As)-Dissolved	2.01		0.10	ug/L	06-SEP-17	06-SEP-17	R3821118

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1986110-3 OW15 Sampled By: CLIENT on 05-SEP-17 @ 11:45 Matrix: WATER							
Dissolved Metals							
Barium (Ba)-Dissolved	44.7		0.10	ug/L	06-SEP-17	06-SEP-17	R3821118
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	06-SEP-17	06-SEP-17	R3821118
Boron (B)-Dissolved	76		10	ug/L	06-SEP-17	06-SEP-17	R3821118
Cadmium (Cd)-Dissolved	0.016		0.010	ug/L	06-SEP-17	06-SEP-17	R3821118
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	06-SEP-17	06-SEP-17	R3821118
Cobalt (Co)-Dissolved	0.16		0.10	ug/L	06-SEP-17	06-SEP-17	R3821118
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	06-SEP-17	06-SEP-17	R3821118
Lead (Pb)-Dissolved	0.275		0.050	ug/L	06-SEP-17	06-SEP-17	R3821118
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	06-SEP-17	06-SEP-17	R3820537
Molybdenum (Mo)-Dissolved	1.56		0.050	ug/L	06-SEP-17	06-SEP-17	R3821118
Nickel (Ni)-Dissolved	1.92		0.50	ug/L	06-SEP-17	06-SEP-17	R3821118
Selenium (Se)-Dissolved	0.076		0.050	ug/L	06-SEP-17	06-SEP-17	R3821118
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	06-SEP-17	06-SEP-17	R3821118
Sodium (Na)-Dissolved	9730		500	ug/L	06-SEP-17	06-SEP-17	R3821118
Thallium (Tl)-Dissolved	0.015		0.010	ug/L	06-SEP-17	06-SEP-17	R3821118
Uranium (U)-Dissolved	0.452		0.010	ug/L	06-SEP-17	06-SEP-17	R3821118
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	06-SEP-17	06-SEP-17	R3821118
Zinc (Zn)-Dissolved	87.5		1.0	ug/L	06-SEP-17	06-SEP-17	R3821118
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		07-SEP-17	R3821991
Volatile Organic Compounds							
Acetone	<30		30	ug/L		07-SEP-17	R3821109
Benzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Bromodichloromethane	<2.0		2.0	ug/L		07-SEP-17	R3821109
Bromoform	<5.0		5.0	ug/L		07-SEP-17	R3821109
Bromomethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
Carbon tetrachloride	<0.20		0.20	ug/L		07-SEP-17	R3821109
Chlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Dibromochloromethane	<2.0		2.0	ug/L		07-SEP-17	R3821109
Chloroform	<1.0		1.0	ug/L		07-SEP-17	R3821109
1,2-Dibromoethane	<0.20		0.20	ug/L		07-SEP-17	R3821109
1,2-Dichlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,3-Dichlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,4-Dichlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Dichlorodifluoromethane	<2.0		2.0	ug/L		07-SEP-17	R3821109
1,1-Dichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,2-Dichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1-Dichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Methylene Chloride	<5.0		5.0	ug/L		07-SEP-17	R3821109

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1986110-3 OW15 Sampled By: CLIENT on 05-SEP-17 @ 11:45 Matrix: WATER							
Volatile Organic Compounds							
1,2-Dichloropropane	<0.50		0.50	ug/L		07-SEP-17	R3821109
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		07-SEP-17	R3821109
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		07-SEP-17	R3821109
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		07-SEP-17	
Ethylbenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
n-Hexane	<0.50		0.50	ug/L		07-SEP-17	R3821109
Methyl Ethyl Ketone	<20		20	ug/L		07-SEP-17	R3821109
Methyl Isobutyl Ketone	<20		20	ug/L		07-SEP-17	R3821109
MTBE	<2.0		2.0	ug/L		07-SEP-17	R3821109
Styrene	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
Tetrachloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Toluene	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1,1-Trichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1,2-Trichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
Trichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Trichlorofluoromethane	<5.0		5.0	ug/L		07-SEP-17	R3821109
Vinyl chloride	<0.50		0.50	ug/L		07-SEP-17	R3821109
o-Xylene	<0.30		0.30	ug/L		07-SEP-17	R3821109
m+p-Xylenes	<0.40		0.40	ug/L		07-SEP-17	R3821109
Xylenes (Total)	<0.50		0.50	ug/L		07-SEP-17	
Surrogate: 4-Bromofluorobenzene	89.3		70-130	%		07-SEP-17	R3821109
Surrogate: 1,4-Difluorobenzene	99.7		70-130	%		07-SEP-17	R3821109
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		07-SEP-17	R3821109
F1-BTEX	<25		25	ug/L		08-SEP-17	
F2 (C10-C16)	<100		100	ug/L	14-SEP-17	14-SEP-17	R3828769
F3a (C16-C22)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828769
F3 (C16-C34)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828769
F3b (C22-C34)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828769
F4 (C34-C50)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828769
Chrom. to baseline at nC50	YES				14-SEP-17	14-SEP-17	R3828769
Surrogate: 2-Bromobenzotrifluoride	106.0		60-140	%	14-SEP-17	14-SEP-17	R3828769
Surrogate: 3,4-Dichlorotoluene	77.0		60-140	%		07-SEP-17	R3821109
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Acenaphthylene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Anthracene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Benzo(a)anthracene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Benzo(a)pyrene	<0.010		0.010	ug/L	06-SEP-17	08-SEP-17	R3821704

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1986110-3 OW15 Sampled By: CLIENT on 05-SEP-17 @ 11:45 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Benzo(b)fluoranthene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Benzo(k)fluoranthene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Chrysene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Fluoranthene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Fluorene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		08-SEP-17	
1-Methylnaphthalene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
2-Methylnaphthalene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Naphthalene	<0.050		0.050	ug/L	06-SEP-17	08-SEP-17	R3821704
Phenanthrene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Pyrene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Surrogate: d10-Acenaphthene	94.7		60-140	%	06-SEP-17	08-SEP-17	R3821704
Surrogate: d12-Chrysene	97.1		60-140	%	06-SEP-17	08-SEP-17	R3821704
Surrogate: d8-Naphthalene	94.9		60-140	%	06-SEP-17	08-SEP-17	R3821704
Surrogate: d10-Phenanthrene	106.4		60-140	%	06-SEP-17	08-SEP-17	R3821704
Polychlorinated Biphenyls							
Aroclor 1242	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824408
Aroclor 1248	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824408
Aroclor 1254	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824408
Aroclor 1260	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824408
Total PCBs	<0.040		0.040	ug/L	11-SEP-17	12-SEP-17	R3824408
Surrogate: 2-fluorobiphenyl	74.1		50-150	%	11-SEP-17	12-SEP-17	R3824408
L1986110-4 OW07-31 Sampled By: CLIENT on 05-SEP-17 @ 13:52 Matrix: WATER							
Physical Tests							
Conductivity	1.53		0.0030	mS/cm		06-SEP-17	R3820599
pH	7.42		0.10	pH units		06-SEP-17	R3820599
Anions and Nutrients							
Chloride (Cl)	327	DLHC	2.5	mg/L		08-SEP-17	R3823730
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		12-SEP-17	R3827207
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					06-SEP-17	R3820347
Dissolved Metals Filtration Location	FIELD					06-SEP-17	R3820231
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	06-SEP-17	07-SEP-17	R3821118
Arsenic (As)-Dissolved	45.7		0.10	ug/L	06-SEP-17	07-SEP-17	R3821118
Barium (Ba)-Dissolved	72.8		0.10	ug/L	06-SEP-17	07-SEP-17	R3821118
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	06-SEP-17	07-SEP-17	R3821118

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1986110-4 OW07-31 Sampled By: CLIENT on 05-SEP-17 @ 13:52 Matrix: WATER							
Dissolved Metals							
Boron (B)-Dissolved	53		10	ug/L	06-SEP-17	07-SEP-17	R3821118
Cadmium (Cd)-Dissolved	0.017		0.010	ug/L	06-SEP-17	07-SEP-17	R3821118
Chromium (Cr)-Dissolved	0.53		0.50	ug/L	06-SEP-17	07-SEP-17	R3821118
Cobalt (Co)-Dissolved	0.38		0.10	ug/L	06-SEP-17	07-SEP-17	R3821118
Copper (Cu)-Dissolved	0.24		0.20	ug/L	06-SEP-17	07-SEP-17	R3821118
Lead (Pb)-Dissolved	0.244		0.050	ug/L	06-SEP-17	07-SEP-17	R3821118
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	06-SEP-17	06-SEP-17	R3820537
Molybdenum (Mo)-Dissolved	1.78		0.050	ug/L	06-SEP-17	07-SEP-17	R3821118
Nickel (Ni)-Dissolved	1.39		0.50	ug/L	06-SEP-17	07-SEP-17	R3821118
Selenium (Se)-Dissolved	0.260		0.050	ug/L	06-SEP-17	07-SEP-17	R3821118
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	06-SEP-17	07-SEP-17	R3821118
Sodium (Na)-Dissolved	165000	DLHC	5000	ug/L	06-SEP-17	06-SEP-17	R3821118
Thallium (Tl)-Dissolved	0.014		0.010	ug/L	06-SEP-17	07-SEP-17	R3821118
Uranium (U)-Dissolved	1.23		0.010	ug/L	06-SEP-17	07-SEP-17	R3821118
Vanadium (V)-Dissolved	1.66		0.50	ug/L	06-SEP-17	07-SEP-17	R3821118
Zinc (Zn)-Dissolved	47.0		1.0	ug/L	06-SEP-17	07-SEP-17	R3821118
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		07-SEP-17	R3821991
Volatile Organic Compounds							
Acetone	<30		30	ug/L		07-SEP-17	R3821109
Benzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Bromodichloromethane	<2.0		2.0	ug/L		07-SEP-17	R3821109
Bromoform	<5.0		5.0	ug/L		07-SEP-17	R3821109
Bromomethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
Carbon tetrachloride	<0.20		0.20	ug/L		07-SEP-17	R3821109
Chlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Dibromochloromethane	<2.0		2.0	ug/L		07-SEP-17	R3821109
Chloroform	<1.0		1.0	ug/L		07-SEP-17	R3821109
1,2-Dibromoethane	<0.20		0.20	ug/L		07-SEP-17	R3821109
1,2-Dichlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,3-Dichlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,4-Dichlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Dichlorodifluoromethane	<2.0		2.0	ug/L		07-SEP-17	R3821109
1,1-Dichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,2-Dichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1-Dichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Methylene Chloride	<5.0		5.0	ug/L		07-SEP-17	R3821109
1,2-Dichloropropane	<0.50		0.50	ug/L		07-SEP-17	R3821109
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		07-SEP-17	R3821109

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1986110-4 OW07-31 Sampled By: CLIENT on 05-SEP-17 @ 13:52 Matrix: WATER							
Volatile Organic Compounds							
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		07-SEP-17	R3821109
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		07-SEP-17	
Ethylbenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
n-Hexane	<0.50		0.50	ug/L		07-SEP-17	R3821109
Methyl Ethyl Ketone	<20		20	ug/L		07-SEP-17	R3821109
Methyl Isobutyl Ketone	<20		20	ug/L		07-SEP-17	R3821109
MTBE	<2.0		2.0	ug/L		07-SEP-17	R3821109
Styrene	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
Tetrachloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Toluene	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1,1-Trichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1,2-Trichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
Trichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Trichlorofluoromethane	<5.0		5.0	ug/L		07-SEP-17	R3821109
Vinyl chloride	<0.50		0.50	ug/L		07-SEP-17	R3821109
o-Xylene	<0.30		0.30	ug/L		07-SEP-17	R3821109
m+p-Xylenes	<0.40		0.40	ug/L		07-SEP-17	R3821109
Xylenes (Total)	<0.50		0.50	ug/L		07-SEP-17	
Surrogate: 4-Bromofluorobenzene	89.9		70-130	%		07-SEP-17	R3821109
Surrogate: 1,4-Difluorobenzene	98.8		70-130	%		07-SEP-17	R3821109
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		07-SEP-17	R3821109
F1-BTEX	<25		25	ug/L		12-SEP-17	
F2 (C10-C16)	<100		100	ug/L	14-SEP-17	14-SEP-17	R3828769
F3a (C16-C22)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828769
F3 (C16-C34)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828769
F3b (C22-C34)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828769
F4 (C34-C50)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828769
Chrom. to baseline at nC50	YES				14-SEP-17	14-SEP-17	R3828769
Surrogate: 2-Bromobenzotrifluoride	108.4		60-140	%	14-SEP-17	14-SEP-17	R3828769
Surrogate: 3,4-Dichlorotoluene	76.9		60-140	%		07-SEP-17	R3821109
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Acenaphthylene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Anthracene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Benzo(a)anthracene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Benzo(a)pyrene	<0.010		0.010	ug/L	06-SEP-17	08-SEP-17	R3821704
Benzo(b)fluoranthene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1986110-4 OW07-31 Sampled By: CLIENT on 05-SEP-17 @ 13:52 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Benzo(k)fluoranthene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Chrysene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Fluoranthene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Fluorene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		12-SEP-17	
1-Methylnaphthalene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
2-Methylnaphthalene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Naphthalene	<0.050		0.050	ug/L	06-SEP-17	08-SEP-17	R3821704
Phenanthrene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Pyrene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Surrogate: d10-Acenaphthene	92.2		60-140	%	06-SEP-17	08-SEP-17	R3821704
Surrogate: d12-Chrysene	97.8		60-140	%	06-SEP-17	08-SEP-17	R3821704
Surrogate: d8-Naphthalene	92.5		60-140	%	06-SEP-17	08-SEP-17	R3821704
Surrogate: d10-Phenanthrene	103.3		60-140	%	06-SEP-17	08-SEP-17	R3821704
Semi-Volatile Organics							
Biphenyl	<0.40		0.40	ug/L	08-SEP-17	12-SEP-17	R3823758
4-Chloroaniline	<0.40		0.40	ug/L	08-SEP-17	12-SEP-17	R3823758
Bis(2-chloroethyl)ether	<0.40		0.40	ug/L	08-SEP-17	12-SEP-17	R3823758
Bis(2-chloroisopropyl)ether	<0.40		0.40	ug/L	08-SEP-17	12-SEP-17	R3823758
2-Chlorophenol	<0.30		0.30	ug/L	08-SEP-17	12-SEP-17	R3823758
3,3'-Dichlorobenzidine	<0.40		0.40	ug/L	08-SEP-17	12-SEP-17	R3823758
2,4-Dichlorophenol	<0.30		0.30	ug/L	08-SEP-17	12-SEP-17	R3823758
Diethylphthalate	<0.20		0.20	ug/L	08-SEP-17	12-SEP-17	R3823758
Dimethylphthalate	<0.20		0.20	ug/L	08-SEP-17	12-SEP-17	R3823758
2,4-Dimethylphenol	<0.50		0.50	ug/L	08-SEP-17	12-SEP-17	R3823758
2,4-Dinitrophenol	<1.0		1.0	ug/L	08-SEP-17	12-SEP-17	R3823758
2,4-Dinitrotoluene	<0.40		0.40	ug/L	08-SEP-17	12-SEP-17	R3823758
2,6-Dinitrotoluene	<0.40		0.40	ug/L	08-SEP-17	12-SEP-17	R3823758
2,4+2,6-Dinitrotoluene	<0.57		0.57	ug/L		12-SEP-17	
Bis(2-ethylhexyl)phthalate	<2.0		2.0	ug/L	08-SEP-17	12-SEP-17	R3823758
Pentachlorophenol	<0.50		0.50	ug/L	08-SEP-17	12-SEP-17	R3823758
Phenanthrene	<0.20		0.20	ug/L	08-SEP-17	12-SEP-17	R3823758
Phenol	<0.50		0.50	ug/L	08-SEP-17	12-SEP-17	R3823758
Pyrene	<0.20		0.20	ug/L	08-SEP-17	12-SEP-17	R3823758
1,2,4-Trichlorobenzene	<0.40		0.40	ug/L	08-SEP-17	12-SEP-17	R3823758
2,4,5-Trichlorophenol	<0.20		0.20	ug/L	08-SEP-17	12-SEP-17	R3823758
2,4,6-Trichlorophenol	<0.20		0.20	ug/L	08-SEP-17	12-SEP-17	R3823758
Surrogate: 2-Fluorobiphenyl	99.3		50-140	%	08-SEP-17	12-SEP-17	R3823758
Surrogate: Nitrobenzene d5	99.9		50-140	%	08-SEP-17	12-SEP-17	R3823758

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1986110-4 OW07-31 Sampled By: CLIENT on 05-SEP-17 @ 13:52 Matrix: WATER							
Semi-Volatile Organics							
Surrogate: Phenol d5	49.6		30-130	%	08-SEP-17	12-SEP-17	R3823758
Surrogate: p-Terphenyl d14	86.6		60-140	%	08-SEP-17	12-SEP-17	R3823758
Surrogate: 2,4,6-Tribromophenol	123.9		50-140	%	08-SEP-17	12-SEP-17	R3823758
L1986110-5 OW02 Sampled By: CLIENT on 05-SEP-17 @ 15:02 Matrix: WATER							
Physical Tests							
Conductivity	0.724		0.0030	mS/cm		06-SEP-17	R3820599
pH	7.28		0.10	pH units		06-SEP-17	R3820599
Anions and Nutrients							
Chloride (Cl)	7.51		0.50	mg/L		08-SEP-17	R3823730
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		12-SEP-17	R3827207
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					06-SEP-17	R3820347
Dissolved Metals Filtration Location	FIELD					06-SEP-17	R3820231
Antimony (Sb)-Dissolved	0.34		0.10	ug/L	06-SEP-17	06-SEP-17	R3821118
Arsenic (As)-Dissolved	1.00		0.10	ug/L	06-SEP-17	06-SEP-17	R3821118
Barium (Ba)-Dissolved	45.5		0.10	ug/L	06-SEP-17	06-SEP-17	R3821118
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	06-SEP-17	06-SEP-17	R3821118
Boron (B)-Dissolved	82		10	ug/L	06-SEP-17	06-SEP-17	R3821118
Cadmium (Cd)-Dissolved	0.012		0.010	ug/L	06-SEP-17	06-SEP-17	R3821118
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	06-SEP-17	06-SEP-17	R3821118
Cobalt (Co)-Dissolved	0.82		0.10	ug/L	06-SEP-17	06-SEP-17	R3821118
Copper (Cu)-Dissolved	0.85		0.20	ug/L	06-SEP-17	06-SEP-17	R3821118
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	06-SEP-17	06-SEP-17	R3821118
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	06-SEP-17	06-SEP-17	R3820537
Molybdenum (Mo)-Dissolved	1.86		0.050	ug/L	06-SEP-17	06-SEP-17	R3821118
Nickel (Ni)-Dissolved	7.14		0.50	ug/L	06-SEP-17	06-SEP-17	R3821118
Selenium (Se)-Dissolved	0.110		0.050	ug/L	06-SEP-17	06-SEP-17	R3821118
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	06-SEP-17	06-SEP-17	R3821118
Sodium (Na)-Dissolved	6050		500	ug/L	06-SEP-17	06-SEP-17	R3821118
Thallium (Tl)-Dissolved	0.084		0.010	ug/L	06-SEP-17	06-SEP-17	R3821118
Uranium (U)-Dissolved	2.50		0.010	ug/L	06-SEP-17	06-SEP-17	R3821118
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	06-SEP-17	06-SEP-17	R3821118
Zinc (Zn)-Dissolved	154		1.0	ug/L	06-SEP-17	06-SEP-17	R3821118
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		07-SEP-17	R3821991
Volatile Organic Compounds							
Acetone	<30		30	ug/L		07-SEP-17	R3821109
Benzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Bromodichloromethane	<2.0		2.0	ug/L		07-SEP-17	R3821109

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1986110-5 OW02 Sampled By: CLIENT on 05-SEP-17 @ 15:02 Matrix: WATER							
Volatile Organic Compounds							
Bromoform	<5.0		5.0	ug/L		07-SEP-17	R3821109
Bromomethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
Carbon tetrachloride	<0.20		0.20	ug/L		07-SEP-17	R3821109
Chlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Dibromochloromethane	<2.0		2.0	ug/L		07-SEP-17	R3821109
Chloroform	<1.0		1.0	ug/L		07-SEP-17	R3821109
1,2-Dibromoethane	<0.20		0.20	ug/L		07-SEP-17	R3821109
1,2-Dichlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,3-Dichlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,4-Dichlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Dichlorodifluoromethane	<2.0		2.0	ug/L		07-SEP-17	R3821109
1,1-Dichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,2-Dichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1-Dichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Methylene Chloride	<5.0		5.0	ug/L		07-SEP-17	R3821109
1,2-Dichloropropane	<0.50		0.50	ug/L		07-SEP-17	R3821109
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		07-SEP-17	R3821109
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		07-SEP-17	R3821109
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		07-SEP-17	
Ethylbenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
n-Hexane	<0.50		0.50	ug/L		07-SEP-17	R3821109
Methyl Ethyl Ketone	<20		20	ug/L		07-SEP-17	R3821109
Methyl Isobutyl Ketone	<20		20	ug/L		07-SEP-17	R3821109
MTBE	<2.0		2.0	ug/L		07-SEP-17	R3821109
Styrene	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
Tetrachloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Toluene	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1,1-Trichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1,2-Trichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
Trichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Trichlorofluoromethane	<5.0		5.0	ug/L		07-SEP-17	R3821109
Vinyl chloride	<0.50		0.50	ug/L		07-SEP-17	R3821109
o-Xylene	<0.30		0.30	ug/L		07-SEP-17	R3821109
m+p-Xylenes	<0.40		0.40	ug/L		07-SEP-17	R3821109
Xylenes (Total)	<0.50		0.50	ug/L		07-SEP-17	
Surrogate: 4-Bromofluorobenzene	89.7		70-130	%		07-SEP-17	R3821109
Surrogate: 1,4-Difluorobenzene	99.3		70-130	%		07-SEP-17	R3821109

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1986110-5 OW02 Sampled By: CLIENT on 05-SEP-17 @ 15:02 Matrix: WATER							
Volatile Organic Compounds							
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		07-SEP-17	R3821109
F1-BTEX	<25		25	ug/L		12-SEP-17	
F2 (C10-C16)	<100		100	ug/L	14-SEP-17	14-SEP-17	R3828769
F3a (C16-C22)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828769
F3 (C16-C34)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828769
F3b (C22-C34)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828769
F4 (C34-C50)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828769
Chrom. to baseline at nC50	YES				14-SEP-17	14-SEP-17	R3828769
Surrogate: 2-Bromobenzotrifluoride	103.3		60-140	%	14-SEP-17	14-SEP-17	R3828769
Surrogate: 3,4-Dichlorotoluene	72.3		60-140	%		07-SEP-17	R3821109
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Acenaphthylene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Anthracene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Benzo(a)anthracene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Benzo(a)pyrene	<0.010		0.010	ug/L	06-SEP-17	08-SEP-17	R3821704
Benzo(b)fluoranthene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Benzo(k)fluoranthene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Chrysene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Fluoranthene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Fluorene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		12-SEP-17	
1-Methylnaphthalene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
2-Methylnaphthalene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Naphthalene	<0.050		0.050	ug/L	06-SEP-17	08-SEP-17	R3821704
Phenanthrene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Pyrene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Surrogate: d10-Acenaphthene	89.7		60-140	%	06-SEP-17	08-SEP-17	R3821704
Surrogate: d12-Chrysene	98.3		60-140	%	06-SEP-17	08-SEP-17	R3821704
Surrogate: d8-Naphthalene	90.7		60-140	%	06-SEP-17	08-SEP-17	R3821704
Surrogate: d10-Phenanthrene	100.8		60-140	%	06-SEP-17	08-SEP-17	R3821704
Semi-Volatile Organics							
Biphenyl	<0.40		0.40	ug/L	08-SEP-17	12-SEP-17	R3823758
4-Chloroaniline	<0.40		0.40	ug/L	08-SEP-17	12-SEP-17	R3823758
Bis(2-chloroethyl)ether	<0.40		0.40	ug/L	08-SEP-17	12-SEP-17	R3823758
Bis(2-chloroisopropyl)ether	<0.40		0.40	ug/L	08-SEP-17	12-SEP-17	R3823758
2-Chlorophenol	<0.30		0.30	ug/L	08-SEP-17	12-SEP-17	R3823758
3,3'-Dichlorobenzidine	<0.40		0.40	ug/L	08-SEP-17	12-SEP-17	R3823758

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1986110-5 OW02 Sampled By: CLIENT on 05-SEP-17 @ 15:02 Matrix: WATER							
Semi-Volatile Organics							
2,4-Dichlorophenol	<0.30		0.30	ug/L	08-SEP-17	12-SEP-17	R3823758
Diethylphthalate	<0.20		0.20	ug/L	08-SEP-17	12-SEP-17	R3823758
Dimethylphthalate	<0.20		0.20	ug/L	08-SEP-17	12-SEP-17	R3823758
2,4-Dimethylphenol	<0.50		0.50	ug/L	08-SEP-17	12-SEP-17	R3823758
2,4-Dinitrophenol	<1.0		1.0	ug/L	08-SEP-17	12-SEP-17	R3823758
2,4-Dinitrotoluene	<0.40		0.40	ug/L	08-SEP-17	12-SEP-17	R3823758
2,6-Dinitrotoluene	<0.40		0.40	ug/L	08-SEP-17	12-SEP-17	R3823758
2,4+2,6-Dinitrotoluene	<0.57		0.57	ug/L		12-SEP-17	
Bis(2-ethylhexyl)phthalate	<2.0		2.0	ug/L	08-SEP-17	12-SEP-17	R3823758
Pentachlorophenol	<0.50		0.50	ug/L	08-SEP-17	12-SEP-17	R3823758
Phenanthrene	<0.20		0.20	ug/L	08-SEP-17	12-SEP-17	R3823758
Phenol	<0.50		0.50	ug/L	08-SEP-17	12-SEP-17	R3823758
Pyrene	<0.20		0.20	ug/L	08-SEP-17	12-SEP-17	R3823758
1,2,4-Trichlorobenzene	<0.40		0.40	ug/L	08-SEP-17	12-SEP-17	R3823758
2,4,5-Trichlorophenol	<0.20		0.20	ug/L	08-SEP-17	12-SEP-17	R3823758
2,4,6-Trichlorophenol	<0.20		0.20	ug/L	08-SEP-17	12-SEP-17	R3823758
Surrogate: 2-Fluorobiphenyl	98.3		50-140	%	08-SEP-17	12-SEP-17	R3823758
Surrogate: Nitrobenzene d5	98.8		50-140	%	08-SEP-17	12-SEP-17	R3823758
Surrogate: Phenol d5	52.2		30-130	%	08-SEP-17	12-SEP-17	R3823758
Surrogate: p-Terphenyl d14	86.7		60-140	%	08-SEP-17	12-SEP-17	R3823758
Surrogate: 2,4,6-Tribromophenol	126.4		50-140	%	08-SEP-17	12-SEP-17	R3823758
L1986110-6 OW17 Sampled By: CLIENT on 05-SEP-17 @ 16:02 Matrix: WATER							
Physical Tests							
Conductivity	0.830		0.0030	mS/cm		06-SEP-17	R3820599
pH	7.49		0.10	pH units		06-SEP-17	R3820599
Anions and Nutrients							
Chloride (Cl)	2.55		0.50	mg/L		08-SEP-17	R3823730
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		12-SEP-17	R3827207
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					06-SEP-17	R3820347
Dissolved Metals Filtration Location	FIELD					06-SEP-17	R3820231
Antimony (Sb)-Dissolved	0.23		0.10	ug/L	06-SEP-17	06-SEP-17	R3821118
Arsenic (As)-Dissolved	3.92		0.10	ug/L	06-SEP-17	06-SEP-17	R3821118
Barium (Ba)-Dissolved	56.2		0.10	ug/L	06-SEP-17	06-SEP-17	R3821118
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	06-SEP-17	06-SEP-17	R3821118
Boron (B)-Dissolved	90		10	ug/L	06-SEP-17	06-SEP-17	R3821118
Cadmium (Cd)-Dissolved	0.013		0.010	ug/L	06-SEP-17	06-SEP-17	R3821118
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	06-SEP-17	06-SEP-17	R3821118
Cobalt (Co)-Dissolved	1.12		0.10	ug/L	06-SEP-17	06-SEP-17	R3821118

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1986110-6 OW17 Sampled By: CLIENT on 05-SEP-17 @ 16:02 Matrix: WATER							
Dissolved Metals							
Copper (Cu)-Dissolved	0.99		0.20	ug/L	06-SEP-17	06-SEP-17	R3821118
Lead (Pb)-Dissolved	0.083		0.050	ug/L	06-SEP-17	06-SEP-17	R3821118
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	06-SEP-17	06-SEP-17	R3820537
Molybdenum (Mo)-Dissolved	1.34		0.050	ug/L	06-SEP-17	06-SEP-17	R3821118
Nickel (Ni)-Dissolved	1.81		0.50	ug/L	06-SEP-17	06-SEP-17	R3821118
Selenium (Se)-Dissolved	0.188		0.050	ug/L	06-SEP-17	06-SEP-17	R3821118
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	06-SEP-17	06-SEP-17	R3821118
Sodium (Na)-Dissolved	5090		500	ug/L	06-SEP-17	06-SEP-17	R3821118
Thallium (Tl)-Dissolved	0.023		0.010	ug/L	06-SEP-17	06-SEP-17	R3821118
Uranium (U)-Dissolved	1.00		0.010	ug/L	06-SEP-17	06-SEP-17	R3821118
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	06-SEP-17	06-SEP-17	R3821118
Zinc (Zn)-Dissolved	94.1		1.0	ug/L	06-SEP-17	06-SEP-17	R3821118
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		07-SEP-17	R3821991
Volatile Organic Compounds							
Acetone	<30		30	ug/L		07-SEP-17	R3821109
Benzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Bromodichloromethane	<2.0		2.0	ug/L		07-SEP-17	R3821109
Bromoform	<5.0		5.0	ug/L		07-SEP-17	R3821109
Bromomethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
Carbon tetrachloride	<0.20		0.20	ug/L		07-SEP-17	R3821109
Chlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Dibromochloromethane	<2.0		2.0	ug/L		07-SEP-17	R3821109
Chloroform	<1.0		1.0	ug/L		07-SEP-17	R3821109
1,2-Dibromoethane	<0.20		0.20	ug/L		07-SEP-17	R3821109
1,2-Dichlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,3-Dichlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,4-Dichlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Dichlorodifluoromethane	<2.0		2.0	ug/L		07-SEP-17	R3821109
1,1-Dichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,2-Dichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1-Dichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Methylene Chloride	<5.0		5.0	ug/L		07-SEP-17	R3821109
1,2-Dichloropropane	<0.50		0.50	ug/L		07-SEP-17	R3821109
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		07-SEP-17	R3821109
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		07-SEP-17	R3821109
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		07-SEP-17	
Ethylbenzene	<0.50		0.50	ug/L		07-SEP-17	R3821109
n-Hexane	<0.50		0.50	ug/L		07-SEP-17	R3821109

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1986110-6 OW17 Sampled By: CLIENT on 05-SEP-17 @ 16:02 Matrix: WATER							
Volatile Organic Compounds							
Methyl Ethyl Ketone	<20		20	ug/L		07-SEP-17	R3821109
Methyl Isobutyl Ketone	<20		20	ug/L		07-SEP-17	R3821109
MTBE	<2.0		2.0	ug/L		07-SEP-17	R3821109
Styrene	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
Tetrachloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Toluene	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1,1-Trichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
1,1,2-Trichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821109
Trichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821109
Trichlorofluoromethane	<5.0		5.0	ug/L		07-SEP-17	R3821109
Vinyl chloride	<0.50		0.50	ug/L		07-SEP-17	R3821109
o-Xylene	<0.30		0.30	ug/L		07-SEP-17	R3821109
m+p-Xylenes	<0.40		0.40	ug/L		07-SEP-17	R3821109
Xylenes (Total)	<0.50		0.50	ug/L		07-SEP-17	
Surrogate: 4-Bromofluorobenzene	88.4		70-130	%		07-SEP-17	R3821109
Surrogate: 1,4-Difluorobenzene	98.7		70-130	%		07-SEP-17	R3821109
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		07-SEP-17	R3821109
F1-BTEX	<25		25	ug/L		08-SEP-17	
F2 (C10-C16)	<100		100	ug/L	14-SEP-17	14-SEP-17	R3828769
F3a (C16-C22)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828769
F3 (C16-C34)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828769
F3b (C22-C34)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828769
F4 (C34-C50)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828769
Chrom. to baseline at nC50	YES				14-SEP-17	14-SEP-17	R3828769
Surrogate: 2-Bromobenzotrifluoride	105.0		60-140	%	14-SEP-17	14-SEP-17	R3828769
Surrogate: 3,4-Dichlorotoluene	67.9		60-140	%		07-SEP-17	R3821109
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	0.062		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Acenaphthylene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Anthracene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Benzo(a)anthracene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Benzo(a)pyrene	<0.010		0.010	ug/L	06-SEP-17	08-SEP-17	R3821704
Benzo(b)fluoranthene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Benzo(k)fluoranthene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Chrysene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Fluoranthene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1986110-6 OW17 Sampled By: CLIENT on 05-SEP-17 @ 16:02 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Fluorene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		08-SEP-17	
1-Methylnaphthalene	0.025		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
2-Methylnaphthalene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Naphthalene	<0.060	DLQ	0.060	ug/L	06-SEP-17	08-SEP-17	R3821704
Phenanthrene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Pyrene	<0.020		0.020	ug/L	06-SEP-17	08-SEP-17	R3821704
Surrogate: d10-Acenaphthene	87.8		60-140	%	06-SEP-17	08-SEP-17	R3821704
Surrogate: d12-Chrysene	89.9		60-140	%	06-SEP-17	08-SEP-17	R3821704
Surrogate: d8-Naphthalene	86.7		60-140	%	06-SEP-17	08-SEP-17	R3821704
Surrogate: d10-Phenanthrene	101.0		60-140	%	06-SEP-17	08-SEP-17	R3821704
L1986110-7 TRIP BLANK 4 Sampled By: CLIENT on 05-SEP-17 Matrix: WATER							
Volatile Organic Compounds							
Acetone	<30		30	ug/L		07-SEP-17	R3821238
Benzene	<0.50		0.50	ug/L		07-SEP-17	R3821238
Bromodichloromethane	<2.0		2.0	ug/L		07-SEP-17	R3821238
Bromoform	<5.0		5.0	ug/L		07-SEP-17	R3821238
Bromomethane	<0.50		0.50	ug/L		07-SEP-17	R3821238
Carbon tetrachloride	<0.20		0.20	ug/L		07-SEP-17	R3821238
Chlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821238
Dibromochloromethane	<2.0		2.0	ug/L		07-SEP-17	R3821238
Chloroform	<1.0		1.0	ug/L		07-SEP-17	R3821238
1,2-Dibromoethane	<0.20		0.20	ug/L		07-SEP-17	R3821238
1,2-Dichlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821238
1,3-Dichlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821238
1,4-Dichlorobenzene	<0.50		0.50	ug/L		07-SEP-17	R3821238
Dichlorodifluoromethane	<2.0		2.0	ug/L		07-SEP-17	R3821238
1,1-Dichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821238
1,2-Dichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821238
1,1-Dichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821238
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821238
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821238
Methylene Chloride	<5.0		5.0	ug/L		07-SEP-17	R3821238
1,2-Dichloropropane	<0.50		0.50	ug/L		07-SEP-17	R3821238
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		07-SEP-17	R3821238
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		07-SEP-17	R3821238
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		07-SEP-17	
Ethylbenzene	<0.50		0.50	ug/L		07-SEP-17	R3821238
n-Hexane	<0.50		0.50	ug/L		07-SEP-17	R3821238

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1986110-7 TRIP BLANK 4 Sampled By: CLIENT on 05-SEP-17 Matrix: WATER							
Volatile Organic Compounds							
Methyl Ethyl Ketone	<20		20	ug/L		07-SEP-17	R3821238
Methyl Isobutyl Ketone	<20		20	ug/L		07-SEP-17	R3821238
MTBE	<2.0		2.0	ug/L		07-SEP-17	R3821238
Styrene	<0.50		0.50	ug/L		07-SEP-17	R3821238
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821238
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821238
Tetrachloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821238
Toluene	<0.50		0.50	ug/L		07-SEP-17	R3821238
1,1,1-Trichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821238
1,1,2-Trichloroethane	<0.50		0.50	ug/L		07-SEP-17	R3821238
Trichloroethylene	<0.50		0.50	ug/L		07-SEP-17	R3821238
Trichlorofluoromethane	<5.0		5.0	ug/L		07-SEP-17	R3821238
Vinyl chloride	<0.50		0.50	ug/L		07-SEP-17	R3821238
o-Xylene	<0.30		0.30	ug/L		07-SEP-17	R3821238
m+p-Xylenes	<0.40		0.40	ug/L		07-SEP-17	R3821238
Xylenes (Total)	<0.50		0.50	ug/L		07-SEP-17	
Surrogate: 4-Bromofluorobenzene	95.9		70-130	%		07-SEP-17	R3821238
Surrogate: 1,4-Difluorobenzene	100.7		70-130	%		07-SEP-17	R3821238
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		07-SEP-17	R3821238
F1-BTEX	<25		25	ug/L		07-SEP-17	
Surrogate: 3,4-Dichlorotoluene	126.2		60-140	%		07-SEP-17	R3821238

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Laboratory Control Sample	Pentachlorophenol	LCS-H	L1986110-4, -5
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1986110-1, -2, -3, -4, -5, -6
Matrix Spike	Boron (B)-Dissolved	MS-B	L1986110-1, -2, -3, -4, -5, -6
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1986110-1, -2, -3, -4, -5, -6
Matrix Spike	Uranium (U)-Dissolved	MS-B	L1986110-1, -2, -3, -4, -5, -6

Sample Parameter Qualifier key listed:

Qualifier	Description
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
DLQ	Detection Limit raised due to co-eluting interference. GCMS qualifier ion ratio did not meet acceptance criteria.
LCS-H	Lab Control Sample recovery was above ALS DQO. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

1,4-DIOXANE-WT | Water | 1,4-Dioxane by Headspace GC/MS | SW846 8260

An aliquot of the sample is analyzed directly by headspace technology, followed by GC/MS using isotopic dilution.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

625-511-WT | Water | ABN,CP,PAH-O.Reg 153/04 | SW846 8270 (511)

Ground water sample extraction is carried out at a pH <2 (acid extractables) and pH>11 (base neutral extractables). Extracts are dried, concentrated and exchanged into a solvent compatible with the cleanup. Analysis is by GC/MS. Depending on the analytical GC/MS column used benzo(j)fluoranthene may chromatographically co-elute with benzo(b)fluoranthene or benzo(k)fluoranthene.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

CL-IC-N-WT | Water | Chloride by IC | EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT | Water | Cyanide (WAD)-O.Reg 153/04 | APHA 4500CN I-Weak acid Dist Colorimet

Weak acid dissociable cyanide (WAD) is determined by undergoing a distillation procedure. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-R511-WT | Water | Hex Chrom-O.Reg 153/04 (July 2011) | EPA 7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

DINITROTOL-CALC-WT | Water | ABN-Calculated Parameters | SW846 8270

EC-R511-WT | Water | Conductivity-O.Reg 153/04 (July 2011) | APHA 2510 B

Water samples can be measured directly by immersing the conductivity cell into the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-F4-511-CALC-WT | Water | F1-F4 Hydrocarbon Calculated Parameters | CCME CWS-PHC, Pub #1310, Dec 2001-L

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH

Reference Information

represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Water	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-UW-WT	Water	F2-F4 (O.Reg.153/04)	MOE DECPH-E3398/CCME TIER 1
HG-D-UG/L-CVAA-WT	Water	Diss. Mercury in Water by CVAAS (ug/L)	EPA 1631E (mod)

Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8

The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT	Water	PAH-Calculated Parameters	SW846 8270
PAH-511-WT	Water	PAH-O. Reg 153/04 (July 2011)	SW846 3510/8270

Aqueous samples, fortified with surrogates, are extracted using liquid/liquid extraction technique. The sample extracts are concentrated and then analyzed using GC/MS. Depending on the analytical GC/MS column used benzo(j)fluoranthene may chromatographically co-elute with benzo(b)fluoranthene or benzo(k)fluoranthene.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PCB-511-WT	Water	PCB-O. Reg 153/04 (July 2011)	SW846 3510/8082

Aqueous samples are extracted, then concentrated, reconstituted, and analyzed by GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

PH-WT	Water	pH	APHA 4500 H-Electrode

Water samples are analyzed directly by a calibrated pH meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Holdtime for samples under this regulation is 28 days

VOC-1,3-DCP-CALC-WT	Water	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Water	VOC by GCMS HS O.Reg 153/04 (July 2011)	SW846 8260

Liquid samples are analyzed by headspace GC/MSD.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION

Reference Information

Total xylenes represents the sum of o-xylene and m&p-xylene.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L1986110 Report Date: 15-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
1,4-DIOXANE-WT	**Water**							
Batch R3821109								
WG2594557-4 DUP		**WG2594557-3**						
1,4-Dioxane		<20	<20	RPD-NA	ug/L	N/A	30	07-SEP-17
WG2594557-1 LCS								
1,4-Dioxane			102.5		%		60-140	07-SEP-17
WG2594557-2 MB								
1,4-Dioxane			<20		ug/L		20	07-SEP-17
WG2594557-5 MS		**WG2594557-3**						
1,4-Dioxane			98.2		%		50-140	07-SEP-17
625-511-WT	**Water**							
Batch R3823758								
WG2611207-2 LCS								
1,2,4-Trichlorobenzene			81.9		%		50-140	11-SEP-17
2-Chlorophenol			84.8		%		50-140	11-SEP-17
2,4-Dichlorophenol			97.8		%		50-140	11-SEP-17
2,4-Dimethylphenol			95.1		%		30-130	11-SEP-17
2,4-Dinitrophenol			138.2		%		50-140	11-SEP-17
2,4-Dinitrotoluene			105.3		%		50-140	11-SEP-17
2,4,5-Trichlorophenol			109.6		%		50-140	11-SEP-17
2,4,6-Trichlorophenol			103.4		%		50-140	11-SEP-17
2,6-Dinitrotoluene			97.5		%		50-140	11-SEP-17
3,3'-Dichlorobenzidine			81.4		%		30-130	11-SEP-17
4-Chloroaniline			49.1		%		30-130	11-SEP-17
Biphenyl			91.9		%		50-140	11-SEP-17
Bis(2-chloroethyl)ether			90.0		%		50-140	11-SEP-17
Bis(2-chloroisopropyl)ether			88.9		%		50-140	11-SEP-17
Bis(2-ethylhexyl)phthalate			73.1		%		50-140	11-SEP-17
Diethylphthalate			86.5		%		50-140	11-SEP-17
Dimethylphthalate			84.8		%		50-140	11-SEP-17
Pentachlorophenol			140.1	LCS-H	%		50-140	11-SEP-17
Phenanthrene			94.4		%		50-140	11-SEP-17
Phenol			48.7		%		30-130	11-SEP-17
Pyrene			77.1		%		50-140	11-SEP-17
WG2611207-3 LCSD		**WG2611207-2**						
1,2,4-Trichlorobenzene		81.9	83.6		%	2.0	50	11-SEP-17
2-Chlorophenol		84.8	91.2		%	7.3	50	11-SEP-17

Quality Control Report

Workorder: L1986110 Report Date: 15-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Water**							
Batch R3823758								
WG2611207-3 LCSD		**WG2611207-2**						
2,4-Dichlorophenol		97.8	103.9		%	6.0	50	11-SEP-17
2,4-Dimethylphenol		95.1	112.5		%	17	50	11-SEP-17
2,4-Dinitrophenol		138.2	130.5		%	5.7	50	11-SEP-17
2,4-Dinitrotoluene		105.3	109.1		%	3.5	50	11-SEP-17
2,4,5-Trichlorophenol		109.6	117.8		%	7.2	50	11-SEP-17
2,4,6-Trichlorophenol		103.4	109.4		%	5.6	50	11-SEP-17
2,6-Dinitrotoluene		97.5	104.3		%	6.7	50	11-SEP-17
3,3'-Dichlorobenzidine		81.4	76.1		%	6.8	50	11-SEP-17
4-Chloroaniline		49.1	72.5		%	38	50	11-SEP-17
Biphenyl		91.9	95.2		%	3.5	50	11-SEP-17
Bis(2-chloroethyl)ether		90.0	93.2		%	3.5	50	11-SEP-17
Bis(2-chloroisopropyl)ether		88.9	90.8		%	2.2	50	11-SEP-17
Bis(2-ethylhexyl)phthalate		73.1	78.5		%	7.2	50	11-SEP-17
Diethylphthalate		86.5	91.5		%	5.7	50	11-SEP-17
Dimethylphthalate		84.8	89.1		%	4.9	50	11-SEP-17
Pentachlorophenol		140.1	142.1		%	1.4	50	11-SEP-17
Phenanthrene		94.4	99.0		%	4.7	50	11-SEP-17
Phenol		48.7	51.6		%	5.9	50	11-SEP-17
Pyrene		77.1	86.2		%	11	50	11-SEP-17
WG2611207-1 MB								
1,2,4-Trichlorobenzene			<0.40		ug/L		0.4	11-SEP-17
2-Chlorophenol			<0.30		ug/L		0.3	11-SEP-17
2,4-Dichlorophenol			<0.30		ug/L		0.3	11-SEP-17
2,4-Dimethylphenol			<0.50		ug/L		0.5	11-SEP-17
2,4-Dinitrophenol			<1.0		ug/L		1	11-SEP-17
2,4-Dinitrotoluene			<0.40		ug/L		0.4	11-SEP-17
2,4,5-Trichlorophenol			<0.20		ug/L		0.2	11-SEP-17
2,4,6-Trichlorophenol			<0.20		ug/L		0.2	11-SEP-17
2,6-Dinitrotoluene			<0.40		ug/L		0.4	11-SEP-17
3,3'-Dichlorobenzidine			<0.40		ug/L		0.4	11-SEP-17
4-Chloroaniline			<0.40		ug/L		0.4	11-SEP-17
Biphenyl			<0.40		ug/L		0.4	11-SEP-17
Bis(2-chloroethyl)ether			<0.40		ug/L		0.4	11-SEP-17

Quality Control Report

Workorder: L1986110 Report Date: 15-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Water**							
Batch R3823758								
WG2611207-1 MB								
Bis(2-chloroisopropyl)ether			<0.40		ug/L		0.4	11-SEP-17
Bis(2-ethylhexyl)phthalate			<2.0		ug/L		2	11-SEP-17
Diethylphthalate			<0.20		ug/L		0.2	11-SEP-17
Dimethylphthalate			<0.20		ug/L		0.2	11-SEP-17
Pentachlorophenol			<0.50		ug/L		0.5	11-SEP-17
Phenanthrene			<0.20		ug/L		0.2	11-SEP-17
Phenol			<0.50		ug/L		0.5	11-SEP-17
Pyrene			<0.20		ug/L		0.2	11-SEP-17
Surrogate: 2-Fluorobiphenyl			98.5		%		50-140	11-SEP-17
Surrogate: 2,4,6-Tribromophenol			99.9		%		50-140	11-SEP-17
Surrogate: Nitrobenzene d5			99.0		%		50-140	11-SEP-17
Surrogate: p-Terphenyl d14			91.2		%		60-140	11-SEP-17
Surrogate: Phenol d5			46.1		%		30-130	11-SEP-17
CL-IC-N-WT	**Water**							
Batch R3823730								
WG2611499-10 DUP		**WG2611499-8**						
Chloride (Cl)		3.28	3.29		mg/L	0.5	20	08-SEP-17
WG2611499-7 LCS								
Chloride (Cl)			101.4		%		90-110	08-SEP-17
WG2611499-6 MB								
Chloride (Cl)			<0.50		mg/L		0.5	08-SEP-17
WG2611499-9 MS		**WG2611499-8**						
Chloride (Cl)			100.6		%		75-125	08-SEP-17
CN-WAD-R511-WT	**Water**							
Batch R3827207								
WG2613826-3 DUP		**L1986110-1**						
Cyanide, Weak Acid Diss		<2.0	<2.0	RPD-NA	ug/L	N/A	20	12-SEP-17
WG2613826-2 LCS								
Cyanide, Weak Acid Diss			106.2		%		80-120	12-SEP-17
WG2613826-1 MB								
Cyanide, Weak Acid Diss			<2.0		ug/L		2	12-SEP-17
WG2613826-4 MS		**L1986110-1**						
Cyanide, Weak Acid Diss			108.8		%		70-130	12-SEP-17
CR-CR6-IC-R511-WT	**Water**							

Quality Control Report

Workorder: L1986110 Report Date: 15-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CR-CR6-IC-R511-WT	**Water**							
Batch R3821991								
WG2610623-4 DUP		**WG2610623-3**						
Chromium, Hexavalent		<1.0	<1.0	RPD-NA	ug/L	N/A	20	07-SEP-17
WG2610623-2 LCS								
Chromium, Hexavalent			101.6		%		80-120	07-SEP-17
WG2610623-1 MB								
Chromium, Hexavalent			<1.0		ug/L		1	07-SEP-17
WG2610623-5 MS		**WG2610623-3**						
Chromium, Hexavalent			98.1		%		70-130	07-SEP-17
EC-R511-WT	**Water**							
Batch R3820599								
WG2609262-4 DUP		**WG2609262-3**						
Conductivity		1.74	1.75		mS/cm	0.1	10	06-SEP-17
WG2609262-8 DUP		**WG2609262-7**						
Conductivity		0.335	0.336		mS/cm	0.3	10	06-SEP-17
WG2609262-2 LCS								
Conductivity			101.7		%		90-110	06-SEP-17
WG2609262-6 LCS								
Conductivity			101.6		%		90-110	06-SEP-17
WG2609262-1 MB								
Conductivity			<0.0030		mS/cm		0.003	06-SEP-17
WG2609262-5 MB								
Conductivity			<0.0030		mS/cm		0.003	06-SEP-17
F1-HS-511-WT	**Water**							
Batch R3821109								
WG2594557-4 DUP		**WG2594557-3**						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	07-SEP-17
WG2594557-1 LCS								
F1 (C6-C10)			104.7		%		80-120	07-SEP-17
WG2594557-2 MB								
F1 (C6-C10)			<25		ug/L		25	07-SEP-17
Surrogate: 3,4-Dichlorotoluene			77.9		%		60-140	07-SEP-17
WG2594557-5 MS		**WG2594557-3**						
F1 (C6-C10)			94.8		%		60-140	07-SEP-17
Batch R3821238								
WG2604556-4 DUP		**WG2604556-3**						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	07-SEP-17
WG2604556-1 LCS								

Quality Control Report

Workorder: L1986110 Report Date: 15-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT	**Water**							
Batch R3821238								
WG2604556-1 LCS								
F1 (C6-C10)			115.9		%		80-120	07-SEP-17
WG2604556-2 MB								
F1 (C6-C10)			<25		ug/L		25	07-SEP-17
Surrogate: 3,4-Dichlorotoluene			117.3		%		60-140	07-SEP-17
WG2604556-5 MS		**WG2604556-3**						
F1 (C6-C10)			115.6		%		60-140	07-SEP-17
F2-F4-UW-WT	**Water**							
Batch R3828769								
WG2614609-2 LCS								
F2 (C10-C16)			111.8		%		70-130	14-SEP-17
F3a (C16-C22)			108.4		%		70-130	14-SEP-17
F3b (C22-C34)			99.4		%		70-130	14-SEP-17
F3 (C16-C34)			104.6		%		70-130	14-SEP-17
F4 (C34-C50)			127.7		%		70-130	14-SEP-17
WG2614609-3 LCSD		**WG2614609-2**						
F2 (C10-C16)		111.8	118.4		%	5.7	50	14-SEP-17
F3a (C16-C22)		108.4	114.7		%	5.6	50	14-SEP-17
F3b (C22-C34)		99.4	114.6		%	14	50	14-SEP-17
F3 (C16-C34)		104.6	114.7		%	9.2	50	14-SEP-17
F4 (C34-C50)		127.7	127.1		%	0.5	50	14-SEP-17
WG2614609-1 MB								
F2 (C10-C16)			<100		ug/L		100	14-SEP-17
F3a (C16-C22)			<130		ug/L		125	14-SEP-17
F3b (C22-C34)			<130		ug/L		125	14-SEP-17
F3 (C16-C34)			<250		ug/L		250	14-SEP-17
F4 (C34-C50)			<250		ug/L		250	14-SEP-17
Surrogate: 2-Bromobenzotrifluoride			106.4		%		60-140	14-SEP-17
HG-D-UG/L-CVAA-WT	**Water**							
Batch R3820537								
WG2609321-4 DUP		**WG2609321-3**						
Mercury (Hg)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	06-SEP-17
WG2609321-2 LCS								
Mercury (Hg)-Dissolved			106.0		%		80-120	06-SEP-17
WG2609321-1 MB								
Mercury (Hg)-Dissolved			<0.010		ug/L		0.01	06-SEP-17

Quality Control Report

Workorder: L1986110 Report Date: 15-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-D-UG/L-CVAA-WT	**Water**							
Batch R3820537								
WG2609321-6 MS		**WG2609321-5**						
Mercury (Hg)-Dissolved			96.7		%		70-130	06-SEP-17
MET-D-UG/L-MS-WT	**Water**							
Batch R3821118								
WG2609142-4 DUP		**WG2609142-3**						
Antimony (Sb)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	06-SEP-17
Arsenic (As)-Dissolved		3.5	3.6		ug/L	5.0	20	06-SEP-17
Barium (Ba)-Dissolved		21.2	21.1		ug/L	0.6	20	06-SEP-17
Beryllium (Be)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	06-SEP-17
Boron (B)-Dissolved		<100	<100	RPD-NA	ug/L	N/A	20	06-SEP-17
Cadmium (Cd)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	06-SEP-17
Chromium (Cr)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	06-SEP-17
Cobalt (Co)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	06-SEP-17
Copper (Cu)-Dissolved		<2.0	<2.0	RPD-NA	ug/L	N/A	20	06-SEP-17
Lead (Pb)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	06-SEP-17
Molybdenum (Mo)-Dissolved		2.95	2.92		ug/L	0.8	20	06-SEP-17
Nickel (Ni)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	06-SEP-17
Selenium (Se)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	06-SEP-17
Silver (Ag)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	06-SEP-17
Sodium (Na)-Dissolved		17300	17500		ug/L	1.4	20	06-SEP-17
Thallium (Tl)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	06-SEP-17
Uranium (U)-Dissolved		0.27	0.25		ug/L	7.9	20	06-SEP-17
Vanadium (V)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	06-SEP-17
Zinc (Zn)-Dissolved		<10	<10	RPD-NA	ug/L	N/A	20	06-SEP-17
WG2609142-2 LCS								
Antimony (Sb)-Dissolved			95.8		%		80-120	06-SEP-17
Arsenic (As)-Dissolved			99.1		%		80-120	06-SEP-17
Barium (Ba)-Dissolved			105.5		%		80-120	06-SEP-17
Beryllium (Be)-Dissolved			99.7		%		80-120	06-SEP-17
Boron (B)-Dissolved			100.5		%		80-120	06-SEP-17
Cadmium (Cd)-Dissolved			94.9		%		80-120	06-SEP-17
Chromium (Cr)-Dissolved			98.9		%		80-120	06-SEP-17
Cobalt (Co)-Dissolved			98.2		%		80-120	06-SEP-17
Copper (Cu)-Dissolved			96.9				80-120	

Quality Control Report

Workorder: L1986110 Report Date: 15-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R3821118								
WG2609142-2 LCS								
Copper (Cu)-Dissolved			96.9		%		80-120	06-SEP-17
Lead (Pb)-Dissolved			104.3		%		80-120	06-SEP-17
Molybdenum (Mo)-Dissolved			101.5		%		80-120	06-SEP-17
Nickel (Ni)-Dissolved			98.1		%		80-120	06-SEP-17
Selenium (Se)-Dissolved			97.4		%		80-120	06-SEP-17
Silver (Ag)-Dissolved			96.6		%		80-120	06-SEP-17
Sodium (Na)-Dissolved			100.9		%		80-120	06-SEP-17
Thallium (Tl)-Dissolved			103.6		%		80-120	06-SEP-17
Uranium (U)-Dissolved			102.1		%		80-120	06-SEP-17
Vanadium (V)-Dissolved			99.4		%		80-120	06-SEP-17
Zinc (Zn)-Dissolved			93.7		%		80-120	06-SEP-17
WG2609142-1 MB								
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	06-SEP-17
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	06-SEP-17
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	06-SEP-17
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	06-SEP-17
Boron (B)-Dissolved			<10		ug/L		10	06-SEP-17
Cadmium (Cd)-Dissolved			<0.010		ug/L		0.01	06-SEP-17
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	06-SEP-17
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	06-SEP-17
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	06-SEP-17
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	06-SEP-17
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	06-SEP-17
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	06-SEP-17
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	06-SEP-17
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	06-SEP-17
Sodium (Na)-Dissolved			<500		ug/L		500	06-SEP-17
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	06-SEP-17
Uranium (U)-Dissolved			<0.010		ug/L		0.01	06-SEP-17
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	06-SEP-17
Zinc (Zn)-Dissolved			<1.0		ug/L		1	06-SEP-17
WG2609142-5 MS		**WG2609142-3**						
Antimony (Sb)-Dissolved			94.4		%		70-130	06-SEP-17
Arsenic (As)-Dissolved			88.7		%		70-130	06-SEP-17

Quality Control Report

Workorder: L1986110 Report Date: 15-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R3821118								
WG2609142-5 MS		**WG2609142-3**						
Barium (Ba)-Dissolved			N/A	MS-B	%		-	06-SEP-17
Beryllium (Be)-Dissolved			93.7		%		70-130	06-SEP-17
Boron (B)-Dissolved			N/A	MS-B	%		-	06-SEP-17
Cadmium (Cd)-Dissolved			90.8		%		70-130	06-SEP-17
Chromium (Cr)-Dissolved			92.8		%		70-130	06-SEP-17
Cobalt (Co)-Dissolved			93.1		%		70-130	06-SEP-17
Copper (Cu)-Dissolved			85.6		%		70-130	06-SEP-17
Lead (Pb)-Dissolved			95.5		%		70-130	06-SEP-17
Molybdenum (Mo)-Dissolved			74.6		%		70-130	06-SEP-17
Nickel (Ni)-Dissolved			93.3		%		70-130	06-SEP-17
Selenium (Se)-Dissolved			92.7		%		70-130	06-SEP-17
Silver (Ag)-Dissolved			87.3		%		70-130	06-SEP-17
Sodium (Na)-Dissolved			N/A	MS-B	%		-	06-SEP-17
Thallium (Tl)-Dissolved			93.5		%		70-130	06-SEP-17
Uranium (U)-Dissolved			N/A	MS-B	%		-	06-SEP-17
Vanadium (V)-Dissolved			94.2		%		70-130	06-SEP-17
PAH-511-WT	**Water**							
Batch R3821704								
WG2609278-2 LCS								
1-Methylnaphthalene			99.5		%		50-140	07-SEP-17
2-Methylnaphthalene			100.1		%		50-140	07-SEP-17
Acenaphthene			101.8		%		50-140	07-SEP-17
Acenaphthylene			109.6		%		50-140	07-SEP-17
Anthracene			111.4		%		50-140	07-SEP-17
Benzo(a)anthracene			112.2		%		50-140	07-SEP-17
Benzo(a)pyrene			117.5		%		50-140	07-SEP-17
Benzo(b)fluoranthene			123.5		%		50-140	07-SEP-17
Benzo(g,h,i)perylene			115.8		%		50-140	07-SEP-17
Benzo(k)fluoranthene			118.6		%		50-140	07-SEP-17
Chrysene			103.2		%		50-140	07-SEP-17
Dibenzo(ah)anthracene			123.0		%		50-140	07-SEP-17
Fluoranthene			115.4		%		50-140	07-SEP-17
Fluorene			108.6		%		50-140	07-SEP-17
Indeno(1,2,3-cd)pyrene			122.1		%		50-140	

Quality Control Report

Workorder: L1986110 Report Date: 15-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R3821704								
WG2609278-2 LCS								
Indeno(1,2,3-cd)pyrene			122.1		%		50-140	07-SEP-17
Naphthalene			103.8		%		50-140	07-SEP-17
Phenanthrene			114.6		%		50-140	07-SEP-17
Pyrene			117.4		%		50-140	07-SEP-17
WG2609278-3 LCSD		**WG2609278-2**						
1-Methylnaphthalene		99.5	101.4		%	1.9	50	07-SEP-17
2-Methylnaphthalene		100.1	102.3		%	2.2	50	07-SEP-17
Acenaphthene		101.8	103.4		%	1.5	50	07-SEP-17
Acenaphthylene		109.6	110.5		%	0.8	50	07-SEP-17
Anthracene		111.4	111.5		%	0.1	50	07-SEP-17
Benzo(a)anthracene		112.2	115.8		%	3.2	50	07-SEP-17
Benzo(a)pyrene		117.5	119.2		%	1.4	50	07-SEP-17
Benzo(b)fluoranthene		123.5	126.8		%	2.6	50	07-SEP-17
Benzo(g,h,i)perylene		115.8	117.8		%	1.8	50	07-SEP-17
Benzo(k)fluoranthene		118.6	122.7		%	3.4	50	07-SEP-17
Chrysene		103.2	112.9		%	9.0	50	07-SEP-17
Dibenzo(ah)anthracene		123.0	127.4		%	3.5	50	07-SEP-17
Fluoranthene		115.4	117.7		%	2.0	50	07-SEP-17
Fluorene		108.6	109.7		%	1.0	50	07-SEP-17
Indeno(1,2,3-cd)pyrene		122.1	126.2		%	3.3	50	07-SEP-17
Naphthalene		103.8	106.1		%	2.1	50	07-SEP-17
Phenanthrene		114.6	115.4		%	0.7	50	07-SEP-17
Pyrene		117.4	119.3		%	1.6	50	07-SEP-17
WG2609278-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	07-SEP-17
2-Methylnaphthalene			<0.020		ug/L		0.02	07-SEP-17
Acenaphthene			<0.020		ug/L		0.02	07-SEP-17
Acenaphthylene			<0.020		ug/L		0.02	07-SEP-17
Anthracene			<0.020		ug/L		0.02	07-SEP-17
Benzo(a)anthracene			<0.020		ug/L		0.02	07-SEP-17
Benzo(a)pyrene			<0.010		ug/L		0.01	07-SEP-17
Benzo(b)fluoranthene			<0.020		ug/L		0.02	07-SEP-17
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	07-SEP-17

Quality Control Report

Workorder: L1986110 Report Date: 15-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R3821704								
WG2609278-1 MB								
Benzo(k)fluoranthene			<0.020		ug/L		0.02	07-SEP-17
Chrysene			<0.020		ug/L		0.02	07-SEP-17
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	07-SEP-17
Fluoranthene			<0.020		ug/L		0.02	07-SEP-17
Fluorene			<0.020		ug/L		0.02	07-SEP-17
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	07-SEP-17
Naphthalene			<0.050		ug/L		0.05	07-SEP-17
Phenanthrene			<0.020		ug/L		0.02	07-SEP-17
Pyrene			<0.020		ug/L		0.02	07-SEP-17
Surrogate: d8-Naphthalene			82.8		%		60-140	07-SEP-17
Surrogate: d10-Phenanthrene			93.2		%		60-140	07-SEP-17
Surrogate: d12-Chrysene			89.2		%		60-140	07-SEP-17
Surrogate: d10-Acenaphthene			83.2		%		60-140	07-SEP-17
PCB-511-WT	**Water**							
Batch R3824408								
WG2611650-2 LCS								
Aroclor 1242			81.7		%		60-140	12-SEP-17
Aroclor 1248			81.9		%		60-140	12-SEP-17
Aroclor 1254			85.9		%		60-140	12-SEP-17
Aroclor 1260			86.1		%		60-140	12-SEP-17
WG2611650-3 LCSD		**WG2611650-2**						
Aroclor 1242		81.7	78.9		%	3.4	50	12-SEP-17
Aroclor 1248		81.9	81.9		%	0.0	50	12-SEP-17
Aroclor 1254		85.9	97.7		%	13	50	12-SEP-17
Aroclor 1260		86.1	99.7		%	15	50	12-SEP-17
WG2611650-1 MB								
Aroclor 1242			<0.020		ug/L		0.02	12-SEP-17
Aroclor 1248			<0.020		ug/L		0.02	12-SEP-17
Aroclor 1254			<0.020		ug/L		0.02	12-SEP-17
Aroclor 1260			<0.020		ug/L		0.02	12-SEP-17
Surrogate: 2-fluorobiphenyl			69.1		%		50-150	12-SEP-17
PH-WT	**Water**							

Quality Control Report

Workorder: L1986110 Report Date: 15-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH-WT	**Water**							
Batch R3820599								
WG2609262-4 DUP		**WG2609262-3**						
pH		7.48	7.50	J	pH units	0.02	0.2	06-SEP-17
WG2609262-8 DUP		**WG2609262-7**						
pH		8.09	8.11	J	pH units	0.02	0.2	06-SEP-17
WG2609262-2 LCS								
pH			6.99		pH units		6.9-7.1	06-SEP-17
WG2609262-6 LCS								
pH			6.99		pH units		6.9-7.1	06-SEP-17
VOC-511-HS-WT	**Water**							
Batch R3821109								
WG2594557-4 DUP		**WG2594557-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	07-SEP-17
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
1,2-Dichloropropane		1.24	1.24		ug/L	0.0	30	07-SEP-17
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	07-SEP-17
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	07-SEP-17
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	07-SEP-17
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	07-SEP-17
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	07-SEP-17
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	07-SEP-17
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	07-SEP-17
Dichlorodifluoromethane		<2.0	<2.0		ug/L			07-SEP-17

Quality Control Report

Workorder: L1986110 Report Date: 15-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3821109								
WG2594557-4 DUP		**WG2594557-3**						
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	07-SEP-17
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
m+p-Xylenes		0.63	0.65		ug/L	3.1	30	07-SEP-17
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	07-SEP-17
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	07-SEP-17
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	07-SEP-17
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	07-SEP-17
o-Xylene		0.33	0.33		ug/L	0.0	30	07-SEP-17
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
Toluene		1.17	1.22		ug/L	4.2	30	07-SEP-17
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	07-SEP-17
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	07-SEP-17
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
WG2594557-1 LCS								
1,1,1,2-Tetrachloroethane			89.5		%		70-130	07-SEP-17
1,1,2,2-Tetrachloroethane			100.5		%		70-130	07-SEP-17
1,1,1-Trichloroethane			88.9		%		70-130	07-SEP-17
1,1,2-Trichloroethane			97.6		%		70-130	07-SEP-17
1,1-Dichloroethane			96.6		%		70-130	07-SEP-17
1,1-Dichloroethylene			85.2		%		70-130	07-SEP-17
1,2-Dibromoethane			99.6		%		70-130	07-SEP-17
1,2-Dichlorobenzene			90.3		%		70-130	07-SEP-17
1,2-Dichloroethane			92.2		%		70-130	07-SEP-17
1,2-Dichloropropane			100.4		%		70-130	07-SEP-17
1,3-Dichlorobenzene			86.7		%		70-130	07-SEP-17
1,4-Dichlorobenzene			89.6		%		70-130	07-SEP-17
Acetone			114.0		%		60-140	07-SEP-17
Benzene			97.7		%		70-130	07-SEP-17
Bromodichloromethane			96.3		%		70-130	07-SEP-17

Quality Control Report

Workorder: L1986110 Report Date: 15-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3821109								
WG2594557-1 LCS								
Bromoform			94.5		%		70-130	07-SEP-17
Bromomethane			102.6		%		60-140	07-SEP-17
Carbon tetrachloride			86.9		%		70-130	07-SEP-17
Chlorobenzene			91.1		%		70-130	07-SEP-17
Chloroform			95.8		%		70-130	07-SEP-17
cis-1,2-Dichloroethylene			94.9		%		70-130	07-SEP-17
cis-1,3-Dichloropropene			101.9		%		70-130	07-SEP-17
Dibromochloromethane			98.8		%		70-130	07-SEP-17
Dichlorodifluoromethane			86.0		%		50-140	07-SEP-17
Ethylbenzene			82.4		%		70-130	07-SEP-17
n-Hexane			103.2		%		70-130	07-SEP-17
m+p-Xylenes			85.6		%		70-130	07-SEP-17
Methyl Ethyl Ketone			102.2		%		60-140	07-SEP-17
Methyl Isobutyl Ketone			92.5		%		60-140	07-SEP-17
Methylene Chloride			95.3		%		70-130	07-SEP-17
MTBE			93.0		%		70-130	07-SEP-17
o-Xylene			84.6		%		70-130	07-SEP-17
Styrene			84.8		%		70-130	07-SEP-17
Tetrachloroethylene			83.2		%		70-130	07-SEP-17
Toluene			86.3		%		70-130	07-SEP-17
trans-1,2-Dichloroethylene			94.9		%		70-130	07-SEP-17
trans-1,3-Dichloropropene			97.5		%		70-130	07-SEP-17
Trichloroethylene			91.0		%		70-130	07-SEP-17
Trichlorofluoromethane			89.6		%		60-140	07-SEP-17
Vinyl chloride			90.9		%		60-140	07-SEP-17
WG2594557-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	07-SEP-17
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	07-SEP-17
1,1,1-Trichloroethane			<0.50		ug/L		0.5	07-SEP-17
1,1,2-Trichloroethane			<0.50		ug/L		0.5	07-SEP-17
1,1-Dichloroethane			<0.50		ug/L		0.5	07-SEP-17
1,1-Dichloroethylene			<0.50		ug/L		0.5	07-SEP-17
1,2-Dibromoethane			<0.20		ug/L		0.2	07-SEP-17
1,2-Dichlorobenzene			<0.50		ug/L		0.5	07-SEP-17

Quality Control Report

Workorder: L1986110 Report Date: 15-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3821109								
WG2594557-2 MB								
1,2-Dichloroethane			<0.50		ug/L		0.5	07-SEP-17
1,2-Dichloropropane			<0.50		ug/L		0.5	07-SEP-17
1,3-Dichlorobenzene			<0.50		ug/L		0.5	07-SEP-17
1,4-Dichlorobenzene			<0.50		ug/L		0.5	07-SEP-17
Acetone			<30		ug/L		30	07-SEP-17
Benzene			<0.50		ug/L		0.5	07-SEP-17
Bromodichloromethane			<2.0		ug/L		2	07-SEP-17
Bromoform			<5.0		ug/L		5	07-SEP-17
Bromomethane			<0.50		ug/L		0.5	07-SEP-17
Carbon tetrachloride			<0.20		ug/L		0.2	07-SEP-17
Chlorobenzene			<0.50		ug/L		0.5	07-SEP-17
Chloroform			<1.0		ug/L		1	07-SEP-17
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	07-SEP-17
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	07-SEP-17
Dibromochloromethane			<2.0		ug/L		2	07-SEP-17
Dichlorodifluoromethane			<2.0		ug/L		2	07-SEP-17
Ethylbenzene			<0.50		ug/L		0.5	07-SEP-17
n-Hexane			<0.50		ug/L		0.5	07-SEP-17
m+p-Xylenes			<0.40		ug/L		0.4	07-SEP-17
Methyl Ethyl Ketone			<20		ug/L		20	07-SEP-17
Methyl Isobutyl Ketone			<20		ug/L		20	07-SEP-17
Methylene Chloride			<5.0		ug/L		5	07-SEP-17
MTBE			<2.0		ug/L		2	07-SEP-17
o-Xylene			<0.30		ug/L		0.3	07-SEP-17
Styrene			<0.50		ug/L		0.5	07-SEP-17
Tetrachloroethylene			<0.50		ug/L		0.5	07-SEP-17
Toluene			<0.50		ug/L		0.5	07-SEP-17
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	07-SEP-17
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	07-SEP-17
Trichloroethylene			<0.50		ug/L		0.5	07-SEP-17
Trichlorofluoromethane			<5.0		ug/L		5	07-SEP-17
Vinyl chloride			<0.50		ug/L		0.5	07-SEP-17
Surrogate: 1,4-Difluorobenzene			100.3		%		70-130	07-SEP-17

Quality Control Report

Workorder: L1986110 Report Date: 15-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch	**R3821109**							
WG2594557-2	**MB**							
Surrogate: 4-Bromofluorobenzene			91.3		%		70-130	07-SEP-17
WG2594557-5	**MS**	**WG2594557-3**						
1,1,1,2-Tetrachloroethane			89.2		%		50-140	07-SEP-17
1,1,2,2-Tetrachloroethane			82.8		%		50-140	07-SEP-17
1,1,1-Trichloroethane			93.7		%		50-140	07-SEP-17
1,1,2-Trichloroethane			87.5		%		50-140	07-SEP-17
1,1-Dichloroethane			96.4		%		50-140	07-SEP-17
1,1-Dichloroethylene			88.6		%		50-140	07-SEP-17
1,2-Dibromoethane			86.4		%		50-140	07-SEP-17
1,2-Dichlorobenzene			90.2		%		50-140	07-SEP-17
1,2-Dichloroethane			81.4		%		50-140	07-SEP-17
1,2-Dichloropropane			94.7		%		50-140	07-SEP-17
1,3-Dichlorobenzene			90.9		%		50-140	07-SEP-17
1,4-Dichlorobenzene			92.6		%		50-140	07-SEP-17
Acetone			88.9		%		50-140	07-SEP-17
Benzene			96.5		%		50-140	07-SEP-17
Bromodichloromethane			91.2		%		50-140	07-SEP-17
Bromoform			81.6		%		50-140	07-SEP-17
Bromomethane			97.6		%		50-140	07-SEP-17
Carbon tetrachloride			93.2		%		50-140	07-SEP-17
Chlorobenzene			90.8		%		50-140	07-SEP-17
Chloroform			94.7		%		50-140	07-SEP-17
cis-1,2-Dichloroethylene			92.5		%		50-140	07-SEP-17
cis-1,3-Dichloropropene			88.4		%		50-140	07-SEP-17
Dibromochloromethane			91.4		%		50-140	07-SEP-17
Dichlorodifluoromethane			86.6		%		50-140	07-SEP-17
Ethylbenzene			85.7		%		50-140	07-SEP-17
n-Hexane			108.0		%		50-140	07-SEP-17
m+p-Xylenes			89.2		%		50-140	07-SEP-17
Methyl Ethyl Ketone			72.7		%		50-140	07-SEP-17
Methyl Isobutyl Ketone			67.0		%		50-140	07-SEP-17
Methylene Chloride			89.5		%		50-140	07-SEP-17
MTBE			93.0		%		50-140	07-SEP-17
o-Xylene			85.3		%		50-140	07-SEP-17

Quality Control Report

Workorder: L1986110 Report Date: 15-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3821109								
WG2594557-5 MS		**WG2594557-3**						
Styrene			79.7		%		50-140	07-SEP-17
Tetrachloroethylene			89.4		%		50-140	07-SEP-17
Toluene			88.7		%		50-140	07-SEP-17
trans-1,2-Dichloroethylene			95.1		%		50-140	07-SEP-17
trans-1,3-Dichloropropene			83.1		%		50-140	07-SEP-17
Trichloroethylene			93.4		%		50-140	07-SEP-17
Trichlorofluoromethane			94.9		%		50-140	07-SEP-17
Vinyl chloride			92.0		%		50-140	07-SEP-17
Batch R3821238								
WG2604556-4 DUP		**WG2604556-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	07-SEP-17
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	07-SEP-17
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	07-SEP-17
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	07-SEP-17
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	07-SEP-17
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	07-SEP-17
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	07-SEP-17
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	07-SEP-17

Quality Control Report

Workorder: L1986110 Report Date: 15-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3821238								
WG2604556-4 DUP		**WG2604556-3**						
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	07-SEP-17
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	07-SEP-17
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	07-SEP-17
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	07-SEP-17
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	07-SEP-17
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	07-SEP-17
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	07-SEP-17
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	07-SEP-17
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	07-SEP-17
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-SEP-17
WG2604556-1 LCS								
1,1,1,2-Tetrachloroethane			87.7		%		70-130	07-SEP-17
1,1,2,2-Tetrachloroethane			89.9		%		70-130	07-SEP-17
1,1,1-Trichloroethane			95.6		%		70-130	07-SEP-17
1,1,2-Trichloroethane			90.4		%		70-130	07-SEP-17
1,1-Dichloroethane			101.5		%		70-130	07-SEP-17
1,1-Dichloroethylene			92.9		%		70-130	07-SEP-17
1,2-Dibromoethane			88.5		%		70-130	07-SEP-17
1,2-Dichlorobenzene			92.7		%		70-130	07-SEP-17
1,2-Dichloroethane			99.2		%		70-130	07-SEP-17
1,2-Dichloropropane			98.9		%		70-130	07-SEP-17
1,3-Dichlorobenzene			91.7		%		70-130	07-SEP-17
1,4-Dichlorobenzene			94.0		%		70-130	07-SEP-17
Acetone			114.2		%		60-140	07-SEP-17
Benzene			99.3		%		70-130	07-SEP-17
Bromodichloromethane			94.2		%		70-130	07-SEP-17

Quality Control Report

Workorder: L1986110 Report Date: 15-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3821238								
WG2604556-1 LCS								
Bromoform			83.4		%		70-130	07-SEP-17
Bromomethane			97.0		%		60-140	07-SEP-17
Carbon tetrachloride			94.2		%		70-130	07-SEP-17
Chlorobenzene			92.6		%		70-130	07-SEP-17
Chloroform			97.3		%		70-130	07-SEP-17
cis-1,2-Dichloroethylene			96.1		%		70-130	07-SEP-17
cis-1,3-Dichloropropene			97.8		%		70-130	07-SEP-17
Dibromochloromethane			92.0		%		70-130	07-SEP-17
Dichlorodifluoromethane			85.3		%		50-140	07-SEP-17
Ethylbenzene			94.0		%		70-130	07-SEP-17
n-Hexane			114.8		%		70-130	07-SEP-17
m+p-Xylenes			95.1		%		70-130	07-SEP-17
Methyl Ethyl Ketone			100.7		%		60-140	07-SEP-17
Methyl Isobutyl Ketone			99.4		%		60-140	07-SEP-17
Methylene Chloride			98.2		%		70-130	07-SEP-17
MTBE			96.7		%		70-130	07-SEP-17
o-Xylene			93.9		%		70-130	07-SEP-17
Styrene			90.4		%		70-130	07-SEP-17
Tetrachloroethylene			91.1		%		70-130	07-SEP-17
Toluene			95.0		%		70-130	07-SEP-17
trans-1,2-Dichloroethylene			100.7		%		70-130	07-SEP-17
trans-1,3-Dichloropropene			93.9		%		70-130	07-SEP-17
Trichloroethylene			93.3		%		70-130	07-SEP-17
Trichlorofluoromethane			97.6		%		60-140	07-SEP-17
Vinyl chloride			95.5		%		60-140	07-SEP-17
WG2604556-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	07-SEP-17
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	07-SEP-17
1,1,1-Trichloroethane			<0.50		ug/L		0.5	07-SEP-17
1,1,2-Trichloroethane			<0.50		ug/L		0.5	07-SEP-17
1,1-Dichloroethane			<0.50		ug/L		0.5	07-SEP-17
1,1-Dichloroethylene			<0.50		ug/L		0.5	07-SEP-17
1,2-Dibromoethane			<0.20		ug/L		0.2	07-SEP-17
1,2-Dichlorobenzene			<0.50		ug/L		0.5	07-SEP-17

Quality Control Report

Workorder: L1986110 Report Date: 15-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3821238								
WG2604556-2 MB								
1,2-Dichloroethane			<0.50		ug/L		0.5	07-SEP-17
1,2-Dichloropropane			<0.50		ug/L		0.5	07-SEP-17
1,3-Dichlorobenzene			<0.50		ug/L		0.5	07-SEP-17
1,4-Dichlorobenzene			<0.50		ug/L		0.5	07-SEP-17
Acetone			<30		ug/L		30	07-SEP-17
Benzene			<0.50		ug/L		0.5	07-SEP-17
Bromodichloromethane			<2.0		ug/L		2	07-SEP-17
Bromoform			<5.0		ug/L		5	07-SEP-17
Bromomethane			<0.50		ug/L		0.5	07-SEP-17
Carbon tetrachloride			<0.20		ug/L		0.2	07-SEP-17
Chlorobenzene			<0.50		ug/L		0.5	07-SEP-17
Chloroform			<1.0		ug/L		1	07-SEP-17
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	07-SEP-17
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	07-SEP-17
Dibromochloromethane			<2.0		ug/L		2	07-SEP-17
Dichlorodifluoromethane			<2.0		ug/L		2	07-SEP-17
Ethylbenzene			<0.50		ug/L		0.5	07-SEP-17
n-Hexane			<0.50		ug/L		0.5	07-SEP-17
m+p-Xylenes			<0.40		ug/L		0.4	07-SEP-17
Methyl Ethyl Ketone			<20		ug/L		20	07-SEP-17
Methyl Isobutyl Ketone			<20		ug/L		20	07-SEP-17
Methylene Chloride			<5.0		ug/L		5	07-SEP-17
MTBE			<2.0		ug/L		2	07-SEP-17
o-Xylene			<0.30		ug/L		0.3	07-SEP-17
Styrene			<0.50		ug/L		0.5	07-SEP-17
Tetrachloroethylene			<0.50		ug/L		0.5	07-SEP-17
Toluene			<0.50		ug/L		0.5	07-SEP-17
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	07-SEP-17
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	07-SEP-17
Trichloroethylene			<0.50		ug/L		0.5	07-SEP-17
Trichlorofluoromethane			<5.0		ug/L		5	07-SEP-17
Vinyl chloride			<0.50		ug/L		0.5	07-SEP-17
Surrogate: 1,4-Difluorobenzene			100.8		%		70-130	07-SEP-17

Quality Control Report

Workorder: L1986110 Report Date: 15-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch	**R3821238**							
WG2604556-2	**MB**							
Surrogate: 4-Bromofluorobenzene			95.0		%		70-130	07-SEP-17
WG2604556-5	**MS**	**WG2604556-3**						
1,1,1,2-Tetrachloroethane			87.7		%		50-140	07-SEP-17
1,1,2,2-Tetrachloroethane			100.4		%		50-140	07-SEP-17
1,1,1-Trichloroethane			91.7		%		50-140	07-SEP-17
1,1,2-Trichloroethane			95.6		%		50-140	07-SEP-17
1,1-Dichloroethane			100.4		%		50-140	07-SEP-17
1,1-Dichloroethylene			86.3		%		50-140	07-SEP-17
1,2-Dibromoethane			95.2		%		50-140	07-SEP-17
1,2-Dichlorobenzene			92.0		%		50-140	07-SEP-17
1,2-Dichloroethane			106.9		%		50-140	07-SEP-17
1,2-Dichloropropane			102.7		%		50-140	07-SEP-17
1,3-Dichlorobenzene			89.5		%		50-140	07-SEP-17
1,4-Dichlorobenzene			91.8		%		50-140	07-SEP-17
Acetone			120.6		%		50-140	07-SEP-17
Benzene			99.1		%		50-140	07-SEP-17
Bromodichloromethane			98.6		%		50-140	07-SEP-17
Bromoform			89.9		%		50-140	07-SEP-17
Bromomethane			95.5		%		50-140	07-SEP-17
Carbon tetrachloride			89.0		%		50-140	07-SEP-17
Chlorobenzene			92.0		%		50-140	07-SEP-17
Chloroform			98.3		%		50-140	07-SEP-17
cis-1,2-Dichloroethylene			97.0		%		50-140	07-SEP-17
cis-1,3-Dichloropropene			110.5		%		50-140	07-SEP-17
Dibromochloromethane			95.7		%		50-140	07-SEP-17
Dichlorodifluoromethane			71.3		%		50-140	07-SEP-17
Ethylbenzene			89.8		%		50-140	07-SEP-17
n-Hexane			103.9		%		50-140	07-SEP-17
m+p-Xylenes			91.2		%		50-140	07-SEP-17
Methyl Ethyl Ketone			114.3		%		50-140	07-SEP-17
Methyl Isobutyl Ketone			115.2		%		50-140	07-SEP-17
Methylene Chloride			100.5		%		50-140	07-SEP-17
MTBE			96.1		%		50-140	07-SEP-17
o-Xylene			91.3		%		50-140	07-SEP-17

Quality Control Report

Workorder: L1986110 Report Date: 15-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3821238								
WG2604556-5 MS		**WG2604556-3**						
Styrene			90.4		%		50-140	07-SEP-17
Tetrachloroethylene			84.6		%		50-140	07-SEP-17
Toluene			91.0		%		50-140	07-SEP-17
trans-1,2-Dichloroethylene			97.3		%		50-140	07-SEP-17
trans-1,3-Dichloropropene			105.7		%		50-140	07-SEP-17
Trichloroethylene			91.2		%		50-140	07-SEP-17
Trichlorofluoromethane			88.3		%		50-140	07-SEP-17
Vinyl chloride			86.1		%		50-140	07-SEP-17

Quality Control Report

Workorder: L1986110 Report Date: 15-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9
Contact: MICHAEL SHIRY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
LCS-H	Lab Control Sample recovery was above ALS DQO. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

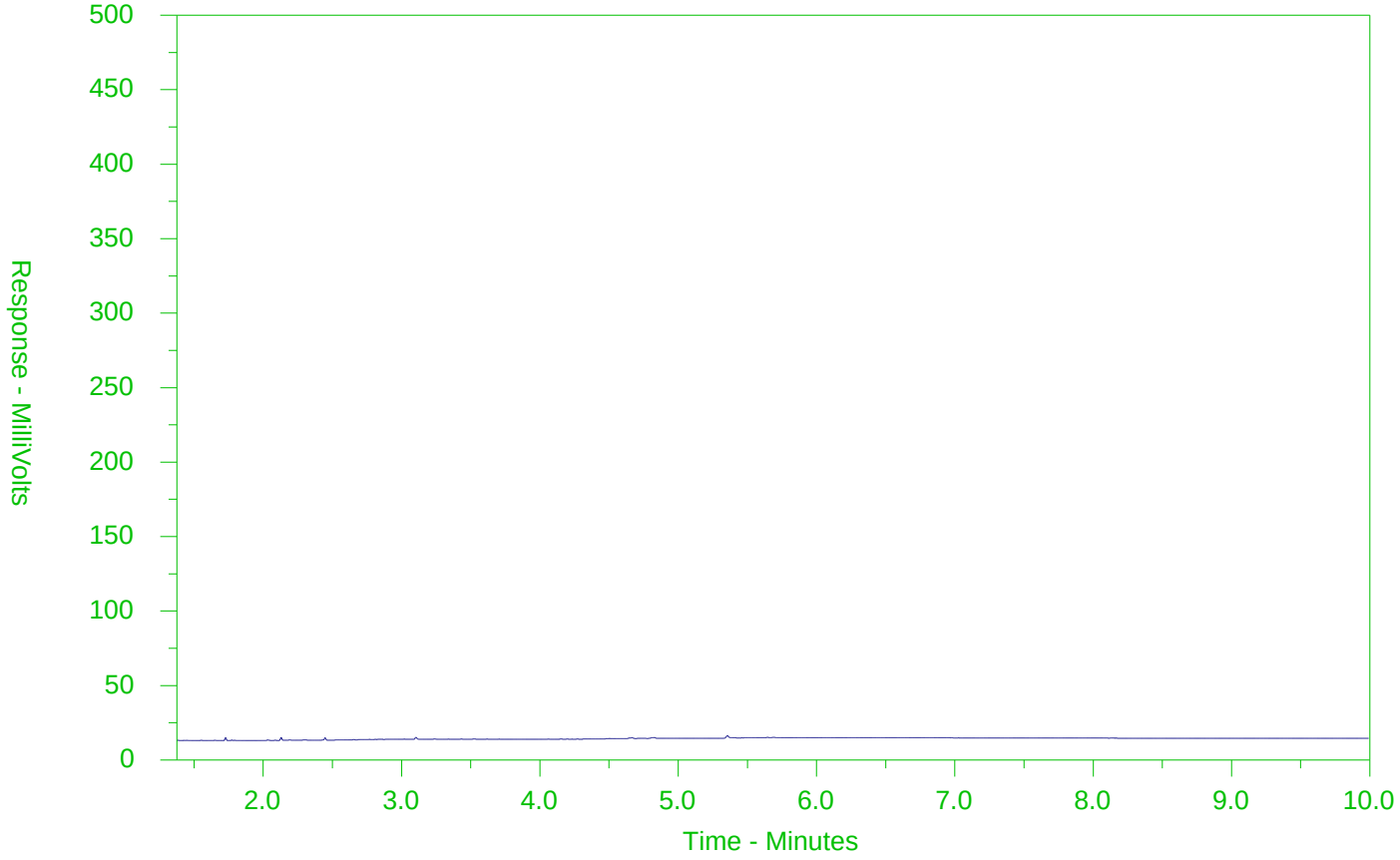
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1986110-1
Client Sample ID: OW12



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

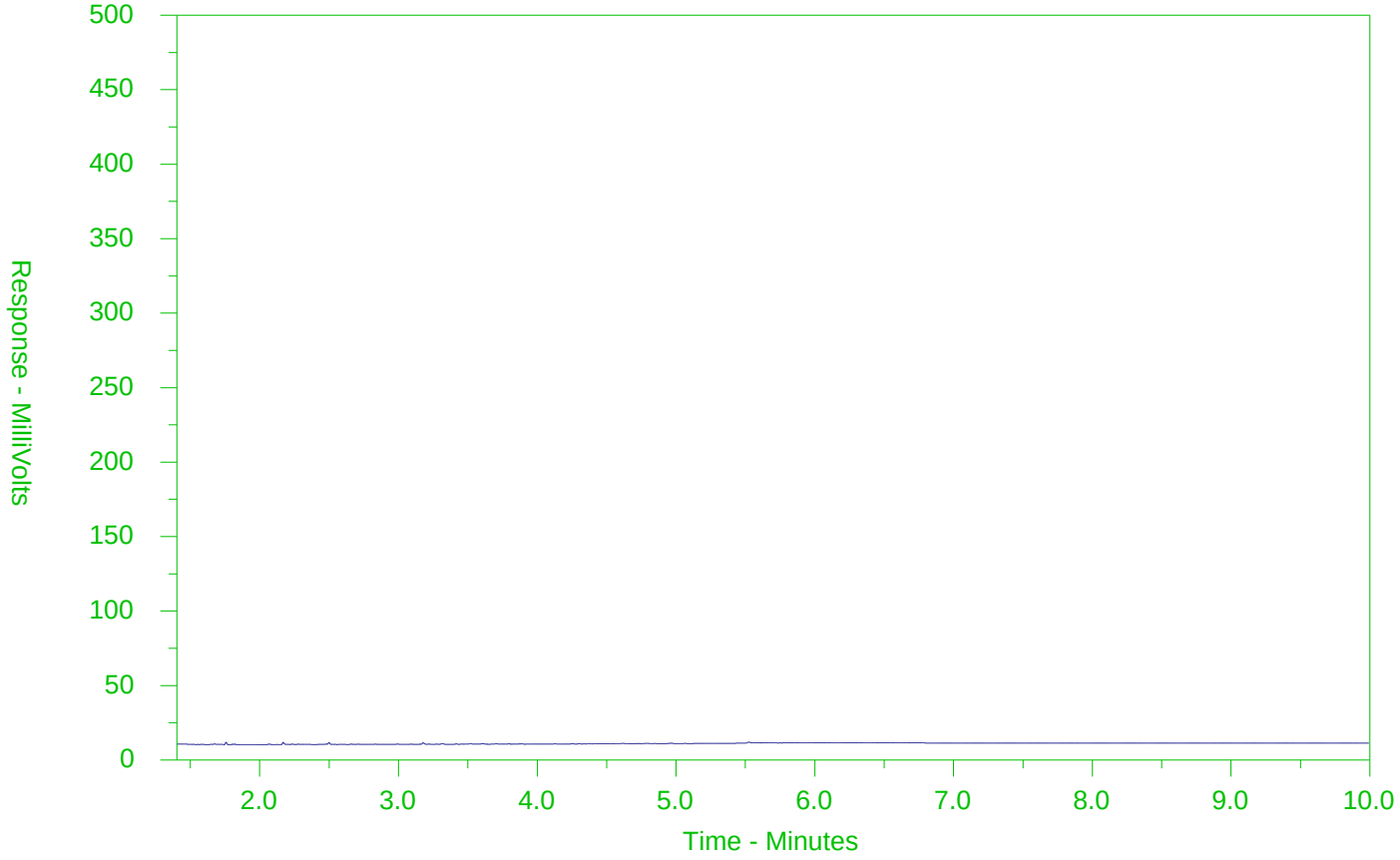
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1986110-2
Client Sample ID: OW16



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

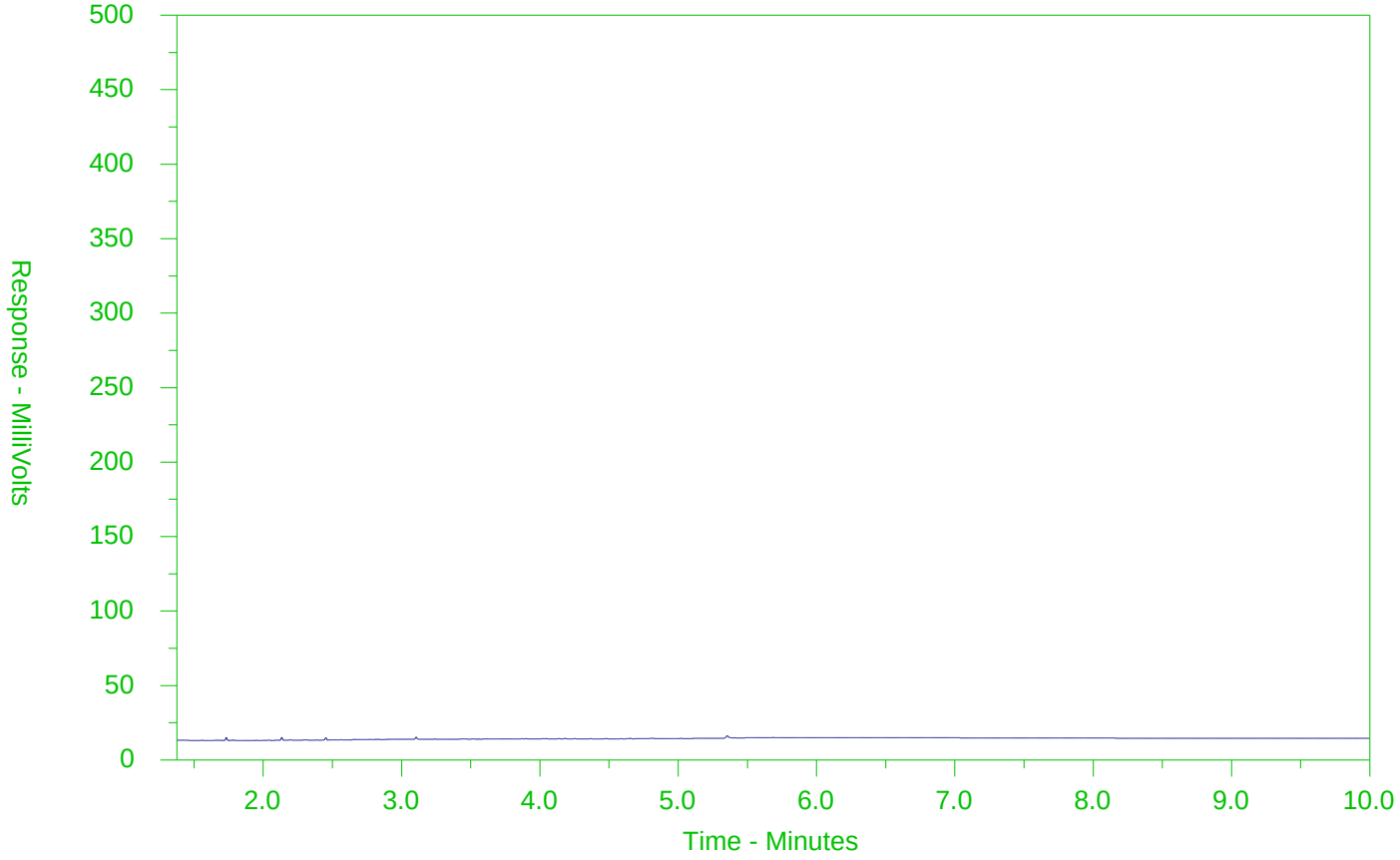
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1986110-3
Client Sample ID: OW15



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

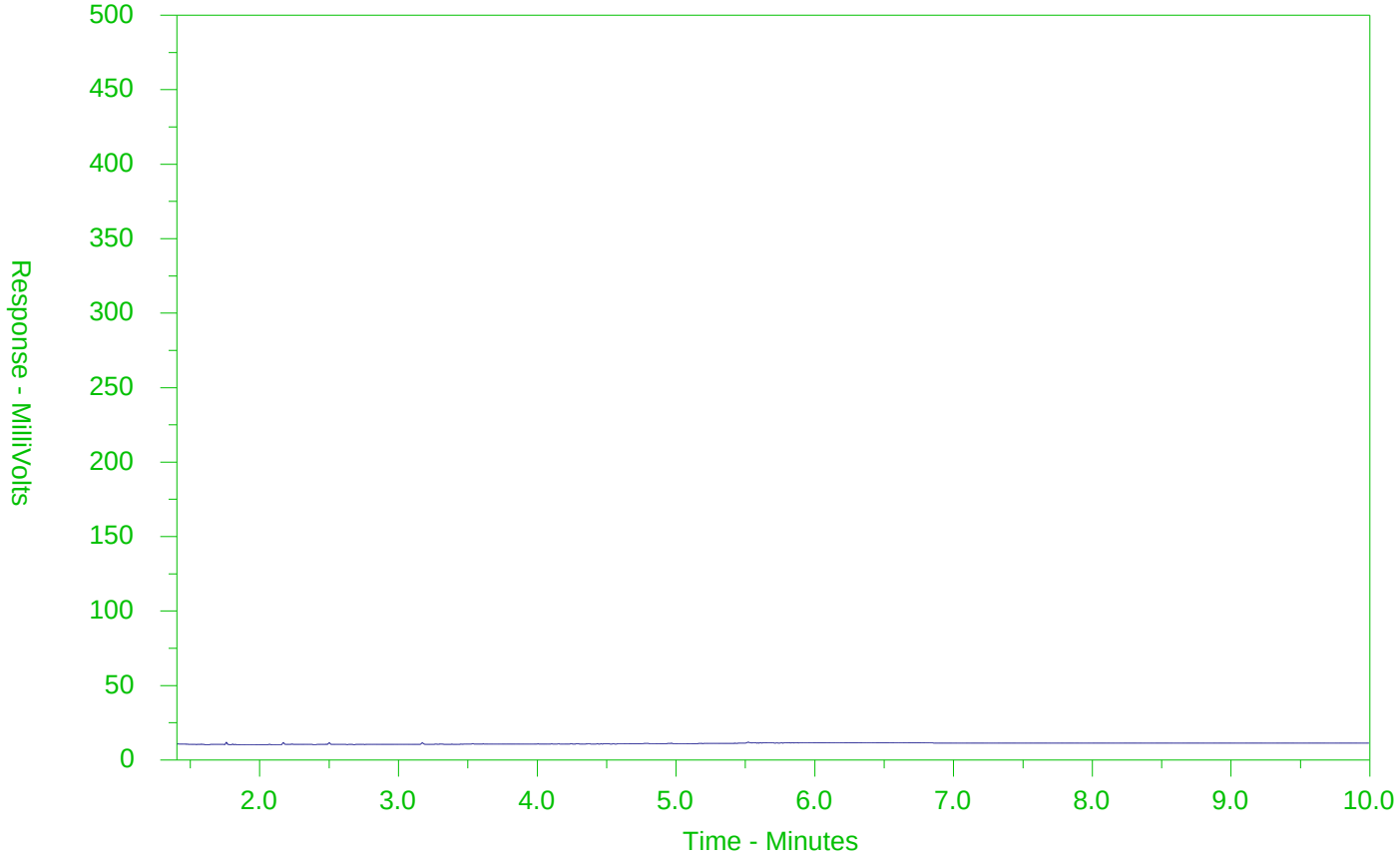
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1986110-4
Client Sample ID: OW07-31



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

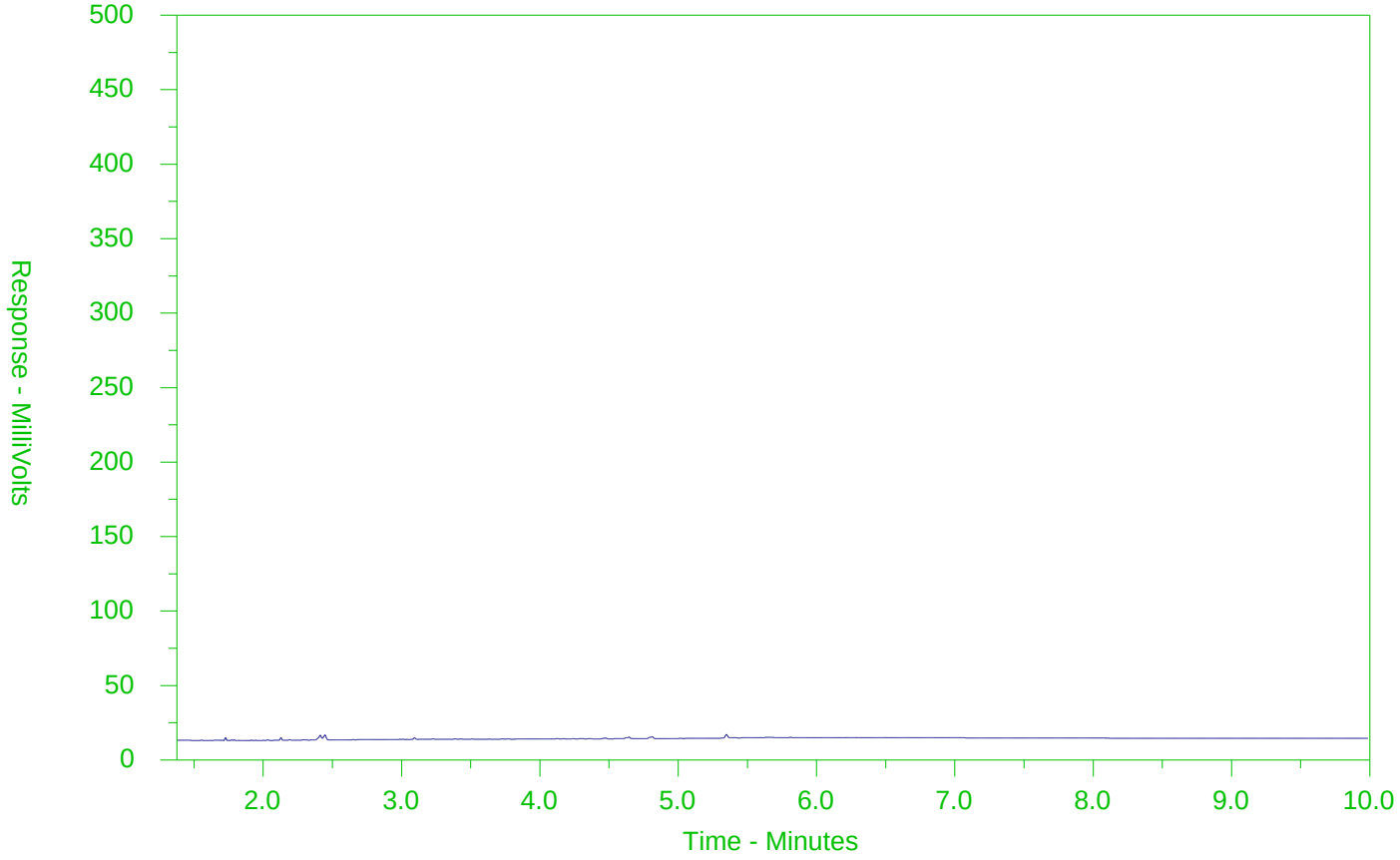
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1986110-5
Client Sample ID: OW02



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

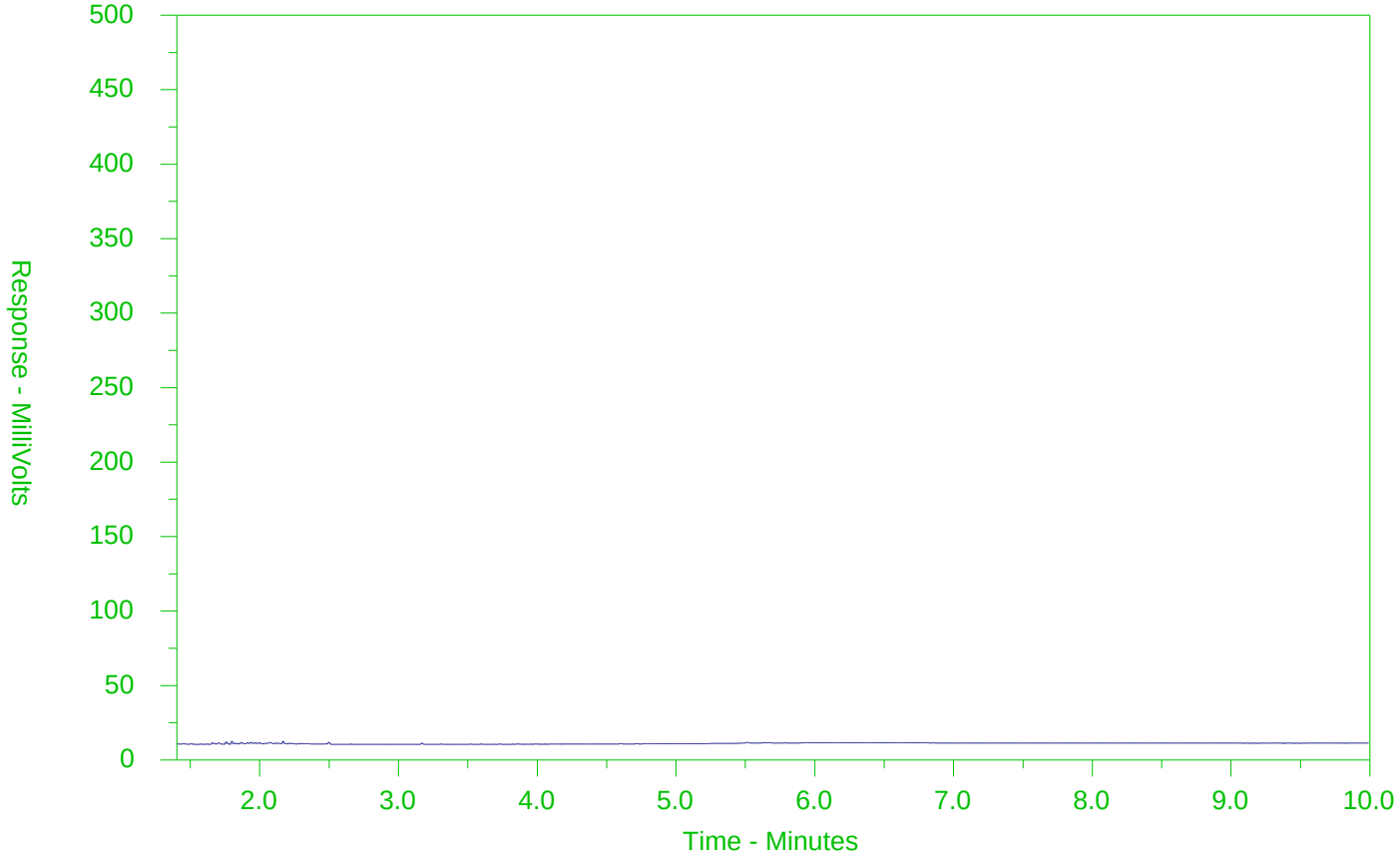
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1986110-6
Client Sample ID: OW17



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

L1986110-COFC

COC Number: 15 -

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	CH2M Hill Kitchener
Contact:	Michael Shiry / Peter Mamo
Phone:	289 971 1779
	Company address below will appear on the final report
Street:	300-72 Victoria St. South
City/Province:	Kitchener, ON
Postal Code:	N2G 4Y9
Invoice To	Same as Report To ☐ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	CH2M Hill Kitchener
Contact:	Accounts Payable

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: Michael.Shiry@ch2m.com

Email 2: Peter.Mamo@ch2m.com

Email 3:

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax:

Email 2:

Project Information

ALS Account # / Quote #: Q62156

Job #: 694757

PO / AFE:

LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#:

Major/Minor Code: Routing Code:

Requisitioner:

Location:

ALS Lab Work Order # (lab use only): L1986110 AK OSB

ALS Contact: Mathy Sampler:

Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
4 day [P4]	☐	1 Business day [E1]	☐
3 day [P3]	☐	Same Day, Weekend or Statutory holiday [E0]	☐
2 day [P2]	☐		

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Metals & Inorganics (F)	SVOC	PAH	VOC, BTX, F1	F2-F4 - UW	1,4 Dioxane	PCB	VOC,F1 (Trip Blank)	Number of Containers
	OW12	05-Sep-17	9:30	Water	✓		✓	✓	✓	✓			15
	OW16	↓	11:15	↓	✓		✓	✓	✓		✓		14
	OW15		11:45		✓		✓	✓	✓		✓		14
	OW07-31		13:52		✓	✓		✓	✓				13
	OW02		15:02		✓	✓		✓	✓				13
	OW17		16:02		✓		✓	✓	✓				12
	Trip Blank 4	05-Sep-17	—	Water								✓	2

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human drinking water use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☑ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
			-4.3		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Peter Mamo	Date: 17/09/05	Time: 1715	Received by:	Date:	Time:	Received by: AK	Date: 05/09/17	Time: 17:15

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

RW

CH2M HILL CANADA LIMITED
ATTN: MICHAEL SHIRY
72 VICTORIA ST SOUTH
SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 08-SEP-17
Report Date: 18-SEP-17 13:32 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L1988005
Project P.O. #: NOT SUBMITTED
Job Reference: 694757
C of C Numbers:
Legal Site Desc:

Mathy Mahadeva
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-1 OW07-37 Sampled By: CLIENT on 06-SEP-17 @ 09:22 Matrix: WATER							
Physical Tests							
Conductivity	1.30		0.0030	mS/cm		08-SEP-17	R3822482
pH	7.37		0.10	pH units		08-SEP-17	R3822482
Anions and Nutrients							
Chloride (Cl)	215	DLHC	2.5	mg/L		13-SEP-17	R3828551
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		14-SEP-17	R3829167
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					08-SEP-17	R3822248
Dissolved Metals Filtration Location	FIELD					08-SEP-17	R3822259
Antimony (Sb)-Dissolved	0.63		0.10	ug/L	08-SEP-17	12-SEP-17	R3824202
Arsenic (As)-Dissolved	0.34		0.10	ug/L	08-SEP-17	12-SEP-17	R3824202
Barium (Ba)-Dissolved	38.7		0.10	ug/L	08-SEP-17	12-SEP-17	R3824202
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	08-SEP-17	12-SEP-17	R3824202
Boron (B)-Dissolved	65		10	ug/L	08-SEP-17	12-SEP-17	R3824202
Cadmium (Cd)-Dissolved	1.05		0.010	ug/L	08-SEP-17	12-SEP-17	R3824202
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	08-SEP-17	12-SEP-17	R3824202
Cobalt (Co)-Dissolved	0.18		0.10	ug/L	08-SEP-17	12-SEP-17	R3824202
Copper (Cu)-Dissolved	14.4		0.20	ug/L	08-SEP-17	12-SEP-17	R3824202
Lead (Pb)-Dissolved	1.02		0.050	ug/L	08-SEP-17	12-SEP-17	R3824202
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	08-SEP-17	11-SEP-17	R3823689
Molybdenum (Mo)-Dissolved	4.00		0.050	ug/L	08-SEP-17	12-SEP-17	R3824202
Nickel (Ni)-Dissolved	6.43		0.50	ug/L	08-SEP-17	12-SEP-17	R3824202
Selenium (Se)-Dissolved	0.869		0.050	ug/L	08-SEP-17	12-SEP-17	R3824202
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	08-SEP-17	12-SEP-17	R3824202
Sodium (Na)-Dissolved	130000		500	ug/L	08-SEP-17	11-SEP-17	R3824202
Thallium (Tl)-Dissolved	0.162		0.010	ug/L	08-SEP-17	12-SEP-17	R3824202
Uranium (U)-Dissolved	9.48		0.010	ug/L	08-SEP-17	12-SEP-17	R3824202
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	08-SEP-17	12-SEP-17	R3824202
Zinc (Zn)-Dissolved	681		1.0	ug/L	08-SEP-17	12-SEP-17	R3824202
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		08-SEP-17	R3823185
Volatile Organic Compounds							
Acetone	<30		30	ug/L		11-SEP-17	R3823436
Benzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Bromodichloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
Bromoform	<5.0		5.0	ug/L		11-SEP-17	R3823436
Bromomethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Carbon tetrachloride	<0.20		0.20	ug/L		11-SEP-17	R3823436
Chlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Dibromochloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
Chloroform	<1.0		1.0	ug/L		11-SEP-17	R3823436
1,2-Dibromoethane	<0.20		0.20	ug/L		11-SEP-17	R3823436

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-1 OW07-37							
Sampled By: CLIENT on 06-SEP-17 @ 09:22							
Matrix: WATER							
Volatile Organic Compounds							
1,2-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,3-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,4-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Dichlorodifluoromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
1,1-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,2-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Methylene Chloride	<5.0		5.0	ug/L		11-SEP-17	R3823436
1,2-Dichloropropane	<0.50		0.50	ug/L		11-SEP-17	R3823436
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823436
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823436
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		11-SEP-17	
Ethylbenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
n-Hexane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Methyl Ethyl Ketone	<20		20	ug/L		11-SEP-17	R3823436
Methyl Isobutyl Ketone	<20		20	ug/L		11-SEP-17	R3823436
MTBE	<2.0		2.0	ug/L		11-SEP-17	R3823436
Styrene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Tetrachloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Toluene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,1-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,2-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Trichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Trichlorofluoromethane	<5.0		5.0	ug/L		11-SEP-17	R3823436
Vinyl chloride	<0.50		0.50	ug/L		11-SEP-17	R3823436
o-Xylene	<0.30		0.30	ug/L		11-SEP-17	R3823436
m+p-Xylenes	<0.40		0.40	ug/L		11-SEP-17	R3823436
Xylenes (Total)	<0.50		0.50	ug/L		11-SEP-17	
Surrogate: 4-Bromofluorobenzene	95.8		70-130	%		11-SEP-17	R3823436
Surrogate: 1,4-Difluorobenzene	100.1		70-130	%		11-SEP-17	R3823436
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		11-SEP-17	R3823436
F1-BTEX	<25		25	ug/L		18-SEP-17	
F2 (C10-C16)	<100		100	ug/L	14-SEP-17	14-SEP-17	R3828769
F2-Naphth	<100		100	ug/L		18-SEP-17	
F3a (C16-C22)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828769
F3 (C16-C34)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828769

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-1 OW07-37 Sampled By: CLIENT on 06-SEP-17 @ 09:22 Matrix: WATER							
Hydrocarbons							
F3b (C22-C34)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828769
F3-PAH	<250		250	ug/L		18-SEP-17	
F4 (C34-C50)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828769
Total Hydrocarbons (C6-C50)	<370		370	ug/L		18-SEP-17	
Chrom. to baseline at nC50	YES				14-SEP-17	14-SEP-17	R3828769
Surrogate: 2-Bromobenzotrifluoride	102.5		60-140	%	14-SEP-17	14-SEP-17	R3828769
Surrogate: 3,4-Dichlorotoluene	95.9		60-140	%		11-SEP-17	R3823436
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Acenaphthylene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Anthracene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Benzo(a)anthracene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Benzo(a)pyrene	<0.010		0.010	ug/L	11-SEP-17	12-SEP-17	R3824208
Benzo(b)fluoranthene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Benzo(k)fluoranthene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Chrysene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Fluoranthene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Fluorene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		18-SEP-17	
1-Methylnaphthalene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
2-Methylnaphthalene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Naphthalene	<0.050		0.050	ug/L	11-SEP-17	12-SEP-17	R3824208
Phenanthrene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Pyrene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Surrogate: d10-Acenaphthene	101.0		60-140	%	11-SEP-17	12-SEP-17	R3824208
Surrogate: d12-Chrysene	113.3		60-140	%	11-SEP-17	12-SEP-17	R3824208
Surrogate: d8-Naphthalene	104.1		60-140	%	11-SEP-17	12-SEP-17	R3824208
Surrogate: d10-Phenanthrene	108.3		60-140	%	11-SEP-17	12-SEP-17	R3824208
Semi-Volatile Organics							
Biphenyl	<0.40		0.40	ug/L	13-SEP-17	18-SEP-17	R3828279
4-Chloroaniline	<0.40		0.40	ug/L	13-SEP-17	18-SEP-17	R3828279
Bis(2-chloroethyl)ether	<0.40		0.40	ug/L	13-SEP-17	18-SEP-17	R3828279
Bis(2-chloroisopropyl)ether	<0.40		0.40	ug/L	13-SEP-17	18-SEP-17	R3828279
2-Chlorophenol	<0.30		0.30	ug/L	13-SEP-17	18-SEP-17	R3828279
3,3'-Dichlorobenzidine	<0.40		0.40	ug/L	13-SEP-17	18-SEP-17	R3828279
2,4-Dichlorophenol	<0.30		0.30	ug/L	13-SEP-17	18-SEP-17	R3828279
Diethylphthalate	<0.20		0.20	ug/L	13-SEP-17	18-SEP-17	R3828279
Dimethylphthalate	<0.20		0.20	ug/L	13-SEP-17	18-SEP-17	R3828279

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-1 OW07-37 Sampled By: CLIENT on 06-SEP-17 @ 09:22 Matrix: WATER							
Semi-Volatile Organics							
2,4-Dimethylphenol	<0.50		0.50	ug/L	13-SEP-17	18-SEP-17	R3828279
2,4-Dinitrophenol	<1.0		1.0	ug/L	13-SEP-17	18-SEP-17	R3828279
2,4-Dinitrotoluene	<0.40		0.40	ug/L	13-SEP-17	18-SEP-17	R3828279
2,6-Dinitrotoluene	<0.40		0.40	ug/L	13-SEP-17	18-SEP-17	R3828279
2,4+2,6-Dinitrotoluene	<0.57		0.57	ug/L		18-SEP-17	
Bis(2-ethylhexyl)phthalate	<2.0		2.0	ug/L	13-SEP-17	18-SEP-17	R3828279
Pentachlorophenol	<0.50		0.50	ug/L	13-SEP-17	18-SEP-17	R3828279
Phenanthrene	<0.20		0.20	ug/L	13-SEP-17	18-SEP-17	R3828279
Phenol	<0.50		0.50	ug/L	13-SEP-17	18-SEP-17	R3828279
Pyrene	<0.20		0.20	ug/L	13-SEP-17	18-SEP-17	R3828279
1,2,4-Trichlorobenzene	<0.40		0.40	ug/L	13-SEP-17	18-SEP-17	R3828279
2,4,5-Trichlorophenol	<0.20		0.20	ug/L	13-SEP-17	18-SEP-17	R3828279
2,4,6-Trichlorophenol	<0.20		0.20	ug/L	13-SEP-17	18-SEP-17	R3828279
Surrogate: 2-Fluorobiphenyl	101.2		50-140	%	13-SEP-17	18-SEP-17	R3828279
Surrogate: Nitrobenzene d5	97.3		50-140	%	13-SEP-17	18-SEP-17	R3828279
Surrogate: Phenol d5	42.9		30-130	%	13-SEP-17	18-SEP-17	R3828279
Surrogate: p-Terphenyl d14	102.4		60-140	%	13-SEP-17	18-SEP-17	R3828279
Surrogate: 2,4,6-Tribromophenol	112.5		50-140	%	13-SEP-17	18-SEP-17	R3828279
L1988005-2 OW07-32 Sampled By: CLIENT on 06-SEP-17 @ 10:35 Matrix: WATER							
Physical Tests							
Conductivity	1.03		0.0030	mS/cm		08-SEP-17	R3822482
pH	7.53		0.10	pH units		08-SEP-17	R3822482
Anions and Nutrients							
Chloride (Cl)	123		0.50	mg/L		13-SEP-17	R3828551
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		14-SEP-17	R3829167
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					08-SEP-17	R3822248
Dissolved Metals Filtration Location	FIELD					08-SEP-17	R3822259
Antimony (Sb)-Dissolved	0.41		0.10	ug/L	08-SEP-17	11-SEP-17	R3824202
Arsenic (As)-Dissolved	0.73		0.10	ug/L	08-SEP-17	11-SEP-17	R3824202
Barium (Ba)-Dissolved	47.5		0.10	ug/L	08-SEP-17	11-SEP-17	R3824202
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	08-SEP-17	11-SEP-17	R3824202
Boron (B)-Dissolved	74		10	ug/L	08-SEP-17	11-SEP-17	R3824202
Cadmium (Cd)-Dissolved	0.613		0.010	ug/L	08-SEP-17	11-SEP-17	R3824202
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	08-SEP-17	11-SEP-17	R3824202
Cobalt (Co)-Dissolved	2.29		0.10	ug/L	08-SEP-17	11-SEP-17	R3824202
Copper (Cu)-Dissolved	6.58		0.20	ug/L	08-SEP-17	11-SEP-17	R3824202
Lead (Pb)-Dissolved	1.08		0.050	ug/L	08-SEP-17	11-SEP-17	R3824202
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	08-SEP-17	11-SEP-17	R3823689

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-2 OW07-32 Sampled By: CLIENT on 06-SEP-17 @ 10:35 Matrix: WATER							
Dissolved Metals							
Molybdenum (Mo)-Dissolved	3.48		0.050	ug/L	08-SEP-17	11-SEP-17	R3824202
Nickel (Ni)-Dissolved	10.1		0.50	ug/L	08-SEP-17	11-SEP-17	R3824202
Selenium (Se)-Dissolved	0.292		0.050	ug/L	08-SEP-17	11-SEP-17	R3824202
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	08-SEP-17	11-SEP-17	R3824202
Sodium (Na)-Dissolved	72900		500	ug/L	08-SEP-17	11-SEP-17	R3824202
Thallium (Tl)-Dissolved	0.984		0.010	ug/L	08-SEP-17	11-SEP-17	R3824202
Uranium (U)-Dissolved	4.71		0.010	ug/L	08-SEP-17	11-SEP-17	R3824202
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	08-SEP-17	11-SEP-17	R3824202
Zinc (Zn)-Dissolved	1270	DLHC	10	ug/L	08-SEP-17	11-SEP-17	R3824202
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		08-SEP-17	R3823185
Volatile Organic Compounds							
Acetone	<30		30	ug/L		11-SEP-17	R3823436
Benzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Bromodichloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
Bromoform	<5.0		5.0	ug/L		11-SEP-17	R3823436
Bromomethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Carbon tetrachloride	<0.20		0.20	ug/L		11-SEP-17	R3823436
Chlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Dibromochloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
Chloroform	<1.0		1.0	ug/L		11-SEP-17	R3823436
1,2-Dibromoethane	<0.20		0.20	ug/L		11-SEP-17	R3823436
1,2-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,3-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,4-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Dichlorodifluoromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
1,1-Dichloroethane	1.58		0.50	ug/L		11-SEP-17	R3823436
1,2-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
cis-1,2-Dichloroethylene	1.08		0.50	ug/L		11-SEP-17	R3823436
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Methylene Chloride	<5.0		5.0	ug/L		11-SEP-17	R3823436
1,2-Dichloropropane	<0.50		0.50	ug/L		11-SEP-17	R3823436
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823436
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823436
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		11-SEP-17	
Ethylbenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
n-Hexane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Methyl Ethyl Ketone	<20		20	ug/L		11-SEP-17	R3823436
Methyl Isobutyl Ketone	<20		20	ug/L		11-SEP-17	R3823436
MTBE	<2.0		2.0	ug/L		11-SEP-17	R3823436

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-2 OW07-32 Sampled By: CLIENT on 06-SEP-17 @ 10:35 Matrix: WATER							
Volatile Organic Compounds							
Styrene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Tetrachloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Toluene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,1-Trichloroethane	1.36		0.50	ug/L		11-SEP-17	R3823436
1,1,2-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Trichloroethylene	0.92		0.50	ug/L		11-SEP-17	R3823436
Trichlorofluoromethane	<5.0		5.0	ug/L		11-SEP-17	R3823436
Vinyl chloride	<0.50		0.50	ug/L		11-SEP-17	R3823436
o-Xylene	<0.30		0.30	ug/L		11-SEP-17	R3823436
m+p-Xylenes	<0.40		0.40	ug/L		11-SEP-17	R3823436
Xylenes (Total)	<0.50		0.50	ug/L		11-SEP-17	
Surrogate: 4-Bromofluorobenzene	95.1		70-130	%		11-SEP-17	R3823436
Surrogate: 1,4-Difluorobenzene	100.4		70-130	%		11-SEP-17	R3823436
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		11-SEP-17	R3823436
F1-BTEX	<25		25	ug/L		12-SEP-17	
F2 (C10-C16)	<100		100	ug/L	14-SEP-17	14-SEP-17	R3828769
F3a (C16-C22)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828769
F3 (C16-C34)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828769
F3b (C22-C34)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828769
F4 (C34-C50)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828769
Chrom. to baseline at nC50	YES				14-SEP-17	14-SEP-17	R3828769
Surrogate: 2-Bromobenzotrifluoride	105.1		60-140	%	14-SEP-17	14-SEP-17	R3828769
Surrogate: 3,4-Dichlorotoluene	90.9		60-140	%		11-SEP-17	R3823436
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Acenaphthylene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Anthracene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Benzo(a)anthracene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Benzo(a)pyrene	<0.010		0.010	ug/L	11-SEP-17	12-SEP-17	R3824208
Benzo(b)fluoranthene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Benzo(k)fluoranthene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Chrysene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Fluoranthene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Fluorene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		12-SEP-17	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-2 OW07-32 Sampled By: CLIENT on 06-SEP-17 @ 10:35 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
1-Methylnaphthalene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
2-Methylnaphthalene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Naphthalene	<0.050		0.050	ug/L	11-SEP-17	12-SEP-17	R3824208
Phenanthrene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Pyrene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Surrogate: d10-Acenaphthene	91.4		60-140	%	11-SEP-17	12-SEP-17	R3824208
Surrogate: d12-Chrysene	89.6		60-140	%	11-SEP-17	12-SEP-17	R3824208
Surrogate: d8-Naphthalene	93.3		60-140	%	11-SEP-17	12-SEP-17	R3824208
Surrogate: d10-Phenanthrene	99.1		60-140	%	11-SEP-17	12-SEP-17	R3824208
L1988005-3 OW03-I Sampled By: CLIENT on 06-SEP-17 @ 11:57 Matrix: WATER							
Physical Tests							
Conductivity	0.847		0.0030	mS/cm		08-SEP-17	R3822482
pH	7.24		0.10	pH units		08-SEP-17	R3822482
Anions and Nutrients							
Chloride (Cl)	2.64		0.50	mg/L		13-SEP-17	R3828551
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		14-SEP-17	R3829167
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					08-SEP-17	R3822248
Dissolved Metals Filtration Location	FIELD					08-SEP-17	R3822259
Antimony (Sb)-Dissolved	0.27		0.10	ug/L	08-SEP-17	11-SEP-17	R3824202
Arsenic (As)-Dissolved	0.41		0.10	ug/L	08-SEP-17	11-SEP-17	R3824202
Barium (Ba)-Dissolved	49.5		0.10	ug/L	08-SEP-17	11-SEP-17	R3824202
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	08-SEP-17	11-SEP-17	R3824202
Boron (B)-Dissolved	105		10	ug/L	08-SEP-17	11-SEP-17	R3824202
Cadmium (Cd)-Dissolved	0.766		0.010	ug/L	08-SEP-17	11-SEP-17	R3824202
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	08-SEP-17	11-SEP-17	R3824202
Cobalt (Co)-Dissolved	0.13		0.10	ug/L	08-SEP-17	11-SEP-17	R3824202
Copper (Cu)-Dissolved	3.77		0.20	ug/L	08-SEP-17	11-SEP-17	R3824202
Lead (Pb)-Dissolved	0.962		0.050	ug/L	08-SEP-17	11-SEP-17	R3824202
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	08-SEP-17	11-SEP-17	R3823689
Molybdenum (Mo)-Dissolved	0.638		0.050	ug/L	08-SEP-17	11-SEP-17	R3824202
Nickel (Ni)-Dissolved	5.57		0.50	ug/L	08-SEP-17	11-SEP-17	R3824202
Selenium (Se)-Dissolved	0.103		0.050	ug/L	08-SEP-17	11-SEP-17	R3824202
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	08-SEP-17	11-SEP-17	R3824202
Sodium (Na)-Dissolved	3550		500	ug/L	08-SEP-17	11-SEP-17	R3824202
Thallium (Tl)-Dissolved	0.042		0.010	ug/L	08-SEP-17	11-SEP-17	R3824202
Uranium (U)-Dissolved	3.11		0.010	ug/L	08-SEP-17	11-SEP-17	R3824202
Vanadium (V)-Dissolved	0.51		0.50	ug/L	08-SEP-17	11-SEP-17	R3824202
Zinc (Zn)-Dissolved	562		1.0	ug/L	08-SEP-17	11-SEP-17	R3824202

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-3 OW03-I Sampled By: CLIENT on 06-SEP-17 @ 11:57 Matrix: WATER							
Dissolved Metals							
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		08-SEP-17	R3823185
Volatile Organic Compounds							
Acetone	<30		30	ug/L		11-SEP-17	R3823436
Benzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Bromodichloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
Bromoform	<5.0		5.0	ug/L		11-SEP-17	R3823436
Bromomethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Carbon tetrachloride	<0.20		0.20	ug/L		11-SEP-17	R3823436
Chlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Dibromochloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
Chloroform	<1.0		1.0	ug/L		11-SEP-17	R3823436
1,2-Dibromoethane	<0.20		0.20	ug/L		11-SEP-17	R3823436
1,2-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,3-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,4-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Dichlorodifluoromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
1,1-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,2-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Methylene Chloride	<5.0		5.0	ug/L		11-SEP-17	R3823436
1,2-Dichloropropane	<0.50		0.50	ug/L		11-SEP-17	R3823436
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823436
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823436
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		11-SEP-17	
Ethylbenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
n-Hexane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Methyl Ethyl Ketone	<20		20	ug/L		11-SEP-17	R3823436
Methyl Isobutyl Ketone	<20		20	ug/L		11-SEP-17	R3823436
MTBE	<2.0		2.0	ug/L		11-SEP-17	R3823436
Styrene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Tetrachloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Toluene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,1-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,2-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Trichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Trichlorofluoromethane	<5.0		5.0	ug/L		11-SEP-17	R3823436

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-3 OW03-I Sampled By: CLIENT on 06-SEP-17 @ 11:57 Matrix: WATER							
Volatile Organic Compounds							
Vinyl chloride	<0.50		0.50	ug/L		11-SEP-17	R3823436
o-Xylene	<0.30		0.30	ug/L		11-SEP-17	R3823436
m+p-Xylenes	<0.40		0.40	ug/L		11-SEP-17	R3823436
Xylenes (Total)	<0.50		0.50	ug/L		11-SEP-17	
Surrogate: 4-Bromofluorobenzene	93.7		70-130	%		11-SEP-17	R3823436
Surrogate: 1,4-Difluorobenzene	100.0		70-130	%		11-SEP-17	R3823436
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		11-SEP-17	R3823436
F1-BTEX	<25		25	ug/L		18-SEP-17	
F2 (C10-C16)	<100		100	ug/L	14-SEP-17	14-SEP-17	R3828769
F2-Naphth	<100		100	ug/L		18-SEP-17	
F3a (C16-C22)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828769
F3 (C16-C34)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828769
F3b (C22-C34)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828769
F3-PAH	<250		250	ug/L		18-SEP-17	
F4 (C34-C50)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828769
Total Hydrocarbons (C6-C50)	<370		370	ug/L		18-SEP-17	
Chrom. to baseline at nC50	YES				14-SEP-17	14-SEP-17	R3828769
Surrogate: 2-Bromobenzotrifluoride	106.3		60-140	%	14-SEP-17	14-SEP-17	R3828769
Surrogate: 3,4-Dichlorotoluene	97.8		60-140	%		11-SEP-17	R3823436
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Acenaphthylene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Anthracene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Benzo(a)anthracene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Benzo(a)pyrene	<0.010		0.010	ug/L	11-SEP-17	12-SEP-17	R3824208
Benzo(b)fluoranthene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Benzo(k)fluoranthene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Chrysene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Fluoranthene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Fluorene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		18-SEP-17	
1-Methylnaphthalene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
2-Methylnaphthalene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Naphthalene	<0.050		0.050	ug/L	11-SEP-17	12-SEP-17	R3824208
Phenanthrene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Pyrene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Surrogate: d10-Acenaphthene	104.0		60-140	%	11-SEP-17	12-SEP-17	R3824208

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-3 OW03-I Sampled By: CLIENT on 06-SEP-17 @ 11:57 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Surrogate: d12-Chrysene	106.9		60-140	%	11-SEP-17	12-SEP-17	R3824208
Surrogate: d8-Naphthalene	106.3		60-140	%	11-SEP-17	12-SEP-17	R3824208
Surrogate: d10-Phenanthrene	114.0		60-140	%	11-SEP-17	12-SEP-17	R3824208
Semi-Volatile Organics							
Biphenyl	<0.40		0.40	ug/L	13-SEP-17	18-SEP-17	R3828279
4-Chloroaniline	<0.40		0.40	ug/L	13-SEP-17	18-SEP-17	R3828279
Bis(2-chloroethyl)ether	<0.40		0.40	ug/L	13-SEP-17	18-SEP-17	R3828279
Bis(2-chloroisopropyl)ether	<0.40		0.40	ug/L	13-SEP-17	18-SEP-17	R3828279
2-Chlorophenol	<0.30		0.30	ug/L	13-SEP-17	18-SEP-17	R3828279
3,3'-Dichlorobenzidine	<0.40		0.40	ug/L	13-SEP-17	18-SEP-17	R3828279
2,4-Dichlorophenol	<0.30		0.30	ug/L	13-SEP-17	18-SEP-17	R3828279
Diethylphthalate	<0.20		0.20	ug/L	13-SEP-17	18-SEP-17	R3828279
Dimethylphthalate	<0.20		0.20	ug/L	13-SEP-17	18-SEP-17	R3828279
2,4-Dimethylphenol	<0.50		0.50	ug/L	13-SEP-17	18-SEP-17	R3828279
2,4-Dinitrophenol	<1.0		1.0	ug/L	13-SEP-17	18-SEP-17	R3828279
2,4-Dinitrotoluene	<0.40		0.40	ug/L	13-SEP-17	18-SEP-17	R3828279
2,6-Dinitrotoluene	<0.40		0.40	ug/L	13-SEP-17	18-SEP-17	R3828279
2,4+2,6-Dinitrotoluene	<0.57		0.57	ug/L		18-SEP-17	
Bis(2-ethylhexyl)phthalate	<2.0		2.0	ug/L	13-SEP-17	18-SEP-17	R3828279
Pentachlorophenol	<0.50		0.50	ug/L	13-SEP-17	18-SEP-17	R3828279
Phenanthrene	<0.20		0.20	ug/L	13-SEP-17	18-SEP-17	R3828279
Phenol	<0.50		0.50	ug/L	13-SEP-17	18-SEP-17	R3828279
Pyrene	<0.20		0.20	ug/L	13-SEP-17	18-SEP-17	R3828279
1,2,4-Trichlorobenzene	<0.40		0.40	ug/L	13-SEP-17	18-SEP-17	R3828279
2,4,5-Trichlorophenol	<0.20		0.20	ug/L	13-SEP-17	18-SEP-17	R3828279
2,4,6-Trichlorophenol	<0.20		0.20	ug/L	13-SEP-17	18-SEP-17	R3828279
Surrogate: 2-Fluorobiphenyl	98.1		50-140	%	13-SEP-17	18-SEP-17	R3828279
Surrogate: Nitrobenzene d5	94.7		50-140	%	13-SEP-17	18-SEP-17	R3828279
Surrogate: Phenol d5	44.2		30-130	%	13-SEP-17	18-SEP-17	R3828279
Surrogate: p-Terphenyl d14	117.6		60-140	%	13-SEP-17	18-SEP-17	R3828279
Surrogate: 2,4,6-Tribromophenol	112.0		50-140	%	13-SEP-17	18-SEP-17	R3828279
L1988005-4 OW03-II Sampled By: CLIENT on 06-SEP-17 @ 12:55 Matrix: WATER							
Physical Tests							
Conductivity	0.815		0.0030	mS/cm		08-SEP-17	R3822482
pH	7.41		0.10	pH units		08-SEP-17	R3822482
Anions and Nutrients							
Chloride (Cl)	3.42		0.50	mg/L		13-SEP-17	R3828551
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		14-SEP-17	R3829167
Dissolved Metals							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-4 OW03-II Sampled By: CLIENT on 06-SEP-17 @ 12:55 Matrix: WATER							
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					08-SEP-17	R3822248
Dissolved Metals Filtration Location	FIELD					08-SEP-17	R3822259
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	08-SEP-17	11-SEP-17	R3824202
Arsenic (As)-Dissolved	16.5		0.10	ug/L	08-SEP-17	11-SEP-17	R3824202
Barium (Ba)-Dissolved	63.6		0.10	ug/L	08-SEP-17	11-SEP-17	R3824202
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	08-SEP-17	11-SEP-17	R3824202
Boron (B)-Dissolved	121		10	ug/L	08-SEP-17	11-SEP-17	R3824202
Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	08-SEP-17	11-SEP-17	R3824202
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	08-SEP-17	11-SEP-17	R3824202
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	08-SEP-17	11-SEP-17	R3824202
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	08-SEP-17	11-SEP-17	R3824202
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	08-SEP-17	11-SEP-17	R3824202
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	08-SEP-17	11-SEP-17	R3823689
Molybdenum (Mo)-Dissolved	4.47		0.050	ug/L	08-SEP-17	11-SEP-17	R3824202
Nickel (Ni)-Dissolved	2.33		0.50	ug/L	08-SEP-17	11-SEP-17	R3824202
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	08-SEP-17	11-SEP-17	R3824202
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	08-SEP-17	11-SEP-17	R3824202
Sodium (Na)-Dissolved	6620		500	ug/L	08-SEP-17	11-SEP-17	R3824202
Thallium (Tl)-Dissolved	0.013		0.010	ug/L	08-SEP-17	11-SEP-17	R3824202
Uranium (U)-Dissolved	1.59		0.010	ug/L	08-SEP-17	11-SEP-17	R3824202
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	08-SEP-17	11-SEP-17	R3824202
Zinc (Zn)-Dissolved	22.5		1.0	ug/L	08-SEP-17	11-SEP-17	R3824202
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		08-SEP-17	R3823185
Volatile Organic Compounds							
Acetone	<30		30	ug/L		11-SEP-17	R3823436
Benzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Bromodichloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
Bromoform	<5.0		5.0	ug/L		11-SEP-17	R3823436
Bromomethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Carbon tetrachloride	<0.20		0.20	ug/L		11-SEP-17	R3823436
Chlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Dibromochloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
Chloroform	<1.0		1.0	ug/L		11-SEP-17	R3823436
1,2-Dibromoethane	<0.20		0.20	ug/L		11-SEP-17	R3823436
1,2-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,3-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,4-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Dichlorodifluoromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
1,1-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,2-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-4 OW03-II Sampled By: CLIENT on 06-SEP-17 @ 12:55 Matrix: WATER							
Volatile Organic Compounds							
1,1-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Methylene Chloride	<5.0		5.0	ug/L		11-SEP-17	R3823436
1,2-Dichloropropane	<0.50		0.50	ug/L		11-SEP-17	R3823436
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823436
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823436
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		11-SEP-17	
Ethylbenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
n-Hexane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Methyl Ethyl Ketone	<20		20	ug/L		11-SEP-17	R3823436
Methyl Isobutyl Ketone	<20		20	ug/L		11-SEP-17	R3823436
MTBE	<2.0		2.0	ug/L		11-SEP-17	R3823436
Styrene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Tetrachloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Toluene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,1-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,2-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Trichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Trichlorofluoromethane	<5.0		5.0	ug/L		11-SEP-17	R3823436
Vinyl chloride	<0.50		0.50	ug/L		11-SEP-17	R3823436
o-Xylene	<0.30		0.30	ug/L		11-SEP-17	R3823436
m+p-Xylenes	<0.40		0.40	ug/L		11-SEP-17	R3823436
Xylenes (Total)	<0.50		0.50	ug/L		11-SEP-17	
Surrogate: 4-Bromofluorobenzene	94.4		70-130	%		11-SEP-17	R3823436
Surrogate: 1,4-Difluorobenzene	100.0		70-130	%		11-SEP-17	R3823436
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		11-SEP-17	R3823436
F1-BTEX	<25		25	ug/L		12-SEP-17	
F2 (C10-C16)	<100		100	ug/L	14-SEP-17	14-SEP-17	R3828769
F3a (C16-C22)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828769
F3 (C16-C34)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828769
F3b (C22-C34)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828769
F4 (C34-C50)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828769
Chrom. to baseline at nC50	YES				14-SEP-17	14-SEP-17	R3828769
Surrogate: 2-Bromobenzotrifluoride	106.6		60-140	%	14-SEP-17	14-SEP-17	R3828769
Surrogate: 3,4-Dichlorotoluene	87.8		60-140	%		11-SEP-17	R3823436
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-4 OW03-II Sampled By: CLIENT on 06-SEP-17 @ 12:55 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Acenaphthylene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Anthracene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Benzo(a)anthracene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Benzo(a)pyrene	<0.010		0.010	ug/L	11-SEP-17	12-SEP-17	R3824208
Benzo(b)fluoranthene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Benzo(k)fluoranthene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Chrysene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Fluoranthene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Fluorene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		12-SEP-17	
1-Methylnaphthalene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
2-Methylnaphthalene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Naphthalene	<0.050		0.050	ug/L	11-SEP-17	12-SEP-17	R3824208
Phenanthrene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Pyrene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Surrogate: d10-Acenaphthene	95.7		60-140	%	11-SEP-17	12-SEP-17	R3824208
Surrogate: d12-Chrysene	97.5		60-140	%	11-SEP-17	12-SEP-17	R3824208
Surrogate: d8-Naphthalene	98.8		60-140	%	11-SEP-17	12-SEP-17	R3824208
Surrogate: d10-Phenanthrene	105.2		60-140	%	11-SEP-17	12-SEP-17	R3824208
L1988005-5 OW07-38S Sampled By: CLIENT on 06-SEP-17 @ 14:00 Matrix: WATER							
Physical Tests							
Conductivity	0.815		0.0030	mS/cm		08-SEP-17	R3822482
pH	7.61		0.10	pH units		08-SEP-17	R3822482
Anions and Nutrients							
Chloride (Cl)	2.88		0.50	mg/L		13-SEP-17	R3828551
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		14-SEP-17	R3829167
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					08-SEP-17	R3822248
Dissolved Metals Filtration Location	FIELD					08-SEP-17	R3822259
Antimony (Sb)-Dissolved	0.36		0.10	ug/L	08-SEP-17	11-SEP-17	R3824202
Arsenic (As)-Dissolved	0.32		0.10	ug/L	08-SEP-17	11-SEP-17	R3824202
Barium (Ba)-Dissolved	36.7		0.10	ug/L	08-SEP-17	11-SEP-17	R3824202
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	08-SEP-17	11-SEP-17	R3824202
Boron (B)-Dissolved	135		10	ug/L	08-SEP-17	11-SEP-17	R3824202
Cadmium (Cd)-Dissolved	0.293		0.010	ug/L	08-SEP-17	11-SEP-17	R3824202
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	08-SEP-17	11-SEP-17	R3824202

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-5 OW07-38S Sampled By: CLIENT on 06-SEP-17 @ 14:00 Matrix: WATER							
Dissolved Metals							
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	08-SEP-17	11-SEP-17	R3824202
Copper (Cu)-Dissolved	1.56		0.20	ug/L	08-SEP-17	11-SEP-17	R3824202
Lead (Pb)-Dissolved	0.057		0.050	ug/L	08-SEP-17	11-SEP-17	R3824202
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	08-SEP-17	11-SEP-17	R3823689
Molybdenum (Mo)-Dissolved	0.966		0.050	ug/L	08-SEP-17	11-SEP-17	R3824202
Nickel (Ni)-Dissolved	7.30		0.50	ug/L	08-SEP-17	11-SEP-17	R3824202
Selenium (Se)-Dissolved	0.395		0.050	ug/L	08-SEP-17	11-SEP-17	R3824202
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	08-SEP-17	11-SEP-17	R3824202
Sodium (Na)-Dissolved	6030		500	ug/L	08-SEP-17	11-SEP-17	R3824202
Thallium (Tl)-Dissolved	0.157		0.010	ug/L	08-SEP-17	11-SEP-17	R3824202
Uranium (U)-Dissolved	2.05		0.010	ug/L	08-SEP-17	11-SEP-17	R3824202
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	08-SEP-17	11-SEP-17	R3824202
Zinc (Zn)-Dissolved	455		1.0	ug/L	08-SEP-17	11-SEP-17	R3824202
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		08-SEP-17	R3823185
Volatile Organic Compounds							
Acetone	<30		30	ug/L		11-SEP-17	R3823436
Benzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Bromodichloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
Bromoform	<5.0		5.0	ug/L		11-SEP-17	R3823436
Bromomethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Carbon tetrachloride	<0.20		0.20	ug/L		11-SEP-17	R3823436
Chlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Dibromochloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
Chloroform	<1.0		1.0	ug/L		11-SEP-17	R3823436
1,2-Dibromoethane	<0.20		0.20	ug/L		11-SEP-17	R3823436
1,2-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,3-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,4-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Dichlorodifluoromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
1,1-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,2-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Methylene Chloride	<5.0		5.0	ug/L		11-SEP-17	R3823436
1,2-Dichloropropane	<0.50		0.50	ug/L		11-SEP-17	R3823436
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823436
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823436
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		11-SEP-17	
Ethylbenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-5 OW07-38S Sampled By: CLIENT on 06-SEP-17 @ 14:00 Matrix: WATER							
Volatile Organic Compounds							
n-Hexane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Methyl Ethyl Ketone	<20		20	ug/L		11-SEP-17	R3823436
Methyl Isobutyl Ketone	<20		20	ug/L		11-SEP-17	R3823436
MTBE	<2.0		2.0	ug/L		11-SEP-17	R3823436
Styrene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Tetrachloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Toluene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,1-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,2-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Trichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Trichlorofluoromethane	<5.0		5.0	ug/L		11-SEP-17	R3823436
Vinyl chloride	<0.50		0.50	ug/L		11-SEP-17	R3823436
o-Xylene	<0.30		0.30	ug/L		11-SEP-17	R3823436
m+p-Xylenes	<0.40		0.40	ug/L		11-SEP-17	R3823436
Xylenes (Total)	<0.50		0.50	ug/L		11-SEP-17	
Surrogate: 4-Bromofluorobenzene	93.8		70-130	%		11-SEP-17	R3823436
Surrogate: 1,4-Difluorobenzene	100.5		70-130	%		11-SEP-17	R3823436
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		11-SEP-17	R3823436
F1-BTEX	<25		25	ug/L		12-SEP-17	
F2 (C10-C16)	<100		100	ug/L	14-SEP-17	14-SEP-17	R3828769
F3a (C16-C22)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828769
F3 (C16-C34)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828769
F3b (C22-C34)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828769
F4 (C34-C50)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828769
Chrom. to baseline at nC50	YES				14-SEP-17	14-SEP-17	R3828769
Surrogate: 2-Bromobenzotrifluoride	111.9		60-140	%	14-SEP-17	14-SEP-17	R3828769
Surrogate: 3,4-Dichlorotoluene	88.7		60-140	%		11-SEP-17	R3823436
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Acenaphthylene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Anthracene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Benzo(a)anthracene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Benzo(a)pyrene	<0.010		0.010	ug/L	11-SEP-17	12-SEP-17	R3824208
Benzo(b)fluoranthene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Benzo(k)fluoranthene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Chrysene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-5 OW07-38S Sampled By: CLIENT on 06-SEP-17 @ 14:00 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Fluoranthene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Fluorene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		12-SEP-17	
1-Methylnaphthalene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
2-Methylnaphthalene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Naphthalene	<0.050		0.050	ug/L	11-SEP-17	12-SEP-17	R3824208
Phenanthrene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Pyrene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Surrogate: d10-Acenaphthene	99.9		60-140	%	11-SEP-17	12-SEP-17	R3824208
Surrogate: d12-Chrysene	105.7		60-140	%	11-SEP-17	12-SEP-17	R3824208
Surrogate: d8-Naphthalene	102.8		60-140	%	11-SEP-17	12-SEP-17	R3824208
Surrogate: d10-Phenanthrene	107.8		60-140	%	11-SEP-17	12-SEP-17	R3824208
Polychlorinated Biphenyls							
Aroclor 1242	<0.020		0.020	ug/L	14-SEP-17	15-SEP-17	R3829539
Aroclor 1248	<0.020		0.020	ug/L	14-SEP-17	15-SEP-17	R3829539
Aroclor 1254	<0.020		0.020	ug/L	14-SEP-17	15-SEP-17	R3829539
Aroclor 1260	<0.020		0.020	ug/L	14-SEP-17	15-SEP-17	R3829539
Total PCBs	<0.040		0.040	ug/L	14-SEP-17	15-SEP-17	R3829539
Surrogate: 2-fluorobiphenyl	100.0		50-150	%	14-SEP-17	15-SEP-17	R3829539
L1988005-6 OW22D Sampled By: CLIENT on 06-SEP-17 @ 15:08 Matrix: WATER							
Physical Tests							
Conductivity	1.64		0.0030	mS/cm		08-SEP-17	R3822482
pH	7.58		0.10	pH units		08-SEP-17	R3822482
Anions and Nutrients							
Chloride (Cl)	48.3	DLHC	2.5	mg/L		13-SEP-17	R3828551
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		14-SEP-17	R3829167
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					08-SEP-17	R3822248
Dissolved Metals Filtration Location	FIELD					08-SEP-17	R3822259
Antimony (Sb)-Dissolved	0.28		0.10	ug/L	08-SEP-17	11-SEP-17	R3824202
Arsenic (As)-Dissolved	21.7		0.10	ug/L	08-SEP-17	11-SEP-17	R3824202
Barium (Ba)-Dissolved	107		0.10	ug/L	08-SEP-17	11-SEP-17	R3824202
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	08-SEP-17	11-SEP-17	R3824202
Boron (B)-Dissolved	89		10	ug/L	08-SEP-17	11-SEP-17	R3824202
Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	08-SEP-17	11-SEP-17	R3824202
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	08-SEP-17	11-SEP-17	R3824202
Cobalt (Co)-Dissolved	0.21		0.10	ug/L	08-SEP-17	11-SEP-17	R3824202
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	08-SEP-17	11-SEP-17	R3824202

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-6 OW22D Sampled By: CLIENT on 06-SEP-17 @ 15:08 Matrix: WATER							
Dissolved Metals							
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	08-SEP-17	11-SEP-17	R3824202
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	08-SEP-17	11-SEP-17	R3823689
Molybdenum (Mo)-Dissolved	3.25		0.050	ug/L	08-SEP-17	11-SEP-17	R3824202
Nickel (Ni)-Dissolved	3.45		0.50	ug/L	08-SEP-17	11-SEP-17	R3824202
Selenium (Se)-Dissolved	0.053		0.050	ug/L	08-SEP-17	11-SEP-17	R3824202
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	08-SEP-17	11-SEP-17	R3824202
Sodium (Na)-Dissolved	29700		500	ug/L	08-SEP-17	11-SEP-17	R3824202
Thallium (Tl)-Dissolved	0.032		0.010	ug/L	08-SEP-17	11-SEP-17	R3824202
Uranium (U)-Dissolved	3.46		0.010	ug/L	08-SEP-17	11-SEP-17	R3824202
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	08-SEP-17	11-SEP-17	R3824202
Zinc (Zn)-Dissolved	860		1.0	ug/L	08-SEP-17	11-SEP-17	R3824202
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		08-SEP-17	R3823185
Volatile Organic Compounds							
Acetone	<30		30	ug/L		11-SEP-17	R3823436
Benzene	1.39		0.50	ug/L		11-SEP-17	R3823436
Bromodichloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
Bromoform	<5.0		5.0	ug/L		11-SEP-17	R3823436
Bromomethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Carbon tetrachloride	<0.20		0.20	ug/L		11-SEP-17	R3823436
Chlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Dibromochloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
Chloroform	<1.0		1.0	ug/L		11-SEP-17	R3823436
1,2-Dibromoethane	<0.20		0.20	ug/L		11-SEP-17	R3823436
1,2-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,3-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,4-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Dichlorodifluoromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
1,1-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,2-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
cis-1,2-Dichloroethylene	0.61		0.50	ug/L		11-SEP-17	R3823436
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Methylene Chloride	<5.0		5.0	ug/L		11-SEP-17	R3823436
1,2-Dichloropropane	<0.50		0.50	ug/L		11-SEP-17	R3823436
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823436
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823436
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		11-SEP-17	
1,4-Dioxane	<20		20	ug/L		11-SEP-17	R3823436
Ethylbenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
n-Hexane	<0.50		0.50	ug/L		11-SEP-17	R3823436

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-6 OW22D Sampled By: CLIENT on 06-SEP-17 @ 15:08 Matrix: WATER							
Volatile Organic Compounds							
Methyl Ethyl Ketone	<20		20	ug/L		11-SEP-17	R3823436
Methyl Isobutyl Ketone	<20		20	ug/L		11-SEP-17	R3823436
MTBE	<2.0		2.0	ug/L		11-SEP-17	R3823436
Styrene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Tetrachloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Toluene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,1-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,2-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Trichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Trichlorofluoromethane	<5.0		5.0	ug/L		11-SEP-17	R3823436
Vinyl chloride	<0.50		0.50	ug/L		11-SEP-17	R3823436
o-Xylene	<0.30		0.30	ug/L		11-SEP-17	R3823436
m+p-Xylenes	<0.40		0.40	ug/L		11-SEP-17	R3823436
Xylenes (Total)	<0.50		0.50	ug/L		11-SEP-17	
Surrogate: 4-Bromofluorobenzene	93.5		70-130	%		11-SEP-17	R3823436
Surrogate: 1,4-Difluorobenzene	100.7		70-130	%		11-SEP-17	R3823436
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		11-SEP-17	R3823436
F1-BTEX	<25		25	ug/L		12-SEP-17	
F2 (C10-C16)	<100		100	ug/L	14-SEP-17	14-SEP-17	R3828769
F3a (C16-C22)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828769
F3 (C16-C34)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828769
F3b (C22-C34)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828769
F4 (C34-C50)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828769
Chrom. to baseline at nC50	YES				14-SEP-17	14-SEP-17	R3828769
Surrogate: 2-Bromobenzotrifluoride	107.4		60-140	%	14-SEP-17	14-SEP-17	R3828769
Surrogate: 3,4-Dichlorotoluene	90.2		60-140	%		11-SEP-17	R3823436
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	0.065		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Acenaphthylene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Anthracene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Benzo(a)anthracene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Benzo(a)pyrene	<0.010		0.010	ug/L	11-SEP-17	12-SEP-17	R3824208
Benzo(b)fluoranthene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Benzo(k)fluoranthene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Chrysene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Fluoranthene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-6 OW22D Sampled By: CLIENT on 06-SEP-17 @ 15:08 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Fluorene	0.031		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		12-SEP-17	
1-Methylnaphthalene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
2-Methylnaphthalene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Naphthalene	<0.050		0.050	ug/L	11-SEP-17	12-SEP-17	R3824208
Phenanthrene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Pyrene	<0.020		0.020	ug/L	11-SEP-17	12-SEP-17	R3824208
Surrogate: d10-Acenaphthene	88.9		60-140	%	11-SEP-17	12-SEP-17	R3824208
Surrogate: d12-Chrysene	88.3		60-140	%	11-SEP-17	12-SEP-17	R3824208
Surrogate: d8-Naphthalene	89.8		60-140	%	11-SEP-17	12-SEP-17	R3824208
Surrogate: d10-Phenanthrene	100.6		60-140	%	11-SEP-17	12-SEP-17	R3824208
L1988005-7 DUP 4 Sampled By: CLIENT on 06-SEP-17 Matrix: WATER							
Physical Tests							
Conductivity	1.64		0.0030	mS/cm		08-SEP-17	R3822482
pH	7.52		0.10	pH units		08-SEP-17	R3822482
Anions and Nutrients							
Chloride (Cl)	50.0	DLHC	2.5	mg/L		13-SEP-17	R3828551
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		14-SEP-17	R3829167
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					08-SEP-17	R3822248
Dissolved Metals Filtration Location	FIELD					11-SEP-17	R3823390
Antimony (Sb)-Dissolved	0.28		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Arsenic (As)-Dissolved	22.2		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Barium (Ba)-Dissolved	107		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Boron (B)-Dissolved	88		10	ug/L	11-SEP-17	11-SEP-17	R3824202
Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	11-SEP-17	11-SEP-17	R3824202
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	11-SEP-17	11-SEP-17	R3824202
Cobalt (Co)-Dissolved	0.20		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	11-SEP-17	11-SEP-17	R3824202
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	11-SEP-17	11-SEP-17	R3824202
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	08-SEP-17	11-SEP-17	R3823689
Molybdenum (Mo)-Dissolved	3.25		0.050	ug/L	11-SEP-17	11-SEP-17	R3824202
Nickel (Ni)-Dissolved	3.32		0.50	ug/L	11-SEP-17	11-SEP-17	R3824202
Selenium (Se)-Dissolved	0.057		0.050	ug/L	11-SEP-17	11-SEP-17	R3824202
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	11-SEP-17	11-SEP-17	R3824202
Sodium (Na)-Dissolved	29200		500	ug/L	11-SEP-17	11-SEP-17	R3824202
Thallium (Tl)-Dissolved	0.033		0.010	ug/L	11-SEP-17	11-SEP-17	R3824202

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-7 DUP 4 Sampled By: CLIENT on 06-SEP-17 Matrix: WATER							
Dissolved Metals							
Uranium (U)-Dissolved	3.47		0.010	ug/L	11-SEP-17	11-SEP-17	R3824202
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	11-SEP-17	11-SEP-17	R3824202
Zinc (Zn)-Dissolved	846		1.0	ug/L	11-SEP-17	11-SEP-17	R3824202
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		08-SEP-17	R3823185
Volatile Organic Compounds							
Acetone	<30		30	ug/L		11-SEP-17	R3823436
Benzene	1.35		0.50	ug/L		11-SEP-17	R3823436
Bromodichloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
Bromoform	<5.0		5.0	ug/L		11-SEP-17	R3823436
Bromomethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Carbon tetrachloride	<0.20		0.20	ug/L		11-SEP-17	R3823436
Chlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Dibromochloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
Chloroform	<1.0		1.0	ug/L		11-SEP-17	R3823436
1,2-Dibromoethane	<0.20		0.20	ug/L		11-SEP-17	R3823436
1,2-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,3-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,4-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Dichlorodifluoromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
1,1-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,2-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
cis-1,2-Dichloroethylene	0.59		0.50	ug/L		11-SEP-17	R3823436
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Methylene Chloride	<5.0		5.0	ug/L		11-SEP-17	R3823436
1,2-Dichloropropane	<0.50		0.50	ug/L		11-SEP-17	R3823436
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823436
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823436
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		11-SEP-17	
1,4-Dioxane	<20		20	ug/L		11-SEP-17	R3823436
Ethylbenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
n-Hexane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Methyl Ethyl Ketone	<20		20	ug/L		11-SEP-17	R3823436
Methyl Isobutyl Ketone	<20		20	ug/L		11-SEP-17	R3823436
MTBE	<2.0		2.0	ug/L		11-SEP-17	R3823436
Styrene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Tetrachloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Toluene	<0.50		0.50	ug/L		11-SEP-17	R3823436

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-7 DUP 4 Sampled By: CLIENT on 06-SEP-17 Matrix: WATER							
Volatile Organic Compounds							
1,1,1-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,2-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Trichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Trichlorofluoromethane	<5.0		5.0	ug/L		11-SEP-17	R3823436
Vinyl chloride	<0.50		0.50	ug/L		11-SEP-17	R3823436
o-Xylene	<0.30		0.30	ug/L		11-SEP-17	R3823436
m+p-Xylenes	<0.40		0.40	ug/L		11-SEP-17	R3823436
Xylenes (Total)	<0.50		0.50	ug/L		11-SEP-17	
Surrogate: 4-Bromofluorobenzene	92.8		70-130	%		11-SEP-17	R3823436
Surrogate: 1,4-Difluorobenzene	100.0		70-130	%		11-SEP-17	R3823436
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		11-SEP-17	R3823436
F1-BTEX	<25		25	ug/L		13-SEP-17	
F2 (C10-C16)	<100		100	ug/L	14-SEP-17	14-SEP-17	R3828769
F3a (C16-C22)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828769
F3 (C16-C34)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828769
F3b (C22-C34)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828769
F4 (C34-C50)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828769
Chrom. to baseline at nC50	YES				14-SEP-17	14-SEP-17	R3828769
Surrogate: 2-Bromobenzotrifluoride	104.9		60-140	%	14-SEP-17	14-SEP-17	R3828769
Surrogate: 3,4-Dichlorotoluene	96.4		60-140	%		11-SEP-17	R3823436
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	0.066		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Acenaphthylene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Anthracene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Benzo(a)anthracene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Benzo(a)pyrene	<0.010		0.010	ug/L	12-SEP-17	13-SEP-17	R3826603
Benzo(b)fluoranthene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Benzo(k)fluoranthene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Chrysene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Fluoranthene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Fluorene	0.033		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		13-SEP-17	
1-Methylnaphthalene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
2-Methylnaphthalene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Naphthalene	<0.050		0.050	ug/L	12-SEP-17	13-SEP-17	R3826603
Phenanthrene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Pyrene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-7 DUP 4 Sampled By: CLIENT on 06-SEP-17 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Surrogate: d10-Acenaphthene	88.0		60-140	%	12-SEP-17	13-SEP-17	R3826603
Surrogate: d12-Chrysene	99.5		60-140	%	12-SEP-17	13-SEP-17	R3826603
Surrogate: d8-Naphthalene	88.7		60-140	%	12-SEP-17	13-SEP-17	R3826603
Surrogate: d10-Phenanthrene	101.1		60-140	%	12-SEP-17	13-SEP-17	R3826603
L1988005-8 OW22S Sampled By: CLIENT on 06-SEP-17 @ 16:45 Matrix: WATER							
Physical Tests							
Conductivity	1.28		0.0030	mS/cm		08-SEP-17	R3822482
pH	7.59		0.10	pH units		08-SEP-17	R3822482
Anions and Nutrients							
Chloride (Cl)	<2.5	DLHC	2.5	mg/L		13-SEP-17	R3828551
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		14-SEP-17	R3829167
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					08-SEP-17	R3822248
Dissolved Metals Filtration Location	FIELD					11-SEP-17	R3823390
Antimony (Sb)-Dissolved	0.59		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Arsenic (As)-Dissolved	0.20		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Barium (Ba)-Dissolved	38.7		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Boron (B)-Dissolved	63		10	ug/L	11-SEP-17	11-SEP-17	R3824202
Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	11-SEP-17	11-SEP-17	R3824202
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	11-SEP-17	11-SEP-17	R3824202
Cobalt (Co)-Dissolved	0.25		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	11-SEP-17	11-SEP-17	R3824202
Lead (Pb)-Dissolved	0.166		0.050	ug/L	11-SEP-17	11-SEP-17	R3824202
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	08-SEP-17	11-SEP-17	R3823689
Molybdenum (Mo)-Dissolved	3.46		0.050	ug/L	11-SEP-17	11-SEP-17	R3824202
Nickel (Ni)-Dissolved	16.2		0.50	ug/L	11-SEP-17	11-SEP-17	R3824202
Selenium (Se)-Dissolved	0.393		0.050	ug/L	11-SEP-17	11-SEP-17	R3824202
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	11-SEP-17	11-SEP-17	R3824202
Sodium (Na)-Dissolved	2480		500	ug/L	11-SEP-17	11-SEP-17	R3824202
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	11-SEP-17	11-SEP-17	R3824202
Uranium (U)-Dissolved	25.9		0.010	ug/L	11-SEP-17	11-SEP-17	R3824202
Vanadium (V)-Dissolved	0.57		0.50	ug/L	11-SEP-17	11-SEP-17	R3824202
Zinc (Zn)-Dissolved	17.3		1.0	ug/L	11-SEP-17	11-SEP-17	R3824202
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		08-SEP-17	R3823185
Volatile Organic Compounds							
Acetone	<30		30	ug/L		11-SEP-17	R3823436
Benzene	<0.50		0.50	ug/L		11-SEP-17	R3823436

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-8 OW22S Sampled By: CLIENT on 06-SEP-17 @ 16:45 Matrix: WATER							
Volatile Organic Compounds							
Bromodichloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
Bromoform	<5.0		5.0	ug/L		11-SEP-17	R3823436
Bromomethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Carbon tetrachloride	<0.20		0.20	ug/L		11-SEP-17	R3823436
Chlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Dibromochloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
Chloroform	<1.0		1.0	ug/L		11-SEP-17	R3823436
1,2-Dibromoethane	<0.20		0.20	ug/L		11-SEP-17	R3823436
1,2-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,3-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,4-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Dichlorodifluoromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
1,1-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,2-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Methylene Chloride	<5.0		5.0	ug/L		11-SEP-17	R3823436
1,2-Dichloropropane	<0.50		0.50	ug/L		11-SEP-17	R3823436
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823436
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823436
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		11-SEP-17	
Ethylbenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
n-Hexane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Methyl Ethyl Ketone	<20		20	ug/L		11-SEP-17	R3823436
Methyl Isobutyl Ketone	<20		20	ug/L		11-SEP-17	R3823436
MTBE	<2.0		2.0	ug/L		11-SEP-17	R3823436
Styrene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,2,2-Tetrachloroethane	<1.7	DLVH	1.7	ug/L		11-SEP-17	R3823436
Tetrachloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Toluene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,1-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,2-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Trichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Trichlorofluoromethane	<5.0		5.0	ug/L		11-SEP-17	R3823436
Vinyl chloride	<0.50		0.50	ug/L		11-SEP-17	R3823436
o-Xylene	<0.30		0.30	ug/L		11-SEP-17	R3823436
m+p-Xylenes	<0.40		0.40	ug/L		11-SEP-17	R3823436
Xylenes (Total)	<0.50		0.50	ug/L		11-SEP-17	
Surrogate: 4-Bromofluorobenzene	104.9		70-130	%		11-SEP-17	R3823436

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-8 OW22S Sampled By: CLIENT on 06-SEP-17 @ 16:45 Matrix: WATER							
Volatile Organic Compounds							
Surrogate: 1,4-Difluorobenzene	99.4		70-130	%		11-SEP-17	R3823436
Hydrocarbons							
F1 (C6-C10)	94		25	ug/L		11-SEP-17	R3823436
F1-BTEX	94		25	ug/L		13-SEP-17	
F2 (C10-C16)	6170		100	ug/L	14-SEP-17	14-SEP-17	R3828769
F3a (C16-C22)	18500		130	ug/L	14-SEP-17	14-SEP-17	R3828769
F3 (C16-C34)	57500		250	ug/L	14-SEP-17	14-SEP-17	R3828769
F3b (C22-C34)	38900		130	ug/L	14-SEP-17	14-SEP-17	R3828769
F4 (C34-C50)	4060		250	ug/L	14-SEP-17	14-SEP-17	R3828769
Chrom. to baseline at nC50	YES				14-SEP-17	14-SEP-17	R3828769
Surrogate: 2-Bromobenzotrifluoride	109.5		60-140	%	14-SEP-17	14-SEP-17	R3828769
Surrogate: 3,4-Dichlorotoluene	91.9		60-140	%		11-SEP-17	R3823436
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	1.01	DLM	0.050	ug/L	12-SEP-17	13-SEP-17	R3826603
Acenaphthylene	<0.290	DLQ	0.29	ug/L	12-SEP-17	13-SEP-17	R3826603
Anthracene	<1.20	DLQ	0.20	ug/L	12-SEP-17	13-SEP-17	R3826603
Benzo(a)anthracene	<0.580	DLQ	0.58	ug/L	12-SEP-17	13-SEP-17	R3826603
Benzo(a)pyrene	0.106	DLM	0.050	ug/L	12-SEP-17	13-SEP-17	R3826603
Benzo(b)fluoranthene	0.248	DLM	0.050	ug/L	12-SEP-17	13-SEP-17	R3826603
Benzo(g,h,i)perylene	0.054	DLM	0.050	ug/L	12-SEP-17	13-SEP-17	R3826603
Benzo(k)fluoranthene	0.060	DLM	0.050	ug/L	12-SEP-17	13-SEP-17	R3826603
Chrysene	<1.35	DLQ	1.4	ug/L	12-SEP-17	13-SEP-17	R3826603
Dibenzo(ah)anthracene	<0.050	DLM	0.050	ug/L	12-SEP-17	13-SEP-17	R3826603
Fluoranthene	0.625	DLM	0.050	ug/L	12-SEP-17	13-SEP-17	R3826603
Fluorene	2.31	DLM	0.050	ug/L	12-SEP-17	13-SEP-17	R3826603
Indeno(1,2,3-cd)pyrene	0.050	DLM	0.050	ug/L	12-SEP-17	13-SEP-17	R3826603
1+2-Methylnaphthalenes	2.55		0.12	ug/L		13-SEP-17	
1-Methylnaphthalene	2.55	DLM	0.050	ug/L	12-SEP-17	13-SEP-17	R3826603
2-Methylnaphthalene	<0.110	DLQ	0.11	ug/L	12-SEP-17	13-SEP-17	R3826603
Naphthalene	<0.25	DLQ	0.25	ug/L	12-SEP-17	13-SEP-17	R3826603
Phenanthrene	<1.40	DLQ	1.4	ug/L	12-SEP-17	13-SEP-17	R3826603
Pyrene	1.63	DLM	0.050	ug/L	12-SEP-17	13-SEP-17	R3826603
Surrogate: d10-Acenaphthene	100.4		60-140	%	12-SEP-17	13-SEP-17	R3826603
Surrogate: d12-Chrysene	101.75		60-140	%	12-SEP-17	13-SEP-17	R3826603
Surrogate: d8-Naphthalene	98.2		60-140	%	12-SEP-17	13-SEP-17	R3826603
Surrogate: d10-Phenanthrene	106.3		60-140	%	12-SEP-17	13-SEP-17	R3826603
L1988005-9 OW19 Sampled By: CLIENT on 07-SEP-17 @ 09:23 Matrix: WATER							
Physical Tests							
Conductivity	0.777		0.0030	mS/cm		08-SEP-17	R3822482
pH	7.37		0.10	pH units		08-SEP-17	R3822482

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-9 OW19 Sampled By: CLIENT on 07-SEP-17 @ 09:23 Matrix: WATER							
Physical Tests							
Anions and Nutrients							
Chloride (Cl)	4.37		0.50	mg/L		13-SEP-17	R3828551
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		14-SEP-17	R3829167
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					08-SEP-17	R3822249
Dissolved Metals Filtration Location	FIELD					11-SEP-17	R3823390
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Arsenic (As)-Dissolved	1.38		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Barium (Ba)-Dissolved	101		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Boron (B)-Dissolved	91		10	ug/L	11-SEP-17	11-SEP-17	R3824202
Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	11-SEP-17	11-SEP-17	R3824202
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	11-SEP-17	11-SEP-17	R3824202
Cobalt (Co)-Dissolved	2.22		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	11-SEP-17	11-SEP-17	R3824202
Lead (Pb)-Dissolved	0.370		0.050	ug/L	11-SEP-17	11-SEP-17	R3824202
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	08-SEP-17	11-SEP-17	R3823691
Molybdenum (Mo)-Dissolved	0.945		0.050	ug/L	11-SEP-17	11-SEP-17	R3824202
Nickel (Ni)-Dissolved	10.1		0.50	ug/L	11-SEP-17	11-SEP-17	R3824202
Selenium (Se)-Dissolved	0.063		0.050	ug/L	11-SEP-17	11-SEP-17	R3824202
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	11-SEP-17	11-SEP-17	R3824202
Sodium (Na)-Dissolved	4490		500	ug/L	11-SEP-17	11-SEP-17	R3824202
Thallium (Tl)-Dissolved	0.010		0.010	ug/L	11-SEP-17	11-SEP-17	R3824202
Uranium (U)-Dissolved	1.96		0.010	ug/L	11-SEP-17	11-SEP-17	R3824202
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	11-SEP-17	11-SEP-17	R3824202
Zinc (Zn)-Dissolved	1360	DLHC	10	ug/L	11-SEP-17	11-SEP-17	R3824202
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		08-SEP-17	R3823185
Volatile Organic Compounds							
Acetone	<30		30	ug/L		11-SEP-17	R3823436
Benzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Bromodichloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
Bromoform	<5.0		5.0	ug/L		11-SEP-17	R3823436
Bromomethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Carbon tetrachloride	<0.20		0.20	ug/L		11-SEP-17	R3823436
Chlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Dibromochloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
Chloroform	<1.0		1.0	ug/L		11-SEP-17	R3823436
1,2-Dibromoethane	<0.20		0.20	ug/L		11-SEP-17	R3823436
1,2-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,3-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-9 OW19 Sampled By: CLIENT on 07-SEP-17 @ 09:23 Matrix: WATER							
Volatile Organic Compounds							
1,4-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Dichlorodifluoromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
1,1-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,2-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
cis-1,2-Dichloroethylene	4.06		0.50	ug/L		11-SEP-17	R3823436
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Methylene Chloride	<5.0		5.0	ug/L		11-SEP-17	R3823436
1,2-Dichloropropane	<0.50		0.50	ug/L		11-SEP-17	R3823436
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823436
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823436
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		11-SEP-17	
Ethylbenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
n-Hexane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Methyl Ethyl Ketone	<20		20	ug/L		11-SEP-17	R3823436
Methyl Isobutyl Ketone	<20		20	ug/L		11-SEP-17	R3823436
MTBE	<2.0		2.0	ug/L		11-SEP-17	R3823436
Styrene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Tetrachloroethylene	0.91		0.50	ug/L		11-SEP-17	R3823436
Toluene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,1-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,2-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Trichloroethylene	0.97		0.50	ug/L		11-SEP-17	R3823436
Trichlorofluoromethane	<5.0		5.0	ug/L		11-SEP-17	R3823436
Vinyl chloride	1.05		0.50	ug/L		11-SEP-17	R3823436
o-Xylene	<0.30		0.30	ug/L		11-SEP-17	R3823436
m+p-Xylenes	<0.40		0.40	ug/L		11-SEP-17	R3823436
Xylenes (Total)	<0.50		0.50	ug/L		11-SEP-17	
Surrogate: 4-Bromofluorobenzene	96.2		70-130	%		11-SEP-17	R3823436
Surrogate: 1,4-Difluorobenzene	99.4		70-130	%		11-SEP-17	R3823436
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		11-SEP-17	R3823436
F1-BTEX	<25		25	ug/L		13-SEP-17	
F2 (C10-C16)	<100		100	ug/L	14-SEP-17	14-SEP-17	R3828769
F3a (C16-C22)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828769
F3 (C16-C34)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828769
F3b (C22-C34)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828769
F4 (C34-C50)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828769
Chrom. to baseline at nC50	YES				14-SEP-17	14-SEP-17	R3828769

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-9 OW19 Sampled By: CLIENT on 07-SEP-17 @ 09:23 Matrix: WATER							
Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	104.4		60-140	%	14-SEP-17	14-SEP-17	R3828769
Surrogate: 3,4-Dichlorotoluene	91.4		60-140	%		11-SEP-17	R3823436
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	0.247		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Acenaphthylene	<0.035	DLQ	0.035	ug/L	12-SEP-17	13-SEP-17	R3826603
Anthracene	<0.065	DLQ	0.065	ug/L	12-SEP-17	13-SEP-17	R3826603
Benzo(a)anthracene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Benzo(a)pyrene	<0.010		0.010	ug/L	12-SEP-17	13-SEP-17	R3826603
Benzo(b)fluoranthene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Benzo(k)fluoranthene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Chrysene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Fluoranthene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Fluorene	0.352		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
1+2-Methylnaphthalenes	0.277		0.028	ug/L		13-SEP-17	
1-Methylnaphthalene	0.250		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
2-Methylnaphthalene	0.027		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Naphthalene	<0.075	DLQ	0.075	ug/L	12-SEP-17	13-SEP-17	R3826603
Phenanthrene	<0.075	DLQ	0.075	ug/L	12-SEP-17	13-SEP-17	R3826603
Pyrene	0.051		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Surrogate: d10-Acenaphthene	90.3		60-140	%	12-SEP-17	13-SEP-17	R3826603
Surrogate: d12-Chrysene	105.1		60-140	%	12-SEP-17	13-SEP-17	R3826603
Surrogate: d8-Naphthalene	89.3		60-140	%	12-SEP-17	13-SEP-17	R3826603
Surrogate: d10-Phenanthrene	104.1		60-140	%	12-SEP-17	13-SEP-17	R3826603
L1988005-10 OW23D Sampled By: CLIENT on 07-SEP-17 @ 10:25 Matrix: WATER							
Physical Tests							
Conductivity	0.902		0.0030	mS/cm		08-SEP-17	R3822482
pH	7.56		0.10	pH units		08-SEP-17	R3822482
Anions and Nutrients							
Chloride (Cl)	67.0		0.50	mg/L		13-SEP-17	R3828551
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		14-SEP-17	R3829167
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					08-SEP-17	R3822249
Dissolved Metals Filtration Location	FIELD					11-SEP-17	R3823390
Antimony (Sb)-Dissolved	0.14		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Arsenic (As)-Dissolved	14.0		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Barium (Ba)-Dissolved	102		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-10 OW23D Sampled By: CLIENT on 07-SEP-17 @ 10:25 Matrix: WATER							
Dissolved Metals							
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Boron (B)-Dissolved	71		10	ug/L	11-SEP-17	11-SEP-17	R3824202
Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	11-SEP-17	11-SEP-17	R3824202
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	11-SEP-17	11-SEP-17	R3824202
Cobalt (Co)-Dissolved	0.42		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	11-SEP-17	11-SEP-17	R3824202
Lead (Pb)-Dissolved	1.67		0.050	ug/L	11-SEP-17	11-SEP-17	R3824202
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	08-SEP-17	11-SEP-17	R3823691
Molybdenum (Mo)-Dissolved	2.64		0.050	ug/L	11-SEP-17	11-SEP-17	R3824202
Nickel (Ni)-Dissolved	4.27		0.50	ug/L	11-SEP-17	11-SEP-17	R3824202
Selenium (Se)-Dissolved	0.051		0.050	ug/L	11-SEP-17	11-SEP-17	R3824202
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	11-SEP-17	11-SEP-17	R3824202
Sodium (Na)-Dissolved	35200		500	ug/L	11-SEP-17	11-SEP-17	R3824202
Thallium (Tl)-Dissolved	0.063		0.010	ug/L	11-SEP-17	11-SEP-17	R3824202
Uranium (U)-Dissolved	2.19		0.010	ug/L	11-SEP-17	11-SEP-17	R3824202
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	11-SEP-17	11-SEP-17	R3824202
Zinc (Zn)-Dissolved	553		1.0	ug/L	11-SEP-17	11-SEP-17	R3824202
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		08-SEP-17	R3823185
Volatile Organic Compounds							
Acetone	<30		30	ug/L		11-SEP-17	R3823436
Benzene	1.10		0.50	ug/L		11-SEP-17	R3823436
Bromodichloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
Bromoform	<5.0		5.0	ug/L		11-SEP-17	R3823436
Bromomethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Carbon tetrachloride	<0.20		0.20	ug/L		11-SEP-17	R3823436
Chlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Dibromochloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
Chloroform	<1.0		1.0	ug/L		11-SEP-17	R3823436
1,2-Dibromoethane	<0.20		0.20	ug/L		11-SEP-17	R3823436
1,2-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,3-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,4-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Dichlorodifluoromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
1,1-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,2-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
cis-1,2-Dichloroethylene	25.4		0.50	ug/L		11-SEP-17	R3823436
trans-1,2-Dichloroethylene	0.55		0.50	ug/L		11-SEP-17	R3823436
Methylene Chloride	<5.0		5.0	ug/L		11-SEP-17	R3823436
1,2-Dichloropropane	<0.50		0.50	ug/L		11-SEP-17	R3823436

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-10 OW23D Sampled By: CLIENT on 07-SEP-17 @ 10:25 Matrix: WATER							
Volatile Organic Compounds							
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823436
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823436
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		11-SEP-17	
1,4-Dioxane	<20		20	ug/L		11-SEP-17	R3823436
Ethylbenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
n-Hexane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Methyl Ethyl Ketone	<20		20	ug/L		11-SEP-17	R3823436
Methyl Isobutyl Ketone	<20		20	ug/L		11-SEP-17	R3823436
MTBE	<2.0		2.0	ug/L		11-SEP-17	R3823436
Styrene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Tetrachloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Toluene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,1-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,2-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Trichloroethylene	2.23		0.50	ug/L		11-SEP-17	R3823436
Trichlorofluoromethane	<5.0		5.0	ug/L		11-SEP-17	R3823436
Vinyl chloride	7.26		0.50	ug/L		11-SEP-17	R3823436
o-Xylene	<0.30		0.30	ug/L		11-SEP-17	R3823436
m+p-Xylenes	<0.40		0.40	ug/L		11-SEP-17	R3823436
Xylenes (Total)	<0.50		0.50	ug/L		11-SEP-17	
Surrogate: 4-Bromofluorobenzene	92.4		70-130	%		11-SEP-17	R3823436
Surrogate: 1,4-Difluorobenzene	99.6		70-130	%		11-SEP-17	R3823436
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		11-SEP-17	R3823436
F1-BTEX	<25		25	ug/L		13-SEP-17	
F2 (C10-C16)	<100		100	ug/L	14-SEP-17	14-SEP-17	R3828769
F3a (C16-C22)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828769
F3 (C16-C34)	430		250	ug/L	14-SEP-17	14-SEP-17	R3828769
F3b (C22-C34)	310		130	ug/L	14-SEP-17	14-SEP-17	R3828769
F4 (C34-C50)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828769
Chrom. to baseline at nC50	YES				14-SEP-17	14-SEP-17	R3828769
Surrogate: 2-Bromobenzotrifluoride	108.4		60-140	%	14-SEP-17	14-SEP-17	R3828769
Surrogate: 3,4-Dichlorotoluene	68.9		60-140	%		11-SEP-17	R3823436
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Acenaphthylene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Anthracene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Benzo(a)anthracene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Benzo(a)pyrene	<0.010		0.010	ug/L	12-SEP-17	13-SEP-17	R3826603

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-10 OW23D Sampled By: CLIENT on 07-SEP-17 @ 10:25 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Benzo(b)fluoranthene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Benzo(k)fluoranthene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Chrysene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Fluoranthene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Fluorene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		13-SEP-17	
1-Methylnaphthalene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
2-Methylnaphthalene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Naphthalene	<0.050		0.050	ug/L	12-SEP-17	13-SEP-17	R3826603
Phenanthrene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Pyrene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Surrogate: d10-Acenaphthene	85.5		60-140	%	12-SEP-17	13-SEP-17	R3826603
Surrogate: d12-Chrysene	97.7		60-140	%	12-SEP-17	13-SEP-17	R3826603
Surrogate: d8-Naphthalene	85.8		60-140	%	12-SEP-17	13-SEP-17	R3826603
Surrogate: d10-Phenanthrene	96.3		60-140	%	12-SEP-17	13-SEP-17	R3826603
L1988005-11 OW13-39D Sampled By: CLIENT on 07-SEP-17 @ 12:06 Matrix: WATER							
Physical Tests							
Conductivity	0.930		0.0030	mS/cm		08-SEP-17	R3822482
pH	7.57		0.10	pH units		08-SEP-17	R3822482
Anions and Nutrients							
Chloride (Cl)	44.3		0.50	mg/L		13-SEP-17	R3828551
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		14-SEP-17	R3829167
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					08-SEP-17	R3822249
Dissolved Metals Filtration Location	FIELD					11-SEP-17	R3823390
Antimony (Sb)-Dissolved	0.23		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Arsenic (As)-Dissolved	9.58		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Barium (Ba)-Dissolved	283		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Boron (B)-Dissolved	251		10	ug/L	11-SEP-17	11-SEP-17	R3824202
Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	11-SEP-17	11-SEP-17	R3824202
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	11-SEP-17	11-SEP-17	R3824202
Cobalt (Co)-Dissolved	0.28		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	11-SEP-17	11-SEP-17	R3824202
Lead (Pb)-Dissolved	3.92		0.050	ug/L	11-SEP-17	11-SEP-17	R3824202
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	08-SEP-17	11-SEP-17	R3823691

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-11 OW13-39D Sampled By: CLIENT on 07-SEP-17 @ 12:06 Matrix: WATER							
Dissolved Metals							
Molybdenum (Mo)-Dissolved	3.82		0.050	ug/L	11-SEP-17	11-SEP-17	R3824202
Nickel (Ni)-Dissolved	2.16		0.50	ug/L	11-SEP-17	11-SEP-17	R3824202
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	11-SEP-17	11-SEP-17	R3824202
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	11-SEP-17	11-SEP-17	R3824202
Sodium (Na)-Dissolved	25000		500	ug/L	11-SEP-17	11-SEP-17	R3824202
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	11-SEP-17	11-SEP-17	R3824202
Uranium (U)-Dissolved	3.65		0.010	ug/L	11-SEP-17	11-SEP-17	R3824202
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	11-SEP-17	11-SEP-17	R3824202
Zinc (Zn)-Dissolved	260		1.0	ug/L	11-SEP-17	11-SEP-17	R3824202
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		12-SEP-17	R3825902
Volatile Organic Compounds							
Acetone	<30		30	ug/L		11-SEP-17	R3823436
Benzene	0.61		0.50	ug/L		11-SEP-17	R3823436
Bromodichloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
Bromoform	<5.0		5.0	ug/L		11-SEP-17	R3823436
Bromomethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Carbon tetrachloride	<0.20		0.20	ug/L		11-SEP-17	R3823436
Chlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Dibromochloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
Chloroform	<1.0		1.0	ug/L		11-SEP-17	R3823436
1,2-Dibromoethane	<0.20		0.20	ug/L		11-SEP-17	R3823436
1,2-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,3-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,4-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Dichlorodifluoromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
1,1-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,2-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1-Dichloroethylene	15.2		0.50	ug/L		11-SEP-17	R3823436
cis-1,2-Dichloroethylene	192		0.50	ug/L		11-SEP-17	R3823436
trans-1,2-Dichloroethylene	22.2		0.50	ug/L		11-SEP-17	R3823436
Methylene Chloride	<5.0		5.0	ug/L		11-SEP-17	R3823436
1,2-Dichloropropane	<0.50		0.50	ug/L		11-SEP-17	R3823436
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823436
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823436
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		12-SEP-17	
1,4-Dioxane	<20		20	ug/L		11-SEP-17	R3823436
Ethylbenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
n-Hexane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Methyl Ethyl Ketone	<20		20	ug/L		11-SEP-17	R3823436
Methyl Isobutyl Ketone	<20		20	ug/L		11-SEP-17	R3823436

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-11 OW13-39D Sampled By: CLIENT on 07-SEP-17 @ 12:06 Matrix: WATER							
Volatile Organic Compounds							
MTBE	<2.0		2.0	ug/L		11-SEP-17	R3823436
Styrene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Tetrachloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Toluene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,1-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,2-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Trichloroethylene	1290	DLHC	5.0	ug/L		12-SEP-17	R3823489
Trichlorofluoromethane	<5.0		5.0	ug/L		11-SEP-17	R3823436
Vinyl chloride	45.2		0.50	ug/L		11-SEP-17	R3823436
o-Xylene	<0.30		0.30	ug/L		11-SEP-17	R3823436
m+p-Xylenes	<0.40		0.40	ug/L		11-SEP-17	R3823436
Xylenes (Total)	<0.50		0.50	ug/L		12-SEP-17	
Surrogate: 4-Bromofluorobenzene	94.2		70-130	%		11-SEP-17	R3823436
Surrogate: 1,4-Difluorobenzene	100.0		70-130	%		11-SEP-17	R3823436
Hydrocarbons							
F1 (C6-C10)	313		25	ug/L		11-SEP-17	R3823436
F1-BTEX	312		25	ug/L		12-SEP-17	
F2 (C10-C16)	<100		100	ug/L	15-SEP-17	15-SEP-17	R3830635
F3a (C16-C22)	<130		130	ug/L	15-SEP-17	15-SEP-17	R3830635
F3 (C16-C34)	<250		250	ug/L	15-SEP-17	15-SEP-17	R3830635
F3b (C22-C34)	<130		130	ug/L	15-SEP-17	15-SEP-17	R3830635
F4 (C34-C50)	<250		250	ug/L	15-SEP-17	15-SEP-17	R3830635
Chrom. to baseline at nC50	YES				15-SEP-17	15-SEP-17	R3830635
Surrogate: 2-Bromobenzotrifluoride	99.3		60-140	%	15-SEP-17	15-SEP-17	R3830635
Surrogate: 3,4-Dichlorotoluene	87.8		60-140	%		11-SEP-17	R3823436
L1988005-12 OW13-39S Sampled By: CLIENT on 07-SEP-17 @ 13:21 Matrix: WATER							
Physical Tests							
Conductivity	0.761		0.0030	mS/cm		08-SEP-17	R3822482
pH	7.51		0.10	pH units		08-SEP-17	R3822482
Anions and Nutrients							
Chloride (Cl)	19.3		0.50	mg/L		13-SEP-17	R3828551
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		14-SEP-17	R3829167
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					08-SEP-17	R3822249
Dissolved Metals Filtration Location	FIELD					11-SEP-17	R3823390
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Arsenic (As)-Dissolved	0.73		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-12 OW13-39S Sampled By: CLIENT on 07-SEP-17 @ 13:21 Matrix: WATER							
Dissolved Metals							
Barium (Ba)-Dissolved	68.0		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Boron (B)-Dissolved	133		10	ug/L	11-SEP-17	11-SEP-17	R3824202
Cadmium (Cd)-Dissolved	0.245		0.010	ug/L	11-SEP-17	11-SEP-17	R3824202
Chromium (Cr)-Dissolved	0.74		0.50	ug/L	11-SEP-17	11-SEP-17	R3824202
Cobalt (Co)-Dissolved	0.59		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Copper (Cu)-Dissolved	0.55		0.20	ug/L	11-SEP-17	11-SEP-17	R3824202
Lead (Pb)-Dissolved	0.476		0.050	ug/L	11-SEP-17	11-SEP-17	R3824202
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	08-SEP-17	11-SEP-17	R3823691
Molybdenum (Mo)-Dissolved	0.563		0.050	ug/L	11-SEP-17	11-SEP-17	R3824202
Nickel (Ni)-Dissolved	2.27		0.50	ug/L	11-SEP-17	11-SEP-17	R3824202
Selenium (Se)-Dissolved	0.313		0.050	ug/L	11-SEP-17	11-SEP-17	R3824202
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	11-SEP-17	11-SEP-17	R3824202
Sodium (Na)-Dissolved	15300		500	ug/L	11-SEP-17	11-SEP-17	R3824202
Thallium (Tl)-Dissolved	0.060		0.010	ug/L	11-SEP-17	11-SEP-17	R3824202
Uranium (U)-Dissolved	0.881		0.010	ug/L	11-SEP-17	11-SEP-17	R3824202
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	11-SEP-17	11-SEP-17	R3824202
Zinc (Zn)-Dissolved	698		1.0	ug/L	11-SEP-17	11-SEP-17	R3824202
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		12-SEP-17	R3825902
Volatile Organic Compounds							
Acetone	<30		30	ug/L		11-SEP-17	R3823436
Benzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Bromodichloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
Bromoform	<5.0		5.0	ug/L		11-SEP-17	R3823436
Bromomethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Carbon tetrachloride	<0.20		0.20	ug/L		11-SEP-17	R3823436
Chlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Dibromochloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
Chloroform	<1.0		1.0	ug/L		11-SEP-17	R3823436
1,2-Dibromoethane	<0.20		0.20	ug/L		11-SEP-17	R3823436
1,2-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,3-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,4-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Dichlorodifluoromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
1,1-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,2-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1-Dichloroethylene	1.00		0.50	ug/L		11-SEP-17	R3823436
cis-1,2-Dichloroethylene	51.2		0.50	ug/L		11-SEP-17	R3823436
trans-1,2-Dichloroethylene	4.72		0.50	ug/L		11-SEP-17	R3823436
Methylene Chloride	<5.0		5.0	ug/L		11-SEP-17	R3823436

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-12 OW13-39S Sampled By: CLIENT on 07-SEP-17 @ 13:21 Matrix: WATER							
Volatile Organic Compounds							
1,2-Dichloropropane	<0.50		0.50	ug/L		11-SEP-17	R3823436
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823436
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823436
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		11-SEP-17	
Ethylbenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
n-Hexane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Methyl Ethyl Ketone	<20		20	ug/L		11-SEP-17	R3823436
Methyl Isobutyl Ketone	<20		20	ug/L		11-SEP-17	R3823436
MTBE	<2.0		2.0	ug/L		11-SEP-17	R3823436
Styrene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Tetrachloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Toluene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,1-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,2-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Trichloroethylene	184		0.50	ug/L		11-SEP-17	R3823436
Trichlorofluoromethane	<5.0		5.0	ug/L		11-SEP-17	R3823436
Vinyl chloride	2.76		0.50	ug/L		11-SEP-17	R3823436
o-Xylene	<0.30		0.30	ug/L		11-SEP-17	R3823436
m+p-Xylenes	<0.40		0.40	ug/L		11-SEP-17	R3823436
Xylenes (Total)	<0.50		0.50	ug/L		11-SEP-17	
Surrogate: 4-Bromofluorobenzene	95.3		70-130	%		11-SEP-17	R3823436
Surrogate: 1,4-Difluorobenzene	100.8		70-130	%		11-SEP-17	R3823436
Hydrocarbons							
F1 (C6-C10)	34		25	ug/L		11-SEP-17	R3823436
F1-BTEX	34		25	ug/L		11-SEP-17	
F2 (C10-C16)	<100		100	ug/L	15-SEP-17	15-SEP-17	R3830635
F3a (C16-C22)	<130		130	ug/L	15-SEP-17	15-SEP-17	R3830635
F3 (C16-C34)	<250		250	ug/L	15-SEP-17	15-SEP-17	R3830635
F3b (C22-C34)	<130		130	ug/L	15-SEP-17	15-SEP-17	R3830635
F4 (C34-C50)	<250		250	ug/L	15-SEP-17	15-SEP-17	R3830635
Chrom. to baseline at nC50	YES				15-SEP-17	15-SEP-17	R3830635
Surrogate: 2-Bromobenzotrifluoride	108.6		60-140	%	15-SEP-17	15-SEP-17	R3830635
Surrogate: 3,4-Dichlorotoluene	72.2		60-140	%		11-SEP-17	R3823436
L1988005-13 OW24S Sampled By: CLIENT on 07-SEP-17 @ 15:05 Matrix: WATER							
Physical Tests							
Conductivity	1.21		0.0030	mS/cm		08-SEP-17	R3822482
pH	7.55		0.10	pH units		08-SEP-17	R3822482
Anions and Nutrients							

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-13 OW24S Sampled By: CLIENT on 07-SEP-17 @ 15:05 Matrix: WATER							
Anions and Nutrients							
Chloride (Cl)	170	DLHC	2.5	mg/L		13-SEP-17	R3828551
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		14-SEP-17	R3829167
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					08-SEP-17	R3822249
Dissolved Metals Filtration Location	FIELD					11-SEP-17	R3823390
Antimony (Sb)-Dissolved	0.12		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Arsenic (As)-Dissolved	0.11		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Barium (Ba)-Dissolved	65.0		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Boron (B)-Dissolved	125		10	ug/L	11-SEP-17	11-SEP-17	R3824202
Cadmium (Cd)-Dissolved	0.358		0.010	ug/L	11-SEP-17	11-SEP-17	R3824202
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	11-SEP-17	11-SEP-17	R3824202
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Copper (Cu)-Dissolved	1.00		0.20	ug/L	11-SEP-17	11-SEP-17	R3824202
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	11-SEP-17	11-SEP-17	R3824202
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	08-SEP-17	11-SEP-17	R3823691
Molybdenum (Mo)-Dissolved	0.225		0.050	ug/L	11-SEP-17	11-SEP-17	R3824202
Nickel (Ni)-Dissolved	1.20		0.50	ug/L	11-SEP-17	11-SEP-17	R3824202
Selenium (Se)-Dissolved	0.555		0.050	ug/L	11-SEP-17	11-SEP-17	R3824202
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	11-SEP-17	11-SEP-17	R3824202
Sodium (Na)-Dissolved	100000	DLHC	5000	ug/L	11-SEP-17	11-SEP-17	R3824202
Thallium (Tl)-Dissolved	0.069		0.010	ug/L	11-SEP-17	11-SEP-17	R3824202
Uranium (U)-Dissolved	0.747		0.010	ug/L	11-SEP-17	11-SEP-17	R3824202
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	11-SEP-17	11-SEP-17	R3824202
Zinc (Zn)-Dissolved	674		1.0	ug/L	11-SEP-17	11-SEP-17	R3824202
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		12-SEP-17	R3825902
Volatile Organic Compounds							
Acetone	<30		30	ug/L		11-SEP-17	R3823436
Benzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Bromodichloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
Bromoform	<5.0		5.0	ug/L		11-SEP-17	R3823436
Bromomethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Carbon tetrachloride	<0.20		0.20	ug/L		11-SEP-17	R3823436
Chlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Dibromochloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
Chloroform	<1.0		1.0	ug/L		11-SEP-17	R3823436
1,2-Dibromoethane	<0.20		0.20	ug/L		11-SEP-17	R3823436
1,2-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,3-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,4-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-13 OW24S Sampled By: CLIENT on 07-SEP-17 @ 15:05 Matrix: WATER							
Volatile Organic Compounds							
Dichlorodifluoromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
1,1-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,2-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1-Dichloroethylene	0.85		0.50	ug/L		11-SEP-17	R3823436
cis-1,2-Dichloroethylene	45.1		0.50	ug/L		11-SEP-17	R3823436
trans-1,2-Dichloroethylene	2.47		0.50	ug/L		11-SEP-17	R3823436
Methylene Chloride	<5.0		5.0	ug/L		11-SEP-17	R3823436
1,2-Dichloropropane	<0.50		0.50	ug/L		11-SEP-17	R3823436
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823436
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823436
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		11-SEP-17	
Ethylbenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
n-Hexane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Methyl Ethyl Ketone	<20		20	ug/L		11-SEP-17	R3823436
Methyl Isobutyl Ketone	<20		20	ug/L		11-SEP-17	R3823436
MTBE	<2.0		2.0	ug/L		11-SEP-17	R3823436
Styrene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Tetrachloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Toluene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,1-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,2-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Trichloroethylene	325		0.50	ug/L		11-SEP-17	R3823436
Trichlorofluoromethane	<5.0		5.0	ug/L		11-SEP-17	R3823436
Vinyl chloride	<0.50		0.50	ug/L		11-SEP-17	R3823436
o-Xylene	<0.30		0.30	ug/L		11-SEP-17	R3823436
m+p-Xylenes	<0.40		0.40	ug/L		11-SEP-17	R3823436
Xylenes (Total)	<0.50		0.50	ug/L		11-SEP-17	
Surrogate: 4-Bromofluorobenzene	93.9		70-130	%		11-SEP-17	R3823436
Surrogate: 1,4-Difluorobenzene	99.4		70-130	%		11-SEP-17	R3823436
Hydrocarbons							
F1 (C6-C10)	84		25	ug/L		11-SEP-17	R3823436
F1-BTEX	84		25	ug/L		18-SEP-17	
F2 (C10-C16)	<100		100	ug/L	15-SEP-17	15-SEP-17	R3830635
F2-Naphth	<100		100	ug/L		18-SEP-17	
F3a (C16-C22)	<130		130	ug/L	15-SEP-17	15-SEP-17	R3830635
F3 (C16-C34)	<250		250	ug/L	15-SEP-17	15-SEP-17	R3830635
F3b (C22-C34)	<130		130	ug/L	15-SEP-17	15-SEP-17	R3830635
F3-PAH	<250		250	ug/L		18-SEP-17	
F4 (C34-C50)	<250		250	ug/L	15-SEP-17	15-SEP-17	R3830635

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-13 OW24S Sampled By: CLIENT on 07-SEP-17 @ 15:05 Matrix: WATER							
Hydrocarbons							
Total Hydrocarbons (C6-C50)	<370		370	ug/L		18-SEP-17	
Chrom. to baseline at nC50	YES				15-SEP-17	15-SEP-17	R3830635
Surrogate: 2-Bromobenzotrifluoride	104.0		60-140	%	15-SEP-17	15-SEP-17	R3830635
Surrogate: 3,4-Dichlorotoluene	93.9		60-140	%		11-SEP-17	R3823436
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Acenaphthylene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Anthracene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Benzo(a)anthracene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Benzo(a)pyrene	<0.010		0.010	ug/L	12-SEP-17	13-SEP-17	R3826603
Benzo(b)fluoranthene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Benzo(k)fluoranthene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Chrysene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Fluoranthene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Fluorene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		18-SEP-17	
1-Methylnaphthalene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
2-Methylnaphthalene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Naphthalene	<0.050		0.050	ug/L	12-SEP-17	13-SEP-17	R3826603
Phenanthrene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Pyrene	<0.020		0.020	ug/L	12-SEP-17	13-SEP-17	R3826603
Surrogate: d10-Acenaphthene	89.6		60-140	%	12-SEP-17	13-SEP-17	R3826603
Surrogate: d12-Chrysene	101.7		60-140	%	12-SEP-17	13-SEP-17	R3826603
Surrogate: d8-Naphthalene	89.8		60-140	%	12-SEP-17	13-SEP-17	R3826603
Surrogate: d10-Phenanthrene	98.8		60-140	%	12-SEP-17	13-SEP-17	R3826603
Semi-Volatile Organics							
Biphenyl	<0.40		0.40	ug/L	13-SEP-17	18-SEP-17	R3828279
4-Chloroaniline	<0.40		0.40	ug/L	13-SEP-17	18-SEP-17	R3828279
Bis(2-chloroethyl)ether	<0.40		0.40	ug/L	13-SEP-17	18-SEP-17	R3828279
Bis(2-chloroisopropyl)ether	<0.40		0.40	ug/L	13-SEP-17	18-SEP-17	R3828279
2-Chlorophenol	<0.30		0.30	ug/L	13-SEP-17	18-SEP-17	R3828279
3,3'-Dichlorobenzidine	<0.40		0.40	ug/L	13-SEP-17	18-SEP-17	R3828279
2,4-Dichlorophenol	<0.30		0.30	ug/L	13-SEP-17	18-SEP-17	R3828279
Diethylphthalate	<0.20		0.20	ug/L	13-SEP-17	18-SEP-17	R3828279
Dimethylphthalate	<0.20		0.20	ug/L	13-SEP-17	18-SEP-17	R3828279
2,4-Dimethylphenol	<0.50		0.50	ug/L	13-SEP-17	18-SEP-17	R3828279
2,4-Dinitrophenol	<1.0		1.0	ug/L	13-SEP-17	18-SEP-17	R3828279
2,4-Dinitrotoluene	<0.40		0.40	ug/L	13-SEP-17	18-SEP-17	R3828279

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-13 OW24S Sampled By: CLIENT on 07-SEP-17 @ 15:05 Matrix: WATER							
Semi-Volatile Organics							
2,6-Dinitrotoluene	<0.40		0.40	ug/L	13-SEP-17	18-SEP-17	R3828279
2,4+2,6-Dinitrotoluene	<0.57		0.57	ug/L		18-SEP-17	
Bis(2-ethylhexyl)phthalate	<2.0		2.0	ug/L	13-SEP-17	18-SEP-17	R3828279
Pentachlorophenol	<0.50		0.50	ug/L	13-SEP-17	18-SEP-17	R3828279
Phenanthrene	<0.20		0.20	ug/L	13-SEP-17	18-SEP-17	R3828279
Phenol	<0.50		0.50	ug/L	13-SEP-17	18-SEP-17	R3828279
Pyrene	<0.20		0.20	ug/L	13-SEP-17	18-SEP-17	R3828279
1,2,4-Trichlorobenzene	<0.40		0.40	ug/L	13-SEP-17	18-SEP-17	R3828279
2,4,5-Trichlorophenol	<0.20		0.20	ug/L	13-SEP-17	18-SEP-17	R3828279
2,4,6-Trichlorophenol	<0.20		0.20	ug/L	13-SEP-17	18-SEP-17	R3828279
Surrogate: 2-Fluorobiphenyl	102.5		50-140	%	13-SEP-17	18-SEP-17	R3828279
Surrogate: Nitrobenzene d5	93.7		50-140	%	13-SEP-17	18-SEP-17	R3828279
Surrogate: Phenol d5	45.9		30-130	%	13-SEP-17	18-SEP-17	R3828279
Surrogate: p-Terphenyl d14	99.9		60-140	%	13-SEP-17	18-SEP-17	R3828279
Surrogate: 2,4,6-Tribromophenol	117.0		50-140	%	13-SEP-17	18-SEP-17	R3828279
Polychlorinated Biphenyls							
Aroclor 1242	<0.020		0.020	ug/L	18-SEP-17	18-SEP-17	R3829539
Aroclor 1248	<0.020		0.020	ug/L	18-SEP-17	18-SEP-17	R3829539
Aroclor 1254	<0.020		0.020	ug/L	18-SEP-17	18-SEP-17	R3829539
Aroclor 1260	<0.020		0.020	ug/L	18-SEP-17	18-SEP-17	R3829539
Total PCBs	<0.040		0.040	ug/L	18-SEP-17	18-SEP-17	R3829539
Surrogate: 2-fluorobiphenyl	81.8		50-150	%	18-SEP-17	18-SEP-17	R3829539
L1988005-14 OW24D Sampled By: CLIENT on 07-SEP-17 @ 16:08 Matrix: WATER							
Physical Tests							
Conductivity	0.814		0.0030	mS/cm		08-SEP-17	R3822482
pH	7.56		0.10	pH units		08-SEP-17	R3822482
Anions and Nutrients							
Chloride (Cl)	41.1		0.50	mg/L		13-SEP-17	R3828551
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		14-SEP-17	R3829167
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					08-SEP-17	R3822249
Dissolved Metals Filtration Location	FIELD					11-SEP-17	R3823390
Antimony (Sb)-Dissolved	0.19		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Arsenic (As)-Dissolved	1.01		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Barium (Ba)-Dissolved	187		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Boron (B)-Dissolved	134		10	ug/L	11-SEP-17	11-SEP-17	R3824202
Cadmium (Cd)-Dissolved	0.751		0.010	ug/L	11-SEP-17	11-SEP-17	R3824202
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	11-SEP-17	11-SEP-17	R3824202

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-14 OW24D Sampled By: CLIENT on 07-SEP-17 @ 16:08 Matrix: WATER							
Dissolved Metals							
Cobalt (Co)-Dissolved	0.34		0.10	ug/L	11-SEP-17	11-SEP-17	R3824202
Copper (Cu)-Dissolved	0.67		0.20	ug/L	11-SEP-17	11-SEP-17	R3824202
Lead (Pb)-Dissolved	0.141		0.050	ug/L	11-SEP-17	11-SEP-17	R3824202
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	08-SEP-17	11-SEP-17	R3823691
Molybdenum (Mo)-Dissolved	0.586		0.050	ug/L	11-SEP-17	11-SEP-17	R3824202
Nickel (Ni)-Dissolved	1.96		0.50	ug/L	11-SEP-17	11-SEP-17	R3824202
Selenium (Se)-Dissolved	0.130		0.050	ug/L	11-SEP-17	11-SEP-17	R3824202
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	11-SEP-17	11-SEP-17	R3824202
Sodium (Na)-Dissolved	26900		500	ug/L	11-SEP-17	11-SEP-17	R3824202
Thallium (Tl)-Dissolved	0.137		0.010	ug/L	11-SEP-17	11-SEP-17	R3824202
Uranium (U)-Dissolved	1.23		0.010	ug/L	11-SEP-17	11-SEP-17	R3824202
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	11-SEP-17	11-SEP-17	R3824202
Zinc (Zn)-Dissolved	949	DLHC	10	ug/L	11-SEP-17	11-SEP-17	R3824202
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		12-SEP-17	R3825902
Volatile Organic Compounds							
Acetone	<30		30	ug/L		11-SEP-17	R3823436
Benzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Bromodichloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
Bromoform	<5.0		5.0	ug/L		11-SEP-17	R3823436
Bromomethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Carbon tetrachloride	<0.20		0.20	ug/L		11-SEP-17	R3823436
Chlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Dibromochloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
Chloroform	<1.0		1.0	ug/L		11-SEP-17	R3823436
1,2-Dibromoethane	<0.20		0.20	ug/L		11-SEP-17	R3823436
1,2-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,3-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,4-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Dichlorodifluoromethane	<2.0		2.0	ug/L		11-SEP-17	R3823436
1,1-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,2-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1-Dichloroethylene	9.93		0.50	ug/L		11-SEP-17	R3823436
cis-1,2-Dichloroethylene	225		0.50	ug/L		11-SEP-17	R3823436
trans-1,2-Dichloroethylene	22.7		0.50	ug/L		11-SEP-17	R3823436
Methylene Chloride	<5.0		5.0	ug/L		11-SEP-17	R3823436
1,2-Dichloropropane	<0.50		0.50	ug/L		11-SEP-17	R3823436
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823436
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823436
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		12-SEP-17	
1,4-Dioxane	<20		20	ug/L		11-SEP-17	R3823436

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-14 OW24D Sampled By: CLIENT on 07-SEP-17 @ 16:08 Matrix: WATER							
Volatile Organic Compounds							
Ethylbenzene	<0.50		0.50	ug/L		11-SEP-17	R3823436
n-Hexane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Methyl Ethyl Ketone	<20		20	ug/L		11-SEP-17	R3823436
Methyl Isobutyl Ketone	<20		20	ug/L		11-SEP-17	R3823436
MTBE	<2.0		2.0	ug/L		11-SEP-17	R3823436
Styrene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Tetrachloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823436
Toluene	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,1-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
1,1,2-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823436
Trichloroethylene	1170	DLHC	5.0	ug/L		12-SEP-17	R3823489
Trichlorofluoromethane	<5.0		5.0	ug/L		11-SEP-17	R3823436
Vinyl chloride	14.2		0.50	ug/L		11-SEP-17	R3823436
o-Xylene	<0.30		0.30	ug/L		11-SEP-17	R3823436
m+p-Xylenes	<0.40		0.40	ug/L		11-SEP-17	R3823436
Xylenes (Total)	<0.50		0.50	ug/L		12-SEP-17	
Surrogate: 4-Bromofluorobenzene	93.5		70-130	%		11-SEP-17	R3823436
Surrogate: 1,4-Difluorobenzene	99.4		70-130	%		11-SEP-17	R3823436
Hydrocarbons							
F1 (C6-C10)	304		25	ug/L		11-SEP-17	R3823436
F1-BTEX	304		25	ug/L		12-SEP-17	
F2 (C10-C16)	<100		100	ug/L	15-SEP-17	15-SEP-17	R3830635
F3a (C16-C22)	<130		130	ug/L	15-SEP-17	15-SEP-17	R3830635
F3 (C16-C34)	<250		250	ug/L	15-SEP-17	15-SEP-17	R3830635
F3b (C22-C34)	<130		130	ug/L	15-SEP-17	15-SEP-17	R3830635
F4 (C34-C50)	<250		250	ug/L	15-SEP-17	15-SEP-17	R3830635
Chrom. to baseline at nC50	YES				15-SEP-17	15-SEP-17	R3830635
Surrogate: 2-Bromobenzotrifluoride	99.6		60-140	%	15-SEP-17	15-SEP-17	R3830635
Surrogate: 3,4-Dichlorotoluene	87.2		60-140	%		11-SEP-17	R3823436
L1988005-15 TRIP BLANK 5 Sampled By: CLIENT on 07-SEP-17 Matrix: WATER							
Volatile Organic Compounds							
Acetone	<30		30	ug/L		11-SEP-17	R3823509
Benzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Bromodichloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823509
Bromoform	<5.0		5.0	ug/L		11-SEP-17	R3823509
Bromomethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
Carbon tetrachloride	<0.20		0.20	ug/L		11-SEP-17	R3823509
Chlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-15 TRIP BLANK 5 Sampled By: CLIENT on 07-SEP-17 Matrix: WATER							
Volatile Organic Compounds							
Dibromochloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823509
Chloroform	<1.0		1.0	ug/L		11-SEP-17	R3823509
1,2-Dibromoethane	<0.20		0.20	ug/L		11-SEP-17	R3823509
1,2-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,3-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,4-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Dichlorodifluoromethane	<2.0		2.0	ug/L		11-SEP-17	R3823509
1,1-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,2-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Methylene Chloride	<5.0		5.0	ug/L		11-SEP-17	R3823509
1,2-Dichloropropane	<0.50		0.50	ug/L		11-SEP-17	R3823509
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823509
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823509
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		11-SEP-17	
Ethylbenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
n-Hexane	<0.50		0.50	ug/L		11-SEP-17	R3823509
Methyl Ethyl Ketone	<20		20	ug/L		11-SEP-17	R3823509
Methyl Isobutyl Ketone	<20		20	ug/L		11-SEP-17	R3823509
MTBE	<2.0		2.0	ug/L		11-SEP-17	R3823509
Styrene	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
Tetrachloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Toluene	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1,1-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1,2-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
Trichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Trichlorofluoromethane	<5.0		5.0	ug/L		11-SEP-17	R3823509
Vinyl chloride	<0.50		0.50	ug/L		11-SEP-17	R3823509
o-Xylene	<0.30		0.30	ug/L		11-SEP-17	R3823509
m+p-Xylenes	<0.40		0.40	ug/L		11-SEP-17	R3823509
Xylenes (Total)	<0.50		0.50	ug/L		11-SEP-17	
Surrogate: 4-Bromofluorobenzene	99.8		70-130	%		11-SEP-17	R3823509
Surrogate: 1,4-Difluorobenzene	102.6		70-130	%		11-SEP-17	R3823509
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		11-SEP-17	R3823509
F1-BTEX	<25		25	ug/L		11-SEP-17	
Surrogate: 3,4-Dichlorotoluene	103.8		60-140	%		11-SEP-17	R3823509

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-16 TRIP BLANK 6 Sampled By: CLIENT on 07-SEP-17 Matrix: WATER							
Volatile Organic Compounds							
Acetone	<30		30	ug/L		11-SEP-17	R3823509
Benzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Bromodichloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823509
Bromoform	<5.0		5.0	ug/L		11-SEP-17	R3823509
Bromomethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
Carbon tetrachloride	<0.20		0.20	ug/L		11-SEP-17	R3823509
Chlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Dibromochloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823509
Chloroform	<1.0		1.0	ug/L		11-SEP-17	R3823509
1,2-Dibromoethane	<0.20		0.20	ug/L		11-SEP-17	R3823509
1,2-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,3-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,4-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Dichlorodifluoromethane	<2.0		2.0	ug/L		11-SEP-17	R3823509
1,1-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,2-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Methylene Chloride	<5.0		5.0	ug/L		11-SEP-17	R3823509
1,2-Dichloropropane	<0.50		0.50	ug/L		11-SEP-17	R3823509
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823509
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823509
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		11-SEP-17	
Ethylbenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
n-Hexane	<0.50		0.50	ug/L		11-SEP-17	R3823509
Methyl Ethyl Ketone	<20		20	ug/L		11-SEP-17	R3823509
Methyl Isobutyl Ketone	<20		20	ug/L		11-SEP-17	R3823509
MTBE	<2.0		2.0	ug/L		11-SEP-17	R3823509
Styrene	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
Tetrachloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Toluene	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1,1-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1,2-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
Trichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Trichlorofluoromethane	<5.0		5.0	ug/L		11-SEP-17	R3823509
Vinyl chloride	<0.50		0.50	ug/L		11-SEP-17	R3823509
o-Xylene	<0.30		0.30	ug/L		11-SEP-17	R3823509
m+p-Xylenes	<0.40		0.40	ug/L		11-SEP-17	R3823509

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988005-16 TRIP BLANK 6 Sampled By: CLIENT on 07-SEP-17 Matrix: WATER							
Volatile Organic Compounds							
Xylenes (Total)	<0.50		0.50	ug/L		11-SEP-17	
Surrogate: 4-Bromofluorobenzene	99.7		70-130	%		11-SEP-17	R3823509
Surrogate: 1,4-Difluorobenzene	102.0		70-130	%		11-SEP-17	R3823509
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		11-SEP-17	R3823509
F1-BTEX	<25		25	ug/L		11-SEP-17	
Surrogate: 3,4-Dichlorotoluene	95.4		60-140	%		11-SEP-17	R3823509

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1988005-1, -2, -3, -4, -5, -6
Matrix Spike	Boron (B)-Dissolved	MS-B	L1988005-1, -2, -3, -4, -5, -6
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1988005-1, -2, -3, -4, -5, -6
Matrix Spike	Uranium (U)-Dissolved	MS-B	L1988005-1, -2, -3, -4, -5, -6
Laboratory Control Sample Duplicate	4-Chloroaniline	RRQC	L1988005-1, -13, -3

Comments: Lab control sample recovery outside ALS DQO. Associated sample results have not been affected.

Sample Parameter Qualifier key listed:

Qualifier	Description
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
DLQ	Detection Limit raised due to co-eluting interference. GCMS qualifier ion ratio did not meet acceptance criteria.
DLVH	Detection Limit raised due to interference from Volatile Hydrocarbons on VOC method. Chromatographic elution of interfering peaks in the same region as test analytes prevents a determination of whether VOC analyte is present or absent (above/below regular detection limits).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RRQC	Refer to report remarks for information regarding this QC result.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
1,4-DIOXANE-WT	Water	1,4-Dioxane by Headspace GC/MS	SW846 8260

An aliquot of the sample is analyzed directly by headspace technology, followed by GC/MS using isotopic dilution.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

625-511-WT	Water	ABN,CP,PAH-O.Reg 153/04	SW846 8270 (511)

Ground water sample extraction is carried out at a pH <2 (acid extractables) and pH>11 (base neutral extractables). Extracts are dried, concentrated and exchanged into a solvent compatible with the cleanup. Analysis is by GC/MS. Depending on the analytical GC/MS column used benzo(j)fluoranthene may chromatographically co-elute with benzo(b)fluoranthene or benzo(k)fluoranthene.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Water	Cyanide (WAD)-O.Reg 153/04	APHA 4500CN I-Weak acid Dist Colorimet

Weak acid dissociable cyanide (WAD) is determined by undergoing a distillation procedure. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-R511-WT	Water	Hex Chrom-O.Reg 153/04 (July 2011)	EPA 7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

DINITROTOL-CALC-WT	Water	ABN-Calculated Parameters	SW846 8270
EC-R511-WT	Water	Conductivity-O.Reg 153/04 (July 2011)	APHA 2510 B

Water samples can be measured directly by immersing the conductivity cell into the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-F4-511-CALC-WT	Water	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-L

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and

Reference Information

the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Water	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-UW-WT	Water	F2-F4 (O.Reg.153/04)	MOE DECPH-E3398/CCME TIER 1
HG-D-UG/L-CVAA-WT	Water	Diss. Mercury in Water by CVAAS (ug/L)	EPA 1631E (mod)

Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8

The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT	Water	PAH-Calculated Parameters	SW846 8270
PAH-511-WT	Water	PAH-O. Reg 153/04 (July 2011)	SW846 3510/8270

Aqueous samples, fortified with surrogates, are extracted using liquid/liquid extraction technique. The sample extracts are concentrated and then analyzed using GC/MS. Depending on the analytical GC/MS column used benzo(j)fluoranthene may chromatographically co-elute with benzo(b)fluoranthene or benzo(k)fluoranthene.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PCB-511-WT	Water	PCB-O. Reg 153/04 (July 2011)	SW846 3510/8082

Aqueous samples are extracted, then concentrated, reconstituted, and analyzed by GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

PH-WT	Water	pH	APHA 4500 H-Electrode

Water samples are analyzed directly by a calibrated pH meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Holdtime for samples under this regulation is 28 days

VOC-1,3-DCP-CALC-WT	Water	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Water	VOC by GCMS HS O.Reg 153/04 (July 2011)	SW846 8260

Liquid samples are analyzed by headspace GC/MSD.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental

Reference Information

Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L1988005 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
1,4-DIOXANE-WT	**Water**							
Batch R3823436								
WG2611290-4 DUP		**WG2611290-3**						
1,4-Dioxane		<20	<20	RPD-NA	ug/L	N/A	30	11-SEP-17
WG2611290-1 LCS								
1,4-Dioxane			99.6		%		60-140	11-SEP-17
WG2611290-2 MB								
1,4-Dioxane			<20		ug/L		20	11-SEP-17
WG2611290-5 MS		**WG2611290-3**						
1,4-Dioxane			92.4		%		50-140	11-SEP-17
625-511-WT	**Water**							
Batch R3828279								
WG2613961-2 LCS								
1,2,4-Trichlorobenzene			68.8		%		50-140	14-SEP-17
2-Chlorophenol			93.5		%		50-140	14-SEP-17
2,4-Dichlorophenol			105.6		%		50-140	14-SEP-17
2,4-Dimethylphenol			110.0		%		30-130	14-SEP-17
2,4-Dinitrophenol			86.0		%		50-140	14-SEP-17
2,4-Dinitrotoluene			113.5		%		50-140	14-SEP-17
2,4,5-Trichlorophenol			112.4		%		50-140	14-SEP-17
2,4,6-Trichlorophenol			107.1		%		50-140	14-SEP-17
2,6-Dinitrotoluene			104.4		%		50-140	14-SEP-17
3,3'-Dichlorobenzidine			87.9		%		30-130	14-SEP-17
4-Chloroaniline			86.2		%		30-130	14-SEP-17
Biphenyl			87.1		%		50-140	14-SEP-17
Bis(2-chloroethyl)ether			99.4		%		50-140	14-SEP-17
Bis(2-chloroisopropyl)ether			95.7		%		50-140	14-SEP-17
Bis(2-ethylhexyl)phthalate			90.7		%		50-140	14-SEP-17
Diethylphthalate			93.4		%		50-140	14-SEP-17
Dimethylphthalate			89.4		%		50-140	14-SEP-17
Pentachlorophenol			112.6		%		50-140	14-SEP-17
Phenanthrene			101.4		%		50-140	14-SEP-17
Phenol			52.1		%		30-130	14-SEP-17
Pyrene			94.7		%		50-140	14-SEP-17
WG2613961-3 LCSD		**WG2613961-2**						
4-Chloroaniline		86.2	43.9	RRQC	%	65	50	14-SEP-17

COMMENTS: Lab control sample recovery outside ALS DQO. Associated sample results have not been affected.

WG2613961-3 LCSD **WG2613961-2**

Quality Control Report

Workorder: L1988005 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Water**							
Batch R3828279								
WG2613961-3 LCSD		**WG2613961-2**						
1,2,4-Trichlorobenzene		68.8	67.9		%	1.3	50	14-SEP-17
2-Chlorophenol		93.5	89.8		%	4.0	50	14-SEP-17
2,4-Dichlorophenol		105.6	100.8		%	4.7	50	14-SEP-17
2,4-Dimethylphenol		110.0	106.1		%	3.7	50	14-SEP-17
2,4-Dinitrophenol		86.0	92.8		%	7.6	50	14-SEP-17
2,4-Dinitrotoluene		113.5	102.3		%	10	50	14-SEP-17
2,4,5-Trichlorophenol		112.4	110.9		%	1.3	50	14-SEP-17
2,4,6-Trichlorophenol		107.1	103.5		%	3.4	50	14-SEP-17
2,6-Dinitrotoluene		104.4	101.9		%	2.5	50	14-SEP-17
3,3'-Dichlorobenzidine		87.9	63.7		%	32	50	14-SEP-17
Biphenyl		87.1	84.6		%	2.9	50	14-SEP-17
Bis(2-chloroethyl)ether		99.4	92.7		%	7.0	50	14-SEP-17
Bis(2-chloroisopropyl)ether		95.7	94.3		%	1.5	50	14-SEP-17
Bis(2-ethylhexyl)phthalate		90.7	83.5		%	8.2	50	14-SEP-17
Diethylphthalate		93.4	88.3		%	5.7	50	14-SEP-17
Dimethylphthalate		89.4	87.8		%	1.7	50	14-SEP-17
Pentachlorophenol		112.6	117.9		%	4.6	50	14-SEP-17
Phenanthrene		101.4	95.5		%	6.0	50	14-SEP-17
Phenol		52.1	49.6		%	4.9	50	14-SEP-17
Pyrene		94.7	88.2		%	7.1	50	14-SEP-17
WG2613961-1 MB								
1,2,4-Trichlorobenzene			<0.40		ug/L		0.4	15-SEP-17
2-Chlorophenol			<0.30		ug/L		0.3	15-SEP-17
2,4-Dichlorophenol			<0.30		ug/L		0.3	15-SEP-17
2,4-Dimethylphenol			<0.50		ug/L		0.5	15-SEP-17
2,4-Dinitrophenol			<1.0		ug/L		1	15-SEP-17
2,4-Dinitrotoluene			<0.40		ug/L		0.4	15-SEP-17
2,4,5-Trichlorophenol			<0.20		ug/L		0.2	15-SEP-17
2,4,6-Trichlorophenol			<0.20		ug/L		0.2	15-SEP-17
2,6-Dinitrotoluene			<0.40		ug/L		0.4	15-SEP-17
3,3'-Dichlorobenzidine			<0.40		ug/L		0.4	15-SEP-17
4-Chloroaniline			<0.40		ug/L		0.4	15-SEP-17
Biphenyl			<0.40		ug/L		0.4	15-SEP-17

Quality Control Report

Workorder: L1988005 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Water**							
Batch R3828279								
WG2613961-1 MB								
Bis(2-chloroethyl)ether			<0.40		ug/L		0.4	15-SEP-17
Bis(2-chloroisopropyl)ether			<0.40		ug/L		0.4	15-SEP-17
Bis(2-ethylhexyl)phthalate			<2.0		ug/L		2	15-SEP-17
Diethylphthalate			<0.20		ug/L		0.2	15-SEP-17
Dimethylphthalate			<0.20		ug/L		0.2	15-SEP-17
Pentachlorophenol			<0.50		ug/L		0.5	15-SEP-17
Phenanthrene			<0.20		ug/L		0.2	15-SEP-17
Phenol			<0.50		ug/L		0.5	15-SEP-17
Pyrene			<0.20		ug/L		0.2	15-SEP-17
Surrogate: 2-Fluorobiphenyl			97.5		%		50-140	15-SEP-17
Surrogate: 2,4,6-Tribromophenol			98.2		%		50-140	15-SEP-17
Surrogate: Nitrobenzene d5			97.6		%		50-140	15-SEP-17
Surrogate: p-Terphenyl d14			95.9		%		60-140	15-SEP-17
Surrogate: Phenol d5			45.7		%		30-130	15-SEP-17
CL-IC-N-WT	**Water**							
Batch R3828551								
WG2614721-4 DUP		**WG2614721-3**						
Chloride (Cl)		31.0	31.1		mg/L	0.1	20	13-SEP-17
WG2614721-2 LCS								
Chloride (Cl)			99.1		%		90-110	13-SEP-17
WG2614721-1 MB								
Chloride (Cl)			<0.50		mg/L		0.5	13-SEP-17
WG2614721-5 MS		**WG2614721-3**						
Chloride (Cl)			103.2		%		75-125	13-SEP-17
CN-WAD-R511-WT	**Water**							
Batch R3829167								
WG2616103-3 DUP		**L1988005-1**						
Cyanide, Weak Acid Diss		<2.0	<2.0	RPD-NA	ug/L	N/A	20	14-SEP-17
WG2616103-2 LCS								
Cyanide, Weak Acid Diss			113.4		%		80-120	14-SEP-17
WG2616103-1 MB								
Cyanide, Weak Acid Diss			<2.0		ug/L		2	14-SEP-17
WG2616103-4 MS		**L1988005-1**						
Cyanide, Weak Acid Diss			113.3		%		70-130	14-SEP-17
CR-CR6-IC-R511-WT	**Water**							

Quality Control Report

Workorder: L1988005 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CR-CR6-IC-R511-WT	**Water**							
Batch R3823185								
WG2611524-4 DUP		**WG2611524-3**						
Chromium, Hexavalent		<1.0	<1.0	RPD-NA	ug/L	N/A	20	08-SEP-17
WG2611524-2 LCS								
Chromium, Hexavalent			101.0		%		80-120	08-SEP-17
WG2611524-1 MB								
Chromium, Hexavalent			<1.0		ug/L		1	08-SEP-17
WG2611524-5 MS		**WG2611524-3**						
Chromium, Hexavalent			98.6		%		70-130	08-SEP-17
Batch R3825902								
WG2614549-4 DUP		**WG2614549-3**						
Chromium, Hexavalent		<1.0	<1.0	RPD-NA	ug/L	N/A	20	12-SEP-17
WG2614549-2 LCS								
Chromium, Hexavalent			100.1		%		80-120	12-SEP-17
WG2614549-1 MB								
Chromium, Hexavalent			<1.0		ug/L		1	12-SEP-17
WG2614549-5 MS		**WG2614549-3**						
Chromium, Hexavalent			100.8		%		70-130	12-SEP-17
EC-R511-WT	**Water**							
Batch R3822482								
WG2611419-20 DUP		**WG2611419-19**						
Conductivity		0.736	0.736		mS/cm	0.0	10	08-SEP-17
WG2611419-24 DUP		**WG2611419-23**						
Conductivity		1.64	1.64		mS/cm	0.1	10	08-SEP-17
WG2611419-18 LCS								
Conductivity			101.2		%		90-110	08-SEP-17
WG2611419-22 LCS								
Conductivity			101.8		%		90-110	08-SEP-17
WG2611419-17 MB								
Conductivity			<0.0030		mS/cm		0.003	08-SEP-17
WG2611419-21 MB								
Conductivity			<0.0030		mS/cm		0.003	08-SEP-17
F1-HS-511-WT	**Water**							
Batch R3823436								
WG2611290-4 DUP		**WG2611290-3**						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	11-SEP-17
WG2611290-1 LCS								
F1 (C6-C10)			105.2		%		80-120	11-SEP-17
WG2611290-2 MB								

Quality Control Report

Workorder: L1988005 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT	**Water**							
Batch R3823436								
WG2611290-2 MB								
F1 (C6-C10)			<25		ug/L		25	11-SEP-17
Surrogate: 3,4-Dichlorotoluene			85.4		%		60-140	11-SEP-17
WG2611290-5 MS		**WG2611290-3**						
F1 (C6-C10)			74.3		%		60-140	11-SEP-17
Batch R3823509								
WG2594560-4 DUP		**WG2594560-3**						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	11-SEP-17
WG2594560-1 LCS								
F1 (C6-C10)			103.1		%		80-120	11-SEP-17
WG2594560-2 MB								
F1 (C6-C10)			<25		ug/L		25	11-SEP-17
Surrogate: 3,4-Dichlorotoluene			87.8		%		60-140	11-SEP-17
WG2594560-5 MS		**WG2594560-3**						
F1 (C6-C10)			88.7		%		60-140	11-SEP-17
F2-F4-UW-WT	**Water**							
Batch R3828769								
WG2614609-2 LCS								
F2 (C10-C16)			111.8		%		70-130	14-SEP-17
F3a (C16-C22)			108.4		%		70-130	14-SEP-17
F3b (C22-C34)			99.4		%		70-130	14-SEP-17
F3 (C16-C34)			104.6		%		70-130	14-SEP-17
F4 (C34-C50)			127.7		%		70-130	14-SEP-17
WG2614609-3 LCSD		**WG2614609-2**						
F2 (C10-C16)		111.8	118.4		%	5.7	50	14-SEP-17
F3a (C16-C22)		108.4	114.7		%	5.6	50	14-SEP-17
F3b (C22-C34)		99.4	114.6		%	14	50	14-SEP-17
F3 (C16-C34)		104.6	114.7		%	9.2	50	14-SEP-17
F4 (C34-C50)		127.7	127.1		%	0.5	50	14-SEP-17
WG2614609-1 MB								
F2 (C10-C16)			<100		ug/L		100	14-SEP-17
F3a (C16-C22)			<130		ug/L		125	14-SEP-17
F3b (C22-C34)			<130		ug/L		125	14-SEP-17
F3 (C16-C34)			<250		ug/L		250	14-SEP-17
F4 (C34-C50)			<250		ug/L		250	14-SEP-17
Surrogate: 2-Bromobenzotrifluoride			106.4		%		60-140	14-SEP-17

Quality Control Report

Workorder: L1988005 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-UW-WT	**Water**							
Batch R3830635								
WG2616554-2 LCS								
F2 (C10-C16)			111.7		%		70-130	15-SEP-17
F3a (C16-C22)			113.4		%		70-130	15-SEP-17
F3b (C22-C34)			116.0		%		70-130	15-SEP-17
F3 (C16-C34)			114.5		%		70-130	15-SEP-17
F4 (C34-C50)			120.3		%		70-130	15-SEP-17
WG2616554-3 LCSD		**WG2616554-2**						
F2 (C10-C16)		111.7	118.1		%	5.5	50	15-SEP-17
F3a (C16-C22)		113.4	116.1		%	2.3	50	15-SEP-17
F3b (C22-C34)		116.0	124.4		%	7.0	50	15-SEP-17
F3 (C16-C34)		114.5	119.6		%	4.4	50	15-SEP-17
F4 (C34-C50)		120.3	119.7		%	0.5	50	15-SEP-17
WG2616554-1 MB								
F2 (C10-C16)			<100		ug/L		100	15-SEP-17
F3a (C16-C22)			<130		ug/L		125	15-SEP-17
F3b (C22-C34)			<130		ug/L		125	15-SEP-17
F3 (C16-C34)			<250		ug/L		250	15-SEP-17
F4 (C34-C50)			<250		ug/L		250	15-SEP-17
Surrogate: 2-Bromobenzotrifluoride			99.6		%		60-140	15-SEP-17
HG-D-UG/L-CVAA-WT	**Water**							
Batch R3823689								
WG2611556-4 DUP		**WG2611556-3**						
Mercury (Hg)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	11-SEP-17
WG2611556-2 LCS								
Mercury (Hg)-Dissolved			101.0		%		80-120	11-SEP-17
WG2611556-1 MB								
Mercury (Hg)-Dissolved			<0.010		ug/L		0.01	11-SEP-17
WG2611556-6 MS		**WG2611556-5**						
Mercury (Hg)-Dissolved			97.8		%		70-130	11-SEP-17
Batch R3823691								
WG2611557-3 DUP		**L1988005-9**						
Mercury (Hg)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	11-SEP-17
WG2611557-2 LCS								
Mercury (Hg)-Dissolved			100.0		%		80-120	11-SEP-17
WG2611557-1 MB								
Mercury (Hg)-Dissolved			<0.010		ug/L		0.01	11-SEP-17

Quality Control Report

Workorder: L1988005 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-D-UG/L-CVAA-WT	**Water**							
Batch R3823691								
WG2611557-4 MS		**L1988005-10**						
Mercury (Hg)-Dissolved			94.6		%		70-130	11-SEP-17
MET-D-UG/L-MS-WT	**Water**							
Batch R3824202								
WG2611560-4 DUP		**WG2611560-3**						
Antimony (Sb)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	11-SEP-17
Arsenic (As)-Dissolved		0.22	0.25		ug/L	15	20	11-SEP-17
Barium (Ba)-Dissolved		123	119		ug/L	3.1	20	11-SEP-17
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	11-SEP-17
Boron (B)-Dissolved		191	200		ug/L	4.8	20	11-SEP-17
Cadmium (Cd)-Dissolved		0.040	0.047		ug/L	16	20	11-SEP-17
Chromium (Cr)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	11-SEP-17
Cobalt (Co)-Dissolved		0.30	0.29		ug/L	2.3	20	11-SEP-17
Copper (Cu)-Dissolved		4.10	3.93		ug/L	4.2	20	11-SEP-17
Lead (Pb)-Dissolved		0.115	0.108		ug/L	5.8	20	11-SEP-17
Molybdenum (Mo)-Dissolved		0.309	0.258		ug/L	18	20	11-SEP-17
Nickel (Ni)-Dissolved		4.38	4.25		ug/L	3.1	20	11-SEP-17
Selenium (Se)-Dissolved		0.052	<0.050	RPD-NA	ug/L	N/A	20	11-SEP-17
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	11-SEP-17
Sodium (Na)-Dissolved		166000	165000		ug/L	0.9	20	11-SEP-17
Thallium (Tl)-Dissolved		0.059	0.061		ug/L	2.8	20	11-SEP-17
Uranium (U)-Dissolved		0.401	0.406		ug/L	1.4	20	11-SEP-17
Vanadium (V)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	11-SEP-17
Zinc (Zn)-Dissolved		5.6	4.4	J	ug/L	1.2	2	11-SEP-17
WG2612645-4 DUP		**WG2612645-3**						
Antimony (Sb)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	11-SEP-17
Arsenic (As)-Dissolved		0.39	0.35		ug/L	11	20	11-SEP-17
Barium (Ba)-Dissolved		10.1	9.91		ug/L	1.5	20	11-SEP-17
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	11-SEP-17
Boron (B)-Dissolved		13	13		ug/L	3.9	20	11-SEP-17
Cadmium (Cd)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	11-SEP-17
Chromium (Cr)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	11-SEP-17
Cobalt (Co)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	11-SEP-17

Quality Control Report

Workorder: L1988005 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R3824202								
WG2612645-4 DUP		**WG2612645-3**						
Copper (Cu)-Dissolved		0.47	0.47		ug/L	0.2	20	11-SEP-17
Lead (Pb)-Dissolved		0.050	0.051		ug/L	1.8	20	11-SEP-17
Molybdenum (Mo)-Dissolved		0.145	0.146		ug/L	0.9	20	11-SEP-17
Nickel (Ni)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	11-SEP-17
Selenium (Se)-Dissolved		0.096	0.095		ug/L	1.4	20	11-SEP-17
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	11-SEP-17
Sodium (Na)-Dissolved		1490	1500		ug/L	0.9	20	11-SEP-17
Thallium (Tl)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	11-SEP-17
Uranium (U)-Dissolved		0.097	0.099		ug/L	2.7	20	11-SEP-17
Vanadium (V)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	11-SEP-17
Zinc (Zn)-Dissolved		1.7	1.6		ug/L	9.9	20	11-SEP-17
WG2611560-2 LCS								
Antimony (Sb)-Dissolved			97.8		%		80-120	11-SEP-17
Arsenic (As)-Dissolved			100.7		%		80-120	11-SEP-17
Barium (Ba)-Dissolved			98.1		%		80-120	11-SEP-17
Beryllium (Be)-Dissolved			101.6		%		80-120	11-SEP-17
Boron (B)-Dissolved			101.0		%		80-120	11-SEP-17
Cadmium (Cd)-Dissolved			99.6		%		80-120	11-SEP-17
Chromium (Cr)-Dissolved			100.7		%		80-120	11-SEP-17
Cobalt (Co)-Dissolved			99.5		%		80-120	11-SEP-17
Copper (Cu)-Dissolved			98.5		%		80-120	11-SEP-17
Lead (Pb)-Dissolved			101.5		%		80-120	11-SEP-17
Molybdenum (Mo)-Dissolved			102.4		%		80-120	11-SEP-17
Nickel (Ni)-Dissolved			99.2		%		80-120	11-SEP-17
Selenium (Se)-Dissolved			98.7		%		80-120	11-SEP-17
Silver (Ag)-Dissolved			100.4		%		80-120	11-SEP-17
Sodium (Na)-Dissolved			101.4		%		80-120	11-SEP-17
Thallium (Tl)-Dissolved			96.1		%		80-120	11-SEP-17
Uranium (U)-Dissolved			101.7		%		80-120	11-SEP-17
Vanadium (V)-Dissolved			101.5		%		80-120	11-SEP-17
Zinc (Zn)-Dissolved			95.6		%		80-120	11-SEP-17
WG2612645-2 LCS								
Antimony (Sb)-Dissolved			96.9		%		80-120	11-SEP-17
Arsenic (As)-Dissolved			97.5		%		80-120	

Quality Control Report

Workorder: L1988005 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R3824202								
WG2612645-2 LCS								
Arsenic (As)-Dissolved			97.5		%		80-120	11-SEP-17
Barium (Ba)-Dissolved			97.8		%		80-120	11-SEP-17
Beryllium (Be)-Dissolved			97.4		%		80-120	11-SEP-17
Boron (B)-Dissolved			96.8		%		80-120	11-SEP-17
Cadmium (Cd)-Dissolved			95.6		%		80-120	11-SEP-17
Chromium (Cr)-Dissolved			95.9		%		80-120	11-SEP-17
Cobalt (Co)-Dissolved			94.8		%		80-120	11-SEP-17
Copper (Cu)-Dissolved			94.8		%		80-120	11-SEP-17
Lead (Pb)-Dissolved			101.1		%		80-120	11-SEP-17
Molybdenum (Mo)-Dissolved			101.5		%		80-120	11-SEP-17
Nickel (Ni)-Dissolved			94.7		%		80-120	11-SEP-17
Selenium (Se)-Dissolved			94.3		%		80-120	11-SEP-17
Silver (Ag)-Dissolved			100.5		%		80-120	11-SEP-17
Sodium (Na)-Dissolved			95.7		%		80-120	11-SEP-17
Thallium (Tl)-Dissolved			95.9		%		80-120	11-SEP-17
Uranium (U)-Dissolved			100.8		%		80-120	11-SEP-17
Vanadium (V)-Dissolved			97.1		%		80-120	11-SEP-17
Zinc (Zn)-Dissolved			91.6		%		80-120	11-SEP-17
WG2611560-1 MB								
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	11-SEP-17
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	11-SEP-17
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	11-SEP-17
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	11-SEP-17
Boron (B)-Dissolved			<10		ug/L		10	11-SEP-17
Cadmium (Cd)-Dissolved			<0.010		ug/L		0.01	11-SEP-17
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	11-SEP-17
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	11-SEP-17
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	11-SEP-17
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	11-SEP-17
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	11-SEP-17
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	11-SEP-17
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	11-SEP-17
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	11-SEP-17
Sodium (Na)-Dissolved			<500		ug/L		500	11-SEP-17

Quality Control Report

Workorder: L1988005 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R3824202								
WG2611560-1 MB								
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	11-SEP-17
Uranium (U)-Dissolved			<0.010		ug/L		0.01	11-SEP-17
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	11-SEP-17
Zinc (Zn)-Dissolved			<1.0		ug/L		1	11-SEP-17
WG2612645-1 MB								
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	11-SEP-17
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	11-SEP-17
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	11-SEP-17
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	11-SEP-17
Boron (B)-Dissolved			<10		ug/L		10	11-SEP-17
Cadmium (Cd)-Dissolved			<0.010		ug/L		0.01	11-SEP-17
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	11-SEP-17
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	11-SEP-17
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	11-SEP-17
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	11-SEP-17
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	11-SEP-17
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	11-SEP-17
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	11-SEP-17
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	11-SEP-17
Sodium (Na)-Dissolved			<500		ug/L		500	11-SEP-17
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	11-SEP-17
Uranium (U)-Dissolved			<0.010		ug/L		0.01	11-SEP-17
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	11-SEP-17
Zinc (Zn)-Dissolved			<1.0		ug/L		1	11-SEP-17
WG2611560-5 MS		**WG2611560-3**						
Antimony (Sb)-Dissolved			99.9		%		70-130	11-SEP-17
Arsenic (As)-Dissolved			107.6		%		70-130	11-SEP-17
Barium (Ba)-Dissolved			N/A	MS-B	%		-	11-SEP-17
Beryllium (Be)-Dissolved			108.9		%		70-130	11-SEP-17
Boron (B)-Dissolved			N/A	MS-B	%		-	11-SEP-17
Cadmium (Cd)-Dissolved			95.7		%		70-130	11-SEP-17
Chromium (Cr)-Dissolved			103.1		%		70-130	11-SEP-17
Cobalt (Co)-Dissolved			97.7		%		70-130	11-SEP-17
Copper (Cu)-Dissolved			90.9		%		70-130	11-SEP-17

Quality Control Report

Workorder: L1988005 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R3824202								
WG2611560-5 MS		**WG2611560-3**						
Lead (Pb)-Dissolved			94.4		%		70-130	11-SEP-17
Molybdenum (Mo)-Dissolved			101.7		%		70-130	11-SEP-17
Nickel (Ni)-Dissolved			91.8		%		70-130	11-SEP-17
Selenium (Se)-Dissolved			104.8		%		70-130	11-SEP-17
Silver (Ag)-Dissolved			74.7		%		70-130	12-SEP-17
Sodium (Na)-Dissolved			N/A	MS-B	%		-	11-SEP-17
Thallium (Tl)-Dissolved			92.4		%		70-130	11-SEP-17
Uranium (U)-Dissolved			N/A	MS-B	%		-	11-SEP-17
Vanadium (V)-Dissolved			108.6		%		70-130	11-SEP-17
Zinc (Zn)-Dissolved			91.0		%		70-130	11-SEP-17
WG2612645-5 MS		**WG2612645-3**						
Antimony (Sb)-Dissolved			94.9		%		70-130	11-SEP-17
Arsenic (As)-Dissolved			103.7		%		70-130	11-SEP-17
Beryllium (Be)-Dissolved			101.0		%		70-130	11-SEP-17
Boron (B)-Dissolved			74.1		%		70-130	11-SEP-17
Cadmium (Cd)-Dissolved			97.6		%		70-130	11-SEP-17
Chromium (Cr)-Dissolved			90.6		%		70-130	11-SEP-17
Cobalt (Co)-Dissolved			94.2		%		70-130	11-SEP-17
Copper (Cu)-Dissolved			96.2		%		70-130	11-SEP-17
Lead (Pb)-Dissolved			98.9		%		70-130	11-SEP-17
Molybdenum (Mo)-Dissolved			97.5		%		70-130	11-SEP-17
Nickel (Ni)-Dissolved			92.8		%		70-130	11-SEP-17
Selenium (Se)-Dissolved			109.3		%		70-130	11-SEP-17
Silver (Ag)-Dissolved			94.5		%		70-130	11-SEP-17
Sodium (Na)-Dissolved			90.2		%		70-130	11-SEP-17
Thallium (Tl)-Dissolved			94.9		%		70-130	11-SEP-17
Vanadium (V)-Dissolved			95.3		%		70-130	11-SEP-17
Zinc (Zn)-Dissolved			110.8		%		70-130	11-SEP-17
PAH-511-WT	**Water**							
Batch R3824208								
WG2612759-2 LCS								
1-Methylnaphthalene			90.9		%		50-140	12-SEP-17
2-Methylnaphthalene			91.5		%		50-140	12-SEP-17
Acenaphthene			90.9		%		50-140	12-SEP-17

Quality Control Report

Workorder: L1988005 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R3824208								
WG2612759-2 LCS								
Acenaphthylene			97.6		%		50-140	12-SEP-17
Anthracene			90.2		%		50-140	12-SEP-17
Benzo(a)anthracene			96.8		%		50-140	12-SEP-17
Benzo(a)pyrene			98.7		%		50-140	12-SEP-17
Benzo(b)fluoranthene			90.8		%		50-140	12-SEP-17
Benzo(g,h,i)perylene			96.2		%		50-140	12-SEP-17
Benzo(k)fluoranthene			106.9		%		50-140	12-SEP-17
Chrysene			97.0		%		50-140	12-SEP-17
Dibenzo(ah)anthracene			101.7		%		50-140	12-SEP-17
Fluoranthene			101.2		%		50-140	12-SEP-17
Fluorene			95.2		%		50-140	12-SEP-17
Indeno(1,2,3-cd)pyrene			89.2		%		50-140	12-SEP-17
Naphthalene			96.4		%		50-140	12-SEP-17
Phenanthrene			99.1		%		50-140	12-SEP-17
Pyrene			101.0		%		50-140	12-SEP-17
WG2612759-3 LCSD		**WG2612759-2**						
1-Methylnaphthalene		90.9	89.5		%	1.5	50	07-SEP-17
2-Methylnaphthalene		91.5	90.6		%	1.1	50	07-SEP-17
Acenaphthene		90.9	88.9		%	2.2	50	07-SEP-17
Acenaphthylene		97.6	95.5		%	2.2	50	07-SEP-17
Anthracene		90.2	86.7		%	3.9	50	07-SEP-17
Benzo(a)anthracene		96.8	89.3		%	8.1	50	07-SEP-17
Benzo(a)pyrene		98.7	96.5		%	2.3	50	07-SEP-17
Benzo(b)fluoranthene		90.8	91.4		%	0.6	50	07-SEP-17
Benzo(g,h,i)perylene		96.2	93.0		%	3.5	50	07-SEP-17
Benzo(k)fluoranthene		106.9	101.9		%	4.8	50	07-SEP-17
Chrysene		97.0	86.6		%	11	50	07-SEP-17
Dibenzo(ah)anthracene		101.7	100.2		%	1.5	50	07-SEP-17
Fluoranthene		101.2	91.4		%	10	50	07-SEP-17
Fluorene		95.2	92.6		%	2.7	50	07-SEP-17
Indeno(1,2,3-cd)pyrene		89.2	83.4		%	6.7	50	07-SEP-17
Naphthalene		96.4	95.3		%	1.2	50	07-SEP-17
Phenanthrene		99.1	96.2		%	2.9	50	07-SEP-17

Quality Control Report

Workorder: L1988005 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R3824208								
WG2612759-3 LCSD		**WG2612759-2**						
Pyrene		101.0	93.9		%	7.2	50	07-SEP-17
WG2612759-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	12-SEP-17
2-Methylnaphthalene			<0.020		ug/L		0.02	12-SEP-17
Acenaphthene			<0.020		ug/L		0.02	12-SEP-17
Acenaphthylene			<0.020		ug/L		0.02	12-SEP-17
Anthracene			<0.020		ug/L		0.02	12-SEP-17
Benzo(a)anthracene			<0.020		ug/L		0.02	12-SEP-17
Benzo(a)pyrene			<0.010		ug/L		0.01	12-SEP-17
Benzo(b)fluoranthene			<0.020		ug/L		0.02	12-SEP-17
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	12-SEP-17
Benzo(k)fluoranthene			<0.020		ug/L		0.02	12-SEP-17
Chrysene			<0.020		ug/L		0.02	12-SEP-17
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	12-SEP-17
Fluoranthene			<0.020		ug/L		0.02	12-SEP-17
Fluorene			<0.020		ug/L		0.02	12-SEP-17
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	12-SEP-17
Naphthalene			<0.050		ug/L		0.05	12-SEP-17
Phenanthrene			<0.020		ug/L		0.02	12-SEP-17
Pyrene			<0.020		ug/L		0.02	12-SEP-17
Surrogate: d8-Naphthalene			91.7		%		60-140	12-SEP-17
Surrogate: d10-Phenanthrene			99.0		%		60-140	12-SEP-17
Surrogate: d12-Chrysene			100.5		%		60-140	12-SEP-17
Surrogate: d10-Acenaphthene			90.5		%		60-140	12-SEP-17
Batch R3826603								
WG2613465-2 LCS								
1-Methylnaphthalene			72.8		%		50-140	13-SEP-17
2-Methylnaphthalene			73.2		%		50-140	13-SEP-17
Acenaphthene			76.3		%		50-140	13-SEP-17
Acenaphthylene			84.2		%		50-140	13-SEP-17
Anthracene			84.4		%		50-140	13-SEP-17
Benzo(a)anthracene			104.1		%		50-140	13-SEP-17
Benzo(a)pyrene			89.2		%		50-140	13-SEP-17
Benzo(b)fluoranthene			78.6		%		50-140	13-SEP-17

Quality Control Report

Workorder: L1988005 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R3826603								
WG2613465-2 LCS								
Benzo(g,h,i)perylene			84.1		%		50-140	13-SEP-17
Benzo(k)fluoranthene			88.6		%		50-140	13-SEP-17
Chrysene			92.3		%		50-140	13-SEP-17
Dibenzo(ah)anthracene			89.8		%		50-140	13-SEP-17
Fluoranthene			82.9		%		50-140	13-SEP-17
Fluorene			83.8		%		50-140	13-SEP-17
Indeno(1,2,3-cd)pyrene			83.2		%		50-140	13-SEP-17
Naphthalene			75.8		%		50-140	13-SEP-17
Phenanthrene			86.1		%		50-140	13-SEP-17
Pyrene			85.3		%		50-140	13-SEP-17
WG2613465-3 LCSD		**WG2613465-2**						
1-Methylnaphthalene		72.8	77.6		%	6.4	50	13-SEP-17
2-Methylnaphthalene		73.2	78.5		%	7.0	50	13-SEP-17
Acenaphthene		76.3	79.8		%	4.4	50	13-SEP-17
Acenaphthylene		84.2	87.0		%	3.3	50	13-SEP-17
Anthracene		84.4	96.9		%	14	50	13-SEP-17
Benzo(a)anthracene		104.1	102.5		%	1.5	50	13-SEP-17
Benzo(a)pyrene		89.2	92.2		%	3.4	50	13-SEP-17
Benzo(b)fluoranthene		78.6	85.0		%	7.9	50	13-SEP-17
Benzo(g,h,i)perylene		84.1	84.6		%	0.6	50	13-SEP-17
Benzo(k)fluoranthene		88.6	94.4		%	6.4	50	13-SEP-17
Chrysene		92.3	99.9		%	7.9	50	13-SEP-17
Dibenzo(ah)anthracene		89.8	97.4		%	8.2	50	13-SEP-17
Fluoranthene		82.9	91.2		%	9.6	50	13-SEP-17
Fluorene		83.8	87.4		%	4.2	50	13-SEP-17
Indeno(1,2,3-cd)pyrene		83.2	86.3		%	3.7	50	13-SEP-17
Naphthalene		75.8	82.2		%	8.1	50	13-SEP-17
Phenanthrene		86.1	91.4		%	6.0	50	13-SEP-17
Pyrene		85.3	92.4		%	8.0	50	13-SEP-17
WG2613465-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	13-SEP-17
2-Methylnaphthalene			<0.020		ug/L		0.02	13-SEP-17
Acenaphthene			<0.020		ug/L		0.02	13-SEP-17

Quality Control Report

Workorder: L1988005 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R3826603								
WG2613465-1 MB								
Acenaphthylene			<0.020		ug/L		0.02	13-SEP-17
Anthracene			<0.020		ug/L		0.02	13-SEP-17
Benzo(a)anthracene			<0.020		ug/L		0.02	13-SEP-17
Benzo(a)pyrene			<0.010		ug/L		0.01	13-SEP-17
Benzo(b)fluoranthene			<0.020		ug/L		0.02	13-SEP-17
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	13-SEP-17
Benzo(k)fluoranthene			<0.020		ug/L		0.02	13-SEP-17
Chrysene			<0.020		ug/L		0.02	13-SEP-17
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	13-SEP-17
Fluoranthene			<0.020		ug/L		0.02	13-SEP-17
Fluorene			<0.020		ug/L		0.02	13-SEP-17
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	13-SEP-17
Naphthalene			<0.050		ug/L		0.05	13-SEP-17
Phenanthrene			<0.020		ug/L		0.02	13-SEP-17
Pyrene			<0.020		ug/L		0.02	13-SEP-17
Surrogate: d8-Naphthalene			90.0		%		60-140	13-SEP-17
Surrogate: d10-Phenanthrene			99.4		%		60-140	13-SEP-17
Surrogate: d12-Chrysene			104.0		%		60-140	13-SEP-17
Surrogate: d10-Acenaphthene			88.9		%		60-140	13-SEP-17
PCB-511-WT	**Water**							
Batch R3829539								
WG2614619-2 LCS								
Aroclor 1242			85.8		%		60-140	15-SEP-17
Aroclor 1248			96.6		%		60-140	15-SEP-17
Aroclor 1254			98.7		%		60-140	15-SEP-17
Aroclor 1260			89.3		%		60-140	15-SEP-17
WG2614619-3 LCSD		**WG2614619-2**						
Aroclor 1242		85.8	95.7		%	11	50	15-SEP-17
Aroclor 1248		96.6	96.6		%	0.0	50	15-SEP-17
Aroclor 1254		98.7	115.4		%	16	50	15-SEP-17
Aroclor 1260		89.3	111.3		%	22	50	15-SEP-17
WG2614619-1 MB								
Aroclor 1242			<0.020		ug/L		0.02	15-SEP-17
Aroclor 1248			<0.020		ug/L		0.02	15-SEP-17

Quality Control Report

Workorder: L1988005 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PCB-511-WT	**Water**							
Batch R3829539								
WG2614619-1 MB								
Aroclor 1254			<0.020		ug/L		0.02	15-SEP-17
Aroclor 1260			<0.020		ug/L		0.02	15-SEP-17
Surrogate: 2-fluorobiphenyl			103.9		%		50-150	15-SEP-17
PH-WT	**Water**							
Batch R3822482								
WG2611419-20 DUP		**WG2611419-19**						
pH		6.90	6.92	J	pH units	0.01	0.2	08-SEP-17
WG2611419-24 DUP		**WG2611419-23**						
pH		7.56	7.57	J	pH units	0.01	0.2	08-SEP-17
WG2611419-18 LCS								
pH			6.99		pH units		6.9-7.1	08-SEP-17
WG2611419-22 LCS								
pH			6.99		pH units		6.9-7.1	08-SEP-17
VOC-511-HS-WT	**Water**							
Batch R3823436								
WG2611290-4 DUP		**WG2611290-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	11-SEP-17
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	11-SEP-17
Benzene		1.10	1.12		ug/L	1.8	30	11-SEP-17
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	11-SEP-17
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	11-SEP-17
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	11-SEP-17

Quality Control Report

Workorder: L1988005 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3823436								
WG2611290-4 DUP		**WG2611290-3**						
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	11-SEP-17
cis-1,2-Dichloroethylene		25.4	26.4		ug/L	3.9	30	11-SEP-17
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	11-SEP-17
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	11-SEP-17
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	11-SEP-17
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	11-SEP-17
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	11-SEP-17
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	11-SEP-17
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	11-SEP-17
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	11-SEP-17
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	11-SEP-17
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
trans-1,2-Dichloroethylene		0.55	0.57		ug/L	3.6	30	11-SEP-17
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	11-SEP-17
Trichloroethylene		2.23	2.21		ug/L	0.9	30	11-SEP-17
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	11-SEP-17
Vinyl chloride		7.26	7.46		ug/L	2.7	30	11-SEP-17
WG2611290-1 LCS								
1,1,1,2-Tetrachloroethane			88.7		%		70-130	11-SEP-17
1,1,2,2-Tetrachloroethane			96.4		%		70-130	11-SEP-17
1,1,1-Trichloroethane			94.3		%		70-130	11-SEP-17
1,1,2-Trichloroethane			94.2		%		70-130	11-SEP-17
1,1-Dichloroethane			99.3		%		70-130	11-SEP-17
1,1-Dichloroethylene			90.4		%		70-130	11-SEP-17
1,2-Dibromoethane			95.2		%		70-130	11-SEP-17
1,2-Dichlorobenzene			91.8		%		70-130	11-SEP-17
1,2-Dichloroethane			104.0		%		70-130	11-SEP-17
1,2-Dichloropropane			98.8		%		70-130	11-SEP-17

Quality Control Report

Workorder: L1988005 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3823436								
WG2611290-1 LCS								
1,3-Dichlorobenzene			89.9		%		70-130	11-SEP-17
1,4-Dichlorobenzene			93.9		%		70-130	11-SEP-17
Acetone			124.5		%		60-140	11-SEP-17
Benzene			99.5		%		70-130	11-SEP-17
Bromodichloromethane			96.7		%		70-130	11-SEP-17
Bromoform			92.3		%		70-130	11-SEP-17
Bromomethane			102.8		%		60-140	11-SEP-17
Carbon tetrachloride			93.9		%		70-130	11-SEP-17
Chlorobenzene			91.7		%		70-130	11-SEP-17
Chloroform			99.5		%		70-130	11-SEP-17
cis-1,2-Dichloroethylene			96.7		%		70-130	11-SEP-17
cis-1,3-Dichloropropene			100.7		%		70-130	11-SEP-17
Dibromochloromethane			98.1		%		70-130	11-SEP-17
Dichlorodifluoromethane			82.0		%		50-140	11-SEP-17
Ethylbenzene			87.4		%		70-130	11-SEP-17
n-Hexane			105.4		%		70-130	11-SEP-17
m+p-Xylenes			90.4		%		70-130	11-SEP-17
Methyl Ethyl Ketone			111.6		%		60-140	11-SEP-17
Methyl Isobutyl Ketone			106.5		%		60-140	11-SEP-17
Methylene Chloride			107.5		%		70-130	11-SEP-17
MTBE			94.2		%		70-130	11-SEP-17
o-Xylene			89.6		%		70-130	11-SEP-17
Styrene			91.5		%		70-130	11-SEP-17
Tetrachloroethylene			84.4		%		70-130	11-SEP-17
Toluene			83.4		%		70-130	11-SEP-17
trans-1,2-Dichloroethylene			99.2		%		70-130	11-SEP-17
trans-1,3-Dichloropropene			103.1		%		70-130	11-SEP-17
Trichloroethylene			93.1		%		70-130	11-SEP-17
Trichlorofluoromethane			96.7		%		60-140	11-SEP-17
Vinyl chloride			90.0		%		60-140	11-SEP-17
WG2611290-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	11-SEP-17
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	11-SEP-17
1,1,1-Trichloroethane			<0.50		ug/L		0.5	11-SEP-17

Quality Control Report

Workorder: L1988005 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3823436								
WG2611290-2 MB								
1,1,2-Trichloroethane			<0.50		ug/L		0.5	11-SEP-17
1,1-Dichloroethane			<0.50		ug/L		0.5	11-SEP-17
1,1-Dichloroethylene			<0.50		ug/L		0.5	11-SEP-17
1,2-Dibromoethane			<0.20		ug/L		0.2	11-SEP-17
1,2-Dichlorobenzene			<0.50		ug/L		0.5	11-SEP-17
1,2-Dichloroethane			<0.50		ug/L		0.5	11-SEP-17
1,2-Dichloropropane			<0.50		ug/L		0.5	11-SEP-17
1,3-Dichlorobenzene			<0.50		ug/L		0.5	11-SEP-17
1,4-Dichlorobenzene			<0.50		ug/L		0.5	11-SEP-17
Acetone			<30		ug/L		30	11-SEP-17
Benzene			<0.50		ug/L		0.5	11-SEP-17
Bromodichloromethane			<2.0		ug/L		2	11-SEP-17
Bromoform			<5.0		ug/L		5	11-SEP-17
Bromomethane			<0.50		ug/L		0.5	11-SEP-17
Carbon tetrachloride			<0.20		ug/L		0.2	11-SEP-17
Chlorobenzene			<0.50		ug/L		0.5	11-SEP-17
Chloroform			<1.0		ug/L		1	11-SEP-17
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	11-SEP-17
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	11-SEP-17
Dibromochloromethane			<2.0		ug/L		2	11-SEP-17
Dichlorodifluoromethane			<2.0		ug/L		2	11-SEP-17
Ethylbenzene			<0.50		ug/L		0.5	11-SEP-17
n-Hexane			<0.50		ug/L		0.5	11-SEP-17
m+p-Xylenes			<0.40		ug/L		0.4	11-SEP-17
Methyl Ethyl Ketone			<20		ug/L		20	11-SEP-17
Methyl Isobutyl Ketone			<20		ug/L		20	11-SEP-17
Methylene Chloride			<5.0		ug/L		5	11-SEP-17
MTBE			<2.0		ug/L		2	11-SEP-17
o-Xylene			<0.30		ug/L		0.3	11-SEP-17
Styrene			<0.50		ug/L		0.5	11-SEP-17
Tetrachloroethylene			<0.50		ug/L		0.5	11-SEP-17
Toluene			<0.50		ug/L		0.5	11-SEP-17
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	11-SEP-17

Quality Control Report

Workorder: L1988005 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch	**R3823436**							
WG2611290-2	**MB**							
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	11-SEP-17
Trichloroethylene			<0.50		ug/L		0.5	11-SEP-17
Trichlorofluoromethane			<5.0		ug/L		5	11-SEP-17
Vinyl chloride			<0.50		ug/L		0.5	11-SEP-17
Surrogate: 1,4-Difluorobenzene			100.4		%		70-130	11-SEP-17
Surrogate: 4-Bromofluorobenzene			94.1		%		70-130	11-SEP-17
WG2611290-5	**MS**	**WG2611290-3**						
1,1,1,2-Tetrachloroethane			89.8		%		50-140	11-SEP-17
1,1,2,2-Tetrachloroethane			97.3		%		50-140	11-SEP-17
1,1,1-Trichloroethane			94.1		%		50-140	11-SEP-17
1,1,2-Trichloroethane			94.9		%		50-140	11-SEP-17
1,1-Dichloroethane			101.2		%		50-140	11-SEP-17
1,1-Dichloroethylene			84.8		%		50-140	11-SEP-17
1,2-Dibromoethane			95.7		%		50-140	11-SEP-17
1,2-Dichlorobenzene			91.9		%		50-140	11-SEP-17
1,2-Dichloroethane			107.1		%		50-140	11-SEP-17
1,2-Dichloropropane			102.4		%		50-140	11-SEP-17
1,3-Dichlorobenzene			88.9		%		50-140	11-SEP-17
1,4-Dichlorobenzene			93.5		%		50-140	11-SEP-17
Acetone			123.1		%		50-140	11-SEP-17
Benzene			100.5		%		50-140	11-SEP-17
Bromodichloromethane			100.0		%		50-140	11-SEP-17
Bromoform			92.5		%		50-140	11-SEP-17
Bromomethane			94.4		%		50-140	11-SEP-17
Carbon tetrachloride			92.3		%		50-140	11-SEP-17
Chlorobenzene			91.3		%		50-140	11-SEP-17
Chloroform			102.2		%		50-140	11-SEP-17
cis-1,2-Dichloroethylene			94.9		%		50-140	11-SEP-17
cis-1,3-Dichloropropene			97.4		%		50-140	11-SEP-17
Dibromochloromethane			99.4		%		50-140	11-SEP-17
Dichlorodifluoromethane			60.1		%		50-140	11-SEP-17
Ethylbenzene			84.2		%		50-140	11-SEP-17
n-Hexane			91.2		%		50-140	11-SEP-17
m+p-Xylenes			88.6		%		50-140	11-SEP-17

Quality Control Report

Workorder: L1988005 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3823436								
WG2611290-5 MS		**WG2611290-3**						
Methyl Ethyl Ketone			113.8		%		50-140	11-SEP-17
Methyl Isobutyl Ketone			106.9		%		50-140	11-SEP-17
Methylene Chloride			108.8		%		50-140	11-SEP-17
MTBE			93.8		%		50-140	11-SEP-17
o-Xylene			87.7		%		50-140	11-SEP-17
Styrene			89.0		%		50-140	11-SEP-17
Tetrachloroethylene			80.1		%		50-140	11-SEP-17
Toluene			80.5		%		50-140	11-SEP-17
trans-1,2-Dichloroethylene			96.4		%		50-140	11-SEP-17
trans-1,3-Dichloropropene			95.5		%		50-140	11-SEP-17
Trichloroethylene			91.9		%		50-140	11-SEP-17
Trichlorofluoromethane			87.6		%		50-140	11-SEP-17
Vinyl chloride			77.1		%		50-140	11-SEP-17
Batch R3823489								
WG2609244-4 DUP		**WG2609244-3**						
Trichloroethylene		N/A	<0.50	RPD-NA	ug/L	N/A	30	12-SEP-17
WG2609244-1 LCS								
Trichloroethylene			90.3		%		70-130	11-SEP-17
WG2609244-2 MB								
Trichloroethylene			<0.50		ug/L		0.5	11-SEP-17
WG2609244-5 MS		**WG2609244-3**						
Trichloroethylene			85.7		%		50-140	12-SEP-17
Batch R3823509								
WG2594560-4 DUP		**WG2594560-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	11-SEP-17
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17

Quality Control Report

Workorder: L1988005 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3823509								
WG2594560-4 DUP		**WG2594560-3**						
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	11-SEP-17
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	11-SEP-17
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	11-SEP-17
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	11-SEP-17
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	11-SEP-17
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	11-SEP-17
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	11-SEP-17
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	11-SEP-17
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	11-SEP-17
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	11-SEP-17
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	11-SEP-17
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	11-SEP-17
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	11-SEP-17
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	11-SEP-17
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	11-SEP-17
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	11-SEP-17
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
WG2594560-1 LCS								
1,1,1,2-Tetrachloroethane			91.5		%		70-130	11-SEP-17
1,1,2,2-Tetrachloroethane			85.1		%		70-130	11-SEP-17

Quality Control Report

Workorder: L1988005 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3823509								
WG2594560-1 LCS								
1,1,1-Trichloroethane			91.2		%		70-130	11-SEP-17
1,1,2-Trichloroethane			93.5		%		70-130	11-SEP-17
1,1-Dichloroethane			92.1		%		70-130	11-SEP-17
1,1-Dichloroethylene			83.7		%		70-130	11-SEP-17
1,2-Dibromoethane			92.1		%		70-130	11-SEP-17
1,2-Dichlorobenzene			90.0		%		70-130	11-SEP-17
1,2-Dichloroethane			91.2		%		70-130	11-SEP-17
1,2-Dichloropropane			95.6		%		70-130	11-SEP-17
1,3-Dichlorobenzene			87.1		%		70-130	11-SEP-17
1,4-Dichlorobenzene			89.8		%		70-130	11-SEP-17
Acetone			102.9		%		60-140	11-SEP-17
Benzene			94.7		%		70-130	11-SEP-17
Bromodichloromethane			92.3		%		70-130	11-SEP-17
Bromoform			88.0		%		70-130	11-SEP-17
Bromomethane			90.5		%		60-140	11-SEP-17
Carbon tetrachloride			90.5		%		70-130	11-SEP-17
Chlorobenzene			91.5		%		70-130	11-SEP-17
Chloroform			94.2		%		70-130	11-SEP-17
cis-1,2-Dichloroethylene			92.2		%		70-130	11-SEP-17
cis-1,3-Dichloropropene			83.1		%		70-130	11-SEP-17
Dibromochloromethane			96.5		%		70-130	11-SEP-17
Dichlorodifluoromethane			94.5		%		50-140	11-SEP-17
Ethylbenzene			88.7		%		70-130	11-SEP-17
n-Hexane			102.2		%		70-130	11-SEP-17
m+p-Xylenes			89.9		%		70-130	11-SEP-17
Methyl Ethyl Ketone			82.8		%		60-140	11-SEP-17
Methyl Isobutyl Ketone			82.1		%		60-140	11-SEP-17
Methylene Chloride			94.5		%		70-130	11-SEP-17
MTBE			93.2		%		70-130	11-SEP-17
o-Xylene			90.3		%		70-130	11-SEP-17
Styrene			88.0		%		70-130	11-SEP-17
Tetrachloroethylene			87.6		%		70-130	11-SEP-17
Toluene			90.4		%		70-130	11-SEP-17

Quality Control Report

Workorder: L1988005 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch	**R3823509**							
WG2594560-1	**LCS**							
trans-1,2-Dichloroethylene			90.1		%		70-130	11-SEP-17
trans-1,3-Dichloropropene			83.4		%		70-130	11-SEP-17
Trichloroethylene			91.6		%		70-130	11-SEP-17
Trichlorofluoromethane			91.7		%		60-140	11-SEP-17
Vinyl chloride			85.7		%		60-140	11-SEP-17
WG2594560-2	**MB**							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	11-SEP-17
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	11-SEP-17
1,1,1-Trichloroethane			<0.50		ug/L		0.5	11-SEP-17
1,1,2-Trichloroethane			<0.50		ug/L		0.5	11-SEP-17
1,1-Dichloroethane			<0.50		ug/L		0.5	11-SEP-17
1,1-Dichloroethylene			<0.50		ug/L		0.5	11-SEP-17
1,2-Dibromoethane			<0.20		ug/L		0.2	11-SEP-17
1,2-Dichlorobenzene			<0.50		ug/L		0.5	11-SEP-17
1,2-Dichloroethane			<0.50		ug/L		0.5	11-SEP-17
1,2-Dichloropropane			<0.50		ug/L		0.5	11-SEP-17
1,3-Dichlorobenzene			<0.50		ug/L		0.5	11-SEP-17
1,4-Dichlorobenzene			<0.50		ug/L		0.5	11-SEP-17
Acetone			<30		ug/L		30	11-SEP-17
Benzene			<0.50		ug/L		0.5	11-SEP-17
Bromodichloromethane			<2.0		ug/L		2	11-SEP-17
Bromoform			<5.0		ug/L		5	11-SEP-17
Bromomethane			<0.50		ug/L		0.5	11-SEP-17
Carbon tetrachloride			<0.20		ug/L		0.2	11-SEP-17
Chlorobenzene			<0.50		ug/L		0.5	11-SEP-17
Chloroform			<1.0		ug/L		1	11-SEP-17
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	11-SEP-17
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	11-SEP-17
Dibromochloromethane			<2.0		ug/L		2	11-SEP-17
Dichlorodifluoromethane			<2.0		ug/L		2	11-SEP-17
Ethylbenzene			<0.50		ug/L		0.5	11-SEP-17
n-Hexane			<0.50		ug/L		0.5	11-SEP-17
m+p-Xylenes			<0.40		ug/L		0.4	11-SEP-17
Methyl Ethyl Ketone			<20		ug/L		20	11-SEP-17

Quality Control Report

Workorder: L1988005 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3823509								
WG2594560-2 MB								
Methyl Isobutyl Ketone			<20		ug/L		20	11-SEP-17
Methylene Chloride			<5.0		ug/L		5	11-SEP-17
MTBE			<2.0		ug/L		2	11-SEP-17
o-Xylene			<0.30		ug/L		0.3	11-SEP-17
Styrene			<0.50		ug/L		0.5	11-SEP-17
Tetrachloroethylene			<0.50		ug/L		0.5	11-SEP-17
Toluene			<0.50		ug/L		0.5	11-SEP-17
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	11-SEP-17
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	11-SEP-17
Trichloroethylene			<0.50		ug/L		0.5	11-SEP-17
Trichlorofluoromethane			<5.0		ug/L		5	11-SEP-17
Vinyl chloride			<0.50		ug/L		0.5	11-SEP-17
Surrogate: 1,4-Difluorobenzene			101.8		%		70-130	11-SEP-17
Surrogate: 4-Bromofluorobenzene			98.6		%		70-130	11-SEP-17
WG2594560-5 MS		**WG2594560-3**						
1,1,1,2-Tetrachloroethane			90.1		%		50-140	11-SEP-17
1,1,2,2-Tetrachloroethane			89.6		%		50-140	11-SEP-17
1,1,1-Trichloroethane			88.0		%		50-140	11-SEP-17
1,1,2-Trichloroethane			94.6		%		50-140	11-SEP-17
1,1-Dichloroethane			91.4		%		50-140	11-SEP-17
1,1-Dichloroethylene			79.0		%		50-140	11-SEP-17
1,2-Dibromoethane			93.9		%		50-140	11-SEP-17
1,2-Dichlorobenzene			90.0		%		50-140	11-SEP-17
1,2-Dichloroethane			95.5		%		50-140	11-SEP-17
1,2-Dichloropropane			98.1		%		50-140	11-SEP-17
1,3-Dichlorobenzene			87.8		%		50-140	11-SEP-17
1,4-Dichlorobenzene			91.0		%		50-140	11-SEP-17
Acetone			100.2		%		50-140	11-SEP-17
Benzene			94.6		%		50-140	11-SEP-17
Bromodichloromethane			94.9		%		50-140	11-SEP-17
Bromoform			89.2		%		50-140	11-SEP-17
Bromomethane			89.1		%		50-140	11-SEP-17
Carbon tetrachloride			86.4		%		50-140	11-SEP-17
Chlorobenzene			90.8		%		50-140	11-SEP-17

Quality Control Report

Workorder: L1988005 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3823509								
WG2594560-5 MS		**WG2594560-3**						
Chloroform			94.8		%		50-140	11-SEP-17
cis-1,2-Dichloroethylene			92.9		%		50-140	11-SEP-17
cis-1,3-Dichloropropene			92.9		%		50-140	11-SEP-17
Dibromochloromethane			96.6		%		50-140	11-SEP-17
Dichlorodifluoromethane			79.0		%		50-140	11-SEP-17
Ethylbenzene			85.6		%		50-140	11-SEP-17
n-Hexane			91.7		%		50-140	11-SEP-17
m+p-Xylenes			88.0		%		50-140	11-SEP-17
Methyl Ethyl Ketone			87.7		%		50-140	11-SEP-17
Methyl Isobutyl Ketone			89.1		%		50-140	11-SEP-17
Methylene Chloride			95.9		%		50-140	11-SEP-17
MTBE			93.0		%		50-140	11-SEP-17
o-Xylene			87.7		%		50-140	11-SEP-17
Styrene			87.1		%		50-140	11-SEP-17
Tetrachloroethylene			84.9		%		50-140	11-SEP-17
Toluene			87.2		%		50-140	11-SEP-17
trans-1,2-Dichloroethylene			91.0		%		50-140	11-SEP-17
trans-1,3-Dichloropropene			91.7		%		50-140	11-SEP-17
Trichloroethylene			91.8		%		50-140	11-SEP-17
Trichlorofluoromethane			83.3		%		50-140	11-SEP-17
Vinyl chloride			77.7		%		50-140	11-SEP-17

Quality Control Report

Workorder: L1988005 Report Date: 18-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9
Contact: MICHAEL SHIRY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.
RRQC	Refer to report remarks for information regarding this QC result.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

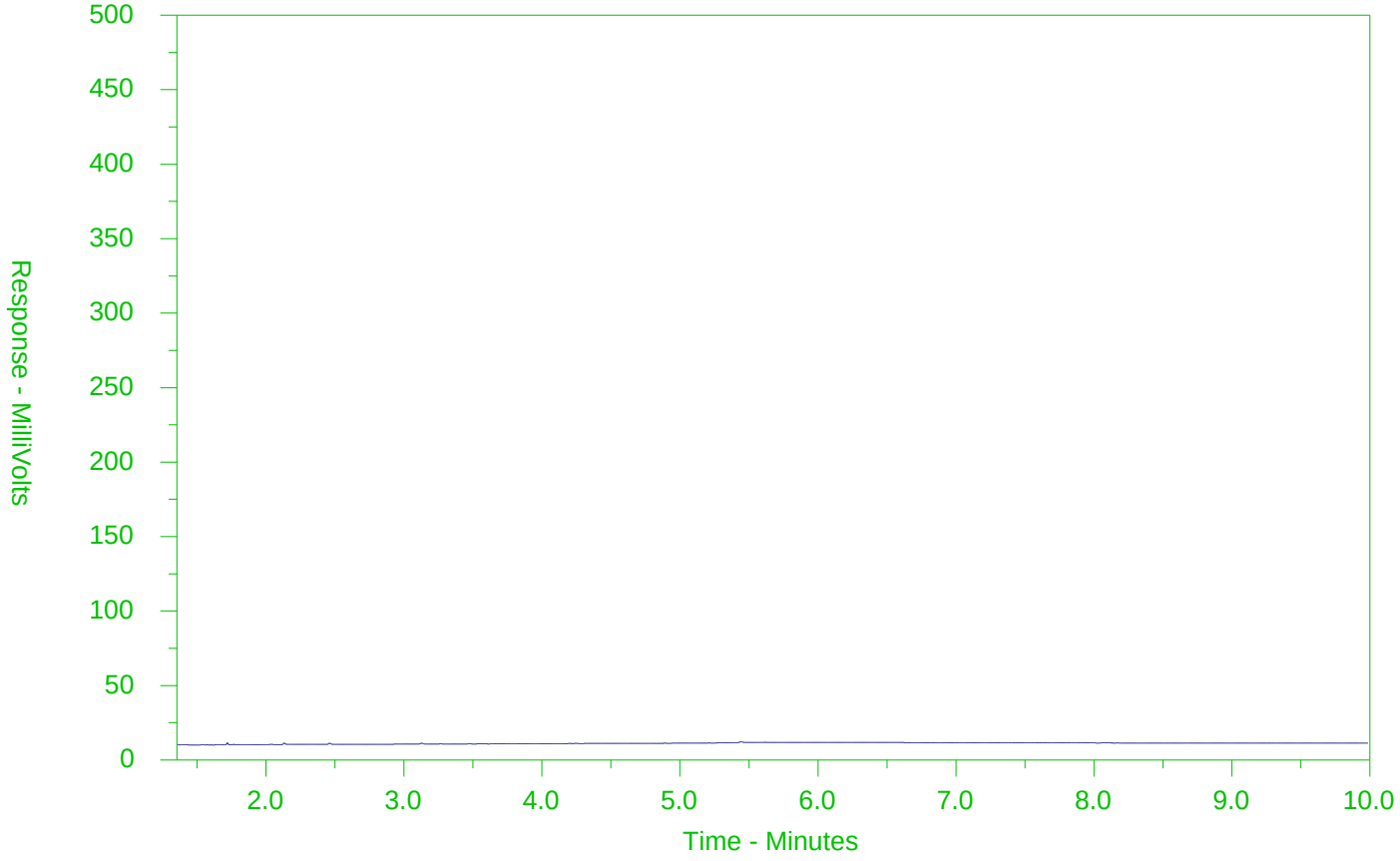
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1988005-1
Client Sample ID: OW07-37



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

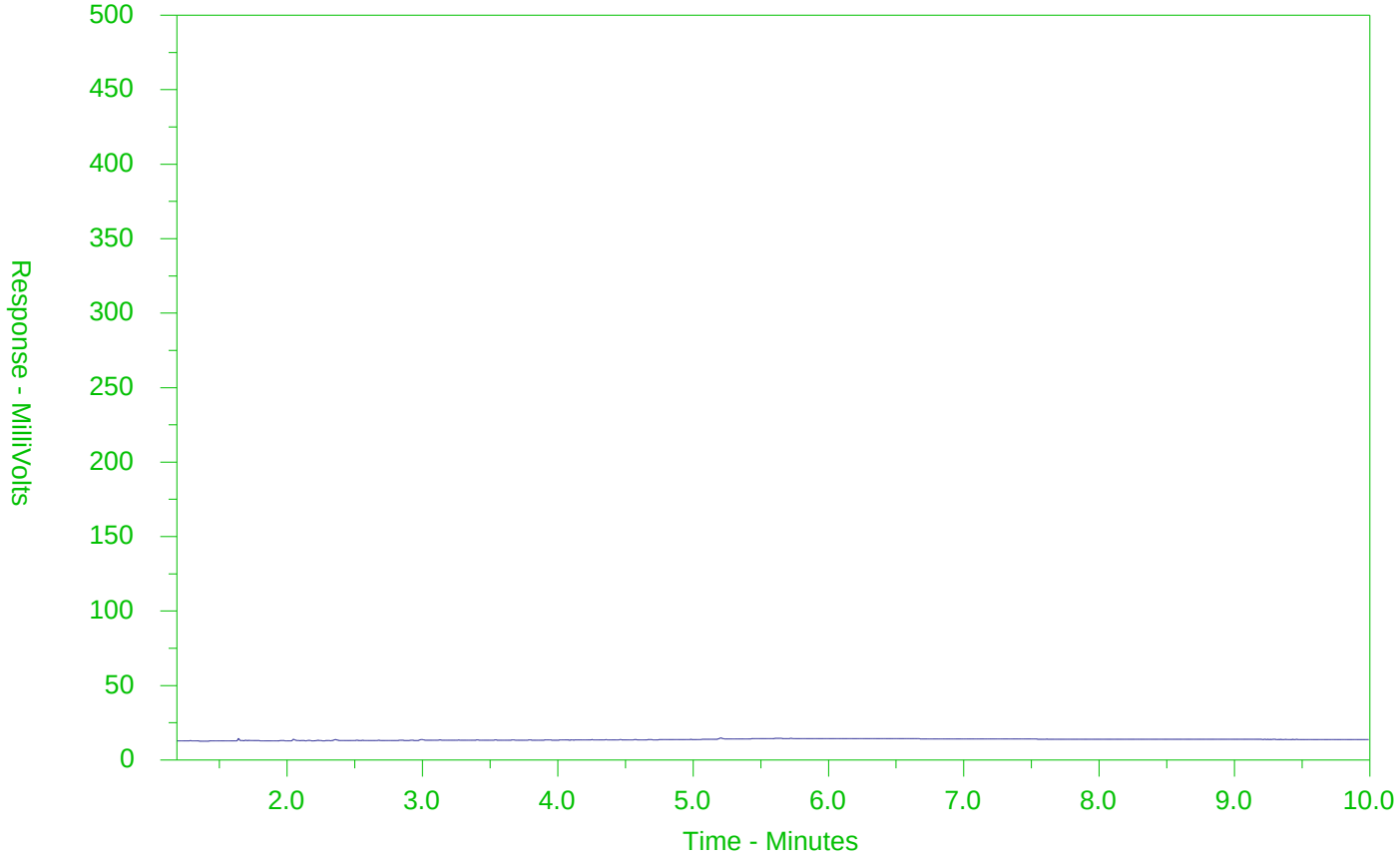
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1988005-2
Client Sample ID: OW07-32



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

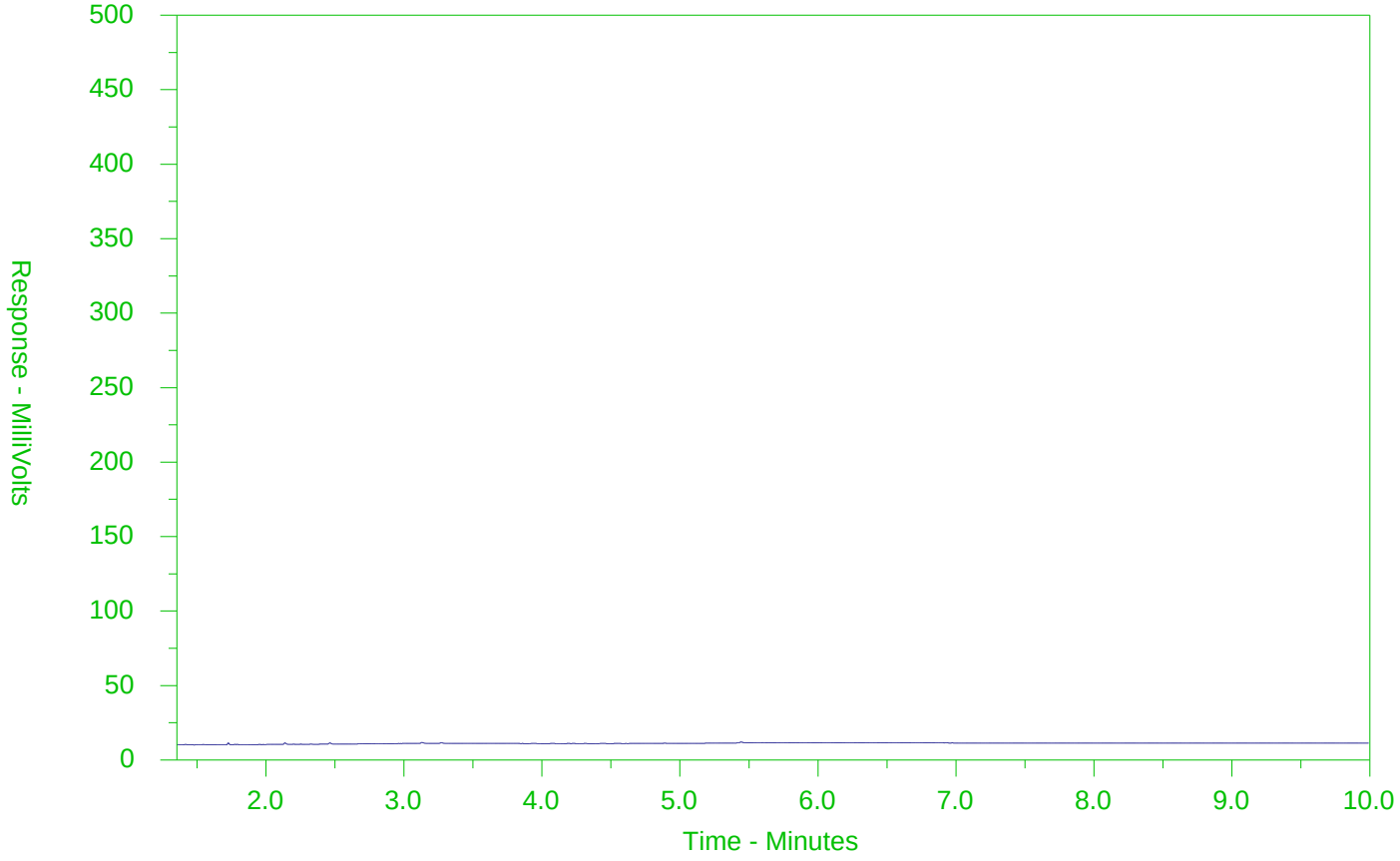
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1988005-3
Client Sample ID: OW03-I



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

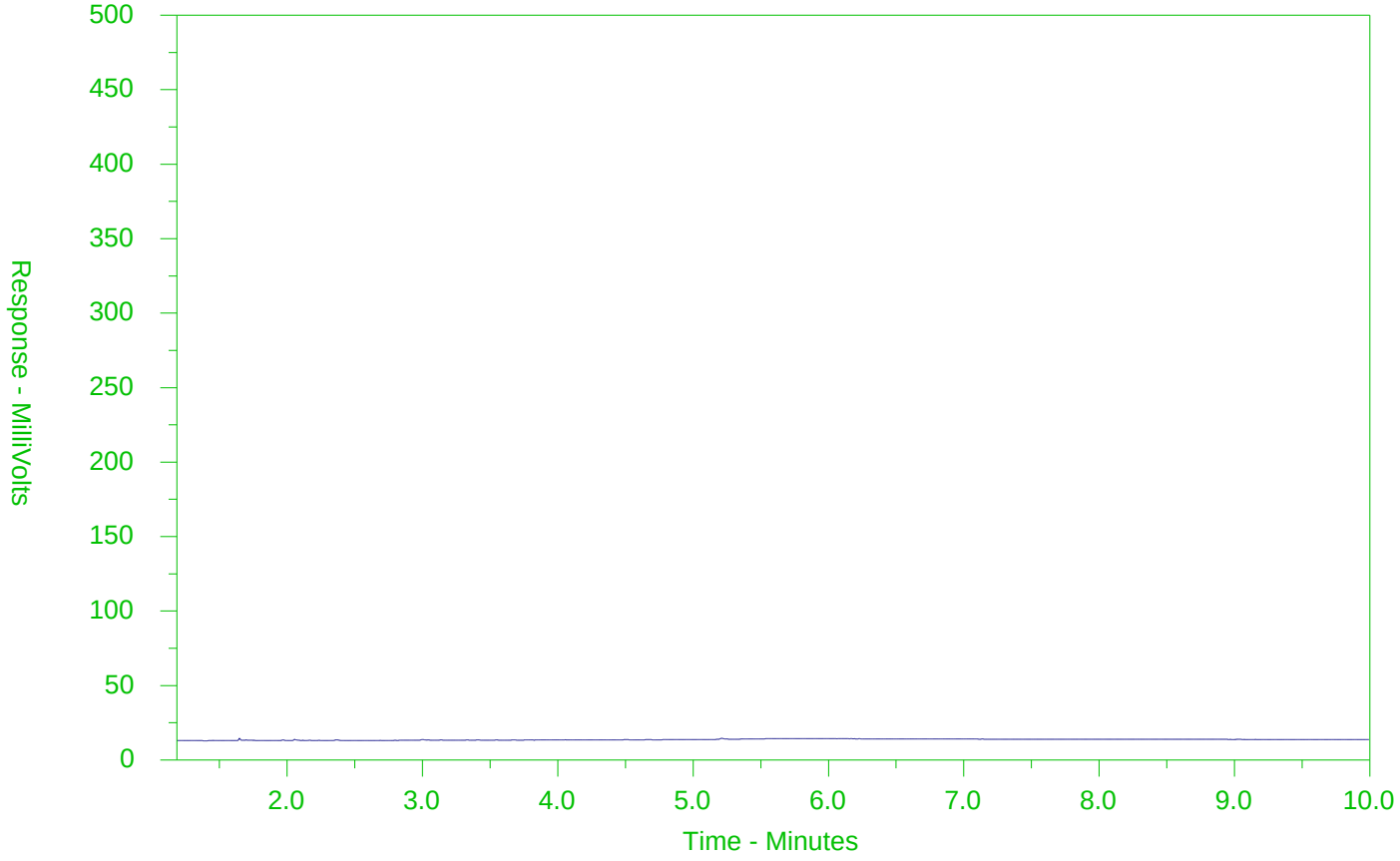
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1988005-4
Client Sample ID: OW03-II



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

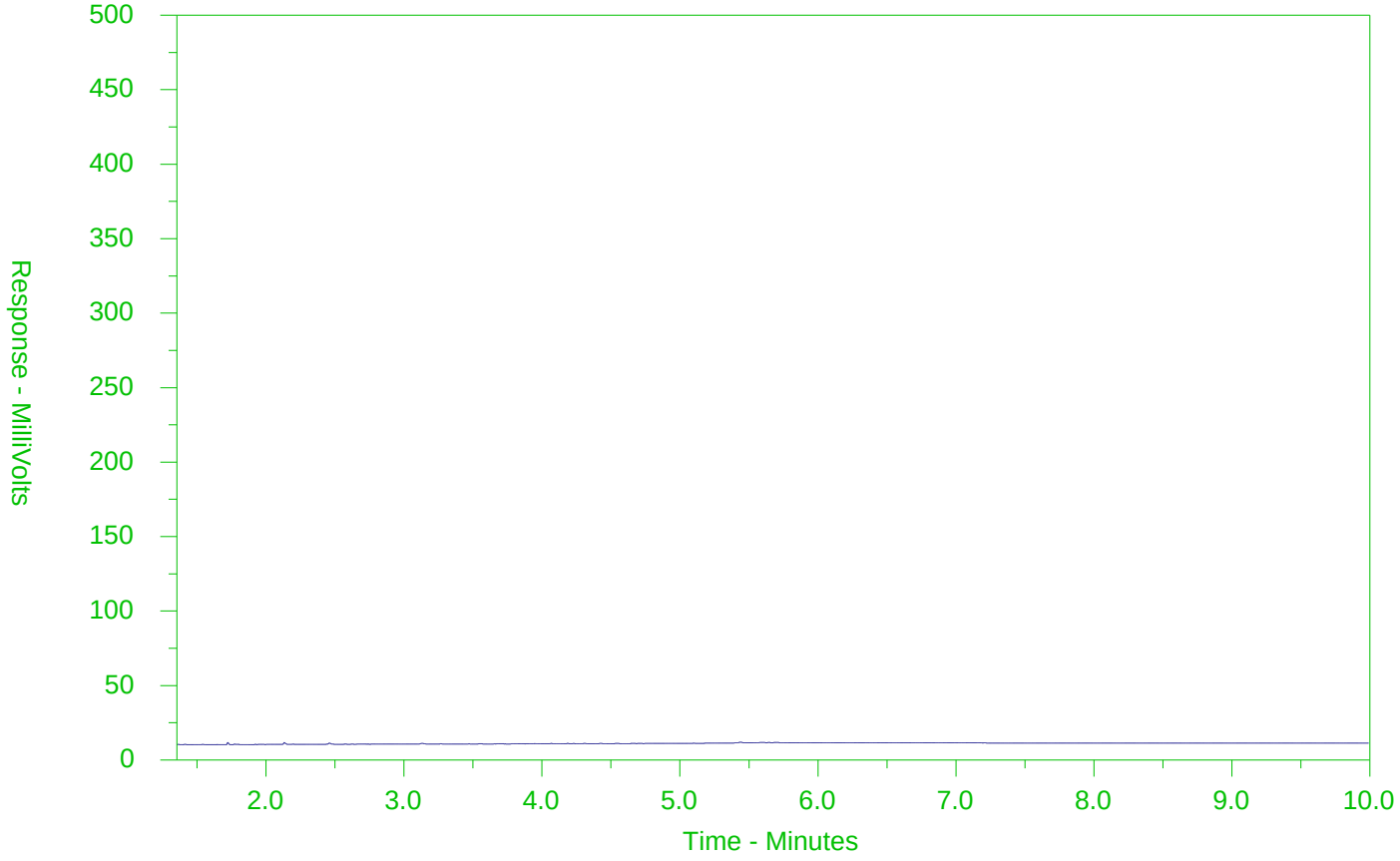
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1988005-5
Client Sample ID: OW07-38S



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

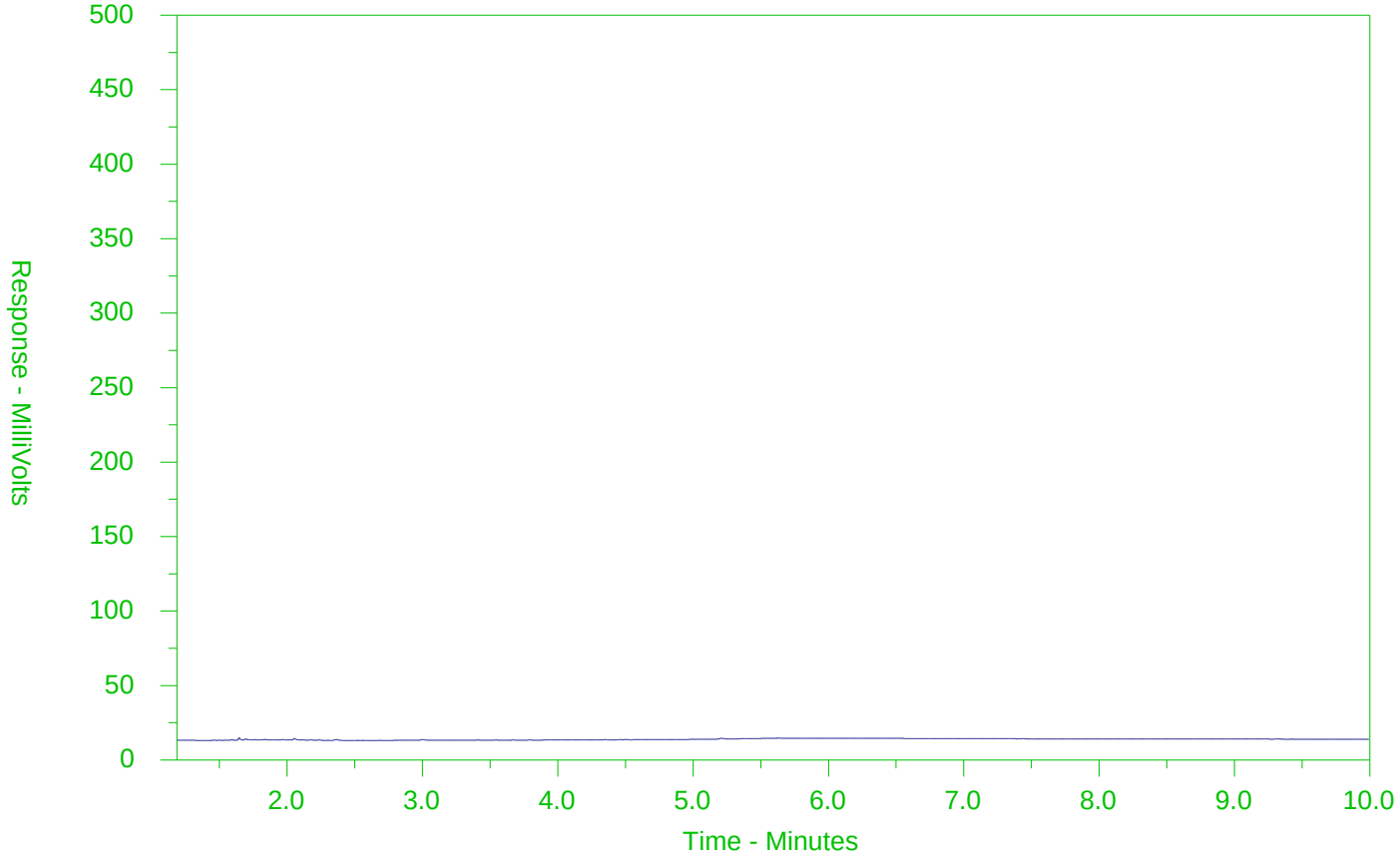
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1988005-6
Client Sample ID: OW22D



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

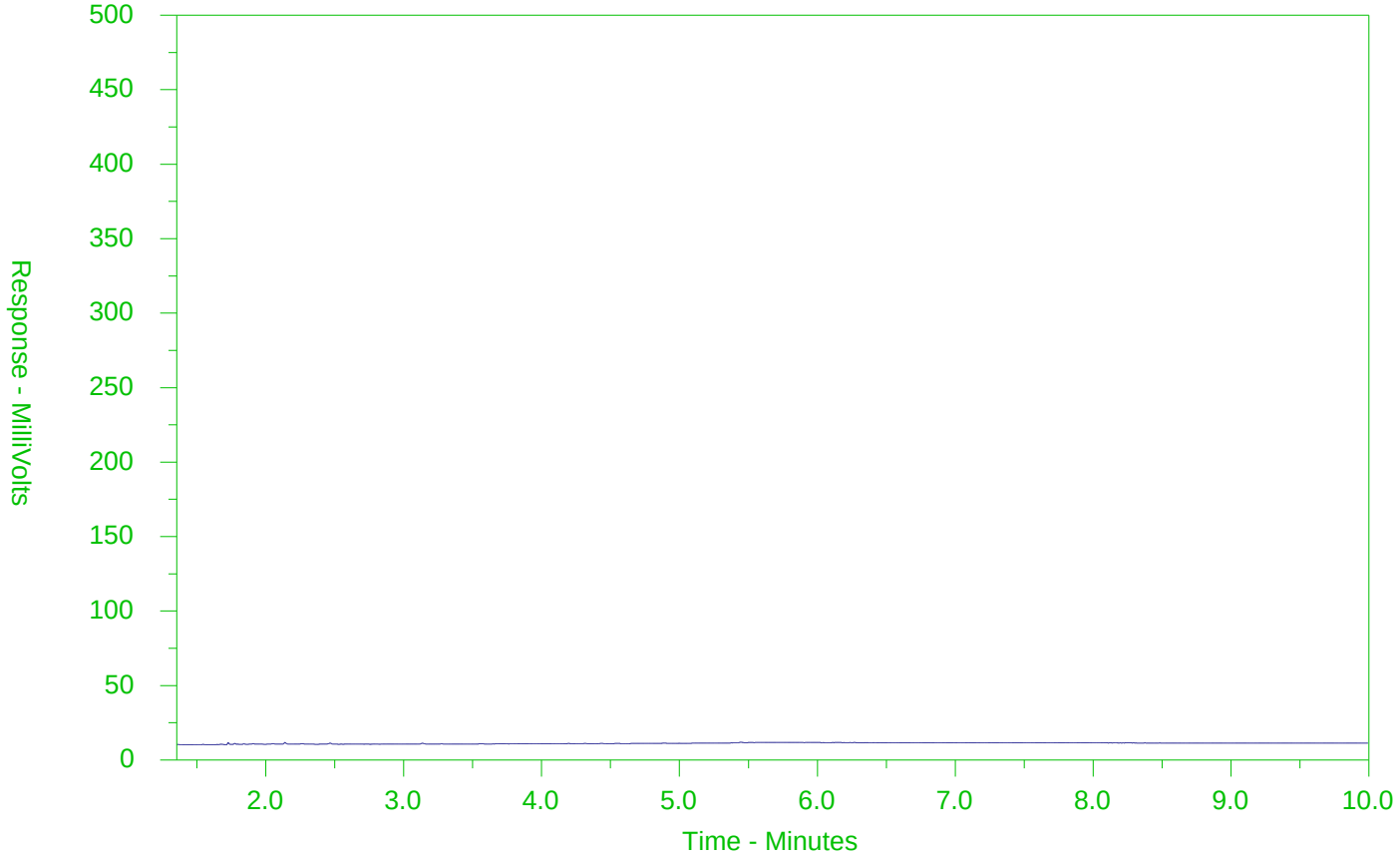
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1988005-7
Client Sample ID: DUP 4



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

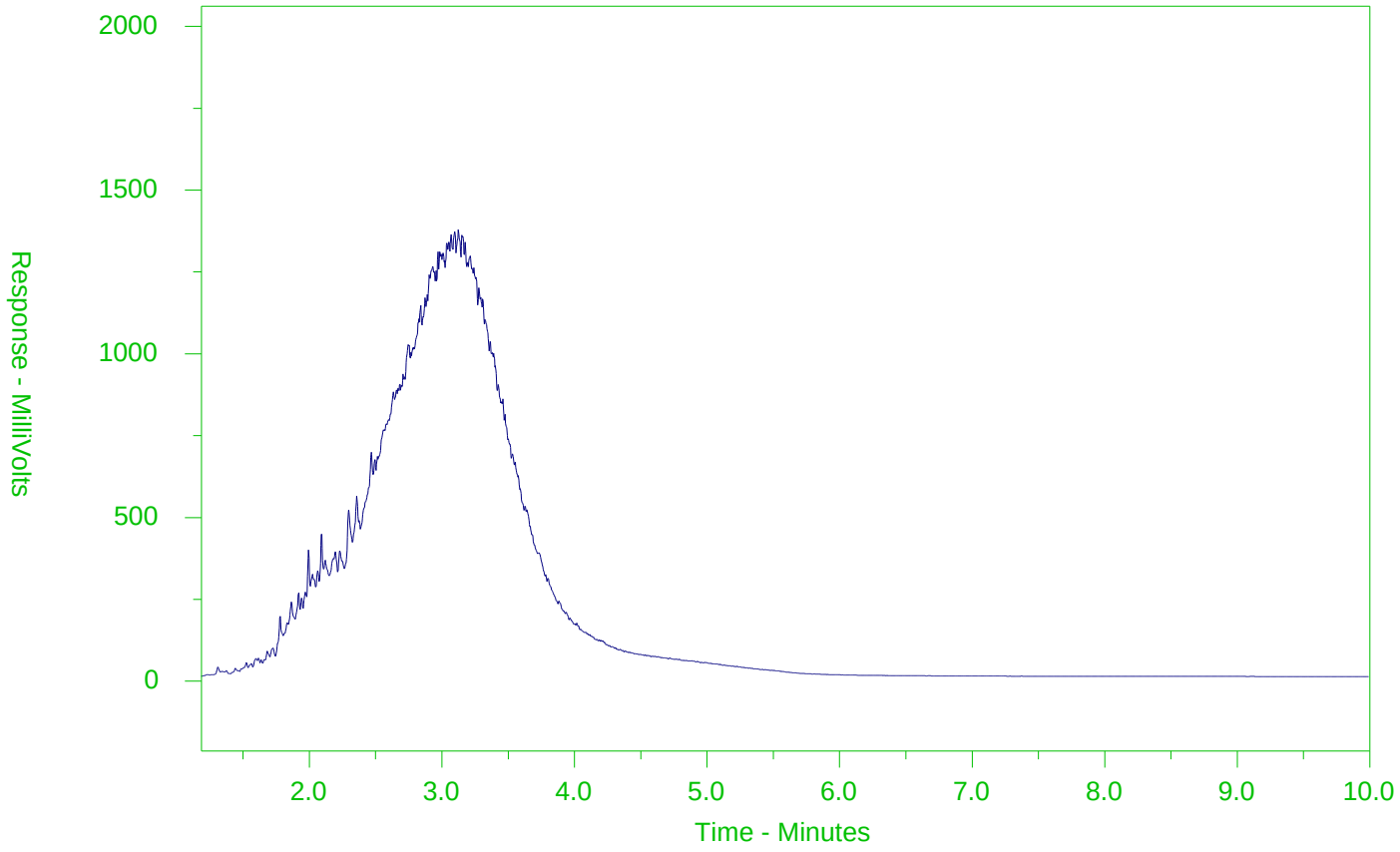
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1988005-8
Client Sample ID: OW22S



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

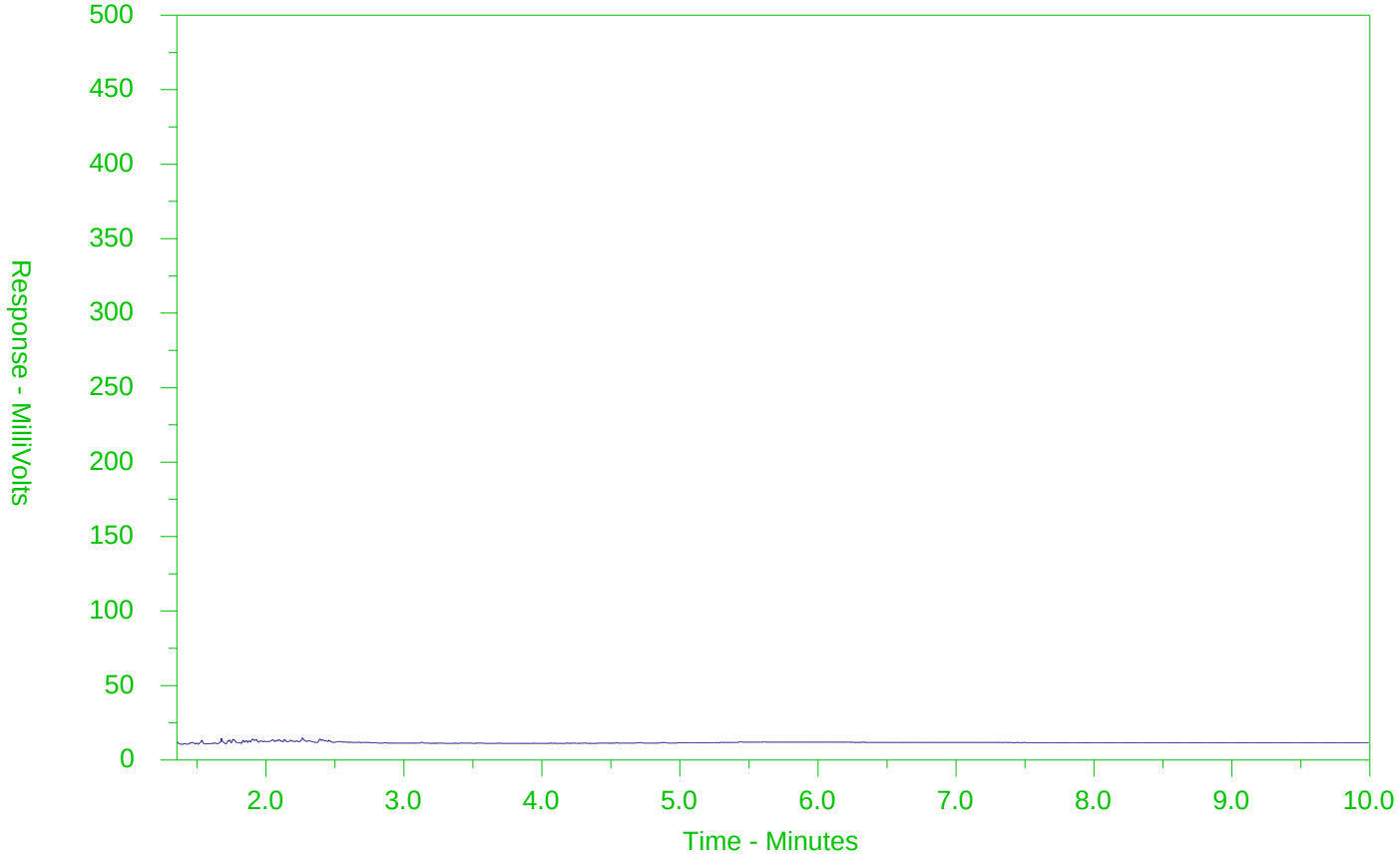
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1988005-9
Client Sample ID: OW19



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

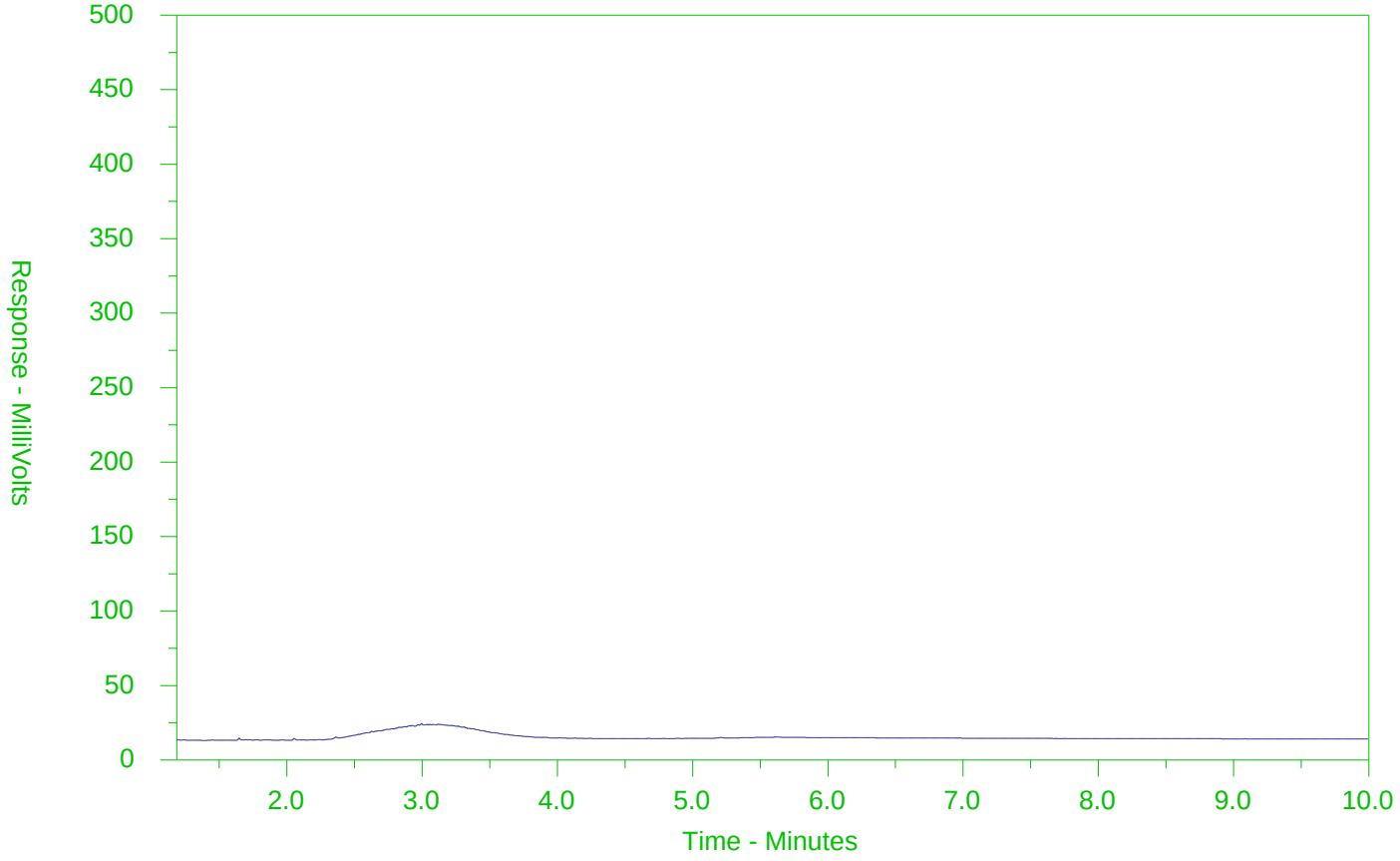
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1988005-10
Client Sample ID: OW23D



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

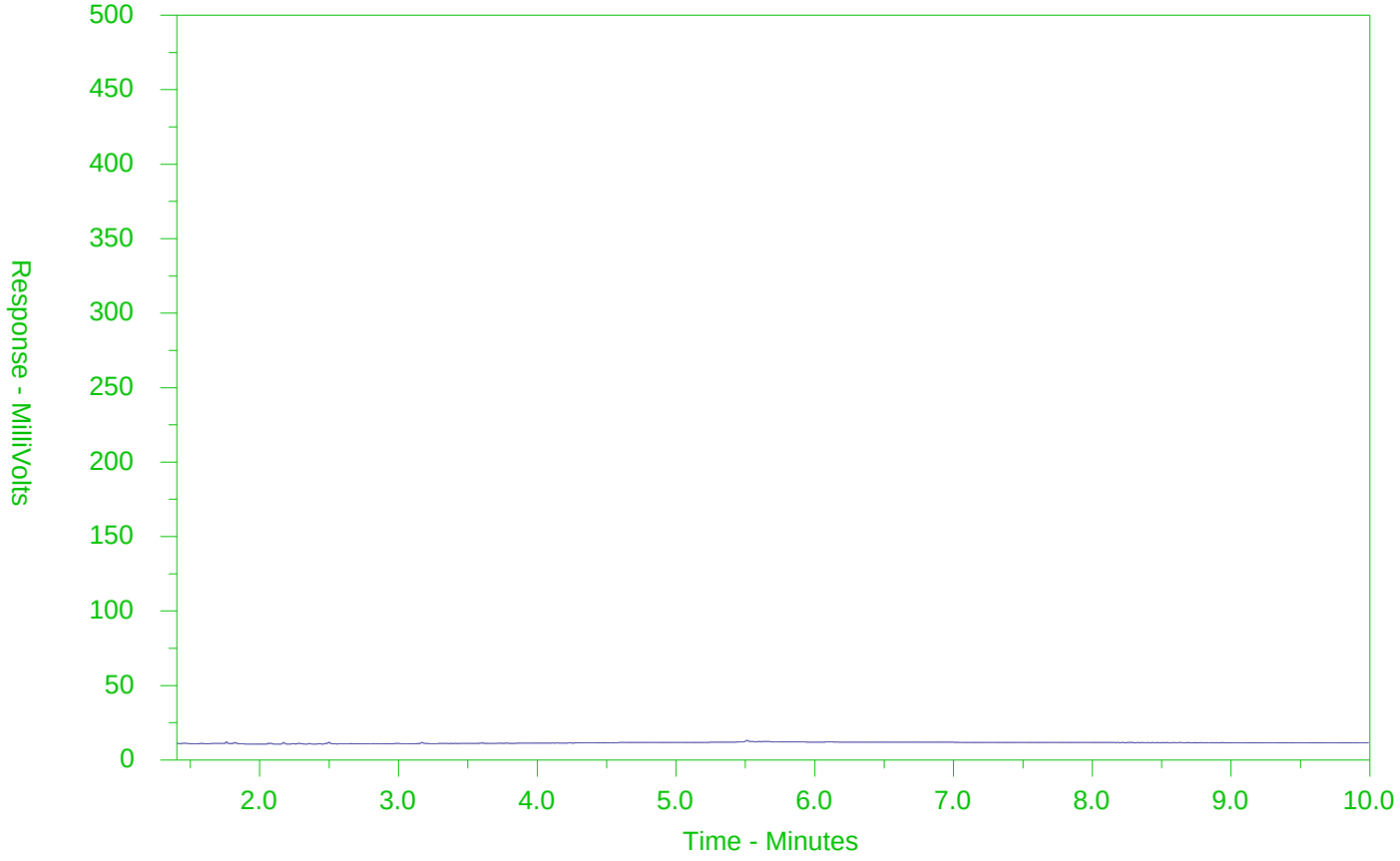
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1988005-11
Client Sample ID: OW13-39D



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

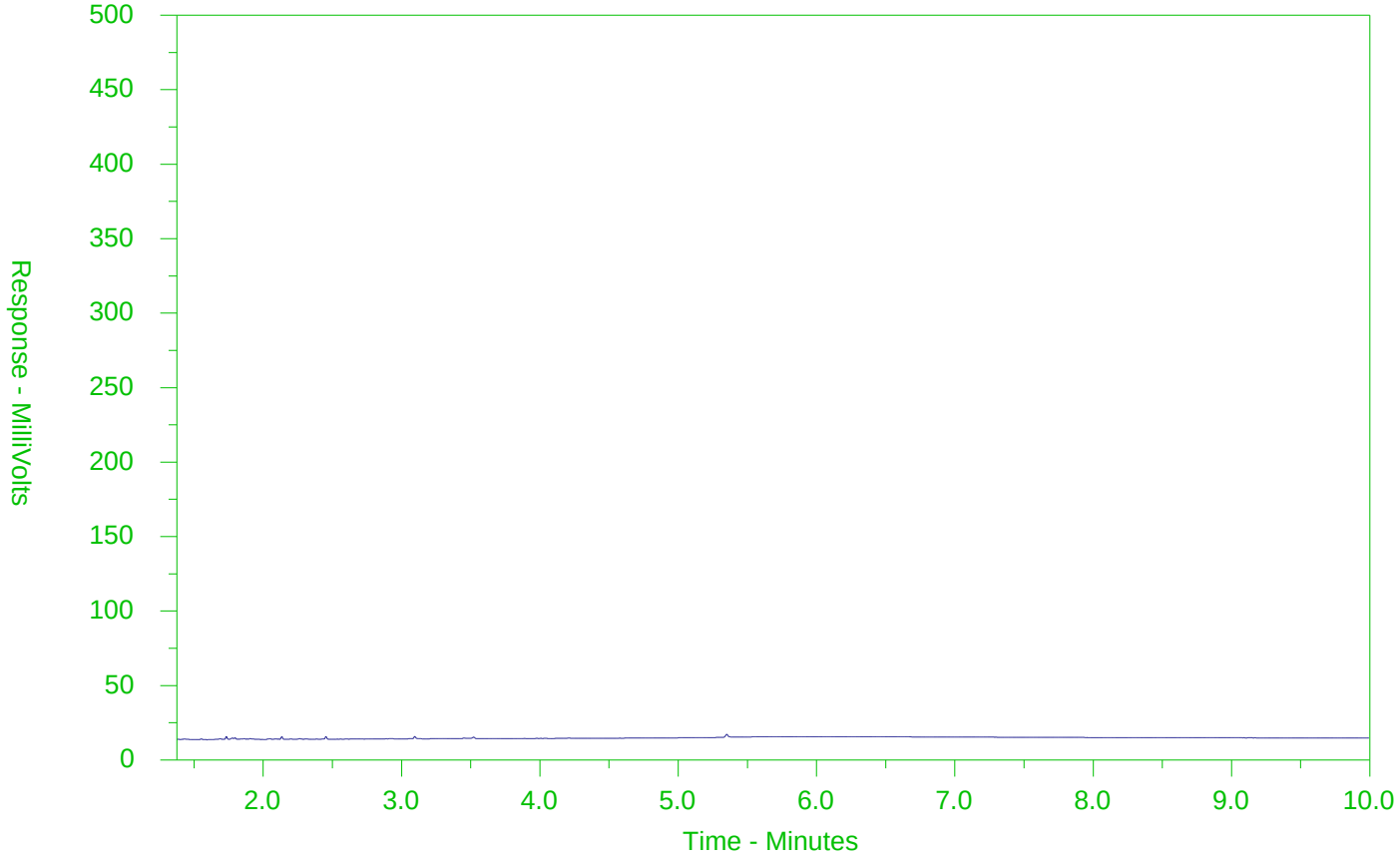
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1988005-12
Client Sample ID: OW13-39S



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

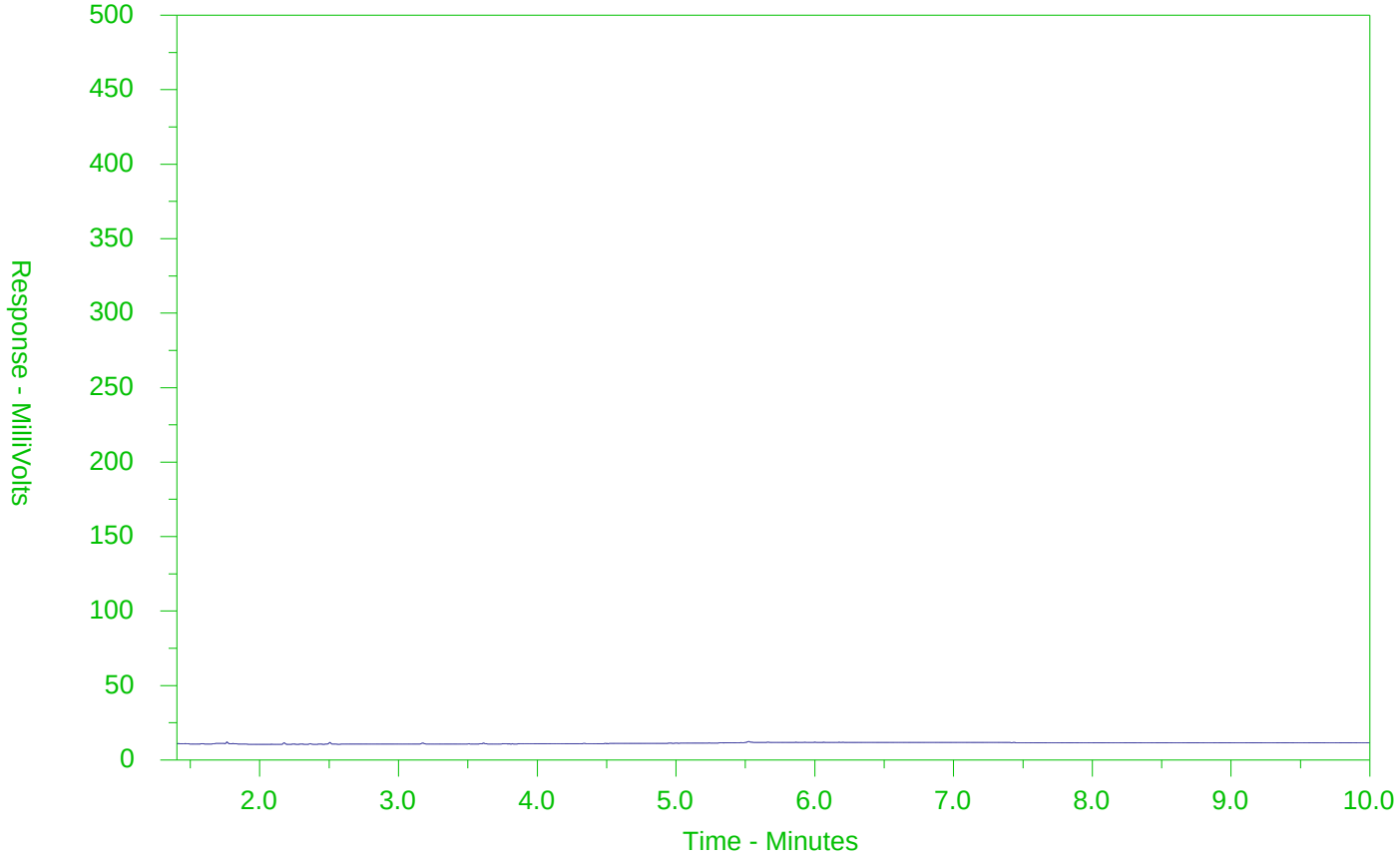
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1988005-13
Client Sample ID: OW24S



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

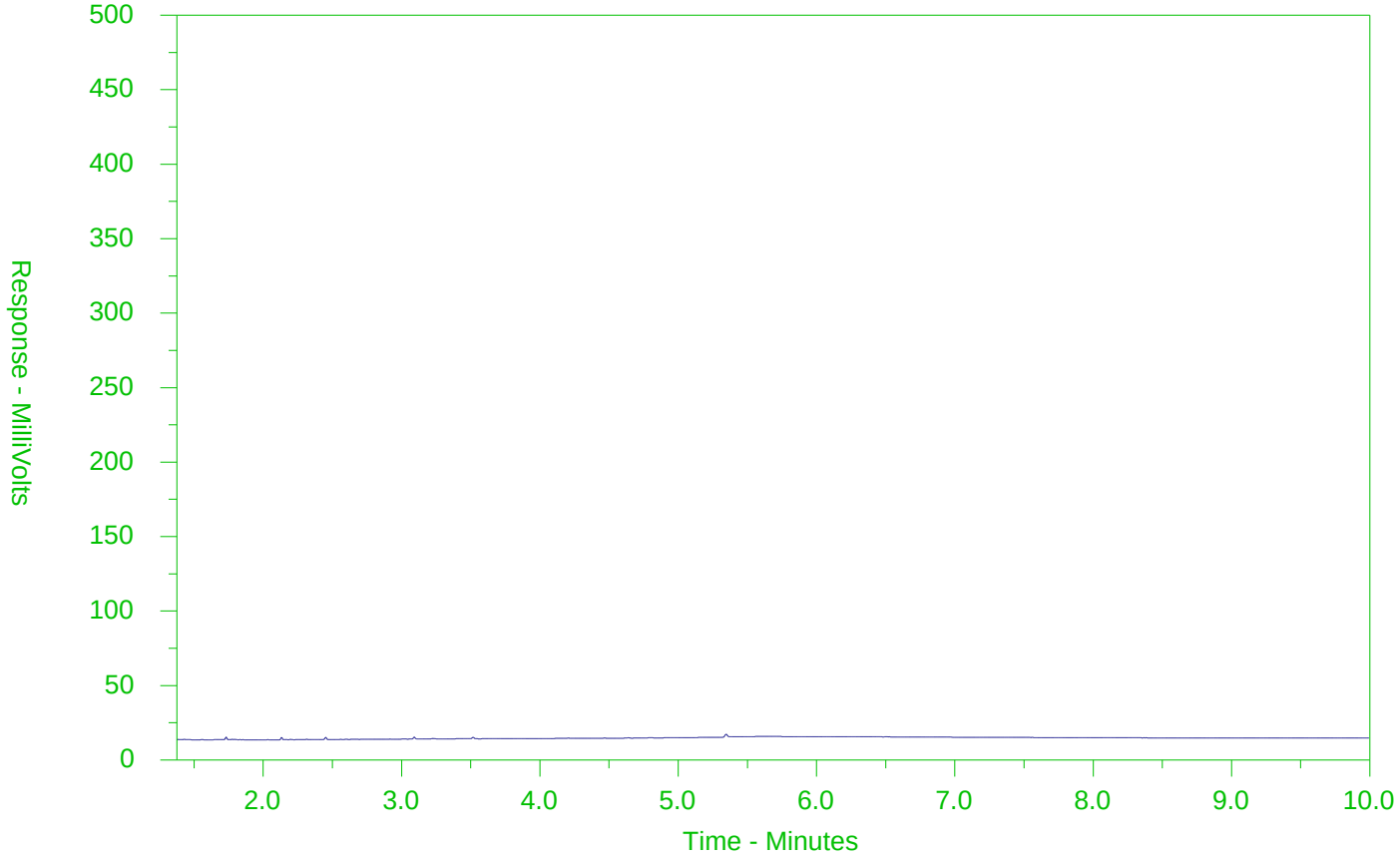
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1988005-14
Client Sample ID: OW24D



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L1988005-COFC

COC Number: 15 -

Report To	Contact and company name below will appear on the final report
Company:	CH2M Hill Kitchener
Contact:	Michael Shiry / Peter Mamo
Phone:	289 971 1779
	Company address below will appear on the final report
Street:	300-72 Victoria St. South
City/Province:	Kitchener, ON
Postal Code:	N2G 4Y9
Invoice To	Same as Report To ☐ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	CH2M Hill Kitchener
Contact:	Accounts Payable

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: Michael.Shiry@ch2m.com

Email 2: Peter.Mamo@ch2m.com

Email 3:

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax:

Email 2:

Project Information

ALS Account # / Quote #: Q62156

Job #: 694757

PO / AFE:

LSD: SEP 28A

Oil and Gas Required Fields (client use)

AFE/Cost Center:

PO#:

Major/Minor Code:

Routing Code:

Requisitioner:

Location:

ALS Lab Work Order # (lab use only): L1988005 a/

ALS Contact: Mathy

Sampler:

Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
4 day [P4]	☐	1 Business day [E1]	☐
3 day [P3]	☐	Same Day, Weekend or Statutory holiday [E0]	☐
2 day [P2]	☐		

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Metals & Inorganics (F)	SVOC	PAH	VOC, BTX, F1	F2-F4 - DW	1,4 Dioxane	PCB	VOC,F1 (Trip Blank)	Number of Containers
1	OW07-37	06-Sep-17	09:22	Water	✓	✓		✓	✓				13
2	OW07-32		10:35		✓		✓	✓	✓				12
3	OW03-1		11:57		✓	✓		✓	✓				13
4	OW03-11		12:55		✓		✓	✓	✓				12
5	OW07-38S		14:00		✓		✓	✓	✓		✓		14
6	OW22D		15:08		✓		✓	✓	✓	✓			15
7	Dup 4		—		✓		✓	✓	✓	✓			15
8	OW22S	06-Sep-17	1645	Water	✓		✓	✓	✓				12

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human drinking water use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☑ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☑

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
			12.4	9.2	

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Peter Mamo	Date: 17/09/07	Time: 1815	Received by:	Date:	Time:	Received by:	Date: 07/09/17	Time: 18:10

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L1988005-COFC

COC Number: 15 -

Report To	Contact and company name below will appear on the final report
Company:	CH2M Hill Kitchener
Contact:	Michael Shiry / Peter Mamo
Phone:	289 971 1779
	Company address below will appear on the final report
Street:	300-72 Victoria St. South
City/Province:	Kitchener, ON
Postal Code:	N2G 4Y9
Invoice To	Same as Report To ☐ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	CH2M Hill Kitchener
Contact:	Accounts Payable

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: Michael.Shiry@ch2m.com
Email 2: Peter.Mamo@ch2m.com
Email 3:

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax:
Email 2:

Project Information

ALS Account # / Quote #: Q62156
Job #: 694757
PO / AFE:
LSD: Sep 8A
ALS Lab Work Order # (lab use only): L1988005 af
ALS Contact: Mathy
Sampler:

Oil and Gas Required Fields (client use)

AFE/Cost Center:
PO#:
Major/Minor Code:
Routing Code:
Requisitioner:
Location:

Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
4 day [P4]	☐	1 Business day [E1]	☐
3 day [P3]	☐	Same Day, Weekend or Statutory holiday [E0]	☐
2 day [P2]	☐		

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Metals & Inorganics (F)	SVOC	PAH	VOC, BTX, F1	F2-F4	1,4 Dioxane	PCB	VOC, F1 (Trip Blank)						Number of Containers
9	OW19	07-Sep-17	9:23	Water	✓		✓	✓	✓									12
10	OW23D		10:25		✓		✓	✓	✓	✓								15
11	OW13-39D		12:06		✓			✓	✓	✓								13
12	OW13-39S		13:21		✓			✓	✓									10
13	OW24S		15:05		✓	✓		✓	✓		✓							15
14	OW24D		16:08		✓			✓	✓	✓								13
15	Trip Blank 5		—									✓						2
16	Trip Blank 6	07-Sep-17	—	Water								✓						2

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO
Are samples for human drinking water use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☑ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
			12.4	9.2	

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Peter Mamo	Date: 17/09/07	Time: 1815	Received by:	Date:	Time:	Received by:	Date: 07/09/17	Time: 14:20

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

CH2M HILL CANADA LIMITED
ATTN: MICHAEL SHIRY
72 VICTORIA ST SOUTH
SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 08-SEP-17
Report Date: 14-SEP-17 14:48 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L1988476

Project P.O. #:	NOT SUBMITTED
Job Reference:	694757
C of C Numbers:	15-GW0908
Legal Site Desc:	

Mathy Mahadeva
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988476-1 OW31 Sampled By: M.S. on 08-SEP-17 @ 10:50 Matrix: WATER							
Volatile Organic Compounds							
Acetone	<30		30	ug/L		11-SEP-17	R3823509
Benzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Bromodichloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823509
Bromoform	<5.0		5.0	ug/L		11-SEP-17	R3823509
Bromomethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
Carbon tetrachloride	<0.20		0.20	ug/L		11-SEP-17	R3823509
Chlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Dibromochloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823509
Chloroform	<1.0		1.0	ug/L		11-SEP-17	R3823509
1,2-Dibromoethane	<0.20		0.20	ug/L		11-SEP-17	R3823509
1,2-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,3-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,4-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Dichlorodifluoromethane	<2.0		2.0	ug/L		11-SEP-17	R3823509
1,1-Dichloroethane	0.64		0.50	ug/L		11-SEP-17	R3823509
1,2-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
cis-1,2-Dichloroethylene	1.98		0.50	ug/L		11-SEP-17	R3823509
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Methylene Chloride	<5.0		5.0	ug/L		11-SEP-17	R3823509
1,2-Dichloropropane	<0.50		0.50	ug/L		11-SEP-17	R3823509
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823509
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823509
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		11-SEP-17	
1,4-Dioxane	<20		20	ug/L		11-SEP-17	R3823509
Ethylbenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
n-Hexane	<0.50		0.50	ug/L		11-SEP-17	R3823509
Methyl Ethyl Ketone	<20		20	ug/L		11-SEP-17	R3823509
Methyl Isobutyl Ketone	<20		20	ug/L		11-SEP-17	R3823509
MTBE	<2.0		2.0	ug/L		11-SEP-17	R3823509
Styrene	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
Tetrachloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Toluene	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1,1-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1,2-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
Trichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Trichlorofluoromethane	<5.0		5.0	ug/L		11-SEP-17	R3823509
Vinyl chloride	<0.50		0.50	ug/L		11-SEP-17	R3823509
o-Xylene	<0.30		0.30	ug/L		11-SEP-17	R3823509

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988476-1 OW31 Sampled By: M.S. on 08-SEP-17 @ 10:50 Matrix: WATER							
Volatile Organic Compounds							
m+p-Xylenes	<0.40		0.40	ug/L		11-SEP-17	R3823509
Xylenes (Total)	<0.50		0.50	ug/L		11-SEP-17	
Surrogate: 4-Bromofluorobenzene	99.6		70-130	%		11-SEP-17	R3823509
Surrogate: 1,4-Difluorobenzene	101.5		70-130	%		11-SEP-17	R3823509
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		11-SEP-17	R3823509
F1-BTEX	<25		25	ug/L		11-SEP-17	
F2 (C10-C16)	<100		100	ug/L	14-SEP-17	14-SEP-17	R3828732
F3a (C16-C22)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828732
F3 (C16-C34)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828732
F3b (C22-C34)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828732
F4 (C34-C50)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828732
Chrom. to baseline at nC50	YES				14-SEP-17	14-SEP-17	R3828732
Surrogate: 2-Bromobenzotrifluoride	80.4		60-140	%	14-SEP-17	14-SEP-17	R3828732
Surrogate: 3,4-Dichlorotoluene	88.6		60-140	%		11-SEP-17	R3823509
L1988476-2 DUP Sampled By: M.S. on 08-SEP-17 @ 10:50 Matrix: WATER							
Volatile Organic Compounds							
Acetone	<30		30	ug/L		11-SEP-17	R3823509
Benzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Bromodichloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823509
Bromoform	<5.0		5.0	ug/L		11-SEP-17	R3823509
Bromomethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
Carbon tetrachloride	<0.20		0.20	ug/L		11-SEP-17	R3823509
Chlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Dibromochloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823509
Chloroform	<1.0		1.0	ug/L		11-SEP-17	R3823509
1,2-Dibromoethane	<0.20		0.20	ug/L		11-SEP-17	R3823509
1,2-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,3-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,4-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Dichlorodifluoromethane	<2.0		2.0	ug/L		11-SEP-17	R3823509
1,1-Dichloroethane	0.67		0.50	ug/L		11-SEP-17	R3823509
1,2-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
cis-1,2-Dichloroethylene	2.01		0.50	ug/L		11-SEP-17	R3823509
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Methylene Chloride	<5.0		5.0	ug/L		11-SEP-17	R3823509
1,2-Dichloropropane	<0.50		0.50	ug/L		11-SEP-17	R3823509
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823509
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823509

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988476-2 DUP Sampled By: M.S. on 08-SEP-17 @ 10:50 Matrix: WATER							
Volatile Organic Compounds							
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		11-SEP-17	
Ethylbenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
n-Hexane	<0.50		0.50	ug/L		11-SEP-17	R3823509
Methyl Ethyl Ketone	<20		20	ug/L		11-SEP-17	R3823509
Methyl Isobutyl Ketone	<20		20	ug/L		11-SEP-17	R3823509
MTBE	<2.0		2.0	ug/L		11-SEP-17	R3823509
Styrene	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
Tetrachloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Toluene	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1,1-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1,2-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
Trichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Trichlorofluoromethane	<5.0		5.0	ug/L		11-SEP-17	R3823509
Vinyl chloride	<0.50		0.50	ug/L		11-SEP-17	R3823509
o-Xylene	<0.30		0.30	ug/L		11-SEP-17	R3823509
m+p-Xylenes	<0.40		0.40	ug/L		11-SEP-17	R3823509
Xylenes (Total)	<0.50		0.50	ug/L		11-SEP-17	
Surrogate: 4-Bromofluorobenzene	98.4		70-130	%		11-SEP-17	R3823509
Surrogate: 1,4-Difluorobenzene	101.5		70-130	%		11-SEP-17	R3823509
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		11-SEP-17	R3823509
F1-BTEX	<25		25	ug/L		11-SEP-17	
F2 (C10-C16)	<100		100	ug/L	14-SEP-17	14-SEP-17	R3828732
F3a (C16-C22)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828732
F3 (C16-C34)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828732
F3b (C22-C34)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828732
F4 (C34-C50)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828732
Chrom. to baseline at nC50	YES				14-SEP-17	14-SEP-17	R3828732
Surrogate: 2-Bromobenzotrifluoride	86.6		60-140	%	14-SEP-17	14-SEP-17	R3828732
Surrogate: 3,4-Dichlorotoluene	85.9		60-140	%		11-SEP-17	R3823509
L1988476-3 TRIP BLANK Sampled By: M.S. on 08-SEP-17 @ 10:50 Matrix: WATER							
Volatile Organic Compounds							
Acetone	<30		30	ug/L		11-SEP-17	R3823509
Benzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Bromodichloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823509
Bromoform	<5.0		5.0	ug/L		11-SEP-17	R3823509
Bromomethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
Carbon tetrachloride	<0.20		0.20	ug/L		11-SEP-17	R3823509

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988476-3 TRIP BLANK Sampled By: M.S. on 08-SEP-17 @ 10:50 Matrix: WATER							
Volatile Organic Compounds							
Chlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Dibromochloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823509
Chloroform	<1.0		1.0	ug/L		11-SEP-17	R3823509
1,2-Dibromoethane	<0.20		0.20	ug/L		11-SEP-17	R3823509
1,2-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,3-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,4-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Dichlorodifluoromethane	<2.0		2.0	ug/L		11-SEP-17	R3823509
1,1-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,2-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Methylene Chloride	<5.0		5.0	ug/L		11-SEP-17	R3823509
1,2-Dichloropropane	<0.50		0.50	ug/L		11-SEP-17	R3823509
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823509
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823509
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		11-SEP-17	
Ethylbenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
n-Hexane	<0.50		0.50	ug/L		11-SEP-17	R3823509
Methyl Ethyl Ketone	<20		20	ug/L		11-SEP-17	R3823509
Methyl Isobutyl Ketone	<20		20	ug/L		11-SEP-17	R3823509
MTBE	<2.0		2.0	ug/L		11-SEP-17	R3823509
Styrene	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
Tetrachloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Toluene	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1,1-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1,2-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
Trichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Trichlorofluoromethane	<5.0		5.0	ug/L		11-SEP-17	R3823509
Vinyl chloride	<0.50		0.50	ug/L		11-SEP-17	R3823509
o-Xylene	<0.30		0.30	ug/L		11-SEP-17	R3823509
m+p-Xylenes	<0.40		0.40	ug/L		11-SEP-17	R3823509
Xylenes (Total)	<0.50		0.50	ug/L		11-SEP-17	
Surrogate: 4-Bromofluorobenzene	97.3		70-130	%		11-SEP-17	R3823509
Surrogate: 1,4-Difluorobenzene	101.0		70-130	%		11-SEP-17	R3823509
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		11-SEP-17	R3823509
F1-BTEX	<25		25	ug/L		11-SEP-17	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988476-3 TRIP BLANK Sampled By: M.S. on 08-SEP-17 @ 10:50 Matrix: WATER							
Hydrocarbons							
Surrogate: 3,4-Dichlorotoluene	89.0		60-140	%		11-SEP-17	R3823509

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Qualifiers for Sample Submission Listed:

Qualifier	Description
CINT	Cooling initiated. Samples were received packed with ice or ice packs and were sampled the same day as received.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
1,4-DIOXANE-WT	Water	1,4-Dioxane by Headspace GC/MS	SW846 8260

An aliquot of the sample is analyzed directly by headspace technology, followed by GC/MS using isotopic dilution.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-F4-511-CALC-WT	Water	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-L

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Water	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-UW-WT	Water	F2-F4 (O.Reg.153/04)	MOE DECPH-E3398/CCME TIER 1
VOC-1,3-DCP-CALC-WT	Water	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Water	VOC by GCMS HS O.Reg 153/04 (July 2011)	SW846 8260

Liquid samples are analyzed by headspace GC/MSD.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

15-GW0908

Reference Information

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L1988476 Report Date: 14-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
1,4-DIOXANE-WT	**Water**							
Batch R3823509								
WG2594560-4 DUP		**WG2594560-3**						
1,4-Dioxane		<20	<20	RPD-NA	ug/L	N/A	30	11-SEP-17
WG2594560-1 LCS								
1,4-Dioxane			96.8		%		60-140	11-SEP-17
WG2594560-2 MB								
1,4-Dioxane			<20		ug/L		20	11-SEP-17
WG2594560-5 MS		**WG2594560-3**						
1,4-Dioxane			94.6		%		50-140	11-SEP-17
F1-HS-511-WT	**Water**							
Batch R3823509								
WG2594560-4 DUP		**WG2594560-3**						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	11-SEP-17
WG2594560-1 LCS								
F1 (C6-C10)			103.1		%		80-120	11-SEP-17
WG2594560-2 MB								
F1 (C6-C10)			<25		ug/L		25	11-SEP-17
Surrogate: 3,4-Dichlorotoluene			87.8		%		60-140	11-SEP-17
WG2594560-5 MS		**WG2594560-3**						
F1 (C6-C10)			88.7		%		60-140	11-SEP-17
F2-F4-UW-WT	**Water**							
Batch R3828732								
WG2615892-2 LCS								
F2 (C10-C16)			98.3		%		70-130	14-SEP-17
F3a (C16-C22)			96.6		%		70-130	14-SEP-17
F3b (C22-C34)			94.0		%		70-130	14-SEP-17
F3 (C16-C34)			95.5		%		70-130	14-SEP-17
F4 (C34-C50)			108.7		%		70-130	14-SEP-17
WG2615892-3 LCSD		**WG2615892-2**						
F2 (C10-C16)		98.3	107.1		%	8.6	50	14-SEP-17
F3a (C16-C22)		96.6	105.4		%	8.6	50	14-SEP-17
F3b (C22-C34)		94.0	106.7		%	13	50	14-SEP-17
F3 (C16-C34)		95.5	105.9		%	10	50	14-SEP-17
F4 (C34-C50)		108.7	114.5		%	5.2	50	14-SEP-17
WG2615892-1 MB								
F2 (C10-C16)			<100		ug/L		100	14-SEP-17
F3a (C16-C22)			<130		ug/L		125	14-SEP-17

Quality Control Report

Workorder: L1988476 Report Date: 14-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-UW-WT	**Water**							
Batch R3828732								
WG2615892-1 MB								
F3b (C22-C34)			<130		ug/L		125	14-SEP-17
F3 (C16-C34)			<250		ug/L		250	14-SEP-17
F4 (C34-C50)			<250		ug/L		250	14-SEP-17
Surrogate: 2-Bromobenzotrifluoride			84.2		%		60-140	14-SEP-17
VOC-511-HS-WT	**Water**							
Batch R3823509								
WG2594560-4 DUP		**WG2594560-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	11-SEP-17
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	11-SEP-17
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	11-SEP-17
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	11-SEP-17
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	11-SEP-17
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	11-SEP-17
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	11-SEP-17
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	11-SEP-17
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	11-SEP-17
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17

Quality Control Report

Workorder: L1988476 Report Date: 14-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3823509								
WG2594560-4 DUP		**WG2594560-3**						
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	11-SEP-17
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	11-SEP-17
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	11-SEP-17
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	11-SEP-17
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	11-SEP-17
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	11-SEP-17
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	11-SEP-17
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	11-SEP-17
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
WG2594560-1 LCS								
1,1,1,2-Tetrachloroethane			91.5		%		70-130	11-SEP-17
1,1,2,2-Tetrachloroethane			85.1		%		70-130	11-SEP-17
1,1,1-Trichloroethane			91.2		%		70-130	11-SEP-17
1,1,2-Trichloroethane			93.5		%		70-130	11-SEP-17
1,1-Dichloroethane			92.1		%		70-130	11-SEP-17
1,1-Dichloroethylene			83.7		%		70-130	11-SEP-17
1,2-Dibromoethane			92.1		%		70-130	11-SEP-17
1,2-Dichlorobenzene			90.0		%		70-130	11-SEP-17
1,2-Dichloroethane			91.2		%		70-130	11-SEP-17
1,2-Dichloropropane			95.6		%		70-130	11-SEP-17
1,3-Dichlorobenzene			87.1		%		70-130	11-SEP-17
1,4-Dichlorobenzene			89.8		%		70-130	11-SEP-17
Acetone			102.9		%		60-140	11-SEP-17
Benzene			94.7		%		70-130	11-SEP-17
Bromodichloromethane			92.3		%		70-130	11-SEP-17
Bromoform			88.0		%		70-130	11-SEP-17
Bromomethane			90.5		%		60-140	11-SEP-17
Carbon tetrachloride			90.5		%		70-130	11-SEP-17

Quality Control Report

Workorder: L1988476 Report Date: 14-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3823509								
WG2594560-1 LCS								
Chlorobenzene			91.5		%		70-130	11-SEP-17
Chloroform			94.2		%		70-130	11-SEP-17
cis-1,2-Dichloroethylene			92.2		%		70-130	11-SEP-17
cis-1,3-Dichloropropene			83.1		%		70-130	11-SEP-17
Dibromochloromethane			96.5		%		70-130	11-SEP-17
Dichlorodifluoromethane			94.5		%		50-140	11-SEP-17
Ethylbenzene			88.7		%		70-130	11-SEP-17
n-Hexane			102.2		%		70-130	11-SEP-17
m+p-Xylenes			89.9		%		70-130	11-SEP-17
Methyl Ethyl Ketone			82.8		%		60-140	11-SEP-17
Methyl Isobutyl Ketone			82.1		%		60-140	11-SEP-17
Methylene Chloride			94.5		%		70-130	11-SEP-17
MTBE			93.2		%		70-130	11-SEP-17
o-Xylene			90.3		%		70-130	11-SEP-17
Styrene			88.0		%		70-130	11-SEP-17
Tetrachloroethylene			87.6		%		70-130	11-SEP-17
Toluene			90.4		%		70-130	11-SEP-17
trans-1,2-Dichloroethylene			90.1		%		70-130	11-SEP-17
trans-1,3-Dichloropropene			83.4		%		70-130	11-SEP-17
Trichloroethylene			91.6		%		70-130	11-SEP-17
Trichlorofluoromethane			91.7		%		60-140	11-SEP-17
Vinyl chloride			85.7		%		60-140	11-SEP-17
WG2594560-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	11-SEP-17
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	11-SEP-17
1,1,1-Trichloroethane			<0.50		ug/L		0.5	11-SEP-17
1,1,2-Trichloroethane			<0.50		ug/L		0.5	11-SEP-17
1,1-Dichloroethane			<0.50		ug/L		0.5	11-SEP-17
1,1-Dichloroethylene			<0.50		ug/L		0.5	11-SEP-17
1,2-Dibromoethane			<0.20		ug/L		0.2	11-SEP-17
1,2-Dichlorobenzene			<0.50		ug/L		0.5	11-SEP-17
1,2-Dichloroethane			<0.50		ug/L		0.5	11-SEP-17
1,2-Dichloropropane			<0.50		ug/L		0.5	11-SEP-17
1,3-Dichlorobenzene			<0.50		ug/L		0.5	11-SEP-17

Quality Control Report

Workorder: L1988476 Report Date: 14-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3823509								
WG2594560-2 MB								
1,4-Dichlorobenzene			<0.50		ug/L		0.5	11-SEP-17
Acetone			<30		ug/L		30	11-SEP-17
Benzene			<0.50		ug/L		0.5	11-SEP-17
Bromodichloromethane			<2.0		ug/L		2	11-SEP-17
Bromoform			<5.0		ug/L		5	11-SEP-17
Bromomethane			<0.50		ug/L		0.5	11-SEP-17
Carbon tetrachloride			<0.20		ug/L		0.2	11-SEP-17
Chlorobenzene			<0.50		ug/L		0.5	11-SEP-17
Chloroform			<1.0		ug/L		1	11-SEP-17
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	11-SEP-17
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	11-SEP-17
Dibromochloromethane			<2.0		ug/L		2	11-SEP-17
Dichlorodifluoromethane			<2.0		ug/L		2	11-SEP-17
Ethylbenzene			<0.50		ug/L		0.5	11-SEP-17
n-Hexane			<0.50		ug/L		0.5	11-SEP-17
m+p-Xylenes			<0.40		ug/L		0.4	11-SEP-17
Methyl Ethyl Ketone			<20		ug/L		20	11-SEP-17
Methyl Isobutyl Ketone			<20		ug/L		20	11-SEP-17
Methylene Chloride			<5.0		ug/L		5	11-SEP-17
MTBE			<2.0		ug/L		2	11-SEP-17
o-Xylene			<0.30		ug/L		0.3	11-SEP-17
Styrene			<0.50		ug/L		0.5	11-SEP-17
Tetrachloroethylene			<0.50		ug/L		0.5	11-SEP-17
Toluene			<0.50		ug/L		0.5	11-SEP-17
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	11-SEP-17
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	11-SEP-17
Trichloroethylene			<0.50		ug/L		0.5	11-SEP-17
Trichlorofluoromethane			<5.0		ug/L		5	11-SEP-17
Vinyl chloride			<0.50		ug/L		0.5	11-SEP-17
Surrogate: 1,4-Difluorobenzene			101.8		%		70-130	11-SEP-17
Surrogate: 4-Bromofluorobenzene			98.6		%		70-130	11-SEP-17
WG2594560-5 MS		**WG2594560-3**						
1,1,1,2-Tetrachloroethane			90.1		%		50-140	11-SEP-17
1,1,2,2-Tetrachloroethane			89.6		%		50-140	11-SEP-17

Quality Control Report

Workorder: L1988476 Report Date: 14-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3823509								
WG2594560-5 MS		**WG2594560-3**						
1,1,1-Trichloroethane			88.0		%		50-140	11-SEP-17
1,1,2-Trichloroethane			94.6		%		50-140	11-SEP-17
1,1-Dichloroethane			91.4		%		50-140	11-SEP-17
1,1-Dichloroethylene			79.0		%		50-140	11-SEP-17
1,2-Dibromoethane			93.9		%		50-140	11-SEP-17
1,2-Dichlorobenzene			90.0		%		50-140	11-SEP-17
1,2-Dichloroethane			95.5		%		50-140	11-SEP-17
1,2-Dichloropropane			98.1		%		50-140	11-SEP-17
1,3-Dichlorobenzene			87.8		%		50-140	11-SEP-17
1,4-Dichlorobenzene			91.0		%		50-140	11-SEP-17
Acetone			100.2		%		50-140	11-SEP-17
Benzene			94.6		%		50-140	11-SEP-17
Bromodichloromethane			94.9		%		50-140	11-SEP-17
Bromoform			89.2		%		50-140	11-SEP-17
Bromomethane			89.1		%		50-140	11-SEP-17
Carbon tetrachloride			86.4		%		50-140	11-SEP-17
Chlorobenzene			90.8		%		50-140	11-SEP-17
Chloroform			94.8		%		50-140	11-SEP-17
cis-1,2-Dichloroethylene			92.9		%		50-140	11-SEP-17
cis-1,3-Dichloropropene			92.9		%		50-140	11-SEP-17
Dibromochloromethane			96.6		%		50-140	11-SEP-17
Dichlorodifluoromethane			79.0		%		50-140	11-SEP-17
Ethylbenzene			85.6		%		50-140	11-SEP-17
n-Hexane			91.7		%		50-140	11-SEP-17
m+p-Xylenes			88.0		%		50-140	11-SEP-17
Methyl Ethyl Ketone			87.7		%		50-140	11-SEP-17
Methyl Isobutyl Ketone			89.1		%		50-140	11-SEP-17
Methylene Chloride			95.9		%		50-140	11-SEP-17
MTBE			93.0		%		50-140	11-SEP-17
o-Xylene			87.7		%		50-140	11-SEP-17
Styrene			87.1		%		50-140	11-SEP-17
Tetrachloroethylene			84.9		%		50-140	11-SEP-17
Toluene			87.2		%		50-140	11-SEP-17

Quality Control Report

Workorder: L1988476 Report Date: 14-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3823509								
WG2594560-5 MS		**WG2594560-3**						
trans-1,2-Dichloroethylene			91.0		%		50-140	11-SEP-17
trans-1,3-Dichloropropene			91.7		%		50-140	11-SEP-17
Trichloroethylene			91.8		%		50-140	11-SEP-17
Trichlorofluoromethane			83.3		%		50-140	11-SEP-17
Vinyl chloride			77.7		%		50-140	11-SEP-17

Quality Control Report

Workorder: L1988476 Report Date: 14-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9
Contact: MICHAEL SHIRY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

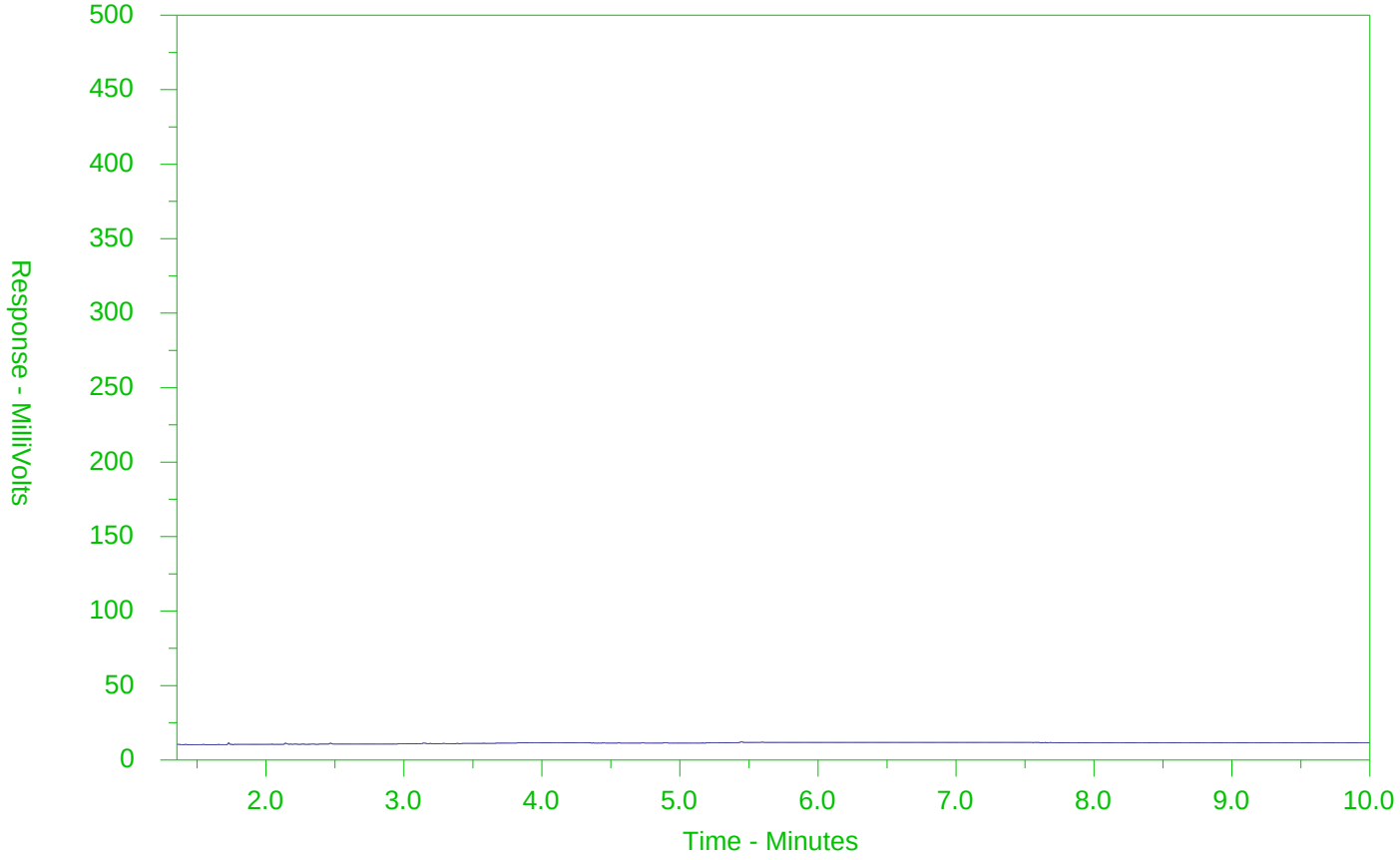
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1988476-1
Client Sample ID: OW31



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

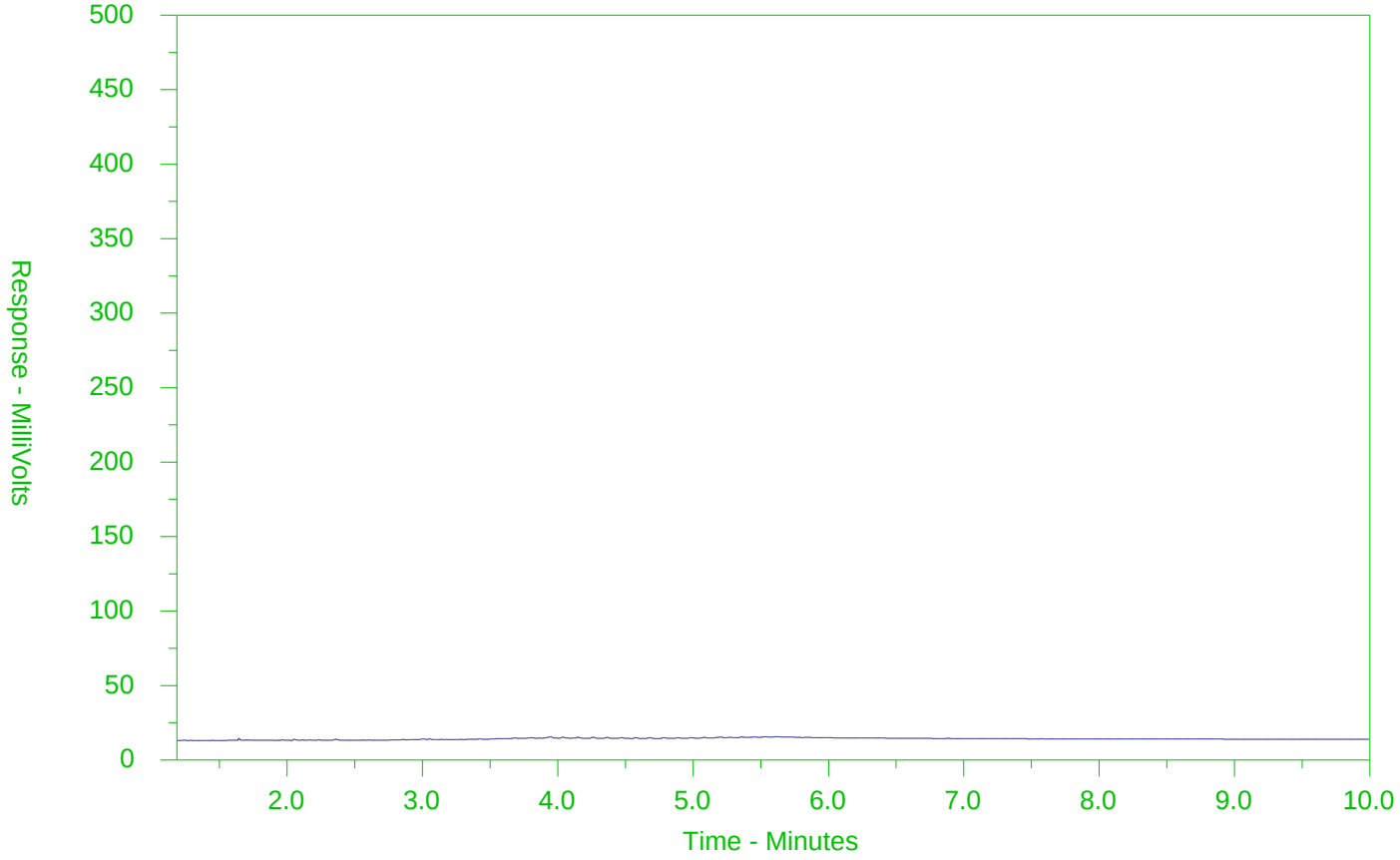
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1988476-2
Client Sample ID: DUP



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

ALS Environmental

www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L1988476-COFC

COC Number: 15 - GW0908

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	CH2M Hill Kitchener
Contact:	Michael Shiry / Peter Mamo
Phone:	289 971 1779
	Company address below will appear on the final report
Street:	300-72 Victoria St. South
City/Province:	Kitchener, ON
Postal Code:	N2G 4Y9
Invoice To	Same as Report To ☐ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	CH2M Hill Kitchener
Contact:	Accounts Payable

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: Michael.Shiry@ch2m.com

Email 2: Peter.Mamo@ch2m.com

Email 3:

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax:

Email 2:

Project Information

ALS Account # / Quote #: Q62156

Job #: 694757

PO / AFE:

LSD:

ALS Lab Work Order # (lab use only): L1988476 DA 088

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#:

Major/Minor Code: Routing Code:

Requisitioner:

Location:

ALS Contact: Mathy Sampler: M.Shiry

Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
4 day [P4]	☐	1 Business day [E1]	☐
3 day [P3]	☐	Same Day, Weekend or Statutory holiday [E0]	☐
2 day [P2]	☐		

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Metals & Inorganics	SVOC	PAH	VOC, BTX, F1	F2-F4 - SW	1,4 Dioxane	PCB	VOC, F1 (Trip Blank)						Number of Containers
1	GW31	08-Sept-17	1050	Water				✓	✓	✓								7
2	DUP	↓	—	↓				✓	✓			—	—	—	—	—		5
3	Trip Blank	↓	—	↓								✓						2

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human drinking water use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☑ Ice Cubes ☐ Custody seal intact Yes ☑ No ☐

Cooling Initiated ☑

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
			13.0		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: M.Shiry	Date: 2017/9/8	Time: 1347	Received by:	Date:	Time:	Received by:	Date: 08-Sep-17	Time: 1347

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

RW

CH2M HILL CANADA LIMITED
ATTN: MICHAEL SHIRY
72 VICTORIA ST SOUTH
SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 08-SEP-17
Report Date: 14-SEP-17 14:48 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L1988476

Project P.O. #:	NOT SUBMITTED
Job Reference:	694757
C of C Numbers:	15-GW0908
Legal Site Desc:	

Mathy Mahadeva
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988476-1 OW31 Sampled By: M.S. on 08-SEP-17 @ 10:50 Matrix: WATER							
Volatile Organic Compounds							
Acetone	<30		30	ug/L		11-SEP-17	R3823509
Benzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Bromodichloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823509
Bromoform	<5.0		5.0	ug/L		11-SEP-17	R3823509
Bromomethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
Carbon tetrachloride	<0.20		0.20	ug/L		11-SEP-17	R3823509
Chlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Dibromochloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823509
Chloroform	<1.0		1.0	ug/L		11-SEP-17	R3823509
1,2-Dibromoethane	<0.20		0.20	ug/L		11-SEP-17	R3823509
1,2-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,3-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,4-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Dichlorodifluoromethane	<2.0		2.0	ug/L		11-SEP-17	R3823509
1,1-Dichloroethane	0.64		0.50	ug/L		11-SEP-17	R3823509
1,2-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
cis-1,2-Dichloroethylene	1.98		0.50	ug/L		11-SEP-17	R3823509
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Methylene Chloride	<5.0		5.0	ug/L		11-SEP-17	R3823509
1,2-Dichloropropane	<0.50		0.50	ug/L		11-SEP-17	R3823509
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823509
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823509
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		11-SEP-17	
1,4-Dioxane	<20		20	ug/L		11-SEP-17	R3823509
Ethylbenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
n-Hexane	<0.50		0.50	ug/L		11-SEP-17	R3823509
Methyl Ethyl Ketone	<20		20	ug/L		11-SEP-17	R3823509
Methyl Isobutyl Ketone	<20		20	ug/L		11-SEP-17	R3823509
MTBE	<2.0		2.0	ug/L		11-SEP-17	R3823509
Styrene	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
Tetrachloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Toluene	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1,1-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1,2-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
Trichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Trichlorofluoromethane	<5.0		5.0	ug/L		11-SEP-17	R3823509
Vinyl chloride	<0.50		0.50	ug/L		11-SEP-17	R3823509
o-Xylene	<0.30		0.30	ug/L		11-SEP-17	R3823509

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988476-1 OW31 Sampled By: M.S. on 08-SEP-17 @ 10:50 Matrix: WATER							
Volatile Organic Compounds							
m+p-Xylenes	<0.40		0.40	ug/L		11-SEP-17	R3823509
Xylenes (Total)	<0.50		0.50	ug/L		11-SEP-17	
Surrogate: 4-Bromofluorobenzene	99.6		70-130	%		11-SEP-17	R3823509
Surrogate: 1,4-Difluorobenzene	101.5		70-130	%		11-SEP-17	R3823509
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		11-SEP-17	R3823509
F1-BTEX	<25		25	ug/L		11-SEP-17	
F2 (C10-C16)	<100		100	ug/L	14-SEP-17	14-SEP-17	R3828732
F3a (C16-C22)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828732
F3 (C16-C34)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828732
F3b (C22-C34)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828732
F4 (C34-C50)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828732
Chrom. to baseline at nC50	YES				14-SEP-17	14-SEP-17	R3828732
Surrogate: 2-Bromobenzotrifluoride	80.4		60-140	%	14-SEP-17	14-SEP-17	R3828732
Surrogate: 3,4-Dichlorotoluene	88.6		60-140	%		11-SEP-17	R3823509
L1988476-2 DUP Sampled By: M.S. on 08-SEP-17 @ 10:50 Matrix: WATER							
Volatile Organic Compounds							
Acetone	<30		30	ug/L		11-SEP-17	R3823509
Benzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Bromodichloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823509
Bromoform	<5.0		5.0	ug/L		11-SEP-17	R3823509
Bromomethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
Carbon tetrachloride	<0.20		0.20	ug/L		11-SEP-17	R3823509
Chlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Dibromochloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823509
Chloroform	<1.0		1.0	ug/L		11-SEP-17	R3823509
1,2-Dibromoethane	<0.20		0.20	ug/L		11-SEP-17	R3823509
1,2-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,3-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,4-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Dichlorodifluoromethane	<2.0		2.0	ug/L		11-SEP-17	R3823509
1,1-Dichloroethane	0.67		0.50	ug/L		11-SEP-17	R3823509
1,2-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
cis-1,2-Dichloroethylene	2.01		0.50	ug/L		11-SEP-17	R3823509
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Methylene Chloride	<5.0		5.0	ug/L		11-SEP-17	R3823509
1,2-Dichloropropane	<0.50		0.50	ug/L		11-SEP-17	R3823509
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823509
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823509

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988476-2 DUP Sampled By: M.S. on 08-SEP-17 @ 10:50 Matrix: WATER							
Volatile Organic Compounds							
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		11-SEP-17	
Ethylbenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
n-Hexane	<0.50		0.50	ug/L		11-SEP-17	R3823509
Methyl Ethyl Ketone	<20		20	ug/L		11-SEP-17	R3823509
Methyl Isobutyl Ketone	<20		20	ug/L		11-SEP-17	R3823509
MTBE	<2.0		2.0	ug/L		11-SEP-17	R3823509
Styrene	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
Tetrachloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Toluene	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1,1-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1,2-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
Trichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Trichlorofluoromethane	<5.0		5.0	ug/L		11-SEP-17	R3823509
Vinyl chloride	<0.50		0.50	ug/L		11-SEP-17	R3823509
o-Xylene	<0.30		0.30	ug/L		11-SEP-17	R3823509
m+p-Xylenes	<0.40		0.40	ug/L		11-SEP-17	R3823509
Xylenes (Total)	<0.50		0.50	ug/L		11-SEP-17	
Surrogate: 4-Bromofluorobenzene	98.4		70-130	%		11-SEP-17	R3823509
Surrogate: 1,4-Difluorobenzene	101.5		70-130	%		11-SEP-17	R3823509
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		11-SEP-17	R3823509
F1-BTEX	<25		25	ug/L		11-SEP-17	
F2 (C10-C16)	<100		100	ug/L	14-SEP-17	14-SEP-17	R3828732
F3a (C16-C22)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828732
F3 (C16-C34)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828732
F3b (C22-C34)	<130		130	ug/L	14-SEP-17	14-SEP-17	R3828732
F4 (C34-C50)	<250		250	ug/L	14-SEP-17	14-SEP-17	R3828732
Chrom. to baseline at nC50	YES				14-SEP-17	14-SEP-17	R3828732
Surrogate: 2-Bromobenzotrifluoride	86.6		60-140	%	14-SEP-17	14-SEP-17	R3828732
Surrogate: 3,4-Dichlorotoluene	85.9		60-140	%		11-SEP-17	R3823509
L1988476-3 TRIP BLANK Sampled By: M.S. on 08-SEP-17 @ 10:50 Matrix: WATER							
Volatile Organic Compounds							
Acetone	<30		30	ug/L		11-SEP-17	R3823509
Benzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Bromodichloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823509
Bromoform	<5.0		5.0	ug/L		11-SEP-17	R3823509
Bromomethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
Carbon tetrachloride	<0.20		0.20	ug/L		11-SEP-17	R3823509

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988476-3 TRIP BLANK Sampled By: M.S. on 08-SEP-17 @ 10:50 Matrix: WATER							
Volatile Organic Compounds							
Chlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Dibromochloromethane	<2.0		2.0	ug/L		11-SEP-17	R3823509
Chloroform	<1.0		1.0	ug/L		11-SEP-17	R3823509
1,2-Dibromoethane	<0.20		0.20	ug/L		11-SEP-17	R3823509
1,2-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,3-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,4-Dichlorobenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Dichlorodifluoromethane	<2.0		2.0	ug/L		11-SEP-17	R3823509
1,1-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,2-Dichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Methylene Chloride	<5.0		5.0	ug/L		11-SEP-17	R3823509
1,2-Dichloropropane	<0.50		0.50	ug/L		11-SEP-17	R3823509
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823509
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		11-SEP-17	R3823509
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		11-SEP-17	
Ethylbenzene	<0.50		0.50	ug/L		11-SEP-17	R3823509
n-Hexane	<0.50		0.50	ug/L		11-SEP-17	R3823509
Methyl Ethyl Ketone	<20		20	ug/L		11-SEP-17	R3823509
Methyl Isobutyl Ketone	<20		20	ug/L		11-SEP-17	R3823509
MTBE	<2.0		2.0	ug/L		11-SEP-17	R3823509
Styrene	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
Tetrachloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Toluene	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1,1-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
1,1,2-Trichloroethane	<0.50		0.50	ug/L		11-SEP-17	R3823509
Trichloroethylene	<0.50		0.50	ug/L		11-SEP-17	R3823509
Trichlorofluoromethane	<5.0		5.0	ug/L		11-SEP-17	R3823509
Vinyl chloride	<0.50		0.50	ug/L		11-SEP-17	R3823509
o-Xylene	<0.30		0.30	ug/L		11-SEP-17	R3823509
m+p-Xylenes	<0.40		0.40	ug/L		11-SEP-17	R3823509
Xylenes (Total)	<0.50		0.50	ug/L		11-SEP-17	
Surrogate: 4-Bromofluorobenzene	97.3		70-130	%		11-SEP-17	R3823509
Surrogate: 1,4-Difluorobenzene	101.0		70-130	%		11-SEP-17	R3823509
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		11-SEP-17	R3823509
F1-BTEX	<25		25	ug/L		11-SEP-17	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1988476-3 TRIP BLANK Sampled By: M.S. on 08-SEP-17 @ 10:50 Matrix: WATER							
Hydrocarbons							
Surrogate: 3,4-Dichlorotoluene	89.0		60-140	%		11-SEP-17	R3823509

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Qualifiers for Sample Submission Listed:

Qualifier	Description
CINT	Cooling initiated. Samples were received packed with ice or ice packs and were sampled the same day as received.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
1,4-DIOXANE-WT	Water	1,4-Dioxane by Headspace GC/MS	SW846 8260

An aliquot of the sample is analyzed directly by headspace technology, followed by GC/MS using isotopic dilution.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-F4-511-CALC-WT	Water	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-L

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Water	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-UW-WT	Water	F2-F4 (O.Reg.153/04)	MOE DECPH-E3398/CCME TIER 1
VOC-1,3-DCP-CALC-WT	Water	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Water	VOC by GCMS HS O.Reg 153/04 (July 2011)	SW846 8260

Liquid samples are analyzed by headspace GC/MSD.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

15-GW0908

Reference Information

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L1988476 Report Date: 14-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
1,4-DIOXANE-WT	**Water**							
Batch R3823509								
WG2594560-4 DUP		**WG2594560-3**						
1,4-Dioxane		<20	<20	RPD-NA	ug/L	N/A	30	11-SEP-17
WG2594560-1 LCS								
1,4-Dioxane			96.8		%		60-140	11-SEP-17
WG2594560-2 MB								
1,4-Dioxane			<20		ug/L		20	11-SEP-17
WG2594560-5 MS		**WG2594560-3**						
1,4-Dioxane			94.6		%		50-140	11-SEP-17
F1-HS-511-WT	**Water**							
Batch R3823509								
WG2594560-4 DUP		**WG2594560-3**						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	11-SEP-17
WG2594560-1 LCS								
F1 (C6-C10)			103.1		%		80-120	11-SEP-17
WG2594560-2 MB								
F1 (C6-C10)			<25		ug/L		25	11-SEP-17
Surrogate: 3,4-Dichlorotoluene			87.8		%		60-140	11-SEP-17
WG2594560-5 MS		**WG2594560-3**						
F1 (C6-C10)			88.7		%		60-140	11-SEP-17
F2-F4-UW-WT	**Water**							
Batch R3828732								
WG2615892-2 LCS								
F2 (C10-C16)			98.3		%		70-130	14-SEP-17
F3a (C16-C22)			96.6		%		70-130	14-SEP-17
F3b (C22-C34)			94.0		%		70-130	14-SEP-17
F3 (C16-C34)			95.5		%		70-130	14-SEP-17
F4 (C34-C50)			108.7		%		70-130	14-SEP-17
WG2615892-3 LCSD		**WG2615892-2**						
F2 (C10-C16)		98.3	107.1		%	8.6	50	14-SEP-17
F3a (C16-C22)		96.6	105.4		%	8.6	50	14-SEP-17
F3b (C22-C34)		94.0	106.7		%	13	50	14-SEP-17
F3 (C16-C34)		95.5	105.9		%	10	50	14-SEP-17
F4 (C34-C50)		108.7	114.5		%	5.2	50	14-SEP-17
WG2615892-1 MB								
F2 (C10-C16)			<100		ug/L		100	14-SEP-17
F3a (C16-C22)			<130		ug/L		125	14-SEP-17

Quality Control Report

Workorder: L1988476 Report Date: 14-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-UW-WT	**Water**							
Batch R3828732								
WG2615892-1 MB								
F3b (C22-C34)			<130		ug/L		125	14-SEP-17
F3 (C16-C34)			<250		ug/L		250	14-SEP-17
F4 (C34-C50)			<250		ug/L		250	14-SEP-17
Surrogate: 2-Bromobenzotrifluoride			84.2		%		60-140	14-SEP-17
VOC-511-HS-WT	**Water**							
Batch R3823509								
WG2594560-4 DUP		**WG2594560-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	11-SEP-17
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	11-SEP-17
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	11-SEP-17
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	11-SEP-17
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	11-SEP-17
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	11-SEP-17
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	11-SEP-17
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	11-SEP-17
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	11-SEP-17
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17

Quality Control Report

Workorder: L1988476 Report Date: 14-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3823509								
WG2594560-4 DUP		**WG2594560-3**						
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	11-SEP-17
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	11-SEP-17
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	11-SEP-17
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	11-SEP-17
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	11-SEP-17
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	11-SEP-17
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	11-SEP-17
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	11-SEP-17
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-SEP-17
WG2594560-1 LCS								
1,1,1,2-Tetrachloroethane			91.5		%		70-130	11-SEP-17
1,1,2,2-Tetrachloroethane			85.1		%		70-130	11-SEP-17
1,1,1-Trichloroethane			91.2		%		70-130	11-SEP-17
1,1,2-Trichloroethane			93.5		%		70-130	11-SEP-17
1,1-Dichloroethane			92.1		%		70-130	11-SEP-17
1,1-Dichloroethylene			83.7		%		70-130	11-SEP-17
1,2-Dibromoethane			92.1		%		70-130	11-SEP-17
1,2-Dichlorobenzene			90.0		%		70-130	11-SEP-17
1,2-Dichloroethane			91.2		%		70-130	11-SEP-17
1,2-Dichloropropane			95.6		%		70-130	11-SEP-17
1,3-Dichlorobenzene			87.1		%		70-130	11-SEP-17
1,4-Dichlorobenzene			89.8		%		70-130	11-SEP-17
Acetone			102.9		%		60-140	11-SEP-17
Benzene			94.7		%		70-130	11-SEP-17
Bromodichloromethane			92.3		%		70-130	11-SEP-17
Bromoform			88.0		%		70-130	11-SEP-17
Bromomethane			90.5		%		60-140	11-SEP-17
Carbon tetrachloride			90.5		%		70-130	11-SEP-17

Quality Control Report

Workorder: L1988476 Report Date: 14-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3823509								
WG2594560-1 LCS								
Chlorobenzene			91.5		%		70-130	11-SEP-17
Chloroform			94.2		%		70-130	11-SEP-17
cis-1,2-Dichloroethylene			92.2		%		70-130	11-SEP-17
cis-1,3-Dichloropropene			83.1		%		70-130	11-SEP-17
Dibromochloromethane			96.5		%		70-130	11-SEP-17
Dichlorodifluoromethane			94.5		%		50-140	11-SEP-17
Ethylbenzene			88.7		%		70-130	11-SEP-17
n-Hexane			102.2		%		70-130	11-SEP-17
m+p-Xylenes			89.9		%		70-130	11-SEP-17
Methyl Ethyl Ketone			82.8		%		60-140	11-SEP-17
Methyl Isobutyl Ketone			82.1		%		60-140	11-SEP-17
Methylene Chloride			94.5		%		70-130	11-SEP-17
MTBE			93.2		%		70-130	11-SEP-17
o-Xylene			90.3		%		70-130	11-SEP-17
Styrene			88.0		%		70-130	11-SEP-17
Tetrachloroethylene			87.6		%		70-130	11-SEP-17
Toluene			90.4		%		70-130	11-SEP-17
trans-1,2-Dichloroethylene			90.1		%		70-130	11-SEP-17
trans-1,3-Dichloropropene			83.4		%		70-130	11-SEP-17
Trichloroethylene			91.6		%		70-130	11-SEP-17
Trichlorofluoromethane			91.7		%		60-140	11-SEP-17
Vinyl chloride			85.7		%		60-140	11-SEP-17
WG2594560-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	11-SEP-17
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	11-SEP-17
1,1,1-Trichloroethane			<0.50		ug/L		0.5	11-SEP-17
1,1,2-Trichloroethane			<0.50		ug/L		0.5	11-SEP-17
1,1-Dichloroethane			<0.50		ug/L		0.5	11-SEP-17
1,1-Dichloroethylene			<0.50		ug/L		0.5	11-SEP-17
1,2-Dibromoethane			<0.20		ug/L		0.2	11-SEP-17
1,2-Dichlorobenzene			<0.50		ug/L		0.5	11-SEP-17
1,2-Dichloroethane			<0.50		ug/L		0.5	11-SEP-17
1,2-Dichloropropane			<0.50		ug/L		0.5	11-SEP-17
1,3-Dichlorobenzene			<0.50		ug/L		0.5	11-SEP-17

Quality Control Report

Workorder: L1988476 Report Date: 14-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3823509								
WG2594560-2 MB								
1,4-Dichlorobenzene			<0.50		ug/L		0.5	11-SEP-17
Acetone			<30		ug/L		30	11-SEP-17
Benzene			<0.50		ug/L		0.5	11-SEP-17
Bromodichloromethane			<2.0		ug/L		2	11-SEP-17
Bromoform			<5.0		ug/L		5	11-SEP-17
Bromomethane			<0.50		ug/L		0.5	11-SEP-17
Carbon tetrachloride			<0.20		ug/L		0.2	11-SEP-17
Chlorobenzene			<0.50		ug/L		0.5	11-SEP-17
Chloroform			<1.0		ug/L		1	11-SEP-17
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	11-SEP-17
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	11-SEP-17
Dibromochloromethane			<2.0		ug/L		2	11-SEP-17
Dichlorodifluoromethane			<2.0		ug/L		2	11-SEP-17
Ethylbenzene			<0.50		ug/L		0.5	11-SEP-17
n-Hexane			<0.50		ug/L		0.5	11-SEP-17
m+p-Xylenes			<0.40		ug/L		0.4	11-SEP-17
Methyl Ethyl Ketone			<20		ug/L		20	11-SEP-17
Methyl Isobutyl Ketone			<20		ug/L		20	11-SEP-17
Methylene Chloride			<5.0		ug/L		5	11-SEP-17
MTBE			<2.0		ug/L		2	11-SEP-17
o-Xylene			<0.30		ug/L		0.3	11-SEP-17
Styrene			<0.50		ug/L		0.5	11-SEP-17
Tetrachloroethylene			<0.50		ug/L		0.5	11-SEP-17
Toluene			<0.50		ug/L		0.5	11-SEP-17
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	11-SEP-17
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	11-SEP-17
Trichloroethylene			<0.50		ug/L		0.5	11-SEP-17
Trichlorofluoromethane			<5.0		ug/L		5	11-SEP-17
Vinyl chloride			<0.50		ug/L		0.5	11-SEP-17
Surrogate: 1,4-Difluorobenzene			101.8		%		70-130	11-SEP-17
Surrogate: 4-Bromofluorobenzene			98.6		%		70-130	11-SEP-17
WG2594560-5 MS		**WG2594560-3**						
1,1,1,2-Tetrachloroethane			90.1		%		50-140	11-SEP-17
1,1,2,2-Tetrachloroethane			89.6		%		50-140	11-SEP-17

Quality Control Report

Workorder: L1988476 Report Date: 14-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3823509								
WG2594560-5 MS		**WG2594560-3**						
1,1,1-Trichloroethane			88.0		%		50-140	11-SEP-17
1,1,2-Trichloroethane			94.6		%		50-140	11-SEP-17
1,1-Dichloroethane			91.4		%		50-140	11-SEP-17
1,1-Dichloroethylene			79.0		%		50-140	11-SEP-17
1,2-Dibromoethane			93.9		%		50-140	11-SEP-17
1,2-Dichlorobenzene			90.0		%		50-140	11-SEP-17
1,2-Dichloroethane			95.5		%		50-140	11-SEP-17
1,2-Dichloropropane			98.1		%		50-140	11-SEP-17
1,3-Dichlorobenzene			87.8		%		50-140	11-SEP-17
1,4-Dichlorobenzene			91.0		%		50-140	11-SEP-17
Acetone			100.2		%		50-140	11-SEP-17
Benzene			94.6		%		50-140	11-SEP-17
Bromodichloromethane			94.9		%		50-140	11-SEP-17
Bromoform			89.2		%		50-140	11-SEP-17
Bromomethane			89.1		%		50-140	11-SEP-17
Carbon tetrachloride			86.4		%		50-140	11-SEP-17
Chlorobenzene			90.8		%		50-140	11-SEP-17
Chloroform			94.8		%		50-140	11-SEP-17
cis-1,2-Dichloroethylene			92.9		%		50-140	11-SEP-17
cis-1,3-Dichloropropene			92.9		%		50-140	11-SEP-17
Dibromochloromethane			96.6		%		50-140	11-SEP-17
Dichlorodifluoromethane			79.0		%		50-140	11-SEP-17
Ethylbenzene			85.6		%		50-140	11-SEP-17
n-Hexane			91.7		%		50-140	11-SEP-17
m+p-Xylenes			88.0		%		50-140	11-SEP-17
Methyl Ethyl Ketone			87.7		%		50-140	11-SEP-17
Methyl Isobutyl Ketone			89.1		%		50-140	11-SEP-17
Methylene Chloride			95.9		%		50-140	11-SEP-17
MTBE			93.0		%		50-140	11-SEP-17
o-Xylene			87.7		%		50-140	11-SEP-17
Styrene			87.1		%		50-140	11-SEP-17
Tetrachloroethylene			84.9		%		50-140	11-SEP-17
Toluene			87.2		%		50-140	11-SEP-17

Quality Control Report

Workorder: L1988476 Report Date: 14-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3823509								
WG2594560-5 MS		**WG2594560-3**						
trans-1,2-Dichloroethylene			91.0		%		50-140	11-SEP-17
trans-1,3-Dichloropropene			91.7		%		50-140	11-SEP-17
Trichloroethylene			91.8		%		50-140	11-SEP-17
Trichlorofluoromethane			83.3		%		50-140	11-SEP-17
Vinyl chloride			77.7		%		50-140	11-SEP-17

Quality Control Report

Workorder: L1988476 Report Date: 14-SEP-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9
Contact: MICHAEL SHIRY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

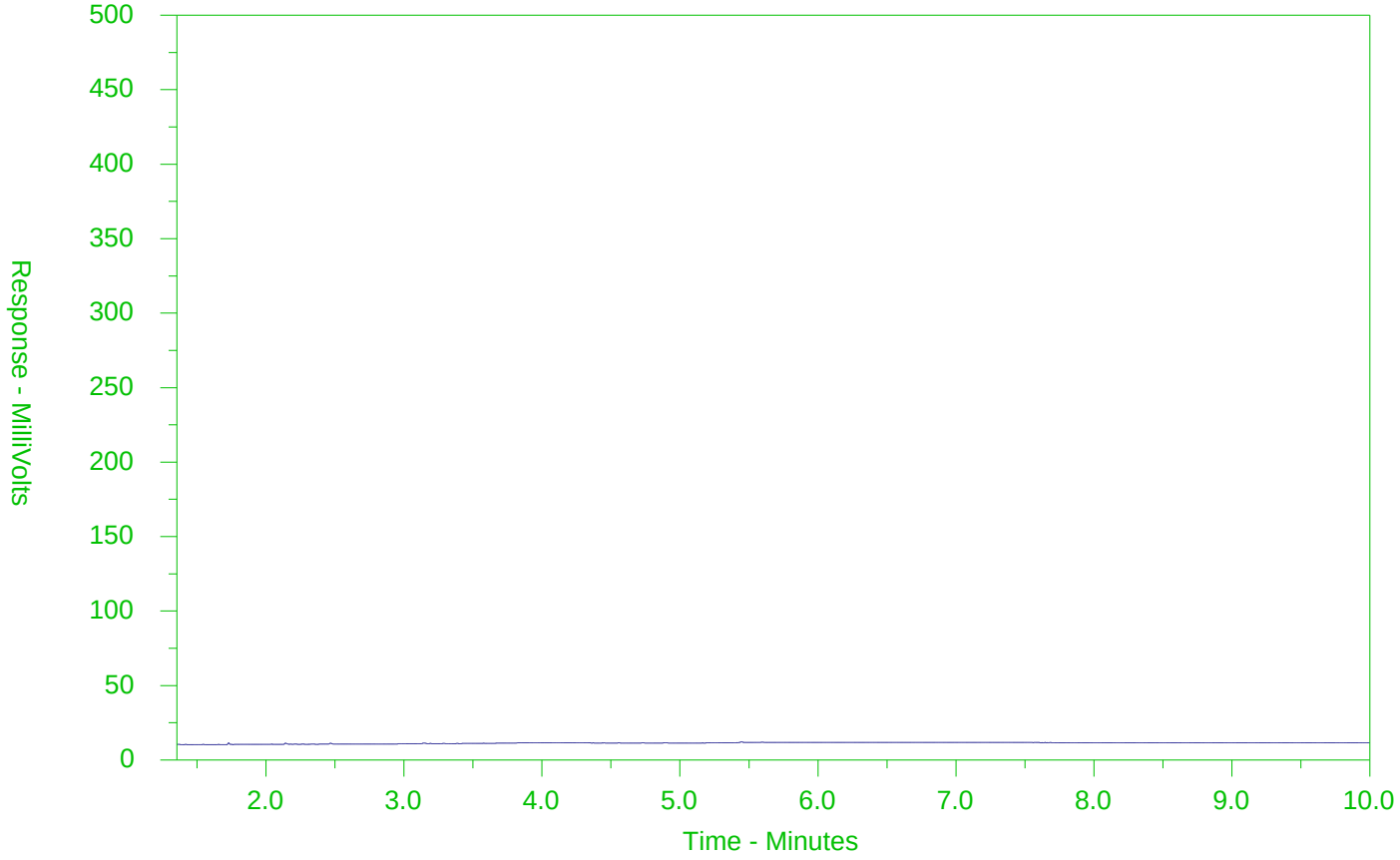
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1988476-1
Client Sample ID: OW31



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

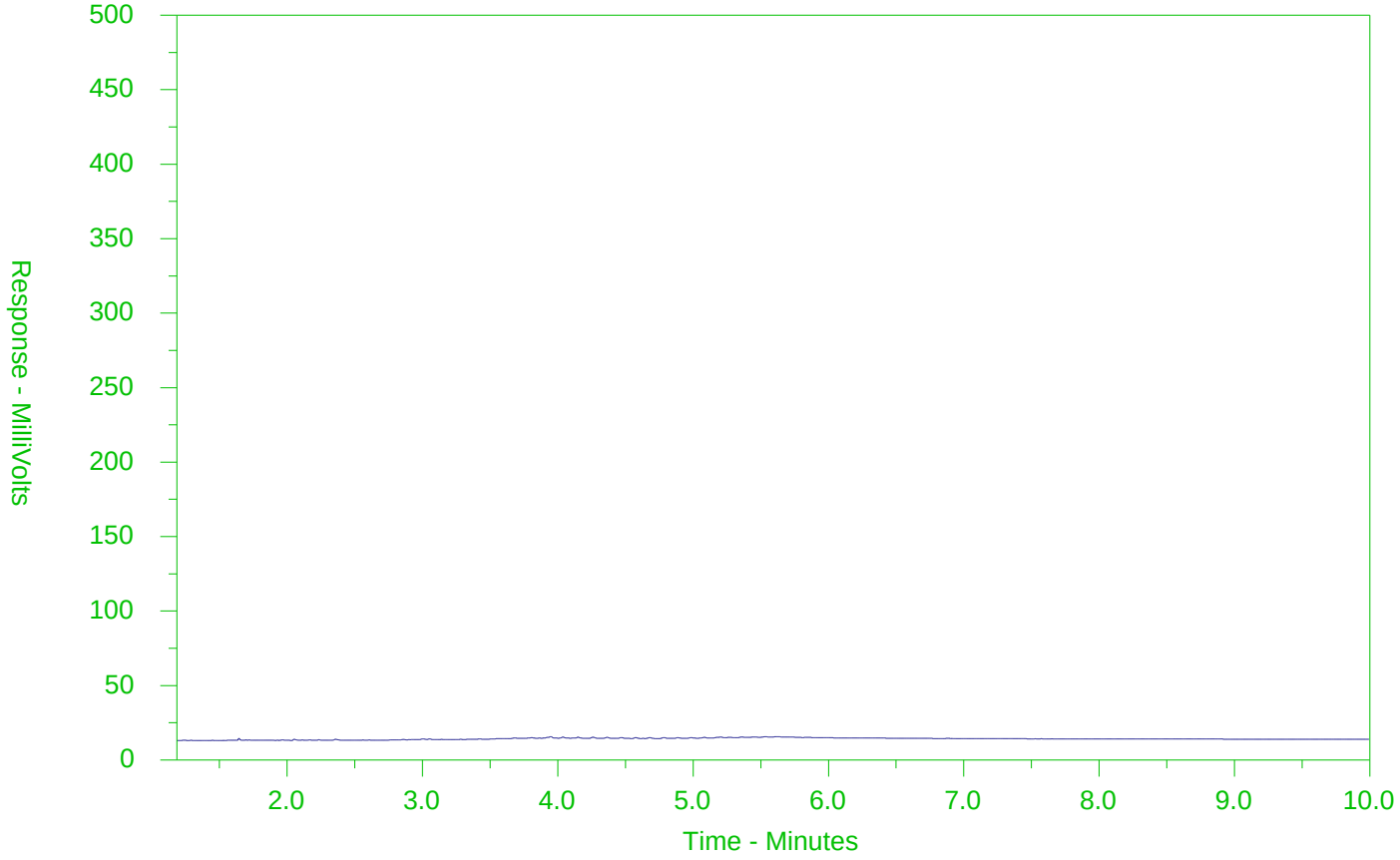
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1988476-2
Client Sample ID: DUP



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

ALS Environmental

www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L1988476-COFC

COC Number: 15 - GW0908

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	CH2M Hill Kitchener
Contact:	Michael Shiry / Peter Mamo
Phone:	289 971 1779
	Company address below will appear on the final report
Street:	300-72 Victoria St. South
City/Province:	Kitchener, ON
Postal Code:	N2G 4Y9
Invoice To	Same as Report To ☐ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	CH2M Hill Kitchener
Contact:	Accounts Payable

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: Michael.Shiry@ch2m.com

Email 2: Peter.Mamo@ch2m.com

Email 3:

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax:

Email 2:

Project Information

ALS Account # / Quote #: Q62156

Job #: 694757

PO / AFE:

LSD:

ALS Lab Work Order # (lab use only): L1988476 DA 088

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#:

Major/Minor Code: Routing Code:

Requisitioner:

Location:

ALS Contact: Mathy Sampler: M.Shiry

Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
4 day [P4]	☐	1 Business day [E1]	☐
3 day [P3]	☐	Same Day, Weekend or Statutory holiday [E0]	☐
2 day [P2]	☐		

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Metals & Inorganics	SVOC	PAH	VOC, BTX, F1	F2-F4 - SW	1,4 Dioxane	PCB	VOC, F1 (Trip Blank)						Number of Containers
1	GW31	08-Sept-17	1050	Water				✓	✓	✓								7
2	DUP	↓	—	↓				✓	✓			—	—	—	—	—		5
3	Trip Blank	↓	—	↓								✓						2

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human drinking water use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☑ Ice Cubes ☐ Custody seal intact Yes ☑ No ☐

Cooling Initiated ☑

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
			13.0		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: M.Shiry	Date: 2017/9/8	Time: 1347	Received by:	Date:	Time:	Received by:	Date: 08-Sep-17	Time: 1347

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

RW

CH2M HILL CANADA LIMITED
ATTN: MICHAEL SHIRY
72 VICTORIA ST SOUTH
SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 05-OCT-17
Report Date: 16-NOV-17 14:14 (MT)
Version: FINAL REV. 2

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2003037

Project P.O. #: NOT SUBMITTED
Job Reference: 694757
C of C Numbers: 17-616667, 17-616668, 17-616669
Legal Site Desc:

Comments: 16-NOV-17: Grain size results attached at the end of the report.

Mathy Mahadeva
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-2	TP17-305-5-6									
Sampled By:	M. SHIRY on 04-OCT-17 @ 10:30									
Matrix:	SOIL									
Physical Tests										
	Conductivity	0.121		0.0040	mS/cm	12-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	5.26		0.10	%	10-OCT-17				
	pH	7.24		0.10	pH units	12-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	11-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	<0.18	SAR:DL	0.18	SAR	11-OCT-17	12	12	5	5
	Calcium (Ca)	2.3		1.0	mg/L	11-OCT-17				
	Magnesium (Mg)	<1.0		1.0	mg/L	11-OCT-17				
	Sodium (Na)	<1.0		1.0	mg/L	11-OCT-17				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	11-OCT-17	40	50	7.5	7.5
	Arsenic (As)	9.3		1.0	ug/g	11-OCT-17	18	18	18	18
	Barium (Ba)	48.9		1.0	ug/g	11-OCT-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	11-OCT-17	8	10	4	5
	Boron (B)	6.4		5.0	ug/g	11-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.14		0.10	ug/g	11-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	0.77		0.50	ug/g	11-OCT-17	1.9	1.9	1.2	1.2
	Chromium (Cr)	28.7		1.0	ug/g	11-OCT-17	160	160	160	160
	Cobalt (Co)	13.3		1.0	ug/g	11-OCT-17	80	100	22	22
	Copper (Cu)	95.9		1.0	ug/g	11-OCT-17	230	300	140	180
	Lead (Pb)	110		1.0	ug/g	11-OCT-17	120	120	120	120
	Mercury (Hg)	0.0327		0.0050	ug/g	11-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	<1.0		1.0	ug/g	11-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	27.9		1.0	ug/g	11-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	11-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	11-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	11-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	11-OCT-17	33	33	23	23
	Vanadium (V)	47.9		1.0	ug/g	11-OCT-17	86	86	86	86
	Zinc (Zn)	3440	DLHC	40	ug/g	11-OCT-17	*340	*340	*340	*340
Speciated Metals										
	Chromium, Hexavalent	0.22		0.20	ug/g	11-OCT-17	8	10	8	10
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	10-OCT-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	10-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	10-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	10-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	10-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	10-OCT-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	10-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	10-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	1.2	1.7	1.2	1.7

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-2	TP17-305-5-6									
Sampled By:	M. SHIRY on 04-OCT-17 @ 10:30									
Matrix:	SOIL									
Volatile Organic Compounds										
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	10-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	10-OCT-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	10-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	10-OCT-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	10-OCT-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	10-OCT-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	10-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	10-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	10-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	10-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	10-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	10-OCT-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	10-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	10-OCT-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	10-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	10-OCT-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	10-OCT-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	10-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	10-OCT-17				
	m+p-Xylenes	<0.030		0.030	ug/g	10-OCT-17				
	Xylenes (Total)	<0.050		0.050	ug/g	10-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	91.8		50-140	%	10-OCT-17				
	Surrogate: 1,4-Difluorobenzene	94.6		50-140	%	10-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	10-OCT-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	13-OCT-17	55	65	55	65
	F2 (C10-C16)	21		10	ug/g	13-OCT-17	230	250	98	150
	F3 (C16-C34)	451		50	ug/g	13-OCT-17	1700	2500	*300	1300
	F4 (C34-C50)	72		50	ug/g	13-OCT-17	3300	6600	2800	5600
	F4G-SG (GHH-Silica)	300		250	ug/g	13-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	543		72	ug/g	13-OCT-17				
	Chrom. to baseline at nC50	NO			No Unit	13-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	76.1		60-140	%	13-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	86.5		60-140	%	10-OCT-17				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-3	TP17-304-3-4									
Sampled By:	M. SHIRY on 04-OCT-17 @ 11:05									
Matrix:	SOIL									
Physical Tests										
	Conductivity	0.266		0.0040	mS/cm	12-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	7.02		0.10	%	10-OCT-17				
	pH	7.74		0.10	pH units	12-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	11-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	<0.10	SAR:DL	0.10	SAR	12-OCT-17	12	12	5	5
	Calcium (Ca)	18.9		1.0	mg/L	12-OCT-17				
	Magnesium (Mg)	1.6		1.0	mg/L	12-OCT-17				
	Sodium (Na)	<1.0		1.0	mg/L	12-OCT-17				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	11-OCT-17	40	50	7.5	7.5
	Arsenic (As)	5.7		1.0	ug/g	11-OCT-17	18	18	18	18
	Barium (Ba)	50.2		1.0	ug/g	11-OCT-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	11-OCT-17	8	10	4	5
	Boron (B)	10.1		5.0	ug/g	11-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	<0.10		0.10	ug/g	11-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	2.46		0.50	ug/g	11-OCT-17	*1.9	*1.9	*1.2	*1.2
	Chromium (Cr)	15.3		1.0	ug/g	11-OCT-17	160	160	160	160
	Cobalt (Co)	8.8		1.0	ug/g	11-OCT-17	80	100	22	22
	Copper (Cu)	36.3		1.0	ug/g	11-OCT-17	230	300	140	180
	Lead (Pb)	205		1.0	ug/g	11-OCT-17	*120	*120	*120	*120
	Mercury (Hg)	0.0510		0.0050	ug/g	11-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	1.0		1.0	ug/g	11-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	23.3		1.0	ug/g	11-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	11-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	11-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	11-OCT-17	3.3	3.3	1	1
	Uranium (U)	1.0		1.0	ug/g	11-OCT-17	33	33	23	23
	Vanadium (V)	30.3		1.0	ug/g	11-OCT-17	86	86	86	86
	Zinc (Zn)	2600	DLHC	40	ug/g	11-OCT-17	*340	*340	*340	*340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	11-OCT-17	8	10	8	10
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	10-OCT-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	10-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	10-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	10-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	10-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	10-OCT-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	10-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	10-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	1.2	1.7	1.2	1.7

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-3	TP17-304-3-4									
Sampled By:	M. SHIRY on 04-OCT-17 @ 11:05									
Matrix:	SOIL									
Volatile Organic Compounds										
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	10-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	10-OCT-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	10-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	10-OCT-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	10-OCT-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	10-OCT-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	10-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	10-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	10-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	10-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	10-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	10-OCT-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	10-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	10-OCT-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	10-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	10-OCT-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	10-OCT-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	10-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	10-OCT-17				
	m+p-Xylenes	<0.030		0.030	ug/g	10-OCT-17				
	Xylenes (Total)	<0.050		0.050	ug/g	10-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	96.5		50-140	%	10-OCT-17				
	Surrogate: 1,4-Difluorobenzene	98.7		50-140	%	10-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	10-OCT-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	13-OCT-17	55	65	55	65
	F2 (C10-C16)	31		10	ug/g	13-OCT-17	230	250	98	150
	F3 (C16-C34)	204		50	ug/g	13-OCT-17	1700	2500	300	1300
	F4 (C34-C50)	59		50	ug/g	13-OCT-17	3300	6600	2800	5600
	F4G-SG (GHH-Silica)	250		250	ug/g	13-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	294		72	ug/g	13-OCT-17				
	Chrom. to baseline at nC50	NO			No Unit	13-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	96.3		60-140	%	13-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	95.6		60-140	%	10-OCT-17				

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-4	TP17-304-6-7									
Sampled By:	M. SHIRY on 04-OCT-17 @ 11:10									
Matrix:	SOIL									
Physical Tests										
	Conductivity	0.295		0.0040	mS/cm	12-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	11.6		0.10	%	10-OCT-17				
	pH	7.55		0.10	pH units	12-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	11-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	<0.10	SAR:DL	0.10	SAR	12-OCT-17	12	12	5	5
	Calcium (Ca)	20.6		1.0	mg/L	12-OCT-17				
	Magnesium (Mg)	1.6		1.0	mg/L	12-OCT-17				
	Sodium (Na)	<1.0		1.0	mg/L	12-OCT-17				
Metals										
	Antimony (Sb)	1.4		1.0	ug/g	11-OCT-17	40	50	7.5	7.5
	Arsenic (As)	13.4		1.0	ug/g	11-OCT-17	18	18	18	18
	Barium (Ba)	91.9		1.0	ug/g	11-OCT-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	11-OCT-17	8	10	4	5
	Boron (B)	16.2		5.0	ug/g	11-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.11		0.10	ug/g	11-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	2.57		0.50	ug/g	11-OCT-17	*1.9	*1.9	*1.2	*1.2
	Chromium (Cr)	18.6		1.0	ug/g	11-OCT-17	160	160	160	160
	Cobalt (Co)	9.5		1.0	ug/g	11-OCT-17	80	100	22	22
	Copper (Cu)	45.1		1.0	ug/g	11-OCT-17	230	300	140	180
	Lead (Pb)	188		1.0	ug/g	11-OCT-17	*120	*120	*120	*120
	Mercury (Hg)	0.0622		0.0050	ug/g	11-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	2.0		1.0	ug/g	11-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	24.9		1.0	ug/g	11-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	11-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	11-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	11-OCT-17	3.3	3.3	1	1
	Uranium (U)	1.1		1.0	ug/g	11-OCT-17	33	33	23	23
	Vanadium (V)	35.2		1.0	ug/g	11-OCT-17	86	86	86	86
	Zinc (Zn)	2660	DLHC	40	ug/g	11-OCT-17	*340	*340	*340	*340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	11-OCT-17	8	10	8	10
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	10-OCT-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	10-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	10-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	10-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	10-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	10-OCT-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	10-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	10-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	1.2	1.7	1.2	1.7

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-4	TP17-304-6-7									
Sampled By:	M. SHIRY on 04-OCT-17 @ 11:10									
Matrix:	SOIL									
Volatile Organic Compounds										
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	10-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	10-OCT-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	10-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	10-OCT-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	10-OCT-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	10-OCT-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	10-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	10-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	10-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	10-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	10-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	10-OCT-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	10-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	10-OCT-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	10-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	10-OCT-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	10-OCT-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	10-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	10-OCT-17				
	m+p-Xylenes	<0.030		0.030	ug/g	10-OCT-17				
	Xylenes (Total)	<0.050		0.050	ug/g	10-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	96.8		50-140	%	10-OCT-17				
	Surrogate: 1,4-Difluorobenzene	99.9		50-140	%	10-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	10-OCT-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	16-OCT-17	55	65	55	65
	F2 (C10-C16)	18		10	ug/g	16-OCT-17	230	250	98	150
	F3 (C16-C34)	177		50	ug/g	16-OCT-17	1700	2500	300	1300
	F4 (C34-C50)	<50		50	ug/g	16-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	194		72	ug/g	16-OCT-17				
	Chrom. to baseline at nC50	YES			No Unit	16-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	82.7		60-140	%	16-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	80.3		60-140	%	10-OCT-17				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-5	TP17-302-1-3									
Sampled By:	M. SHIRY on 04-OCT-17 @ 11:50									
Matrix:	SOIL									
Physical Tests										
	Conductivity	0.223		0.0040	mS/cm	12-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	11.1		0.10	%	10-OCT-17				
	pH	7.58		0.10	pH units	12-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	11-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	<0.10	SAR:DL	0.10	SAR	12-OCT-17	12	12	5	5
	Calcium (Ca)	13.0		1.0	mg/L	12-OCT-17				
	Magnesium (Mg)	1.5		1.0	mg/L	12-OCT-17				
	Sodium (Na)	<1.0		1.0	mg/L	12-OCT-17				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	11-OCT-17	40	50	7.5	7.5
	Arsenic (As)	3.6		1.0	ug/g	11-OCT-17	18	18	18	18
	Barium (Ba)	31.7		1.0	ug/g	11-OCT-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	11-OCT-17	8	10	4	5
	Boron (B)	5.8		5.0	ug/g	11-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.18		0.10	ug/g	11-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	<0.50		0.50	ug/g	11-OCT-17	1.9	1.9	1.2	1.2
	Chromium (Cr)	13.4		1.0	ug/g	11-OCT-17	160	160	160	160
	Cobalt (Co)	3.8		1.0	ug/g	11-OCT-17	80	100	22	22
	Copper (Cu)	18.1		1.0	ug/g	11-OCT-17	230	300	140	180
	Lead (Pb)	26.0		1.0	ug/g	11-OCT-17	120	120	120	120
	Mercury (Hg)	0.0139		0.0050	ug/g	11-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	<1.0		1.0	ug/g	11-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	9.5		1.0	ug/g	11-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	11-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	11-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	11-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	11-OCT-17	33	33	23	23
	Vanadium (V)	22.5		1.0	ug/g	11-OCT-17	86	86	86	86
	Zinc (Zn)	99.1		5.0	ug/g	11-OCT-17	340	340	340	340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	11-OCT-17	8	10	8	10
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	10-OCT-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	10-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	10-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	10-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	10-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	10-OCT-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	10-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	10-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	1.2	1.7	1.2	1.7

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-5	TP17-302-1-3									
Sampled By:	M. SHIRY on 04-OCT-17 @ 11:50									
Matrix:	SOIL									
Volatile Organic Compounds										
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	10-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	10-OCT-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	10-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	10-OCT-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	10-OCT-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	10-OCT-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	10-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	10-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	10-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	10-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	10-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	10-OCT-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	10-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	10-OCT-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	10-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	10-OCT-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	10-OCT-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	10-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	0.082		0.020	ug/g	10-OCT-17				
	m+p-Xylenes	0.072		0.030	ug/g	10-OCT-17				
	Xylenes (Total)	0.154		0.050	ug/g	10-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	100.5		50-140	%	10-OCT-17				
	Surrogate: 1,4-Difluorobenzene	105.5		50-140	%	10-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	10-OCT-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	16-OCT-17	55	65	55	65
	F2 (C10-C16)	<10		10	ug/g	16-OCT-17	230	250	98	150
	F2-Naphth	<10		10	ug/g	16-OCT-17				
	F3 (C16-C34)	<50		50	ug/g	16-OCT-17	1700	2500	300	1300
	F3-PAH	<50		50	ug/g	16-OCT-17				
	F4 (C34-C50)	<50		50	ug/g	16-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	<72		72	ug/g	16-OCT-17				
	Chrom. to baseline at nC50	YES			No Unit	16-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	89.8		60-140	%	16-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	88.9		60-140	%	10-OCT-17				
Polycyclic Aromatic Hydrocarbons										

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#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
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#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-5	TP17-302-1-3									
Sampled By:	M. SHIRY on 04-OCT-17 @ 11:50									
Matrix:	SOIL									
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.050		0.050	ug/g	16-OCT-17	21	29	7.9	29
	Acenaphthylene	<0.050		0.050	ug/g	16-OCT-17	0.15	0.17	0.15	0.17
	Anthracene	<0.050		0.050	ug/g	16-OCT-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	<0.050		0.050	ug/g	16-OCT-17	0.96	0.96	0.5	0.63
	Benzo(a)pyrene	<0.050		0.050	ug/g	16-OCT-17	0.3	0.3	0.3	0.3
	Benzo(b)fluoranthene	0.114		0.050	ug/g	16-OCT-17	0.96	0.96	0.78	0.78
	Benzo(g,h,i)perylene	<0.050		0.050	ug/g	16-OCT-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	<0.050		0.050	ug/g	16-OCT-17	0.96	0.96	0.78	0.78
	Chrysene	0.073		0.050	ug/g	16-OCT-17	9.6	9.6	7	7.8
	Dibenzo(ah)anthracene	<0.050		0.050	ug/g	16-OCT-17	0.1	0.1	0.1	0.1
	Fluoranthene	0.051		0.050	ug/g	16-OCT-17	9.6	9.6	0.69	0.69
	Fluorene	<0.050		0.050	ug/g	16-OCT-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	16-OCT-17	0.76	0.95	0.38	0.48
	1+2-Methylnaphthalenes	<0.042		0.042	ug/g	16-OCT-17	30	42	0.99	3.4
	1-Methylnaphthalene	<0.030		0.030	ug/g	16-OCT-17	30	42	0.99	3.4
	2-Methylnaphthalene	<0.030		0.030	ug/g	16-OCT-17	30	42	0.99	3.4
	Naphthalene	<0.050		0.050	ug/g	16-OCT-17	9.6	28	0.6	0.75
	Phenanthrene	<0.050		0.050	ug/g	16-OCT-17	12	16	6.2	7.8
	Pyrene	<0.050		0.050	ug/g	16-OCT-17	96	96	78	78
	Surrogate: 2-Fluorobiphenyl	93.6		50-140	%	16-OCT-17				
	Surrogate: p-Terphenyl d14	94.4		50-140	%	16-OCT-17				
L2003037-7	TP17-302-5-7									
Sampled By:	M. SHIRY on 04-OCT-17 @ 12:45									
Matrix:	SOIL									
Physical Tests										
	Conductivity	0.109		0.0040	mS/cm	12-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	12.1		0.10	%	10-OCT-17				
	pH	7.62		0.10	pH units	12-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	11-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	0.11		0.10	SAR	12-OCT-17	12	12	5	5
	Calcium (Ca)	4.3		1.0	mg/L	12-OCT-17				
	Magnesium (Mg)	1.5		1.0	mg/L	12-OCT-17				
	Sodium (Na)	1.1		1.0	mg/L	12-OCT-17				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	12-OCT-17	40	50	7.5	7.5
	Arsenic (As)	2.2		1.0	ug/g	12-OCT-17	18	18	18	18
	Barium (Ba)	48.1		1.0	ug/g	12-OCT-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	12-OCT-17	8	10	4	5
	Boron (B)	8.8		5.0	ug/g	12-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	<0.10		0.10	ug/g	12-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	1.06		0.50	ug/g	12-OCT-17	1.9	1.9	1.2	1.2
	Chromium (Cr)	14.0		1.0	ug/g	12-OCT-17	160	160	160	160

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-7	TP17-302-5-7									
Sampled By:	M. SHIRY on 04-OCT-17 @ 12:45									
Matrix:	SOIL									
Metals										
	Cobalt (Co)	4.7		1.0	ug/g	12-OCT-17	80	100	22	22
	Copper (Cu)	27.0		1.0	ug/g	12-OCT-17	230	300	140	180
	Lead (Pb)	87.4		1.0	ug/g	12-OCT-17	120	120	120	120
	Mercury (Hg)	0.0203		0.0050	ug/g	12-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	<1.0		1.0	ug/g	12-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	14.1		1.0	ug/g	12-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	12-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	12-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	12-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	12-OCT-17	33	33	23	23
	Vanadium (V)	23.5		1.0	ug/g	12-OCT-17	86	86	86	86
	Zinc (Zn)	1070		5.0	ug/g	12-OCT-17	*340	*340	*340	*340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	11-OCT-17	8	10	8	10
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	10-OCT-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	10-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	10-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	10-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	10-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	10-OCT-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	10-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	10-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	10-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	10-OCT-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	10-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	10-OCT-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	10-OCT-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	10-OCT-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	10-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	10-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	10-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	10-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	10-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	10-OCT-17	34	43	0.7	2.2

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-7	TP17-302-5-7									
Sampled By:	M. SHIRY on 04-OCT-17 @ 12:45									
Matrix:	SOIL									
Volatile Organic Compounds										
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	10-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	10-OCT-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	10-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	10-OCT-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	10-OCT-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	10-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	10-OCT-17				
	m+p-Xylenes	<0.030		0.030	ug/g	10-OCT-17				
	Xylenes (Total)	<0.050		0.050	ug/g	10-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	91.7		50-140	%	10-OCT-17				
	Surrogate: 1,4-Difluorobenzene	94.2		50-140	%	10-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	10-OCT-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	16-OCT-17	55	65	55	65
	F2 (C10-C16)	<10		10	ug/g	16-OCT-17	230	250	98	150
	F2-Naphth	<10		10	ug/g	16-OCT-17				
	F3 (C16-C34)	<50		50	ug/g	16-OCT-17	1700	2500	300	1300
	F3-PAH	<50		50	ug/g	16-OCT-17				
	F4 (C34-C50)	<50		50	ug/g	16-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	<72		72	ug/g	16-OCT-17				
	Chrom. to baseline at nC50	YES			No Unit	16-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	87.4		60-140	%	16-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	95.8		60-140	%	10-OCT-17				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.050		0.050	ug/g	16-OCT-17	21	29	7.9	29
	Acenaphthylene	<0.050		0.050	ug/g	16-OCT-17	0.15	0.17	0.15	0.17
	Anthracene	<0.050		0.050	ug/g	16-OCT-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	<0.050		0.050	ug/g	16-OCT-17	0.96	0.96	0.5	0.63
	Benzo(a)pyrene	<0.050		0.050	ug/g	16-OCT-17	0.3	0.3	0.3	0.3
	Benzo(b)fluoranthene	<0.050		0.050	ug/g	16-OCT-17	0.96	0.96	0.78	0.78
	Benzo(g,h,i)perylene	<0.050		0.050	ug/g	16-OCT-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	<0.050		0.050	ug/g	16-OCT-17	0.96	0.96	0.78	0.78
	Chrysene	<0.050		0.050	ug/g	16-OCT-17	9.6	9.6	7	7.8
	Dibenzo(ah)anthracene	<0.050		0.050	ug/g	16-OCT-17	0.1	0.1	0.1	0.1
	Fluoranthene	<0.050		0.050	ug/g	16-OCT-17	9.6	9.6	0.69	0.69
	Fluorene	<0.050		0.050	ug/g	16-OCT-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	16-OCT-17	0.76	0.95	0.38	0.48
	1+2-Methylnaphthalenes	<0.042		0.042	ug/g	16-OCT-17	30	42	0.99	3.4
	1-Methylnaphthalene	<0.030		0.030	ug/g	16-OCT-17	30	42	0.99	3.4
	2-Methylnaphthalene	<0.030		0.030	ug/g	16-OCT-17	30	42	0.99	3.4
	Naphthalene	<0.050		0.050	ug/g	16-OCT-17	9.6	28	0.6	0.75
	Phenanthrene	<0.050		0.050	ug/g	16-OCT-17	12	16	6.2	7.8
	Pyrene	<0.050		0.050	ug/g	16-OCT-17	96	96	78	78

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-7	TP17-302-5-7									
Sampled By:	M. SHIRY on 04-OCT-17 @ 12:45									
Matrix:	SOIL									
Polycyclic Aromatic Hydrocarbons										
	Surrogate: 2-Fluorobiphenyl	92.0		50-140	%	16-OCT-17				
	Surrogate: p-Terphenyl d14	95.7		50-140	%	16-OCT-17				
L2003037-8	TP17-301-1-3									
Sampled By:	M. SHIRY on 04-OCT-17 @ 13:20									
Matrix:	SOIL									
Physical Tests										
	Conductivity	0.143		0.0040	mS/cm	12-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	8.66		0.10	%	10-OCT-17				
	pH	7.29		0.10	pH units	12-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	11-OCT-17	0.051	0.051	0.051	0.051
Organic / Inorganic Carbon										
	Fraction Organic Carbon	0.0539		0.0010	No Unit	13-OCT-17				
	Fraction Organic Carbon	0.0548		0.0010	No Unit	13-OCT-17				
	Fraction Organic Carbon	0.0553		0.0010	No Unit	13-OCT-17				
	Average Fraction Organic Carbon	0.0546		0.0010	No Unit	13-OCT-17				
	Total Organic Carbon	5.39		0.10	%	13-OCT-17				
	Total Organic Carbon	5.48		0.10	%	13-OCT-17				
	Total Organic Carbon	5.53		0.10	%	13-OCT-17				
Saturated Paste Extractables										
	SAR	<0.13	SAR:DL	0.13	SAR	12-OCT-17	12	12	5	5
	Calcium (Ca)	4.5		1.0	mg/L	12-OCT-17				
	Magnesium (Mg)	<1.0		1.0	mg/L	12-OCT-17				
	Sodium (Na)	<1.0		1.0	mg/L	12-OCT-17				
Metals										
	Antimony (Sb)	2.3		1.0	ug/g	11-OCT-17	40	50	7.5	7.5
	Arsenic (As)	9.5		1.0	ug/g	11-OCT-17	18	18	18	18
	Barium (Ba)	58.6		1.0	ug/g	11-OCT-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	11-OCT-17	8	10	4	5
	Boron (B)	6.9		5.0	ug/g	11-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.27		0.10	ug/g	12-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	<0.50		0.50	ug/g	11-OCT-17	1.9	1.9	1.2	1.2
	Chromium (Cr)	21.6		1.0	ug/g	11-OCT-17	160	160	160	160
	Cobalt (Co)	5.6		1.0	ug/g	11-OCT-17	80	100	22	22
	Copper (Cu)	219		1.0	ug/g	11-OCT-17	230	300	*140	*180
	Lead (Pb)	72.9		1.0	ug/g	11-OCT-17				

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

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#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-8	TP17-301-1-3									
Sampled By:	M. SHIRY on 04-OCT-17 @ 13:20									
Matrix:	SOIL									
Metals										
							120	120	120	120
	Mercury (Hg)	0.0582		0.0050	ug/g	11-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	1.3		1.0	ug/g	11-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	15.1		1.0	ug/g	11-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	11-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	11-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	11-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	11-OCT-17	33	33	23	23
	Vanadium (V)	34.2		1.0	ug/g	11-OCT-17	86	86	86	86
	Zinc (Zn)	116		5.0	ug/g	11-OCT-17	340	340	340	340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	11-OCT-17	8	10	8	10
Volatile Organic Compounds										
	Benzene	0.0246		0.0068	ug/g	10-OCT-17	0.32	0.4	0.21	0.17
	Ethylbenzene	0.052		0.018	ug/g	10-OCT-17	1.1	1.6	1.1	1.6
	Toluene	0.184		0.080	ug/g	10-OCT-17	6.4	9	2.3	6
	o-Xylene	0.245		0.020	ug/g	10-OCT-17				
	m+p-Xylenes	0.318		0.030	ug/g	10-OCT-17				
	Xylenes (Total)	0.563		0.050	ug/g	11-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	100.2		50-140	%	10-OCT-17				
	Surrogate: 1,4-Difluorobenzene	94.5		50-140	%	10-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	7.9		5.0	ug/g	10-OCT-17	55	65	55	65
	F1-BTEX	7.1		5.0	ug/g	17-OCT-17	55	65	55	65
	F2 (C10-C16)	15		10	ug/g	16-OCT-17	230	250	98	150
	F2-Naphth	14		10	ug/g	17-OCT-17				
	F3 (C16-C34)	158		50	ug/g	16-OCT-17	1700	2500	300	1300
	F3-PAH	145		50	ug/g	17-OCT-17				
	F4 (C34-C50)	58		50	ug/g	16-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	238		72	ug/g	17-OCT-17				
	Chrom. to baseline at nC50	YES			No Unit	16-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	82.7		60-140	%	16-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	86.5		60-140	%	10-OCT-17				
Polycyclic Aromatic Hydrocarbons										
	1+2-Methylnaphthalenes	2.00		0.11	ug/g	17-OCT-17	30	42	*0.99	3.4
Semi-Volatile Organics										
	Acenaphthene	<0.13	DLM	0.13	ug/g	17-OCT-17	21	29	7.9	29
	Acenaphthylene	0.38	DLM	0.13	ug/g	17-OCT-17	*0.15	*0.17	*0.15	*0.17
	Anthracene	0.17	DLM	0.13	ug/g	17-OCT-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	0.92	R	0.13	ug/g	17-OCT-17	0.96	0.96	*0.5	*0.63
	Benzo(a)pyrene	1.76	DLM	0.13	ug/g	17-OCT-17	*0.3	*0.3	*0.3	*0.3
	Benzo(b)fluoranthene	2.44	DLM	0.13	ug/g	17-OCT-17	*0.96	*0.96	*0.78	*0.78
	Benzo(ghi)perylene	1.48	DLM	0.13	ug/g	17-OCT-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	1.64	DLM	0.13	ug/g	17-OCT-17	*0.96	*0.96	*0.78	*0.78
	Biphenyl	0.13	DLM	0.13	ug/g	17-OCT-17	52	210	0.31	1.1
	4-Chloroaniline	<0.25	DLM	0.25	ug/g	17-OCT-17				

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-8	TP17-301-1-3									
Sampled By:	M. SHIRY on 04-OCT-17 @ 13:20									
Matrix:	SOIL									
Semi-Volatile Organics										
							0.5	0.53	0.5	0.53
Bis(2-chloroethyl)ether		<0.25	DLM	0.25	ug/g	17-OCT-17	0.5	0.5	0.5	0.5
Bis(2-chloroisopropyl)ether		<0.25	DLM	0.25	ug/g	17-OCT-17	11	13	0.67	1.8
2-Chlorophenol		<0.25	DLM	0.25	ug/g	17-OCT-17	3.1	3.9	1.6	2
Chrysene		1.75	DLM	0.13	ug/g	17-OCT-17	9.6	9.6	7	7.8
Dibenzo(a,h)anthracene		0.44	DLM	0.13	ug/g	17-OCT-17	*0.1	*0.1	*0.1	*0.1
3,3'-Dichlorobenzidine		<0.25	DLM	0.25	ug/g	17-OCT-17	1	1	1	1
2,4-Dichlorophenol		<0.25	DLM	0.25	ug/g	17-OCT-17	**0.19	0.27	**0.19	0.27
Diethylphthalate		<0.25	DLM	0.25	ug/g	17-OCT-17	0.5	0.5	0.5	0.5
Dimethylphthalate		<0.25	DLM	0.25	ug/g	17-OCT-17	0.5	0.5	0.5	0.5
2,4-Dimethylphenol		<0.25	DLM	0.25	ug/g	17-OCT-17	38	53	38	53
2,4-Dinitrophenol		<2.5	DLM	2.5	ug/g	17-OCT-17	**2	2.9	**2	2.9
2,4-Dinitrotoluene		<0.25	DLM	0.25	ug/g	17-OCT-17	0.5	0.5	0.5	0.5
2,6-Dinitrotoluene		<0.25	DLM	0.25	ug/g	17-OCT-17	0.5	0.5	0.5	0.5
2,4+2,6-Dinitrotoluene		<0.35		0.35	ug/g	17-OCT-17				
Bis(2-ethylhexyl)phthalate		<0.25	DLM	0.25	ug/g	17-OCT-17	28	35	5	5
Fluoranthene		0.89	DLM	0.13	ug/g	17-OCT-17	9.6	9.6	*0.69	*0.69
Fluorene		<0.13	DLM	0.13	ug/g	17-OCT-17	62	69	62	69
Indeno(1,2,3-cd)pyrene		1.61	DLM	0.13	ug/g	17-OCT-17	*0.76	*0.95	*0.38	*0.48
1-Methylnaphthalene		1.08	DUPH	0.075	ug/g	17-OCT-17	30	42	*0.99	3.4
2-Methylnaphthalene		0.918	DUPH	0.075	ug/g	17-OCT-17	30	42	0.99	3.4
Naphthalene		0.46	DUPH	0.13	ug/g	17-OCT-17	9.6	28	0.6	0.75
Pentachlorophenol		<0.25	DLM	0.25	ug/g	17-OCT-17	2.9	3.3	**0.1	**0.1
Phenanthrene		1.15	DLM	0.13	ug/g	17-OCT-17	12	16	6.2	7.8
Phenol		<0.25	DLM	0.25	ug/g	17-OCT-17	9.4	9.4	9.4	9.4
Pyrene		1.49	DLM	0.13	ug/g	17-OCT-17	96	96	78	78
1,2,4-Trichlorobenzene		<0.13	DLM	0.13	ug/g	17-OCT-17	3.2	16	0.36	1.4
2,4,5-Trichlorophenol		<0.25	DLM	0.25	ug/g	17-OCT-17	9.1	10	4.4	5.5
2,4,6-Trichlorophenol		<0.25	DLM	0.25	ug/g	17-OCT-17	2.1	2.9	2.1	2.9
Surrogate: 2-Fluorobiphenyl		104.3		50-140	%	17-OCT-17				
Surrogate: Nitrobenzene d5		101.1		50-140	%	17-OCT-17				
Surrogate: Phenol d5		95.2		30-130	%	17-OCT-17				
Surrogate: p-Terphenyl d14		106.0		50-140	%	17-OCT-17				
Surrogate: 2,4,6-Tribromophenol		76.3		50-140	%	17-OCT-17				
L2003037-9	TP17-301-4-5									
Sampled By:	M. SHIRY on 04-OCT-17 @ 13:40									
Matrix:	SOIL									
Physical Tests										
Conductivity		0.121		0.0040	mS/cm	12-OCT-17	1.4	1.4	0.7	0.7
% Moisture		10.1		0.10	%	10-OCT-17				
pH		7.57		0.10	pH units	12-OCT-17				
Cyanides										
Cyanide, Weak Acid Diss		<0.050		0.050	ug/g	11-OCT-17	0.051	0.051	0.051	0.051
Organic / Inorganic Carbon										
Fraction Organic Carbon		0.0267		0.0010	No Unit	13-OCT-17				

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-9	TP17-301-4-5									
Sampled By:	M. SHIRY on 04-OCT-17 @ 13:40									
Matrix:	SOIL									
Organic / Inorganic Carbon										
	Fraction Organic Carbon	0.0274		0.0010	No Unit	13-OCT-17				
	Fraction Organic Carbon	0.0277		0.0010	No Unit	13-OCT-17				
	Average Fraction Organic Carbon	0.0273		0.0010	No Unit	13-OCT-17				
	Total Organic Carbon	2.67		0.10	%	13-OCT-17				
	Total Organic Carbon	2.74		0.10	%	13-OCT-17				
	Total Organic Carbon	2.77		0.10	%	13-OCT-17				
Saturated Paste Extractables										
	SAR	<0.13	SAR:DL	0.13	SAR	12-OCT-17	12	12	5	5
	Calcium (Ca)	4.4		1.0	mg/L	12-OCT-17				
	Magnesium (Mg)	<1.0		1.0	mg/L	12-OCT-17				
	Sodium (Na)	<1.0		1.0	mg/L	12-OCT-17				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	11-OCT-17	40	50	7.5	7.5
	Arsenic (As)	1.7		1.0	ug/g	11-OCT-17	18	18	18	18
	Barium (Ba)	31.9		1.0	ug/g	11-OCT-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	11-OCT-17	8	10	4	5
	Boron (B)	8.5		5.0	ug/g	11-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.16		0.10	ug/g	12-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	0.57		0.50	ug/g	11-OCT-17	1.9	1.9	1.2	1.2
	Chromium (Cr)	14.1		1.0	ug/g	11-OCT-17	160	160	160	160
	Cobalt (Co)	5.0		1.0	ug/g	11-OCT-17	80	100	22	22
	Copper (Cu)	9.6		1.0	ug/g	11-OCT-17	230	300	140	180
	Lead (Pb)	68.2		1.0	ug/g	11-OCT-17	120	120	120	120
	Mercury (Hg)	0.0405		0.0050	ug/g	11-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	<1.0		1.0	ug/g	11-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	13.9		1.0	ug/g	11-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	11-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	11-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	11-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	11-OCT-17	33	33	23	23
	Vanadium (V)	23.2		1.0	ug/g	11-OCT-17	86	86	86	86
	Zinc (Zn)	843		5.0	ug/g	11-OCT-17	*340	*340	*340	*340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	11-OCT-17	8	10	8	10
Volatile Organic Compounds										
	Benzene	<0.0068		0.0068	ug/g	10-OCT-17	0.32	0.4	0.21	0.17

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-9	TP17-301-4-5									
Sampled By:	M. SHIRY on 04-OCT-17 @ 13:40									
Matrix:	SOIL									
Volatile Organic Compounds										
	Ethylbenzene	<0.018		0.018	ug/g	10-OCT-17	1.1	1.6	1.1	1.6
	Toluene	<0.080		0.080	ug/g	10-OCT-17	6.4	9	2.3	6
	o-Xylene	<0.020		0.020	ug/g	10-OCT-17				
	m+p-Xylenes	<0.030		0.030	ug/g	10-OCT-17				
	Xylenes (Total)	<0.050		0.050	ug/g	11-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	93.7		50-140	%	10-OCT-17				
	Surrogate: 1,4-Difluorobenzene	92.2		50-140	%	10-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	10-OCT-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	17-OCT-17	55	65	55	65
	F2 (C10-C16)	<10		10	ug/g	16-OCT-17	230	250	98	150
	F2-Naphth	<10		10	ug/g	17-OCT-17				
	F3 (C16-C34)	52		50	ug/g	16-OCT-17	1700	2500	300	1300
	F3-PAH	52		50	ug/g	17-OCT-17				
	F4 (C34-C50)	<50		50	ug/g	16-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	<72		72	ug/g	17-OCT-17				
	Chrom. to baseline at nC50	YES			No Unit	16-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	86.1		60-140	%	16-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	86.6		60-140	%	10-OCT-17				
Polycyclic Aromatic Hydrocarbons										
	1+2-Methylnaphthalenes	<0.11		0.11	ug/g	17-OCT-17	30	42	0.99	3.4
Semi-Volatile Organics										
	Acenaphthene	<0.13	DLM	0.13	ug/g	17-OCT-17	21	29	7.9	29
	Acenaphthylene	<0.13	DLM	0.13	ug/g	17-OCT-17	0.15	0.17	0.15	0.17
	Anthracene	<0.13	DLM	0.13	ug/g	17-OCT-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	<0.13	DLM	0.13	ug/g	17-OCT-17	0.96	0.96	0.5	0.63
	Benzo(a)pyrene	<0.13	DLM	0.13	ug/g	17-OCT-17	0.3	0.3	0.3	0.3
	Benzo(b)fluoranthene	<0.13	DLM	0.13	ug/g	17-OCT-17	0.96	0.96	0.78	0.78
	Benzo(ghi)perylene	<0.13	DLM	0.13	ug/g	17-OCT-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	<0.13	DLM	0.13	ug/g	17-OCT-17	0.96	0.96	0.78	0.78
	Biphenyl	<0.13	DLM	0.13	ug/g	17-OCT-17	52	210	0.31	1.1
	4-Chloroaniline	<0.25	DLM	0.25	ug/g	17-OCT-17	0.5	0.53	0.5	0.53
	Bis(2-chloroethyl)ether	<0.25	DLM	0.25	ug/g	17-OCT-17	0.5	0.5	0.5	0.5
	Bis(2-chloroisopropyl)ether	<0.25	DLM	0.25	ug/g	17-OCT-17	11	13	0.67	1.8
	2-Chlorophenol	<0.25	DLM	0.25	ug/g	17-OCT-17	3.1	3.9	1.6	2
	Chrysene	<0.13	DLM	0.13	ug/g	17-OCT-17	9.6	9.6	7	7.8
	Dibenzo(a,h)anthracene	<0.13	DLM	0.13	ug/g	17-OCT-17	**0.1	**0.1	**0.1	**0.1
	3,3'-Dichlorobenzidine	<0.25	DLM	0.25	ug/g	17-OCT-17	1	1	1	1
	2,4-Dichlorophenol	<0.25	DLM	0.25	ug/g	17-OCT-17	**0.19	0.27	**0.19	0.27
	Diethylphthalate	<0.25	DLM	0.25	ug/g	17-OCT-17	0.5	0.5	0.5	0.5
	Dimethylphthalate	<0.25	DLM	0.25	ug/g	17-OCT-17	0.5	0.5	0.5	0.5
	2,4-Dimethylphenol	<0.25	DLM	0.25	ug/g	17-OCT-17	38	53	38	53
	2,4-Dinitrophenol	<2.5	DLM	2.5	ug/g	17-OCT-17	**2	2.9	**2	2.9
	2,4-Dinitrotoluene	<0.25	DLM	0.25	ug/g	17-OCT-17	0.5	0.5	0.5	0.5
	2,6-Dinitrotoluene	<0.25	DLM	0.25	ug/g	17-OCT-17	0.5	0.5	0.5	0.5
	2,4+2,6-Dinitrotoluene	<0.35		0.35	ug/g	17-OCT-17				

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#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
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ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-9	TP17-301-4-5									
Sampled By:	M. SHIRY on 04-OCT-17 @ 13:40									
Matrix:	SOIL									
Semi-Volatile Organics										
	Bis(2-ethylhexyl)phthalate	<0.25	DLM	0.25	ug/g	17-OCT-17	28	35	5	5
	Fluoranthene	<0.13	DLM	0.13	ug/g	17-OCT-17	9.6	9.6	0.69	0.69
	Fluorene	<0.13	DLM	0.13	ug/g	17-OCT-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	<0.13	DLM	0.13	ug/g	17-OCT-17	0.76	0.95	0.38	0.48
	1-Methylnaphthalene	<0.075	DLM	0.075	ug/g	17-OCT-17	30	42	0.99	3.4
	2-Methylnaphthalene	<0.075	DLM	0.075	ug/g	17-OCT-17	30	42	0.99	3.4
	Naphthalene	<0.13	DLM	0.13	ug/g	17-OCT-17	9.6	28	0.6	0.75
	Pentachlorophenol	<0.25	DLM	0.25	ug/g	17-OCT-17	2.9	3.3	**0.1	**0.1
	Phenanthrene	<0.13	DLM	0.13	ug/g	17-OCT-17	12	16	6.2	7.8
	Phenol	<0.25	DLM	0.25	ug/g	17-OCT-17	9.4	9.4	9.4	9.4
	Pyrene	<0.13	DLM	0.13	ug/g	17-OCT-17	96	96	78	78
	1,2,4-Trichlorobenzene	<0.13	DLM	0.13	ug/g	17-OCT-17	3.2	16	0.36	1.4
	2,4,5-Trichlorophenol	<0.25	DLM	0.25	ug/g	17-OCT-17	9.1	10	4.4	5.5
	2,4,6-Trichlorophenol	<0.25	DLM	0.25	ug/g	17-OCT-17	2.1	2.9	2.1	2.9
	Surrogate: 2-Fluorobiphenyl	108.9		50-140	%	17-OCT-17				
	Surrogate: Nitrobenzene d5	106.6		50-140	%	17-OCT-17				
	Surrogate: Phenol d5	97.8		30-130	%	17-OCT-17				
	Surrogate: p-Terphenyl d14	114.6		50-140	%	17-OCT-17				
	Surrogate: 2,4,6-Tribromophenol	93.0		50-140	%	17-OCT-17				
L2003037-10	TP17-300-0-1									
Sampled By:	M. SHIRY on 04-OCT-17 @ 14:15									
Matrix:	SOIL									
Physical Tests										
	% Moisture	2.09		0.10	%	10-OCT-17				
	% Moisture	2.20		0.10	%	07-NOV-17				
Polychlorinated Biphenyls										
	Aroclor 1242	<0.550	DLM	0.55	ug/g	13-OCT-17				
	Aroclor 1248	1.28	PRAR	0.050	ug/g	13-OCT-17				
	Aroclor 1254	<0.40	DLM	0.40	ug/g	13-OCT-17				
	Aroclor 1260	<0.050	DLM	0.050	ug/g	13-OCT-17				
	Total PCBs	1.28	DLM	0.70	ug/g	13-OCT-17	*1.1	*1.1	*0.35	*0.35
	Surrogate: d14-Terphenyl	99.1		60-140	%	13-OCT-17				
Dioxins and Furans										
	2,3,7,8-TCDD	0.157	M,J	0.067	pg/g	11-NOV-17				
	1,2,3,7,8-PeCDD	0.966	M,J	0.043	pg/g	11-NOV-17				
	1,2,3,4,7,8-HxCDD	0.81	M,J	0.11	pg/g	11-NOV-17				
	1,2,3,6,7,8-HxCDD	2.70	[M]	0.11	pg/g	11-NOV-17				
	1,2,3,7,8,9-HxCDD	2.12	M,J	0.11	pg/g	11-NOV-17				
	1,2,3,4,6,7,8-HpCDD	58.2		0.37	pg/g	11-NOV-17				
	OCDD	470		0.25	pg/g	11-NOV-17				
	Total-TCDD	3.31		0.067	pg/g	11-NOV-17				
	Total TCDD # Homologues	7			No Unit	11-NOV-17				
	Total-PeCDD	13.9		0.043	pg/g	11-NOV-17				
	Total PeCDD # Homologues	8			No Unit	11-NOV-17				

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#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2003037-10	TP17-300-0-1									
Sampled By:	M. SHIRY on 04-OCT-17 @ 14:15									
Matrix:	SOIL						#1	#2	#3	#4
Dioxins and Furans										
	Total-HxCDD	24.5		0.11	pg/g	11-NOV-17				
	Total HxCDD # Homologues	6			No Unit	11-NOV-17				
	Total-HpCDD	107		0.37	pg/g	11-NOV-17				
	Total HpCDD # Homologues	2			No Unit	11-NOV-17				
	2,3,7,8-TCDF	1.38	[M]	0.091	pg/g	11-NOV-17				
	1,2,3,7,8-PeCDF	0.68	M,J	0.38	pg/g	11-NOV-17				
	2,3,4,7,8-PeCDF	5.40		0.33	pg/g	11-NOV-17				
	1,2,3,4,7,8-HxCDF	2.01	[J]	0.11	pg/g	11-NOV-17				
	1,2,3,6,7,8-HxCDF	1.83	[J]	0.10	pg/g	11-NOV-17				
	1,2,3,7,8,9-HxCDF	0.61	M,J	0.14	pg/g	11-NOV-17				
	2,3,4,6,7,8-HxCDF	3.17		0.10	pg/g	11-NOV-17				
	1,2,3,4,6,7,8-HpCDF	22.0		0.083	pg/g	11-NOV-17				
	1,2,3,4,7,8,9-HpCDF	0.94	M,J	0.13	pg/g	11-NOV-17				
	OCDF	29.2		0.088	pg/g	11-NOV-17				
	Total-TCDF	82.1		0.091	pg/g	11-NOV-17				
	Total TCDF # Homologues	22			No Unit	11-NOV-17				
	Total-PeCDF	79.0		0.38	pg/g	11-NOV-17				
	Total PeCDF # Homologues	12			No Unit	11-NOV-17				
	Total-HxCDF	53.6		0.14	pg/g	11-NOV-17				
	Total HxCDF # Homologues	8			No Unit	11-NOV-17				
	Total-HpCDF	52.7		0.13	pg/g	11-NOV-17				
	Total HpCDF # Homologues	4			No Unit	11-NOV-17				
	Surrogate: 13C12-2,3,7,8-TCDD	82.0		40-130	%	11-NOV-17				
	Surrogate: 13C12-1,2,3,7,8-PeCDD	78.0		40-140	%	11-NOV-17				
	Surrogate: 13C12-1,2,3,4,7,8-HxCDD	65.0		40-140	%	11-NOV-17				
	Surrogate: 13C12-1,2,3,6,7,8-HxCDD	86.0		40-140	%	11-NOV-17				
	Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	70.0		40-140	%	11-NOV-17				
	Surrogate: 13C12-OCDD	67.0		40-140	%	11-NOV-17				
	Surrogate: 13C12-2,3,7,8-TCDF	78.0		40-130	%	11-NOV-17				
	Surrogate: 13C12-1,2,3,7,8-PeCDF	80.0		40-140	%	11-NOV-17				
	Surrogate: 13C12-2,3,4,7,8-PeCDF	82.0		40-140	%	11-NOV-17				
	Surrogate: 13C12-1,2,3,4,7,8-HxCDF	66.0		40-140	%	11-NOV-17				
	Surrogate: 13C12-1,2,3,6,7,8-HxCDF	75.0		40-140	%	11-NOV-17				
	Surrogate: 13C12-2,3,4,6,7,8-HxCDF	74.0		40-140	%	11-NOV-17				
	Surrogate: 13C12-1,2,3,7,8,9-HxCDF	67.0		40-140	%	11-NOV-17				
	Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	66.0		40-140	%	11-NOV-17				
	Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	62.0		40-140	%	11-NOV-17				
	Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	71.0		40-130	%	11-NOV-17				
	Lower Bound PCDD/F TEQ (WHO 2005)	5.19			pg/g	11-NOV-17				
	Mid Point PCDD/F TEQ (WHO 2005)	5.19			pg/g	11-NOV-17				
	Upper Bound PCDD/F TEQ (WHO 2005)	5.19			pg/g	11-NOV-17				
L2003037-11	TP17-300-1-2A									
Sampled By:	M. SHIRY on 04-OCT-17 @ 14:20									
Matrix:	SOIL						#1	#2	#3	#4
Physical Tests										
	% Moisture	7.46		0.10	%	26-OCT-17				

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)

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ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-11 TP17-300-1-2A									
Sampled By: M. SHIRY on 04-OCT-17 @ 14:20									
Matrix: SOIL									
Polychlorinated Biphenyls									
Aroclor 1242	<0.010		0.010	ug/g	01-NOV-17				
Aroclor 1248	<0.010		0.010	ug/g	01-NOV-17				
Aroclor 1254	<0.010		0.010	ug/g	01-NOV-17				
Aroclor 1260	<0.010		0.010	ug/g	01-NOV-17				
Total PCBs	<0.020		0.020	ug/g	01-NOV-17	1.1	1.1	0.35	0.35
Surrogate: d14-Terphenyl	100.8		60-140	%	01-NOV-17				
L2003037-12 TP17-300-1-2									
Sampled By: M. SHIRY on 04-OCT-17 @ 14:25									
Matrix: SOIL									
Physical Tests									
Conductivity	0.124		0.0040	mS/cm	12-OCT-17	1.4	1.4	0.7	0.7
% Moisture	5.62		0.10	%	10-OCT-17				
pH	7.47		0.10	pH units	12-OCT-17				
Cyanides									
Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	12-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables									
SAR	<0.15	SAR:DL	0.15	SAR	12-OCT-17	12	12	5	5
Calcium (Ca)	3.6		1.0	mg/L	12-OCT-17				
Magnesium (Mg)	<1.0		1.0	mg/L	12-OCT-17				
Sodium (Na)	<1.0		1.0	mg/L	12-OCT-17				
Metals									
Antimony (Sb)	1.9		1.0	ug/g	11-OCT-17	40	50	7.5	7.5
Arsenic (As)	6.5		1.0	ug/g	11-OCT-17	18	18	18	18
Barium (Ba)	53.3		1.0	ug/g	11-OCT-17	670	670	390	390
Beryllium (Be)	<0.50		0.50	ug/g	11-OCT-17	8	10	4	5
Boron (B)	<5.0		5.0	ug/g	11-OCT-17	120	120	120	120
Boron (B), Hot Water Ext.	0.16		0.10	ug/g	12-OCT-17	2	2	1.5	1.5
Cadmium (Cd)	0.62		0.50	ug/g	11-OCT-17	1.9	1.9	1.2	1.2
Chromium (Cr)	13.4		1.0	ug/g	11-OCT-17	160	160	160	160
Cobalt (Co)	3.8		1.0	ug/g	11-OCT-17	80	100	22	22
Copper (Cu)	42.7		1.0	ug/g	11-OCT-17	230	300	140	180
Lead (Pb)	108		1.0	ug/g	11-OCT-17	120	120	120	120
Mercury (Hg)	0.0670		0.0050	ug/g	11-OCT-17	3.9	20	0.27	1.8
Molybdenum (Mo)	1.0		1.0	ug/g	11-OCT-17	40	40	6.9	6.9
Nickel (Ni)	12.0		1.0	ug/g	11-OCT-17	270	340	100	130
Selenium (Se)	<1.0		1.0	ug/g	11-OCT-17	5.5	5.5	2.4	2.4
Silver (Ag)	<0.20		0.20	ug/g	11-OCT-17	40	50	20	25
Thallium (Tl)	<0.50		0.50	ug/g	11-OCT-17	3.3	3.3	1	1
Uranium (U)	<1.0		1.0	ug/g	11-OCT-17	33	33	23	23
Vanadium (V)	18.8		1.0	ug/g	11-OCT-17	86	86	86	86
Zinc (Zn)	259		5.0	ug/g	11-OCT-17	340	340	340	340
Speciated Metals									
Chromium, Hexavalent	<0.20		0.20	ug/g	11-OCT-17	8	10	8	10
Volatile Organic Compounds									

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-12	TP17-300-1-2									
Sampled By:	M. SHIRY on 04-OCT-17 @ 14:25									
Matrix:	SOIL									
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	10-OCT-17	16	28	16	28
	Benzene	0.156		0.0068	ug/g	10-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	10-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	10-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	10-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	10-OCT-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	10-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	10-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	10-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	10-OCT-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	10-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	10-OCT-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	10-OCT-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	10-OCT-17	0.059	0.081	0.05	0.081
	Ethylbenzene	0.092		0.018	ug/g	10-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	0.089		0.050	ug/g	10-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	10-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	10-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	10-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	10-OCT-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	10-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.9	2.5	0.28	2.3
	Toluene	0.606		0.080	ug/g	10-OCT-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	10-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	10-OCT-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	10-OCT-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	10-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	0.168		0.020	ug/g	10-OCT-17				
	m+p-Xylenes	0.538		0.030	ug/g	10-OCT-17				
	Xylenes (Total)	0.706		0.050	ug/g	10-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	89.7		50-140	%	10-OCT-17				
	Surrogate: 1,4-Difluorobenzene	96.2		50-140	%	10-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	5.3		5.0	ug/g	10-OCT-17	55	65	55	65

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-12	TP17-300-1-2									
Sampled By:	M. SHIRY on 04-OCT-17 @ 14:25									
Matrix:	SOIL									
Hydrocarbons										
	F1-BTEX	<5.0		5.0	ug/g	17-OCT-17	55	65	55	65
	F2 (C10-C16)	<10		10	ug/g	16-OCT-17	230	250	98	150
	F2-Naphth	<10		10	ug/g	17-OCT-17				
	F3 (C16-C34)	477		50	ug/g	16-OCT-17	1700	2500	*300	1300
	F3-PAH	405		50	ug/g	17-OCT-17				
	F4 (C34-C50)	865		50	ug/g	16-OCT-17	3300	6600	2800	5600
	F4G-SG (GHH-Silica)	1680		250	ug/g	12-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	1350		72	ug/g	17-OCT-17				
	Chrom. to baseline at nC50	NO			No Unit	16-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	67.9		60-140	%	16-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	95.0		60-140	%	10-OCT-17				
Polycyclic Aromatic Hydrocarbons										
	1+2-Methylnaphthalenes	4.47		0.53	ug/g	17-OCT-17	30	42	*0.99	*3.4
Semi-Volatile Organics										
	Acenaphthene	<0.63	DLM	0.63	ug/g	17-OCT-17	21	29	7.9	29
	Acenaphthylene	<0.63	DLM	0.63	ug/g	17-OCT-17	**0.15	**0.17	**0.15	**0.17
	Anthracene	1.77	DLM	0.63	ug/g	17-OCT-17	*0.67	*0.74	*0.67	*0.74
	Benzo(a)anthracene	14.6	DLM	0.63	ug/g	17-OCT-17	*0.96	*0.96	*0.5	*0.63
	Benzo(a)pyrene	14.3	DLM	0.63	ug/g	17-OCT-17	*0.3	*0.3	*0.3	*0.3
	Benzo(b)fluoranthene	9.26	DLM	0.63	ug/g	17-OCT-17	*0.96	*0.96	*0.78	*0.78
	Benzo(ghi)perylene	18.8	DLM	0.63	ug/g	17-OCT-17	*9.6	*9.6	*6.6	*7.8
	Benzo(k)fluoranthene	3.52	DLM	0.63	ug/g	17-OCT-17	*0.96	*0.96	*0.78	*0.78
	Biphenyl	<0.63	DLM	0.63	ug/g	17-OCT-17	52	210	**0.31	1.1
	4-Chloroaniline	<1.3	DLM	1.3	ug/g	17-OCT-17	**0.5	**0.53	**0.5	**0.53
	Bis(2-chloroethyl)ether	<1.3	DLM	1.3	ug/g	17-OCT-17	**0.5	**0.5	**0.5	**0.5
	Bis(2-chloroisopropyl)ether	<1.3	DLM	1.3	ug/g	17-OCT-17	11	13	**0.67	1.8
	2-Chlorophenol	<1.3	DLM	1.3	ug/g	17-OCT-17	3.1	3.9	1.6	2
	Chrysene	22.2	DLM	0.63	ug/g	17-OCT-17	*9.6	*9.6	*7	*7.8
	Dibenzo(a,h)anthracene	11.9	DLM	0.63	ug/g	17-OCT-17	*0.1	*0.1	*0.1	*0.1
	3,3'-Dichlorobenzidine	<1.3	DLM	1.3	ug/g	17-OCT-17	**1	**1	**1	**1
	2,4-Dichlorophenol	<1.3	DLM	1.3	ug/g	17-OCT-17	**0.19	**0.27	**0.19	**0.27
	Diethylphthalate	<1.3	DLM	1.3	ug/g	17-OCT-17	**0.5	**0.5	**0.5	**0.5
	Dimethylphthalate	<1.3	DLM	1.3	ug/g	17-OCT-17	**0.5	**0.5	**0.5	**0.5
	2,4-Dimethylphenol	<1.3	DLM	1.3	ug/g	17-OCT-17	38	53	38	53
	2,4-Dinitrophenol	<13	DLM	13	ug/g	17-OCT-17	**2	**2.9	**2	**2.9
	2,4-Dinitrotoluene	<1.3	DLM	1.3	ug/g	17-OCT-17	**0.5	**0.5	**0.5	**0.5
	2,6-Dinitrotoluene	<1.3	DLM	1.3	ug/g	17-OCT-17	**0.5	**0.5	**0.5	**0.5
	2,4+2,6-Dinitrotoluene	<1.8		1.8	ug/g	17-OCT-17				
	Bis(2-ethylhexyl)phthalate	<1.3	DLM	1.3	ug/g	17-OCT-17	28	35	5	5
	Fluoranthene	1.42	DLM	0.63	ug/g	17-OCT-17	9.6	9.6	*0.69	*0.69
	Fluorene	<0.63	DLM	0.63	ug/g	17-OCT-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	6.48	DLM	0.63	ug/g	17-OCT-17	*0.76	*0.95	*0.38	*0.48
	1-Methylnaphthalene	1.04	DLM	0.38	ug/g	17-OCT-17	30	42	*0.99	3.4
	2-Methylnaphthalene	3.44	DLM	0.38	ug/g	17-OCT-17	30	42	*0.99	*3.4
	Naphthalene	2.46	DLM	0.63	ug/g	17-OCT-17	9.6	28	*0.6	*0.75
	Pentachlorophenol	<1.3	DLM	1.3	ug/g	17-OCT-17	2.9	3.3	**0.1	**0.1

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
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ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-12 TP17-300-1-2									
Sampled By: M. SHIRY on 04-OCT-17 @ 14:25									
Matrix: SOIL									
Semi-Volatile Organics									
Phenanthrene	5.50	DLM	0.63	ug/g	17-OCT-17	12	16	6.2	7.8
Phenol	<1.3	DLM	1.3	ug/g	17-OCT-17	9.4	9.4	9.4	9.4
Pyrene	4.77	DLM	0.63	ug/g	17-OCT-17	96	96	78	78
1,2,4-Trichlorobenzene	<0.63	DLM	0.63	ug/g	17-OCT-17	3.2	16	**0.36	1.4
2,4,5-Trichlorophenol	<1.3	DLM	1.3	ug/g	17-OCT-17	9.1	10	4.4	5.5
2,4,6-Trichlorophenol	<1.3	DLM	1.3	ug/g	17-OCT-17	2.1	2.9	2.1	2.9
Surrogate: 2-Fluorobiphenyl	108.8		50-140	%	17-OCT-17				
Surrogate: Nitrobenzene d5	103.4		50-140	%	17-OCT-17				
Surrogate: Phenol d5	86.5		30-130	%	17-OCT-17				
Surrogate: p-Terphenyl d14	92.4		50-140	%	17-OCT-17				
Surrogate: 2,4,6-Tribromophenol	87.0		50-140	%	17-OCT-17				
L2003037-13 TP17-300-3-4									
Sampled By: M. SHIRY on 04-OCT-17 @ 14:35									
Matrix: SOIL									
Physical Tests									
Conductivity	0.0898		0.0040	mS/cm	12-OCT-17	1.4	1.4	0.7	0.7
% Moisture	6.51		0.10	%	10-OCT-17				
pH	7.27		0.10	pH units	12-OCT-17				
Cyanides									
Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	12-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables									
SAR	<0.17	SAR:DL	0.17	SAR	12-OCT-17	12	12	5	5
Calcium (Ca)	2.6		1.0	mg/L	12-OCT-17				
Magnesium (Mg)	<1.0		1.0	mg/L	12-OCT-17				
Sodium (Na)	<1.0		1.0	mg/L	12-OCT-17				
Metals									
Antimony (Sb)	<1.0		1.0	ug/g	11-OCT-17	40	50	7.5	7.5
Arsenic (As)	2.2		1.0	ug/g	11-OCT-17	18	18	18	18
Barium (Ba)	29.9		1.0	ug/g	11-OCT-17	670	670	390	390
Beryllium (Be)	<0.50		0.50	ug/g	11-OCT-17	8	10	4	5
Boron (B)	8.9		5.0	ug/g	11-OCT-17	120	120	120	120
Boron (B), Hot Water Ext.	0.10		0.10	ug/g	12-OCT-17	2	2	1.5	1.5
Cadmium (Cd)	0.56		0.50	ug/g	11-OCT-17	1.9	1.9	1.2	1.2
Chromium (Cr)	13.9		1.0	ug/g	11-OCT-17	160	160	160	160
Cobalt (Co)	4.5		1.0	ug/g	11-OCT-17	80	100	22	22
Copper (Cu)	12.4		1.0	ug/g	11-OCT-17	230	300	140	180
Lead (Pb)	73.4		1.0	ug/g	11-OCT-17	120	120	120	120
Mercury (Hg)	0.0447		0.0050	ug/g	11-OCT-17	3.9	20	0.27	1.8
Molybdenum (Mo)	<1.0		1.0	ug/g	11-OCT-17	40	40	6.9	6.9
Nickel (Ni)	12.4		1.0	ug/g	11-OCT-17	270	340	100	130
Selenium (Se)	<1.0		1.0	ug/g	11-OCT-17	5.5	5.5	2.4	2.4
Silver (Ag)	<0.20		0.20	ug/g	11-OCT-17	40	50	20	25
Thallium (Tl)	<0.50		0.50	ug/g	11-OCT-17	3.3	3.3	1	1
Uranium (U)	<1.0		1.0	ug/g	11-OCT-17	33	33	23	23
Vanadium (V)	20.6		1.0	ug/g	11-OCT-17	86	86	86	86

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#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
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ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-13	TP17-300-3-4									
Sampled By:	M. SHIRY on 04-OCT-17 @ 14:35									
Matrix:	SOIL									
Metals										
	Zinc (Zn)	803		5.0	ug/g	11-OCT-17	*340	*340	*340	*340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	11-OCT-17	8	10	8	10
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	10-OCT-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	10-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	10-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	10-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	10-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	10-OCT-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	10-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	10-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	10-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	10-OCT-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	10-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	10-OCT-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	10-OCT-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	11-OCT-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	10-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	10-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	10-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	10-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	10-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	10-OCT-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	10-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	10-OCT-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	10-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	10-OCT-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	10-OCT-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	10-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	10-OCT-17				
	m+p-Xylenes	<0.030		0.030	ug/g	10-OCT-17				
	Xylenes (Total)	<0.050		0.050	ug/g	11-OCT-17	26	30	3.1	25

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-13	TP17-300-3-4									
Sampled By:	M. SHIRY on 04-OCT-17 @ 14:35									
Matrix:	SOIL									
Volatile Organic Compounds										
	Surrogate: 4-Bromofluorobenzene	99.1		50-140	%	10-OCT-17				
	Surrogate: 1,4-Difluorobenzene	103.1		50-140	%	10-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	10-OCT-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	17-OCT-17	55	65	55	65
	F2 (C10-C16)	<10		10	ug/g	16-OCT-17	230	250	98	150
	F2-Naphth	<10		10	ug/g	17-OCT-17				
	F3 (C16-C34)	66		50	ug/g	16-OCT-17	1700	2500	300	1300
	F3-PAH	66		50	ug/g	17-OCT-17				
	F4 (C34-C50)	<50		50	ug/g	16-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	<72		72	ug/g	17-OCT-17				
	Chrom. to baseline at nC50	YES			No Unit	16-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	86.7		60-140	%	16-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	76.2		60-140	%	10-OCT-17				
Polycyclic Aromatic Hydrocarbons										
	1+2-Methylnaphthalenes	<0.11		0.11	ug/g	17-OCT-17	30	42	0.99	3.4
Semi-Volatile Organics										
	Acenaphthene	<0.13	DLM	0.13	ug/g	17-OCT-17	21	29	7.9	29
	Acenaphthylene	<0.13	DLM	0.13	ug/g	17-OCT-17	0.15	0.17	0.15	0.17
	Anthracene	<0.13	DLM	0.13	ug/g	17-OCT-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	<0.13	DLM	0.13	ug/g	17-OCT-17	0.96	0.96	0.5	0.63
	Benzo(a)pyrene	<0.13	DLM	0.13	ug/g	17-OCT-17	0.3	0.3	0.3	0.3
	Benzo(b)fluoranthene	<0.13	DLM	0.13	ug/g	17-OCT-17	0.96	0.96	0.78	0.78
	Benzo(ghi)perylene	<0.13	DLM	0.13	ug/g	17-OCT-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	<0.13	DLM	0.13	ug/g	17-OCT-17	0.96	0.96	0.78	0.78
	Biphenyl	<0.13	DLM	0.13	ug/g	17-OCT-17	52	210	0.31	1.1
	4-Chloroaniline	<0.25	DLM	0.25	ug/g	17-OCT-17	0.5	0.53	0.5	0.53
	Bis(2-chloroethyl)ether	<0.25	DLM	0.25	ug/g	17-OCT-17	0.5	0.5	0.5	0.5
	Bis(2-chloroisopropyl)ether	<0.25	DLM	0.25	ug/g	17-OCT-17	11	13	0.67	1.8
	2-Chlorophenol	<0.25	DLM	0.25	ug/g	17-OCT-17	3.1	3.9	1.6	2
	Chrysene	<0.13	DLM	0.13	ug/g	17-OCT-17	9.6	9.6	7	7.8
	Dibenzo(a,h)anthracene	<0.13	DLM	0.13	ug/g	17-OCT-17	**0.1	**0.1	**0.1	**0.1
	3,3'-Dichlorobenzidine	<0.25	DLM	0.25	ug/g	17-OCT-17	1	1	1	1
	2,4-Dichlorophenol	<0.25	DLM	0.25	ug/g	17-OCT-17	**0.19	0.27	**0.19	0.27
	Diethylphthalate	<0.25	DLM	0.25	ug/g	17-OCT-17	0.5	0.5	0.5	0.5
	Dimethylphthalate	<0.25	DLM	0.25	ug/g	17-OCT-17	0.5	0.5	0.5	0.5
	2,4-Dimethylphenol	<0.25	DLM	0.25	ug/g	17-OCT-17	38	53	38	53
	2,4-Dinitrophenol	<2.5	DLM	2.5	ug/g	17-OCT-17	**2	2.9	**2	2.9
	2,4-Dinitrotoluene	<0.25	DLM	0.25	ug/g	17-OCT-17	0.5	0.5	0.5	0.5
	2,6-Dinitrotoluene	<0.25	DLM	0.25	ug/g	17-OCT-17	0.5	0.5	0.5	0.5
	2,4+2,6-Dinitrotoluene	<0.35		0.35	ug/g	17-OCT-17				
	Bis(2-ethylhexyl)phthalate	<0.25	DLM	0.25	ug/g	17-OCT-17	28	35	5	5
	Fluoranthene	<0.13	DLM	0.13	ug/g	17-OCT-17	9.6	9.6	0.69	0.69
	Fluorene	<0.13	DLM	0.13	ug/g	17-OCT-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	<0.13	DLM	0.13	ug/g	17-OCT-17	0.76	0.95	0.38	0.48
	1-Methylnaphthalene	<0.075	DLM	0.075	ug/g	17-OCT-17	30	42	0.99	3.4

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-13 TP17-300-3-4										
Sampled By: M. SHIRY on 04-OCT-17 @ 14:35										
Matrix: SOIL										
Semi-Volatile Organics										
	2-Methylnaphthalene	<0.075	DLM	0.075	ug/g	17-OCT-17	30	42	0.99	3.4
	Naphthalene	<0.13	DLM	0.13	ug/g	17-OCT-17	9.6	28	0.6	0.75
	Pentachlorophenol	<0.25	DLM	0.25	ug/g	17-OCT-17	2.9	3.3	**0.1	**0.1
	Phenanthrene	<0.13	DLM	0.13	ug/g	17-OCT-17	12	16	6.2	7.8
	Phenol	<0.25	DLM	0.25	ug/g	17-OCT-17	9.4	9.4	9.4	9.4
	Pyrene	<0.13	DLM	0.13	ug/g	17-OCT-17	96	96	78	78
	1,2,4-Trichlorobenzene	<0.13	DLM	0.13	ug/g	17-OCT-17	3.2	16	0.36	1.4
	2,4,5-Trichlorophenol	<0.25	DLM	0.25	ug/g	17-OCT-17	9.1	10	4.4	5.5
	2,4,6-Trichlorophenol	<0.25	DLM	0.25	ug/g	17-OCT-17	2.1	2.9	2.1	2.9
	Surrogate: 2-Fluorobiphenyl	103.5		50-140	%	17-OCT-17				
	Surrogate: Nitrobenzene d5	100.7		50-140	%	17-OCT-17				
	Surrogate: Phenol d5	93.8		30-130	%	17-OCT-17				
	Surrogate: p-Terphenyl d14	90.9		50-140	%	17-OCT-17				
	Surrogate: 2,4,6-Tribromophenol	88.1		50-140	%	17-OCT-17				
L2003037-14 TP17-303-1-2										
Sampled By: M. SHIRY on 04-OCT-17 @ 15:20										
Matrix: SOIL										
Physical Tests										
	Conductivity	0.127		0.0040	mS/cm	12-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	5.57		0.10	%	10-OCT-17				
	pH	7.67		0.10	pH units	12-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	12-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	<0.14	SAR:DL	0.14	SAR	12-OCT-17	12	12	5	5
	Calcium (Ca)	3.8		1.0	mg/L	12-OCT-17				
	Magnesium (Mg)	<1.0		1.0	mg/L	12-OCT-17				
	Sodium (Na)	<1.0		1.0	mg/L	12-OCT-17				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	12-OCT-17	40	50	7.5	7.5
	Arsenic (As)	3.7		1.0	ug/g	12-OCT-17	18	18	18	18
	Barium (Ba)	44.1		1.0	ug/g	12-OCT-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	12-OCT-17	8	10	4	5
	Boron (B)	5.0		5.0	ug/g	12-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.15		0.10	ug/g	12-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	<0.50		0.50	ug/g	12-OCT-17	1.9	1.9	1.2	1.2
	Chromium (Cr)	10.5		1.0	ug/g	12-OCT-17	160	160	160	160
	Cobalt (Co)	4.0		1.0	ug/g	12-OCT-17	80	100	22	22
	Copper (Cu)	10.7		1.0	ug/g	12-OCT-17	230	300	140	180
	Lead (Pb)	19.6		1.0	ug/g	12-OCT-17	120	120	120	120
	Mercury (Hg)	0.0085		0.0050	ug/g	12-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	<1.0		1.0	ug/g	12-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	7.6		1.0	ug/g	12-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	12-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	12-OCT-17	40	50	20	25

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#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
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#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-14	TP17-303-1-2									
Sampled By:	M. SHIRY on 04-OCT-17 @ 15:20									
Matrix:	SOIL									
Metals										
	Thallium (Tl)	<0.50		0.50	ug/g	12-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	12-OCT-17	33	33	23	23
	Vanadium (V)	23.5		1.0	ug/g	12-OCT-17	86	86	86	86
	Zinc (Zn)	41.4		5.0	ug/g	12-OCT-17	340	340	340	340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	11-OCT-17	8	10	8	10
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	10-OCT-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	10-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	10-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	10-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	10-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	10-OCT-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	10-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	10-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	10-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	10-OCT-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	10-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	10-OCT-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	10-OCT-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	11-OCT-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	10-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	10-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	10-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	10-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	10-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	10-OCT-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	10-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	10-OCT-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	10-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	10-OCT-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	10-OCT-17	4	5.8	4	5.8

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
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#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
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#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2003037-14	TP17-303-1-2									
Sampled By:	M. SHIRY on 04-OCT-17 @ 15:20									
Matrix:	SOIL						#1	#2	#3	#4
Volatile Organic Compounds										
	Vinyl chloride	<0.020		0.020	ug/g	10-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	10-OCT-17				
	m+p-Xylenes	<0.030		0.030	ug/g	10-OCT-17				
	Xylenes (Total)	<0.050		0.050	ug/g	11-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	98.3		50-140	%	10-OCT-17				
	Surrogate: 1,4-Difluorobenzene	102.3		50-140	%	10-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	10-OCT-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	16-OCT-17	55	65	55	65
	F2 (C10-C16)	<10		10	ug/g	16-OCT-17	230	250	98	150
	F2-Naphth	<10		10	ug/g	16-OCT-17				
	F3 (C16-C34)	<50		50	ug/g	16-OCT-17	1700	2500	300	1300
	F3-PAH	<50		50	ug/g	16-OCT-17				
	F4 (C34-C50)	<50		50	ug/g	16-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	<72		72	ug/g	16-OCT-17				
	Chrom. to baseline at nC50	YES			No Unit	16-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	89.3		60-140	%	16-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	105.3		60-140	%	10-OCT-17				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.050		0.050	ug/g	16-OCT-17	21	29	7.9	29
	Acenaphthylene	<0.050		0.050	ug/g	16-OCT-17	0.15	0.17	0.15	0.17
	Anthracene	<0.050		0.050	ug/g	16-OCT-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	<0.050		0.050	ug/g	16-OCT-17	0.96	0.96	0.5	0.63
	Benzo(a)pyrene	<0.050		0.050	ug/g	16-OCT-17	0.3	0.3	0.3	0.3
	Benzo(b)fluoranthene	<0.050		0.050	ug/g	16-OCT-17	0.96	0.96	0.78	0.78
	Benzo(g,h,i)perylene	<0.050		0.050	ug/g	16-OCT-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	<0.050		0.050	ug/g	16-OCT-17	0.96	0.96	0.78	0.78
	Chrysene	<0.050		0.050	ug/g	16-OCT-17	9.6	9.6	7	7.8
	Dibenzo(ah)anthracene	<0.050		0.050	ug/g	16-OCT-17	0.1	0.1	0.1	0.1
	Fluoranthene	<0.050		0.050	ug/g	16-OCT-17	9.6	9.6	0.69	0.69
	Fluorene	<0.050		0.050	ug/g	16-OCT-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	16-OCT-17	0.76	0.95	0.38	0.48
	1+2-Methylnaphthalenes	<0.042		0.042	ug/g	16-OCT-17	30	42	0.99	3.4
	1-Methylnaphthalene	<0.030		0.030	ug/g	16-OCT-17	30	42	0.99	3.4
	2-Methylnaphthalene	<0.030		0.030	ug/g	16-OCT-17	30	42	0.99	3.4
	Naphthalene	<0.050		0.050	ug/g	16-OCT-17	9.6	28	0.6	0.75
	Phenanthrene	<0.050		0.050	ug/g	16-OCT-17	12	16	6.2	7.8
	Pyrene	<0.050		0.050	ug/g	16-OCT-17	96	96	78	78
	Surrogate: 2-Fluorobiphenyl	86.1		50-140	%	16-OCT-17				
	Surrogate: p-Terphenyl d14	88.1		50-140	%	16-OCT-17				
L2003037-15	TP17-303-4-5									
Sampled By:	M. SHIRY on 04-OCT-17 @ 15:40									
Matrix:	SOIL						#1	#2	#3	#4
Physical Tests										
	Conductivity	0.0763		0.0040	mS/cm	12-OCT-17	1.4	1.4	0.7	0.7

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-15	TP17-303-4-5									
Sampled By:	M. SHIRY on 04-OCT-17 @ 15:40									
Matrix:	SOIL									
Physical Tests										
	% Moisture	11.2		0.10	%	10-OCT-17				
	pH	7.41		0.10	pH units	12-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	12-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	<0.20	SAR:DL	0.20	SAR	12-OCT-17	12	12	5	5
	Calcium (Ca)	1.8		1.0	mg/L	12-OCT-17				
	Magnesium (Mg)	<1.0		1.0	mg/L	12-OCT-17				
	Sodium (Na)	<1.0		1.0	mg/L	12-OCT-17				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	11-OCT-17	40	50	7.5	7.5
	Arsenic (As)	5.4		1.0	ug/g	11-OCT-17	18	18	18	18
	Barium (Ba)	93.0		1.0	ug/g	11-OCT-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	11-OCT-17	8	10	4	5
	Boron (B)	5.4		5.0	ug/g	11-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.14		0.10	ug/g	12-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	0.78		0.50	ug/g	11-OCT-17	1.9	1.9	1.2	1.2
	Chromium (Cr)	6.2		1.0	ug/g	11-OCT-17	160	160	160	160
	Cobalt (Co)	8.0		1.0	ug/g	11-OCT-17	80	100	22	22
	Copper (Cu)	25.9		1.0	ug/g	11-OCT-17	230	300	140	180
	Lead (Pb)	46.8		1.0	ug/g	11-OCT-17	120	120	120	120
	Mercury (Hg)	0.0146		0.0050	ug/g	11-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	<1.0		1.0	ug/g	11-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	9.4		1.0	ug/g	11-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	11-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	11-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	11-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	11-OCT-17	33	33	23	23
	Vanadium (V)	48.0		1.0	ug/g	11-OCT-17	86	86	86	86
	Zinc (Zn)	665		5.0	ug/g	11-OCT-17	*340	*340	*340	*340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	11-OCT-17	8	10	8	10
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	10-OCT-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	10-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	10-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	10-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	10-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	10-OCT-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	10-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	10-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	9.6	12	4.8	6

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-15	TP17-303-4-5									
Sampled By:	M. SHIRY on 04-OCT-17 @ 15:40									
Matrix:	SOIL									
Volatile Organic Compounds										
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	10-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	10-OCT-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	10-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	10-OCT-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	10-OCT-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	11-OCT-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	10-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	10-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	10-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	10-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	10-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	10-OCT-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	10-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	10-OCT-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	10-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	10-OCT-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	10-OCT-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	10-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	10-OCT-17				
	m+p-Xylenes	<0.030		0.030	ug/g	10-OCT-17				
	Xylenes (Total)	<0.050		0.050	ug/g	11-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	96.4		50-140	%	10-OCT-17				
	Surrogate: 1,4-Difluorobenzene	101.0		50-140	%	10-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	10-OCT-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	16-OCT-17	55	65	55	65
	F2 (C10-C16)	<10		10	ug/g	16-OCT-17	230	250	98	150
	F2-Naphth	<10		10	ug/g	16-OCT-17				
	F3 (C16-C34)	<50		50	ug/g	16-OCT-17	1700	2500	300	1300
	F3-PAH	<50		50	ug/g	16-OCT-17				
	F4 (C34-C50)	<50		50	ug/g	16-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	<72		72	ug/g	16-OCT-17				
	Chrom. to baseline at nC50	YES			No Unit	16-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	85.0		60-140	%	16-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	98.0		60-140	%	10-OCT-17				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.050		0.050	ug/g	16-OCT-17	21	29	7.9	29

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-15 TP17-303-4-5										
Sampled By: M. SHIRY on 04-OCT-17 @ 15:40										
Matrix: SOIL										
Polycyclic Aromatic Hydrocarbons										
	Acenaphthylene	<0.050		0.050	ug/g	16-OCT-17	0.15	0.17	0.15	0.17
	Anthracene	<0.050		0.050	ug/g	16-OCT-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	<0.050		0.050	ug/g	16-OCT-17	0.96	0.96	0.5	0.63
	Benzo(a)pyrene	<0.050		0.050	ug/g	16-OCT-17	0.3	0.3	0.3	0.3
	Benzo(b)fluoranthene	<0.050		0.050	ug/g	16-OCT-17	0.96	0.96	0.78	0.78
	Benzo(g,h,i)perylene	<0.050		0.050	ug/g	16-OCT-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	<0.050		0.050	ug/g	16-OCT-17	0.96	0.96	0.78	0.78
	Chrysene	<0.050		0.050	ug/g	16-OCT-17	9.6	9.6	7	7.8
	Dibenzo(ah)anthracene	<0.050		0.050	ug/g	16-OCT-17	0.1	0.1	0.1	0.1
	Fluoranthene	<0.050		0.050	ug/g	16-OCT-17	9.6	9.6	0.69	0.69
	Fluorene	<0.050		0.050	ug/g	16-OCT-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	16-OCT-17	0.76	0.95	0.38	0.48
	1+2-Methylnaphthalenes	<0.042		0.042	ug/g	16-OCT-17	30	42	0.99	3.4
	1-Methylnaphthalene	<0.030		0.030	ug/g	16-OCT-17	30	42	0.99	3.4
	2-Methylnaphthalene	<0.030		0.030	ug/g	16-OCT-17	30	42	0.99	3.4
	Naphthalene	<0.050		0.050	ug/g	16-OCT-17	9.6	28	0.6	0.75
	Phenanthrene	<0.050		0.050	ug/g	16-OCT-17	12	16	6.2	7.8
	Pyrene	<0.050		0.050	ug/g	16-OCT-17	96	96	78	78
	Surrogate: 2-Fluorobiphenyl	87.7		50-140	%	16-OCT-17				
	Surrogate: p-Terphenyl d14	87.9		50-140	%	16-OCT-17				
L2003037-16 TP17-308-8-8.5										
Sampled By: M. SHIRY on 04-OCT-17 @ 16:35										
Matrix: SOIL										
Physical Tests										
	Conductivity	0.0764		0.0040	mS/cm	18-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	4.71		0.10	%	16-OCT-17				
	pH	8.15		0.10	pH units	17-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	17-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	<0.23	SAR:DL	0.23	SAR	18-OCT-17	12	12	5	5
	Calcium (Ca)	1.5		1.0	mg/L	18-OCT-17				
	Magnesium (Mg)	<1.0		1.0	mg/L	18-OCT-17				
	Sodium (Na)	<1.0		1.0	mg/L	18-OCT-17				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	18-OCT-17	40	50	7.5	7.5
	Arsenic (As)	2.9		1.0	ug/g	18-OCT-17	18	18	18	18
	Barium (Ba)	19.8		1.0	ug/g	18-OCT-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	18-OCT-17	8	10	4	5
	Boron (B)	<5.0		5.0	ug/g	18-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	<0.10		0.10	ug/g	18-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	<0.50		0.50	ug/g	18-OCT-17	1.9	1.9	1.2	1.2
	Chromium (Cr)	9.6		1.0	ug/g	18-OCT-17	160	160	160	160
	Cobalt (Co)	3.5		1.0	ug/g	18-OCT-17	80	100	22	22

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-16 TP17-308-8-8.5										
Sampled By: M. SHIRY on 04-OCT-17 @ 16:35										
Matrix: SOIL										
Metals										
	Copper (Cu)	15.1		1.0	ug/g	18-OCT-17	230	300	140	180
	Lead (Pb)	25.7		1.0	ug/g	18-OCT-17	120	120	120	120
	Mercury (Hg)	0.0152		0.0050	ug/g	18-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	<1.0		1.0	ug/g	18-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	7.9		1.0	ug/g	18-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	18-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	18-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	18-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	18-OCT-17	33	33	23	23
	Vanadium (V)	21.7		1.0	ug/g	18-OCT-17	86	86	86	86
	Zinc (Zn)	160		5.0	ug/g	18-OCT-17	340	340	340	340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	17-OCT-17	8	10	8	10
L2003037-17 TP17-306-3-4										
Sampled By: M. SHIRY on 04-OCT-17 @ 17:05										
Matrix: SOIL										
Physical Tests										
	Conductivity	0.135		0.0040	mS/cm	12-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	6.65		0.10	%	10-OCT-17				
	pH	7.74		0.10	pH units	12-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	12-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	<0.13	SAR:DL	0.13	SAR	12-OCT-17	12	12	5	5
	Calcium (Ca)	4.3		1.0	mg/L	12-OCT-17				
	Magnesium (Mg)	<1.0		1.0	mg/L	12-OCT-17				
	Sodium (Na)	<1.0		1.0	mg/L	12-OCT-17				
Metals										
	Antimony (Sb)	8.5		1.0	ug/g	12-OCT-17	40	50	*7.5	*7.5
	Arsenic (As)	14.0		1.0	ug/g	12-OCT-17	18	18	18	18
	Barium (Ba)	109		1.0	ug/g	12-OCT-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	12-OCT-17	8	10	4	5
	Boron (B)	9.0		5.0	ug/g	12-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.30		0.10	ug/g	12-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	1.22		0.50	ug/g	12-OCT-17	1.9	1.9	*1.2	*1.2
	Chromium (Cr)	20.7		1.0	ug/g	12-OCT-17	160	160	160	160
	Cobalt (Co)	4.9		1.0	ug/g	12-OCT-17	80	100	22	22
	Copper (Cu)	105		1.0	ug/g	12-OCT-17	230	300	140	180
	Lead (Pb)	471		1.0	ug/g	12-OCT-17	*120	*120	*120	*120
	Mercury (Hg)	0.0522		0.0050	ug/g	12-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	1.2		1.0	ug/g	12-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	14.6		1.0	ug/g	12-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	12-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	0.24		0.20	ug/g	12-OCT-17	40	50	20	25

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-17	TP17-306-3-4									
Sampled By:	M. SHIRY on 04-OCT-17 @ 17:05									
Matrix:	SOIL									
Metals										
	Thallium (Tl)	<0.50		0.50	ug/g	12-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	12-OCT-17	33	33	23	23
	Vanadium (V)	24.2		1.0	ug/g	12-OCT-17	86	86	86	86
	Zinc (Zn)	562		5.0	ug/g	12-OCT-17	*340	*340	*340	*340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	11-OCT-17	8	10	8	10
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	10-OCT-17	16	28	16	28
	Benzene	0.0108		0.0068	ug/g	10-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	10-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	10-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	10-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	10-OCT-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	10-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	10-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	10-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	10-OCT-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	10-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	10-OCT-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	10-OCT-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	11-OCT-17	0.059	0.081	0.05	0.081
	Ethylbenzene	0.020		0.018	ug/g	10-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	10-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	10-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	10-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	10-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	10-OCT-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	10-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	10-OCT-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	10-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	10-OCT-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	10-OCT-17	4	5.8	4	5.8

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* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-17	TP17-306-3-4									
Sampled By:	M. SHIRY on 04-OCT-17 @ 17:05									
Matrix:	SOIL									
Volatile Organic Compounds										
	Vinyl chloride	<0.020		0.020	ug/g	10-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	0.079		0.020	ug/g	10-OCT-17				
	m+p-Xylenes	0.081		0.030	ug/g	10-OCT-17				
	Xylenes (Total)	0.160		0.050	ug/g	11-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	95.2		50-140	%	10-OCT-17				
	Surrogate: 1,4-Difluorobenzene	99.4		50-140	%	10-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	10-OCT-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	16-OCT-17	55	65	55	65
	F2 (C10-C16)	<10		10	ug/g	16-OCT-17	230	250	98	150
	F2-Naphth	<10		10	ug/g	16-OCT-17				
	F3 (C16-C34)	74		50	ug/g	16-OCT-17	1700	2500	300	1300
	F3-PAH	66		50	ug/g	16-OCT-17				
	F4 (C34-C50)	<50		50	ug/g	16-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	74		72	ug/g	16-OCT-17				
	Chrom. to baseline at nC50	YES			No Unit	16-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	87.3		60-140	%	16-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	77.5		60-140	%	10-OCT-17				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	0.058		0.050	ug/g	16-OCT-17	21	29	7.9	29
	Acenaphthylene	<0.050		0.050	ug/g	16-OCT-17	0.15	0.17	0.15	0.17
	Anthracene	0.113		0.050	ug/g	16-OCT-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	1.00		0.050	ug/g	16-OCT-17	*0.96	*0.96	*0.5	*0.63
	Benzo(a)pyrene	1.33		0.050	ug/g	16-OCT-17	*0.3	*0.3	*0.3	*0.3
	Benzo(b)fluoranthene	1.85		0.050	ug/g	16-OCT-17	*0.96	*0.96	*0.78	*0.78
	Benzo(g,h,i)perylene	0.757		0.050	ug/g	16-OCT-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	0.678		0.050	ug/g	16-OCT-17	0.96	0.96	0.78	0.78
	Chrysene	1.24		0.050	ug/g	16-OCT-17	9.6	9.6	7	7.8
	Dibenzo(ah)anthracene	0.236		0.050	ug/g	16-OCT-17	*0.1	*0.1	*0.1	*0.1
	Fluoranthene	1.19		0.050	ug/g	16-OCT-17	9.6	9.6	*0.69	*0.69
	Fluorene	<0.050		0.050	ug/g	16-OCT-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	0.769		0.050	ug/g	16-OCT-17	*0.76	0.95	*0.38	*0.48
	1+2-Methylnaphthalenes	0.280		0.042	ug/g	16-OCT-17	30	42	0.99	3.4
	1-Methylnaphthalene	0.129		0.030	ug/g	16-OCT-17	30	42	0.99	3.4
	2-Methylnaphthalene	0.151		0.030	ug/g	16-OCT-17	30	42	0.99	3.4
	Naphthalene	0.114		0.050	ug/g	16-OCT-17	9.6	28	0.6	0.75
	Phenanthrene	0.527		0.050	ug/g	16-OCT-17	12	16	6.2	7.8
	Pyrene	1.12		0.050	ug/g	16-OCT-17	96	96	78	78
	Surrogate: 2-Fluorobiphenyl	80.7		50-140	%	16-OCT-17				
	Surrogate: p-Terphenyl d14	84.8		50-140	%	16-OCT-17				
Polychlorinated Biphenyls										
	Aroclor 1242	<0.350	DLM	0.35	ug/g	01-NOV-17				
	Aroclor 1248	0.945	PRAR	0.010	ug/g	01-NOV-17				
	Aroclor 1254	<0.30	DLM	0.30	ug/g	01-NOV-17				
	Aroclor 1260	<0.0250	DLM	0.025	ug/g	01-NOV-17				
	Total PCBs	0.945	DLM	0.50	ug/g	01-NOV-17	1.1	1.1	*0.35	*0.35

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#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-17 TP17-306-3-4										
Sampled By: M. SHIRY on 04-OCT-17 @ 17:05										
Matrix: SOIL										
Polychlorinated Biphenyls										
	Surrogate: d14-Terphenyl	109.3		60-140	%	01-NOV-17				
L2003037-18 TP17-306-5-6										
Sampled By: M. SHIRY on 04-OCT-17 @ 17:10										
Matrix: SOIL										
Physical Tests										
	Conductivity	0.176		0.0040	mS/cm	31-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	6.96		0.10	%	26-OCT-17				
	pH	7.81		0.10	pH units	28-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	26-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	0.15	SAR:M	0.10	SAR	30-OCT-17	12	12	5	5
	Calcium (Ca)	3.6		1.0	mg/L	30-OCT-17				
	Magnesium (Mg)	<1.0		1.0	mg/L	30-OCT-17				
	Sodium (Na)	1.0		1.0	mg/L	30-OCT-17				
Metals										
	Antimony (Sb)	8.5		1.0	ug/g	30-OCT-17	40	50	*7.5	*7.5
	Arsenic (As)	20.2		1.0	ug/g	30-OCT-17	*18	*18	*18	*18
	Barium (Ba)	119		1.0	ug/g	30-OCT-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	30-OCT-17	8	10	4	5
	Boron (B)	8.9		5.0	ug/g	30-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.41		0.10	ug/g	30-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	1.43		0.50	ug/g	30-OCT-17	1.9	1.9	*1.2	*1.2
	Chromium (Cr)	19.0		1.0	ug/g	30-OCT-17	160	160	160	160
	Cobalt (Co)	5.0		1.0	ug/g	30-OCT-17	80	100	22	22
	Copper (Cu)	124		1.0	ug/g	30-OCT-17	230	300	140	180
	Lead (Pb)	504		1.0	ug/g	30-OCT-17	*120	*120	*120	*120
	Mercury (Hg)	0.0452		0.0050	ug/g	30-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	1.4		1.0	ug/g	30-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	15.2		1.0	ug/g	30-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	30-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	0.26		0.20	ug/g	30-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	30-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	30-OCT-17	33	33	23	23
	Vanadium (V)	22.9		1.0	ug/g	30-OCT-17	86	86	86	86
	Zinc (Zn)	565		5.0	ug/g	30-OCT-17	*340	*340	*340	*340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	30-OCT-17	8	10	8	10
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	0.349	DUPH	0.050	ug/g	31-OCT-17	21	29	7.9	29
	Acenaphthylene	<0.050		0.050	ug/g	31-OCT-17	0.15	0.17	0.15	0.17
	Anthracene	0.887	DUPH	0.050	ug/g	31-OCT-17	*0.67	*0.74	*0.67	*0.74
	Benzo(a)anthracene	2.19	DUPH	0.050	ug/g	31-OCT-17	*0.96	*0.96	*0.5	*0.63
	Benzo(a)pyrene	1.99		0.050	ug/g	31-OCT-17	*0.3	*0.3	*0.3	*0.3

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#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
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#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-18	TP17-306-5-6									
Sampled By:	M. SHIRY on 04-OCT-17 @ 17:10									
Matrix:	SOIL									
Polycyclic Aromatic Hydrocarbons										
	Benzo(b)fluoranthene	2.38		0.050	ug/g	31-OCT-17	*0.96	*0.96	*0.78	*0.78
	Benzo(g,h,i)perylene	1.32		0.050	ug/g	31-OCT-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	1.16	DUPH	0.050	ug/g	31-OCT-17	*0.96	*0.96	*0.78	*0.78
	Chrysene	2.10	DUPH	0.050	ug/g	31-OCT-17	9.6	9.6	7	7.8
	Dibenzo(ah)anthracene	0.399		0.050	ug/g	31-OCT-17	*0.1	*0.1	*0.1	*0.1
	Fluoranthene	4.18	DUPH	0.050	ug/g	31-OCT-17	9.6	9.6	*0.69	*0.69
	Fluorene	0.395	DUPH	0.050	ug/g	31-OCT-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	1.40		0.050	ug/g	31-OCT-17	*0.76	*0.95	*0.38	*0.48
	1+2-Methylnaphthalenes	0.566		0.042	ug/g	31-OCT-17	30	42	0.99	3.4
	1-Methylnaphthalene	0.256		0.030	ug/g	31-OCT-17	30	42	0.99	3.4
	2-Methylnaphthalene	0.310		0.030	ug/g	31-OCT-17	30	42	0.99	3.4
	Naphthalene	0.332		0.050	ug/g	31-OCT-17	9.6	28	0.6	0.75
	Phenanthrene	3.75	DUPH	0.050	ug/g	31-OCT-17	12	16	6.2	7.8
	Pyrene	3.31	DUPH	0.050	ug/g	31-OCT-17	96	96	78	78
	Surrogate: 2-Fluorobiphenyl	91.4		50-140	%	31-OCT-17				
	Surrogate: p-Terphenyl d14	94.6		50-140	%	31-OCT-17				
L2003037-19	TP17-307-7-8									
Sampled By:	M. SHIRY on 04-OCT-17 @ 17:50									
Matrix:	SOIL									
Physical Tests										
	% Moisture	5.45		0.10	%	16-OCT-17				
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	17-OCT-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	17-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	17-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	17-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	17-OCT-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	17-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	17-OCT-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	17-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	17-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	17-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	17-OCT-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	17-OCT-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	17-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	17-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	17-OCT-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	17-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	17-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	17-OCT-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	17-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	17-OCT-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	17-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	17-OCT-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	17-OCT-17				

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#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
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#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-19	TP17-307-7-8									
Sampled By:	M. SHIRY on 04-OCT-17 @ 17:50									
Matrix:	SOIL									
Volatile Organic Compounds										
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	17-OCT-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	17-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	17-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	17-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	17-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	17-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	17-OCT-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	17-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	17-OCT-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	17-OCT-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	17-OCT-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	17-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	17-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	17-OCT-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	17-OCT-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	17-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	17-OCT-17				
	m+p-Xylenes	<0.030		0.030	ug/g	17-OCT-17				
	Xylenes (Total)	<0.050		0.050	ug/g	17-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	101.2		50-140	%	17-OCT-17				
	Surrogate: 1,4-Difluorobenzene	103.6		50-140	%	17-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	17-OCT-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	23-OCT-17	55	65	55	65
	F2 (C10-C16)	14		10	ug/g	20-OCT-17	230	250	98	150
	F3 (C16-C34)	69		50	ug/g	20-OCT-17	1700	2500	300	1300
	F4 (C34-C50)	123		50	ug/g	20-OCT-17	3300	6600	2800	5600
	F4G-SG (GHH-Silica)	360		250	ug/g	18-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	207		72	ug/g	23-OCT-17				
	Chrom. to baseline at nC50	NO			No Unit	20-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	73.9		60-140	%	20-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	80.3		60-140	%	17-OCT-17				
L2003037-20	DUP 1									
Sampled By:	M. SHIRY on 04-OCT-17									
Matrix:	SOIL									
Physical Tests										
	Conductivity	0.165		0.0040	mS/cm	12-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	9.52		0.10	%	10-OCT-17				
	pH	7.48		0.10	pH units	12-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	12-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	<0.11	SAR:DL	0.11	SAR	12-OCT-17	12	12	5	5
	Calcium (Ca)	6.7		1.0	mg/L	12-OCT-17				
	Magnesium (Mg)	<1.0		1.0	mg/L	12-OCT-17				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-20	DUP 1									
Sampled By:	M. SHIRY on 04-OCT-17									
Matrix:	SOIL									
Saturated Paste Extractables										
	Sodium (Na)	<1.0		1.0	mg/L	12-OCT-17				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	12-OCT-17	40	50	7.5	7.5
	Arsenic (As)	3.1		1.0	ug/g	12-OCT-17	18	18	18	18
	Barium (Ba)	26.5		1.0	ug/g	12-OCT-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	12-OCT-17	8	10	4	5
	Boron (B)	5.1		5.0	ug/g	12-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.17		0.10	ug/g	12-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	<0.50		0.50	ug/g	12-OCT-17	1.9	1.9	1.2	1.2
	Chromium (Cr)	9.9		1.0	ug/g	12-OCT-17	160	160	160	160
	Cobalt (Co)	3.3		1.0	ug/g	12-OCT-17	80	100	22	22
	Copper (Cu)	12.9		1.0	ug/g	12-OCT-17	230	300	140	180
	Lead (Pb)	30.4		1.0	ug/g	12-OCT-17	120	120	120	120
	Mercury (Hg)	0.0110		0.0050	ug/g	12-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	<1.0		1.0	ug/g	12-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	7.2		1.0	ug/g	12-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	12-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	12-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	12-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	12-OCT-17	33	33	23	23
	Vanadium (V)	21.1		1.0	ug/g	12-OCT-17	86	86	86	86
	Zinc (Zn)	68.1		5.0	ug/g	12-OCT-17	340	340	340	340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	11-OCT-17	8	10	8	10
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	10-OCT-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	10-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	10-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	10-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	10-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	10-OCT-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	10-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	10-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	10-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	10-OCT-17	1.6	2	0.1	0.96

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-20	DUP 1									
Sampled By:	M. SHIRY on 04-OCT-17									
Matrix:	SOIL									
Volatile Organic Compounds										
	1,2-Dichloropropane	<0.050		0.050	ug/g	10-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	10-OCT-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	10-OCT-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	11-OCT-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	10-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	10-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	10-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	10-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	10-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	10-OCT-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	10-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	10-OCT-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	10-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	10-OCT-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	10-OCT-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	10-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	10-OCT-17				
	m+p-Xylenes	<0.030		0.030	ug/g	10-OCT-17				
	Xylenes (Total)	<0.050		0.050	ug/g	11-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	90.5		50-140	%	10-OCT-17				
	Surrogate: 1,4-Difluorobenzene	94.2		50-140	%	10-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	10-OCT-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	17-OCT-17	55	65	55	65
	F2 (C10-C16)	<10		10	ug/g	16-OCT-17	230	250	98	150
	F2-Naphth	<10		10	ug/g	17-OCT-17				
	F3 (C16-C34)	50		50	ug/g	16-OCT-17	1700	2500	300	1300
	F3-PAH	50		50	ug/g	17-OCT-17				
	F4 (C34-C50)	<50		50	ug/g	16-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	<72		72	ug/g	17-OCT-17				
	Chrom. to baseline at nC50	YES			ppm	16-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	88.1		60-140	%	16-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	87.4		60-140	%	10-OCT-17				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.050		0.050	ug/g	16-OCT-17	21	29	7.9	29
	Acenaphthylene	<0.050		0.050	ug/g	16-OCT-17	0.15	0.17	0.15	0.17
	Anthracene	<0.050		0.050	ug/g	16-OCT-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	<0.050		0.050	ug/g	16-OCT-17	0.96	0.96	0.5	0.63
	Benzo(a)pyrene	<0.050		0.050	ug/g	16-OCT-17	0.3	0.3	0.3	0.3
	Benzo(b)fluoranthene	0.122		0.050	ug/g	16-OCT-17	0.96	0.96	0.78	0.78
	Benzo(g,h,i)perylene	0.062		0.050	ug/g	16-OCT-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	<0.050		0.050	ug/g	16-OCT-17	0.96	0.96	0.78	0.78
	Chrysene	0.074		0.050	ug/g	16-OCT-17	9.6	9.6	7	7.8

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-20 DUP 1										
Sampled By: M. SHIRY on 04-OCT-17										
Matrix: SOIL										
Polycyclic Aromatic Hydrocarbons										
	Dibenzo(ah)anthracene	<0.050		0.050	ug/g	16-OCT-17	0.1	0.1	0.1	0.1
	Fluoranthene	<0.050		0.050	ug/g	16-OCT-17	9.6	9.6	0.69	0.69
	Fluorene	<0.050		0.050	ug/g	16-OCT-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	16-OCT-17	0.76	0.95	0.38	0.48
	1+2-Methylnaphthalenes	0.205		0.042	ug/g	16-OCT-17	30	42	0.99	3.4
	1-Methylnaphthalene	0.093		0.030	ug/g	16-OCT-17	30	42	0.99	3.4
	2-Methylnaphthalene	0.112		0.030	ug/g	16-OCT-17	30	42	0.99	3.4
	Naphthalene	0.082		0.050	ug/g	16-OCT-17	9.6	28	0.6	0.75
	Phenanthrene	0.070		0.050	ug/g	16-OCT-17	12	16	6.2	7.8
	Pyrene	<0.050		0.050	ug/g	16-OCT-17	96	96	78	78
	Surrogate: 2-Fluorobiphenyl	87.4		50-140	%	16-OCT-17				
	Surrogate: p-Terphenyl d14	88.6		50-140	%	16-OCT-17				
L2003037-21 DUP 2										
Sampled By: M. SHIRY on 04-OCT-17										
Matrix: SOIL										
Physical Tests										
	% Moisture	10.9		0.10	%	10-OCT-17				
Polycyclic Aromatic Hydrocarbons										
	1+2-Methylnaphthalenes	1.99		0.11	ug/g	17-OCT-17	30	42	*0.99	3.4
Semi-Volatile Organics										
	Acenaphthene	<0.13	DLM	0.13	ug/g	17-OCT-17	21	29	7.9	29
	Acenaphthylene	0.59	DLM	0.13	ug/g	17-OCT-17	*0.15	*0.17	*0.15	*0.17
	Anthracene	0.25	DLM	0.13	ug/g	17-OCT-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	1.27	R	0.13	ug/g	17-OCT-17	*0.96	*0.96	*0.5	*0.63
	Benzo(a)pyrene	2.52	DLM	0.13	ug/g	17-OCT-17	*0.3	*0.3	*0.3	*0.3
	Benzo(b)fluoranthene	3.03	DLM	0.13	ug/g	17-OCT-17	*0.96	*0.96	*0.78	*0.78
	Benzo(ghi)perylene	2.22	DLM	0.13	ug/g	17-OCT-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	1.96	DLM	0.13	ug/g	17-OCT-17	*0.96	*0.96	*0.78	*0.78
	Biphenyl	<0.13	DLM	0.13	ug/g	17-OCT-17	52	210	0.31	1.1
	4-Chloroaniline	<0.25	DLM	0.25	ug/g	17-OCT-17	0.5	0.53	0.5	0.53
	Bis(2-chloroethyl)ether	<0.25	DLM	0.25	ug/g	17-OCT-17	0.5	0.5	0.5	0.5
	Bis(2-chloroisopropyl)ether	<0.25	DLM	0.25	ug/g	17-OCT-17	11	13	0.67	1.8
	2-Chlorophenol	<0.25	DLM	0.25	ug/g	17-OCT-17	3.1	3.9	1.6	2
	Chrysene	2.16	DLM	0.13	ug/g	17-OCT-17	9.6	9.6	7	7.8
	Dibenzo(a,h)anthracene	0.66	DLM	0.13	ug/g	17-OCT-17	*0.1	*0.1	*0.1	*0.1
	3,3'-Dichlorobenzidine	<0.25	DLM	0.25	ug/g	17-OCT-17	1	1	1	1
	2,4-Dichlorophenol	<0.25	DLM	0.25	ug/g	17-OCT-17	**0.19	0.27	**0.19	0.27
	Diethylphthalate	<0.25	DLM	0.25	ug/g	17-OCT-17	0.5	0.5	0.5	0.5
	Dimethylphthalate	<0.25	DLM	0.25	ug/g	17-OCT-17	0.5	0.5	0.5	0.5
	2,4-Dimethylphenol	<0.25	DLM	0.25	ug/g	17-OCT-17	38	53	38	53
	2,4-Dinitrophenol	<2.5	DLM	2.5	ug/g	17-OCT-17	**2	2.9	**2	2.9
	2,4-Dinitrotoluene	<0.25	DLM	0.25	ug/g	17-OCT-17	0.5	0.5	0.5	0.5
	2,6-Dinitrotoluene	<0.25	DLM	0.25	ug/g	17-OCT-17	0.5	0.5	0.5	0.5
	2,4+2,6-Dinitrotoluene	<0.35		0.35	ug/g	17-OCT-17				

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-21 DUP 2										
Sampled By: M. SHIRY on 04-OCT-17										
Matrix: SOIL										
Semi-Volatile Organics										
	Bis(2-ethylhexyl)phthalate	<0.25	DLM	0.25	ug/g	17-OCT-17	28	35	5	5
	Fluoranthene	1.13	DLM	0.13	ug/g	17-OCT-17	9.6	9.6	*0.69	*0.69
	Fluorene	<0.13	DLM	0.13	ug/g	17-OCT-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	2.47	DLM	0.13	ug/g	17-OCT-17	*0.76	*0.95	*0.38	*0.48
	1-Methylnaphthalene	1.04	DLM	0.075	ug/g	17-OCT-17	30	42	*0.99	3.4
	2-Methylnaphthalene	0.959	DLM	0.075	ug/g	17-OCT-17	30	42	0.99	3.4
	Naphthalene	0.56	DLM	0.13	ug/g	17-OCT-17	9.6	28	0.6	0.75
	Pentachlorophenol	<0.25	DLM	0.25	ug/g	17-OCT-17	2.9	3.3	**0.1	**0.1
	Phenanthrene	1.09	DLM	0.13	ug/g	17-OCT-17	12	16	6.2	7.8
	Phenol	<0.25	DLM	0.25	ug/g	17-OCT-17	9.4	9.4	9.4	9.4
	Pyrene	1.91	DLM	0.13	ug/g	17-OCT-17	96	96	78	78
	1,2,4-Trichlorobenzene	<0.13	DLM	0.13	ug/g	17-OCT-17	3.2	16	0.36	1.4
	2,4,5-Trichlorophenol	<0.25	DLM	0.25	ug/g	17-OCT-17	9.1	10	4.4	5.5
	2,4,6-Trichlorophenol	<0.25	DLM	0.25	ug/g	17-OCT-17	2.1	2.9	2.1	2.9
	Surrogate: 2-Fluorobiphenyl	104.9		50-140	%	17-OCT-17				
	Surrogate: Nitrobenzene d5	98.9		50-140	%	17-OCT-17				
	Surrogate: Phenol d5	92.0		30-130	%	17-OCT-17				
	Surrogate: p-Terphenyl d14	92.6		50-140	%	17-OCT-17				
	Surrogate: 2,4,6-Tribromophenol	95.2		50-140	%	17-OCT-17				
L2003037-22 DUP 3										
Sampled By: M. SHIRY on 04-OCT-17										
Matrix: SOIL										
Physical Tests										
	% Moisture	1.84		0.10	%	10-OCT-17				
Polychlorinated Biphenyls										
	Aroclor 1242	<0.70	DLM	0.70	ug/g	13-OCT-17				
	Aroclor 1248	1.65	PRAR	0.050	ug/g	13-OCT-17				
	Aroclor 1254	<0.450	DLM	0.45	ug/g	13-OCT-17				
	Aroclor 1260	<0.050	DLM	0.050	ug/g	13-OCT-17				
	Total PCBs	1.65	DLM	0.85	ug/g	13-OCT-17	*1.1	*1.1	*0.35	*0.35
	Surrogate: d14-Terphenyl	98.7		60-140	%	13-OCT-17				
L2003037-23 DUP 4										
Sampled By: M. SHIRY on 04-OCT-17										
Matrix: SOIL										
Physical Tests										
	Conductivity	0.117		0.0040	mS/cm	12-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	6.40		0.10	%	10-OCT-17				
	pH	7.40		0.10	pH units	12-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	12-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	<0.16	SAR:DL	0.16	SAR	12-OCT-17	12	12	5	5
	Calcium (Ca)	3.1		1.0	mg/L	12-OCT-17				
	Magnesium (Mg)	<1.0		1.0	mg/L	12-OCT-17				

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-23	DUP 4									
Sampled By:	M. SHIRY on 04-OCT-17									
Matrix:	SOIL									
Saturated Paste Extractables										
	Sodium (Na)	<1.0		1.0	mg/L	12-OCT-17				
Metals										
	Antimony (Sb)	1.7		1.0	ug/g	12-OCT-17	40	50	7.5	7.5
	Arsenic (As)	5.8		1.0	ug/g	12-OCT-17	18	18	18	18
	Barium (Ba)	47.4		1.0	ug/g	12-OCT-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	12-OCT-17	8	10	4	5
	Boron (B)	<5.0		5.0	ug/g	12-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.14		0.10	ug/g	12-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	<0.50		0.50	ug/g	12-OCT-17	1.9	1.9	1.2	1.2
	Chromium (Cr)	12.0		1.0	ug/g	12-OCT-17	160	160	160	160
	Cobalt (Co)	3.5		1.0	ug/g	12-OCT-17	80	100	22	22
	Copper (Cu)	40.0		1.0	ug/g	12-OCT-17	230	300	140	180
	Lead (Pb)	94.4		1.0	ug/g	12-OCT-17	120	120	120	120
	Mercury (Hg)	0.0626		0.0050	ug/g	12-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	<1.0		1.0	ug/g	12-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	10.7		1.0	ug/g	12-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	12-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	12-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	12-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	12-OCT-17	33	33	23	23
	Vanadium (V)	17.6		1.0	ug/g	12-OCT-17	86	86	86	86
	Zinc (Zn)	210		5.0	ug/g	12-OCT-17	340	340	340	340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	11-OCT-17	8	10	8	10
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	10-OCT-17	16	28	16	28
	Benzene	0.105		0.0068	ug/g	10-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	10-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	10-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	10-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	10-OCT-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	10-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	10-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	10-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	10-OCT-17	1.6	2	0.1	0.96

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#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
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#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-23	DUP 4									
Sampled By:	M. SHIRY on 04-OCT-17									
Matrix:	SOIL									
Volatile Organic Compounds										
	1,2-Dichloropropane	<0.050		0.050	ug/g	10-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	10-OCT-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	10-OCT-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	11-OCT-17	0.059	0.081	0.05	0.081
	Ethylbenzene	0.066		0.018	ug/g	10-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	0.061		0.050	ug/g	10-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	10-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	10-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	10-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	10-OCT-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	10-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.9	2.5	0.28	2.3
	Toluene	0.406		0.080	ug/g	10-OCT-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	10-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	10-OCT-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	10-OCT-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	10-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	0.115		0.020	ug/g	10-OCT-17				
	m+p-Xylenes	0.360		0.030	ug/g	10-OCT-17				
	Xylenes (Total)	0.475		0.050	ug/g	11-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	100.0		50-140	%	10-OCT-17				
	Surrogate: 1,4-Difluorobenzene	105.3		50-140	%	10-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	10-OCT-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	17-OCT-17	55	65	55	65
	F2 (C10-C16)	<10		10	ug/g	16-OCT-17	230	250	98	150
	F2-Naphth	<10		10	ug/g	17-OCT-17				
	F3 (C16-C34)	516		50	ug/g	16-OCT-17	1700	2500	*300	1300
	F3-PAH	436		50	ug/g	17-OCT-17				
	F4 (C34-C50)	813		50	ug/g	16-OCT-17	3300	6600	2800	5600
	F4G-SG (GHH-Silica)	1890		250	ug/g	12-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	1330		72	ug/g	17-OCT-17				
	Chrom. to baseline at nC50	NO			ppm	16-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	70.8		60-140	%	16-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	101.9		60-140	%	10-OCT-17				
Polycyclic Aromatic Hydrocarbons										
	1+2-Methylnaphthalenes	4.93		0.53	ug/g	17-OCT-17	30	42	*0.99	*3.4
Semi-Volatile Organics										
	Acenaphthene	<0.63	DLM	0.63	ug/g	17-OCT-17	21	29	7.9	29
	Acenaphthylene	<0.63	DLM	0.63	ug/g	17-OCT-17	**0.15	**0.17	**0.15	**0.17
	Anthracene	2.04	DLM	0.63	ug/g	17-OCT-17	*0.67	*0.74	*0.67	*0.74
	Benzo(a)anthracene	16.2	DLM	0.63	ug/g	17-OCT-17	*0.96	*0.96	*0.5	*0.63
	Benzo(a)pyrene	16.1	DLM	0.63	ug/g	17-OCT-17	*0.3	*0.3	*0.3	*0.3
	Benzo(b)fluoranthene	10.5	DLM	0.63	ug/g	17-OCT-17	*0.96	*0.96	*0.78	*0.78

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#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-23	DUP 4									
Sampled By:	M. SHIRY on 04-OCT-17									
Matrix:	SOIL									
Semi-Volatile Organics										
	Benzo(ghi)perylene	20.1	DLM	0.63	ug/g	17-OCT-17	*9.6	*9.6	*6.6	*7.8
	Benzo(k)fluoranthene	3.71	DLM	0.63	ug/g	17-OCT-17	*0.96	*0.96	*0.78	*0.78
	Biphenyl	<0.63	DLM	0.63	ug/g	17-OCT-17	52	210	**0.31	1.1
	4-Chloroaniline	<1.3	DLM	1.3	ug/g	17-OCT-17	**0.5	**0.53	**0.5	**0.53
	Bis(2-chloroethyl)ether	<1.3	DLM	1.3	ug/g	17-OCT-17	**0.5	**0.5	**0.5	**0.5
	Bis(2-chloroisopropyl)ether	<1.3	DLM	1.3	ug/g	17-OCT-17	11	13	**0.67	1.8
	2-Chlorophenol	<1.3	DLM	1.3	ug/g	17-OCT-17	3.1	3.9	1.6	2
	Chrysene	25.7	DLM	0.63	ug/g	17-OCT-17	*9.6	*9.6	*7	*7.8
	Dibenzo(a,h)anthracene	13.2	DLM	0.63	ug/g	17-OCT-17	*0.1	*0.1	*0.1	*0.1
	3,3'-Dichlorobenzidine	<1.3	DLM	1.3	ug/g	17-OCT-17	**1	**1	**1	**1
	2,4-Dichlorophenol	<1.3	DLM	1.3	ug/g	17-OCT-17	**0.19	**0.27	**0.19	**0.27
	Diethylphthalate	<1.3	DLM	1.3	ug/g	17-OCT-17	**0.5	**0.5	**0.5	**0.5
	Dimethylphthalate	<1.3	DLM	1.3	ug/g	17-OCT-17	**0.5	**0.5	**0.5	**0.5
	2,4-Dimethylphenol	<1.3	DLM	1.3	ug/g	17-OCT-17	38	53	38	53
	2,4-Dinitrophenol	<13	DLM	13	ug/g	17-OCT-17	**2	**2.9	**2	**2.9
	2,4-Dinitrotoluene	<1.3	DLM	1.3	ug/g	17-OCT-17	**0.5	**0.5	**0.5	**0.5
	2,6-Dinitrotoluene	<1.3	DLM	1.3	ug/g	17-OCT-17	**0.5	**0.5	**0.5	**0.5
	2,4+2,6-Dinitrotoluene	<1.8		1.8	ug/g	17-OCT-17				
	Bis(2-ethylhexyl)phthalate	<1.3	DLM	1.3	ug/g	17-OCT-17	28	35	5	5
	Fluoranthene	1.61	DLM	0.63	ug/g	17-OCT-17	9.6	9.6	*0.69	*0.69
	Fluorene	<0.63	DLM	0.63	ug/g	17-OCT-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	7.86	DLM	0.63	ug/g	17-OCT-17	*0.76	*0.95	*0.38	*0.48
	1-Methylnaphthalene	1.26	DLM	0.38	ug/g	17-OCT-17	30	42	*0.99	3.4
	2-Methylnaphthalene	3.67	DLM	0.38	ug/g	17-OCT-17	30	42	*0.99	*3.4
	Naphthalene	2.75	DLM	0.63	ug/g	17-OCT-17	9.6	28	*0.6	*0.75
	Pentachlorophenol	<1.3	DLM	1.3	ug/g	17-OCT-17	2.9	3.3	**0.1	**0.1
	Phenanthrene	6.18	DLM	0.63	ug/g	17-OCT-17	12	16	6.2	7.8
	Phenol	<1.3	DLM	1.3	ug/g	17-OCT-17	9.4	9.4	9.4	9.4
	Pyrene	5.11	DLM	0.63	ug/g	17-OCT-17	96	96	78	78
	1,2,4-Trichlorobenzene	<0.63	DLM	0.63	ug/g	17-OCT-17	3.2	16	**0.36	1.4
	2,4,5-Trichlorophenol	<1.3	DLM	1.3	ug/g	17-OCT-17	9.1	10	4.4	5.5
	2,4,6-Trichlorophenol	<1.3	DLM	1.3	ug/g	17-OCT-17	2.1	2.9	2.1	2.9
	Surrogate: 2-Fluorobiphenyl	109.0		50-140	%	17-OCT-17				
	Surrogate: Nitrobenzene d5	108.8		50-140	%	17-OCT-17				
	Surrogate: Phenol d5	94.5		30-130	%	17-OCT-17				
	Surrogate: p-Terphenyl d14	82.9		50-140	%	17-OCT-17				
	Surrogate: 2,4,6-Tribromophenol	89.7		50-140	%	17-OCT-17				
L2003037-24	DUP 5									
Sampled By:	M. SHIRY on 04-OCT-17									
Matrix:	SOIL									
Physical Tests										
	Conductivity	0.157		0.0040	mS/cm	12-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	6.27		0.10	%	10-OCT-17				
	pH	7.60		0.10	pH units	12-OCT-17				
Cyanides										

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ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-24	DUP 5									
Sampled By:	M. SHIRY on 04-OCT-17									
Matrix:	SOIL									
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	12-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	<0.11	SAR:DL	0.11	SAR	12-OCT-17	12	12	5	5
	Calcium (Ca)	5.9		1.0	mg/L	12-OCT-17				
	Magnesium (Mg)	<1.0		1.0	mg/L	12-OCT-17				
	Sodium (Na)	<1.0		1.0	mg/L	12-OCT-17				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	12-OCT-17	40	50	7.5	7.5
	Arsenic (As)	3.7		1.0	ug/g	12-OCT-17	18	18	18	18
	Barium (Ba)	43.6		1.0	ug/g	12-OCT-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	12-OCT-17	8	10	4	5
	Boron (B)	5.1		5.0	ug/g	12-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.13		0.10	ug/g	12-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	<0.50		0.50	ug/g	12-OCT-17	1.9	1.9	1.2	1.2
	Chromium (Cr)	10.6		1.0	ug/g	12-OCT-17	160	160	160	160
	Cobalt (Co)	4.0		1.0	ug/g	12-OCT-17	80	100	22	22
	Copper (Cu)	11.2		1.0	ug/g	12-OCT-17	230	300	140	180
	Lead (Pb)	20.4		1.0	ug/g	12-OCT-17	120	120	120	120
	Mercury (Hg)	0.0090		0.0050	ug/g	12-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	<1.0		1.0	ug/g	12-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	7.4		1.0	ug/g	12-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	12-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	12-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	12-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	12-OCT-17	33	33	23	23
	Vanadium (V)	23.7		1.0	ug/g	12-OCT-17	86	86	86	86
	Zinc (Zn)	43.8		5.0	ug/g	12-OCT-17	340	340	340	340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	11-OCT-17	8	10	8	10
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.050		0.050	ug/g	16-OCT-17	21	29	7.9	29
	Acenaphthylene	<0.050		0.050	ug/g	16-OCT-17	0.15	0.17	0.15	0.17
	Anthracene	<0.050		0.050	ug/g	16-OCT-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	<0.050		0.050	ug/g	16-OCT-17	0.96	0.96	0.5	0.63
	Benzo(a)pyrene	<0.050		0.050	ug/g	16-OCT-17	0.3	0.3	0.3	0.3
	Benzo(b)fluoranthene	0.057		0.050	ug/g	16-OCT-17	0.96	0.96	0.78	0.78
	Benzo(g,h,i)perylene	<0.050		0.050	ug/g	16-OCT-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	<0.050		0.050	ug/g	16-OCT-17	0.96	0.96	0.78	0.78
	Chrysene	0.062		0.050	ug/g	16-OCT-17	9.6	9.6	7	7.8
	Dibenzo(ah)anthracene	<0.050		0.050	ug/g	16-OCT-17	0.1	0.1	0.1	0.1
	Fluoranthene	<0.050		0.050	ug/g	16-OCT-17	9.6	9.6	0.69	0.69
	Fluorene	<0.050		0.050	ug/g	16-OCT-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	16-OCT-17	0.76	0.95	0.38	0.48
	1+2-Methylnaphthalenes	<0.042		0.042	ug/g	16-OCT-17	30	42	0.99	3.4
	1-Methylnaphthalene	<0.030		0.030	ug/g	16-OCT-17	30	42	0.99	3.4

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-24 DUP 5										
Sampled By: M. SHIRY on 04-OCT-17										
Matrix: SOIL										
Polycyclic Aromatic Hydrocarbons										
	2-Methylnaphthalene	<0.030		0.030	ug/g	16-OCT-17	30	42	0.99	3.4
	Naphthalene	<0.050		0.050	ug/g	16-OCT-17	9.6	28	0.6	0.75
	Phenanthrene	0.051		0.050	ug/g	16-OCT-17	12	16	6.2	7.8
	Pyrene	<0.050		0.050	ug/g	16-OCT-17	96	96	78	78
	Surrogate: 2-Fluorobiphenyl	88.5		50-140	%	16-OCT-17				
	Surrogate: p-Terphenyl d14	92.9		50-140	%	16-OCT-17				
L2003037-25 TRIP BLANK - TP										
Sampled By: M. SHIRY on 04-OCT-17										
Matrix: SOIL										
Physical Tests										
	% Moisture	<0.10		0.10	%	10-OCT-17				
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	10-OCT-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	10-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	10-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	10-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	10-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	10-OCT-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	10-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	10-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	10-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	10-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	10-OCT-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	10-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	10-OCT-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	10-OCT-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	11-OCT-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	10-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	10-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	10-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	10-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	10-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	10-OCT-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	10-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	10-OCT-17	1.9	2.5	0.28	2.3

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2003037-25	TRIP BLANK - TP									
Sampled By:	M. SHIRY on 04-OCT-17									
Matrix:	SOIL									
Volatile Organic Compounds										
	Toluene	<0.080		0.080	ug/g	10-OCT-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	10-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	10-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	10-OCT-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	10-OCT-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	10-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	10-OCT-17				
	m+p-Xylenes	<0.030		0.030	ug/g	10-OCT-17				
	Xylenes (Total)	<0.050		0.050	ug/g	11-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	97.8		50-140	%	10-OCT-17				
	Surrogate: 1,4-Difluorobenzene	102.0		50-140	%	10-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	10-OCT-17	55	65	55	65
	Surrogate: 3,4-Dichlorotoluene	103.3		60-140	%	10-OCT-17				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

Reference Information

Sample Parameter Qualifier key listed:

Qualifier	Description
R	The ion abundance ratio(s) did not meet the acceptance criteria. Value is an estimated maximum.
PRAR	PCB Pattern Most Closely Resembles Aroclor Reported
[J]	The analyte was detected below the calibrated range but above the EDL.
SAR:M	Reported SAR represents a maximum value. Actual SAR may be lower if both Ca and Mg were detectable.
SAR:DL	SAR is incalculable due to undetectable Na. Detection Limit represents maximum possible SAR value.
DUPH	Duplicate results outside ALS DQO, due to sample heterogeneity.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
M,J	A peak has been manually integrated, and the analyte was detected below the calibrated range but above the EDL.
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference***
625-511-WT	Soil	ABN-O.Reg 153/04 (July 2011)	SW846 8270 (511)

Soil and sediment samples are dried by mixing with a desiccant prior to extraction. The extracts are dried, concentrated and exchanged into a solvent and analyzed by GC/MS. Depending on the analytical GC/MS column used benzo(j)fluoranthene may chromatographically co-elute with benzo(b)fluoranthene or benzo(k)fluoranthene.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B

A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

BTX-511-HS-WT	Soil	BTEX-O.Reg 153/04 (July 2011)	SW846 8260

BTX is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD

The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

DINITROTOL-CALC-WT	Soil	ABN-Calculated Parameters	SW846 8270
DX-R511-HRMS-BU	Soil	Dioxins and Furans	USEPA 1613B
EC-WT	Soil	Conductivity (EC)	MOEE E3138

A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

Reference Information

F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Soil	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Soil	F2-F4-O.Reg 153/04 (July 2011)	CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from soil with 1:1 hexane:acetone using a rotary extractor. Extracts are treated with silica gel to remove polar organic interferences. F2, F3, & F4 are analyzed by GC-FID. F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where both F4 (C34-C50) and F4G-sg are reported for a sample, the larger of the two values is used for comparison against the relevant CCME guideline for F4.
7. F4G-sg cannot be added to the C6 to C50 hydrocarbon results to obtain an estimate of total extractable hydrocarbons.
8. This method is validated for use.
9. Data from analysis of validation and quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram, unless otherwise indicated.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F4G-ADD-511-WT	Soil	F4G SG-O.Reg 153/04 (July 2011)	MOE DECPH-E3398/CCME TIER 1

F4G, gravimetric analysis, is determined if the chromatogram does not return to baseline at or before C50. A soil sample is extracted with a solvent mix, the solvent is evaporated and the weight of the residue is determined.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

HG-200.2-CVAA-WT	Soil	Mercury in Soil by CVAAS	EPA 200.2/1631E (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

Reference Information

MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)

This method uses a heated strong acid digestion with HNO3 and HCl and is intended to liberate metals that may be environmentally available. Silicate minerals are not solubilized. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. Analysis is by Collision/Reaction Cell ICPMS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT	Soil	ABN-Calculated Parameters	SW846 8270
MOISTURE-BU	Soil	% Moisture	ASTM METHOD D2974-00
MOISTURE-WT	Soil	% Moisture	Gravimetric: Oven Dried
PAH-511-WT	Soil	PAH-O.Reg 153/04 (July 2011)	SW846 3510/8270

A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking techniqueis used to extract the sample with a mixture of methanol and toluene. The extracts are concentrated and analyzed by GC/MS. Depending on the analytical GC/MS column used benzo(j)fluoranthene may chromatographically co-elute with benzo(b)fluoranthene or benzo(k)fluoranthene.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PCB-511-WT	Soil	PCB-O.Reg 153/04 (July 2011)	SW846 3510/8082

An aliquot of a solid sample is extracted with a solvent, extract is cleaned up and analyzed on the GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

PH-WT	Soil	pH	MOEE E3137A

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C

A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

TOC-R511-WT	Soil	TOC & FOC-O.Reg 153/04 (July 2011)	CARTER 21.3.2

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

VOC-1,3-DCP-CALC-WT	Soil	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Soil	VOC-O.Reg 153/04 (July 2011)	SW846 8260 (511)

Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

*** ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody numbers:

17-616667 17-616668 17-616669

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Reference Information

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA	BU	ALS ENVIRONMENTAL - BURLINGTON, ONTARIO, CANADA

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Soil**							
Batch R3857759								
WG2638879-4 DUP		**WG2638879-3**						
1-Methylnaphthalene		1.08	2.65	DUP-H	ug/g	84	40	17-OCT-17
1,2,4-Trichlorobenzene		<0.13	<0.13	RPD-NA	ug/g	N/A	40	17-OCT-17
2-Chlorophenol		<0.25	<0.25	RPD-NA	ug/g	N/A	40	17-OCT-17
2-Methylnaphthalene		0.918	3.17	DUP-H	ug/g	110	40	17-OCT-17
2,4-Dichlorophenol		<0.25	<0.25	RPD-NA	ug/g	N/A	40	17-OCT-17
2,4-Dimethylphenol		<0.25	<0.25	RPD-NA	ug/g	N/A	40	17-OCT-17
2,4-Dinitrophenol		<2.5	<2.5	RPD-NA	ug/g	N/A	40	17-OCT-17
2,4-Dinitrotoluene		<0.25	<0.25	RPD-NA	ug/g	N/A	40	17-OCT-17
2,4,5-Trichlorophenol		<0.25	<0.25	RPD-NA	ug/g	N/A	40	17-OCT-17
2,4,6-Trichlorophenol		<0.25	<0.25	RPD-NA	ug/g	N/A	40	17-OCT-17
2,6-Dinitrotoluene		<0.25	<0.25	RPD-NA	ug/g	N/A	40	17-OCT-17
3,3'-Dichlorobenzidine		<0.25	<0.25	RPD-NA	ug/g	N/A	40	17-OCT-17
4-Chloroaniline		<0.25	<0.25	RPD-NA	ug/g	N/A	40	17-OCT-17
Acenaphthene		<0.13	<0.13	RPD-NA	ug/g	N/A	40	17-OCT-17
Acenaphthylene		0.38	0.31		ug/g	21	40	17-OCT-17
Anthracene		0.17	0.19		ug/g	9.2	40	17-OCT-17
Benzo(a)anthracene		0.92	0.98		ug/g	6.6	40	17-OCT-17
Benzo(a)pyrene		1.76	1.54		ug/g	14	40	17-OCT-17
Benzo(b)fluoranthene		2.44	2.18		ug/g	11	40	17-OCT-17
Benzo(ghi)perylene		1.48	1.39		ug/g	6.1	40	17-OCT-17
Benzo(k)fluoranthene		1.64	1.49		ug/g	9.6	40	17-OCT-17
Biphenyl		0.13	0.20		ug/g	38	40	17-OCT-17
Bis(2-chloroethyl)ether		<0.25	<0.25	RPD-NA	ug/g	N/A	40	17-OCT-17
Bis(2-chloroisopropyl)ether		<0.25	<0.25	RPD-NA	ug/g	N/A	40	17-OCT-17
Bis(2-ethylhexyl)phthalate		<0.25	<0.25	RPD-NA	ug/g	N/A	40	17-OCT-17
Chrysene		1.75	1.76		ug/g	0.1	40	17-OCT-17
Dibenzo(a,h)anthracene		0.44	0.46		ug/g	4.2	40	17-OCT-17
Diethylphthalate		<0.25	<0.25	RPD-NA	ug/g	N/A	40	17-OCT-17
Dimethylphthalate		<0.25	<0.25	RPD-NA	ug/g	N/A	40	17-OCT-17
Fluoranthene		0.89	0.89		ug/g	0.4	40	17-OCT-17
Fluorene		<0.13	<0.13	RPD-NA	ug/g	N/A	40	17-OCT-17
Indeno(1,2,3-cd)pyrene		1.61	1.56		ug/g	3.3	40	17-OCT-17
Naphthalene		0.46	2.55		ug/g			17-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Soil**							
Batch R3857759								
WG2638879-4 DUP		**WG2638879-3**						
Naphthalene		0.46	2.55	DUP-H	ug/g	139	40	17-OCT-17
Pentachlorophenol		<0.25	<0.25	RPD-NA	ug/g	N/A	40	17-OCT-17
Phenanthrene		1.15	1.51		ug/g	27	40	17-OCT-17
Phenol		<0.25	<0.25	RPD-NA	ug/g	N/A	40	17-OCT-17
Pyrene		1.49	1.30		ug/g	13	40	17-OCT-17
WG2638879-2 LCS								
1-Methylnaphthalene			115.1		%		50-140	17-OCT-17
1,2,4-Trichlorobenzene			99.5		%		50-140	17-OCT-17
2-Chlorophenol			102.8		%		50-140	17-OCT-17
2-Methylnaphthalene			103.1		%		50-140	17-OCT-17
2,4-Dichlorophenol			100.4		%		50-140	17-OCT-17
2,4-Dimethylphenol			111.5		%		30-130	17-OCT-17
2,4-Dinitrophenol			106.6		%		30-130	17-OCT-17
2,4-Dinitrotoluene			113.4		%		50-140	17-OCT-17
2,4,5-Trichlorophenol			104.5		%		50-140	17-OCT-17
2,4,6-Trichlorophenol			106.9		%		50-140	17-OCT-17
2,6-Dinitrotoluene			113.9		%		50-140	17-OCT-17
3,3'-Dichlorobenzidine			88.0		%		30-130	17-OCT-17
4-Chloroaniline			91.4		%		30-130	17-OCT-17
Acenaphthene			98.5		%		50-140	17-OCT-17
Acenaphthylene			102.2		%		50-140	17-OCT-17
Anthracene			102.2		%		50-140	17-OCT-17
Benzo(a)anthracene			113.2		%		50-140	17-OCT-17
Benzo(a)pyrene			111.1		%		50-140	17-OCT-17
Benzo(b)fluoranthene			102.4		%		50-140	17-OCT-17
Benzo(ghi)perylene			114.4		%		50-140	17-OCT-17
Benzo(k)fluoranthene			107.9		%		50-140	17-OCT-17
Biphenyl			104.6		%		50-140	17-OCT-17
Bis(2-chloroethyl)ether			95.0		%		50-140	17-OCT-17
Bis(2-chloroisopropyl)ether			100.5		%		50-140	17-OCT-17
Bis(2-ethylhexyl)phthalate			109.7		%		50-140	17-OCT-17
Chrysene			112.0		%		50-140	17-OCT-17
Dibenzo(a,h)anthracene			110.4		%		50-140	17-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Soil**							
Batch R3857759								
WG2638879-2 LCS								
Diethylphthalate			96.2		%		50-140	17-OCT-17
Dimethylphthalate			94.8		%		50-140	17-OCT-17
Fluoranthene			105.9		%		50-140	17-OCT-17
Fluorene			101.7		%		50-140	17-OCT-17
Indeno(1,2,3-cd)pyrene			106.6		%		50-140	17-OCT-17
Naphthalene			100.1		%		50-140	17-OCT-17
Pentachlorophenol			119.0		%		50-140	17-OCT-17
Phenanthrene			101.5		%		50-140	17-OCT-17
Phenol			101.2		%		30-130	17-OCT-17
Pyrene			109.1		%		50-140	17-OCT-17
WG2638879-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	17-OCT-17
1,2,4-Trichlorobenzene			<0.050		ug/g		0.05	17-OCT-17
2-Chlorophenol			<0.10		ug/g		0.1	17-OCT-17
2-Methylnaphthalene			<0.030		ug/g		0.03	17-OCT-17
2,4-Dichlorophenol			<0.10		ug/g		0.1	17-OCT-17
2,4-Dimethylphenol			<0.10		ug/g		0.1	17-OCT-17
2,4-Dinitrophenol			<1.0		ug/g		1	17-OCT-17
2,4-Dinitrotoluene			<0.10		ug/g		0.1	17-OCT-17
2,4,5-Trichlorophenol			<0.10		ug/g		0.1	17-OCT-17
2,4,6-Trichlorophenol			<0.10		ug/g		0.1	17-OCT-17
2,6-Dinitrotoluene			<0.10		ug/g		0.1	17-OCT-17
3,3'-Dichlorobenzidine			<0.10		ug/g		0.1	17-OCT-17
4-Chloroaniline			<0.10		ug/g		0.1	17-OCT-17
Acenaphthene			<0.050		ug/g		0.05	17-OCT-17
Acenaphthylene			<0.050		ug/g		0.05	17-OCT-17
Anthracene			<0.050		ug/g		0.05	17-OCT-17
Benzo(a)anthracene			<0.050		ug/g		0.05	17-OCT-17
Benzo(a)pyrene			<0.050		ug/g		0.05	17-OCT-17
Benzo(b)fluoranthene			<0.050		ug/g		0.05	17-OCT-17
Benzo(ghi)perylene			<0.050		ug/g		0.05	17-OCT-17
Benzo(k)fluoranthene			<0.050		ug/g		0.05	17-OCT-17
Biphenyl			<0.050		ug/g		0.05	17-OCT-17
Bis(2-chloroethyl)ether			<0.10		ug/g		0.1	17-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Soil**							
Batch	**R3857759**							
WG2638879-1	**MB**							
Bis(2-chloroisopropyl)ether			<0.10		ug/g		0.1	17-OCT-17
Bis(2-ethylhexyl)phthalate			<0.10		ug/g		0.1	17-OCT-17
Chrysene			<0.050		ug/g		0.05	17-OCT-17
Dibenzo(a,h)anthracene			<0.050		ug/g		0.05	17-OCT-17
Diethylphthalate			<0.10		ug/g		0.1	17-OCT-17
Dimethylphthalate			<0.10		ug/g		0.1	17-OCT-17
Fluoranthene			<0.050		ug/g		0.05	17-OCT-17
Fluorene			<0.050		ug/g		0.05	17-OCT-17
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	17-OCT-17
Naphthalene			<0.050		ug/g		0.05	17-OCT-17
Pentachlorophenol			<0.10		ug/g		0.1	17-OCT-17
Phenanthrene			<0.050		ug/g		0.05	17-OCT-17
Phenol			<0.10		ug/g		0.1	17-OCT-17
Pyrene			<0.050		ug/g		0.05	17-OCT-17
Surrogate: 2-Fluorobiphenyl			105.6		%		50-140	17-OCT-17
Surrogate: 2,4,6-Tribromophenol			64.2		%		50-140	17-OCT-17
Surrogate: Nitrobenzene d5			104.3		%		50-140	17-OCT-17
Surrogate: p-Terphenyl d14			124.9		%		50-140	17-OCT-17
Surrogate: Phenol d5			94.0		%		30-130	17-OCT-17
WG2638879-5	**MS**	**WG2638879-3**						
1-Methylnaphthalene			115.3		%		50-140	17-OCT-17
1,2,4-Trichlorobenzene			104.2		%		50-140	17-OCT-17
2-Chlorophenol			108.6		%		50-140	17-OCT-17
2-Methylnaphthalene			110.0		%		50-140	17-OCT-17
2,4-Dichlorophenol			100.1		%		50-140	17-OCT-17
2,4-Dimethylphenol			111.7		%		30-150	17-OCT-17
2,4-Dinitrophenol			78.3		%		30-150	17-OCT-17
2,4-Dinitrotoluene			106.2		%		50-140	17-OCT-17
2,4,5-Trichlorophenol			111.5		%		50-140	17-OCT-17
2,4,6-Trichlorophenol			114.6		%		50-140	17-OCT-17
2,6-Dinitrotoluene			106.3		%		50-140	17-OCT-17
3,3'-Dichlorobenzidine			73.4		%		30-130	17-OCT-17
4-Chloroaniline			68.7		%		30-130	17-OCT-17
Acenaphthene			103.4		%		50-140	17-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Soil**							
Batch R3857759								
WG2638879-5 MS		**WG2638879-3**						
Acenaphthylene			109.0		%		50-140	17-OCT-17
Anthracene			108.4		%		50-140	17-OCT-17
Benzo(a)anthracene			116.7		%		50-140	17-OCT-17
Benzo(a)pyrene			105.4		%		50-140	17-OCT-17
Benzo(b)fluoranthene			N/A	MS-B	%		-	17-OCT-17
Benzo(ghi)perylene			114.5		%		50-140	17-OCT-17
Benzo(k)fluoranthene			88.4		%		50-140	17-OCT-17
Biphenyl			107.7		%		50-140	17-OCT-17
Bis(2-chloroethyl)ether			103.0		%		50-140	17-OCT-17
Bis(2-chloroisopropyl)ether			101.9		%		50-140	17-OCT-17
Bis(2-ethylhexyl)phthalate			97.9		%		50-140	17-OCT-17
Chrysene			104.6		%		50-140	17-OCT-17
Dibenzo(a,h)anthracene			126.0		%		50-140	17-OCT-17
Diethylphthalate			97.4		%		50-140	17-OCT-17
Dimethylphthalate			99.1		%		50-140	17-OCT-17
Fluoranthene			104.1		%		50-140	17-OCT-17
Fluorene			104.6		%		50-140	17-OCT-17
Indeno(1,2,3-cd)pyrene			119.6		%		50-140	17-OCT-17
Naphthalene			109.1		%		50-140	17-OCT-17
Pentachlorophenol			116.7		%		50-140	17-OCT-17
Phenanthrene			97.1		%		50-140	17-OCT-17
Phenol			105.6		%		30-130	17-OCT-17
Pyrene			108.3		%		50-140	17-OCT-17
B-HWS-R511-WT	**Soil**							
Batch R3852026								
WG2636183-4 DUP		**L2003249-4**						
Boron (B), Hot Water Ext.		0.29	0.28		ug/g	4.5	30	11-OCT-17
WG2636183-2 IRM		**HOTB-SAL_SOIL5**						
Boron (B), Hot Water Ext.			78.7		%		70-130	11-OCT-17
WG2636183-3 LCS								
Boron (B), Hot Water Ext.			98.7		%		70-130	11-OCT-17
WG2636183-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	11-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT	**Soil**							
Batch R3852969								
WG2637242-4 DUP		**L2003921-6**						
Boron (B), Hot Water Ext.		0.25	0.29		ug/g	13	30	12-OCT-17
WG2637242-2 IRM		**HOTB-SAL_SOIL5**						
Boron (B), Hot Water Ext.			96.2		%		70-130	12-OCT-17
WG2637242-3 LCS								
Boron (B), Hot Water Ext.			105.3		%		70-130	12-OCT-17
WG2637242-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	12-OCT-17
Batch R3858834								
WG2642060-4 DUP		**L2007170-3**						
Boron (B), Hot Water Ext.		0.21	0.21		ug/g	1.2	30	18-OCT-17
WG2642060-2 IRM		**HOTB-SAL_SOIL5**						
Boron (B), Hot Water Ext.			100.3		%		70-130	18-OCT-17
WG2642060-3 LCS								
Boron (B), Hot Water Ext.			104.8		%		70-130	18-OCT-17
WG2642060-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	18-OCT-17
Batch R3869496								
WG2651662-4 DUP		**L2012727-2**						
Boron (B), Hot Water Ext.		<0.10	<0.10	RPD-NA	ug/g	N/A	30	30-OCT-17
WG2651662-2 IRM		**HOTB-SAL_SOIL5**						
Boron (B), Hot Water Ext.			101.7		%		70-130	30-OCT-17
WG2651662-3 LCS								
Boron (B), Hot Water Ext.			90.7		%		70-130	30-OCT-17
WG2651662-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	30-OCT-17
BTX-511-HS-WT	**Soil**							
Batch R3848678								
WG2633606-4 DUP		**WG2633606-3**						
Benzene		0.0246	0.0230		ug/g	6.7	40	10-OCT-17
Ethylbenzene		0.052	0.049		ug/g	6.8	40	10-OCT-17
m+p-Xylenes		0.318	0.299		ug/g	6.2	40	10-OCT-17
o-Xylene		0.245	0.235		ug/g	4.1	40	10-OCT-17
Toluene		0.184	0.173		ug/g	6.1	40	10-OCT-17
WG2633606-2 LCS								
Benzene			95.9		%		70-130	06-OCT-17
Ethylbenzene			94.3		%		70-130	06-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTX-511-HS-WT	**Soil**							
Batch R3848678								
WG2633606-2 LCS								
m+p-Xylenes			91.0		%		70-130	06-OCT-17
o-Xylene			97.5		%		70-130	06-OCT-17
Toluene			95.8		%		70-130	06-OCT-17
WG2633606-1 MB								
Benzene			<0.0068		ug/g		0.0068	06-OCT-17
Ethylbenzene			<0.018		ug/g		0.018	06-OCT-17
m+p-Xylenes			<0.030		ug/g		0.03	06-OCT-17
o-Xylene			<0.020		ug/g		0.02	06-OCT-17
Toluene			<0.080		ug/g		0.08	06-OCT-17
Surrogate: 1,4-Difluorobenzene			100.5		%		50-140	06-OCT-17
Surrogate: 4-Bromofluorobenzene			99.5		%		50-140	06-OCT-17
WG2633606-5 MS		**WG2633606-3**						
Benzene			91.4		%		60-140	10-OCT-17
Ethylbenzene			95.1		%		60-140	10-OCT-17
m+p-Xylenes			88.0		%		60-140	10-OCT-17
o-Xylene			96.5		%		60-140	10-OCT-17
Toluene			95.5		%		60-140	10-OCT-17
CN-WAD-R511-WT	**Soil**							
Batch R3852958								
WG2635188-3 DUP		**L2002516-1**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	11-OCT-17
WG2635188-2 LCS								
Cyanide, Weak Acid Diss			99.4		%		80-120	11-OCT-17
WG2635188-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	11-OCT-17
WG2635188-4 MS		**L2002516-1**						
Cyanide, Weak Acid Diss			107.5		%		70-130	11-OCT-17
Batch R3853855								
WG2636249-3 DUP		**L2003037-12**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	12-OCT-17
WG2636249-2 LCS								
Cyanide, Weak Acid Diss			99.98		%		80-120	12-OCT-17
WG2636249-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	12-OCT-17
WG2636249-4 MS		**L2003037-12**						

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-WAD-R511-WT	**Soil**							
Batch R3853855								
WG2636249-4 MS		**L2003037-12**						
Cyanide, Weak Acid Diss			97.1		%		70-130	12-OCT-17
Batch R3858832								
WG2640031-3 DUP		**L2006981-17**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	17-OCT-17
WG2640031-2 LCS								
Cyanide, Weak Acid Diss			95.7		%		80-120	17-OCT-17
WG2640031-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	17-OCT-17
WG2640031-4 MS		**L2006981-17**						
Cyanide, Weak Acid Diss			103.4		%		70-130	17-OCT-17
Batch R3866891								
WG2648716-3 DUP		**L2003037-18**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	26-OCT-17
WG2648716-2 LCS								
Cyanide, Weak Acid Diss			96.1		%		80-120	26-OCT-17
WG2648716-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	26-OCT-17
WG2648716-4 MS		**L2003037-18**						
Cyanide, Weak Acid Diss			100.8		%		70-130	26-OCT-17
CR-CR6-IC-WT	**Soil**							
Batch R3852106								
WG2635207-4 CRM		**WT-SQC012**						
Chromium, Hexavalent			90.3		%		70-130	11-OCT-17
WG2635564-3 CRM		**WT-SQC012**						
Chromium, Hexavalent			87.9		%		70-130	11-OCT-17
WG2635207-3 DUP		**L2003037-2**						
Chromium, Hexavalent		0.22	<0.20	RPD-NA	ug/g	N/A	35	11-OCT-17
WG2635564-4 DUP		**L2003970-7**						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	11-OCT-17
WG2635207-2 LCS								
Chromium, Hexavalent			95.4		%		80-120	11-OCT-17
WG2635564-2 LCS								
Chromium, Hexavalent			88.5		%		80-120	11-OCT-17
WG2635207-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	11-OCT-17
WG2635564-1 MB								

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CR-CR6-IC-WT	**Soil**							
Batch R3852106								
WG2635564-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	11-OCT-17
Batch R3857680								
WG2640389-3 CRM		**WT-SQC012**						
Chromium, Hexavalent			88.8		%		70-130	17-OCT-17
WG2640389-4 DUP		**L2007190-5**						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	17-OCT-17
WG2640389-2 LCS								
Chromium, Hexavalent			94.5		%		80-120	17-OCT-17
WG2640389-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	17-OCT-17
Batch R3869304								
WG2650137-3 CRM		**WT-SQC012**						
Chromium, Hexavalent			81.9		%		70-130	30-OCT-17
WG2650137-4 DUP		**L2012539-1**						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	30-OCT-17
WG2650137-2 LCS								
Chromium, Hexavalent			95.9		%		80-120	30-OCT-17
WG2650137-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	30-OCT-17
DX-R511-HRMS-BU	**Soil**							
Batch R3884799								
WG2649387-2 LCS								
2,3,7,8-TCDD			95.0		%		50-150	11-NOV-17
1,2,3,7,8-PeCDD			105.0		%		50-150	11-NOV-17
1,2,3,4,7,8-HxCDD			96.0		%		50-150	11-NOV-17
1,2,3,6,7,8-HxCDD			96.0		%		50-150	11-NOV-17
1,2,3,7,8,9-HxCDD			102.0		%		50-150	11-NOV-17
1,2,3,4,6,7,8-HpCDD			94.0		%		50-150	11-NOV-17
OCDD			93.0		%		50-150	11-NOV-17
2,3,7,8-TCDF			92.0		%		50-150	11-NOV-17
1,2,3,7,8-PeCDF			96.0		%		50-150	11-NOV-17
2,3,4,7,8-PeCDF			97.0		%		50-150	11-NOV-17
1,2,3,4,7,8-HxCDF			102.0		%		50-150	11-NOV-17
1,2,3,6,7,8-HxCDF			97.0		%		50-150	11-NOV-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
DX-R511-HRMS-BU	**Soil**							
Batch R3884799								
WG2649387-2 LCS								
2,3,4,6,7,8-HxCDF			92.0		%		50-150	11-NOV-17
1,2,3,7,8,9-HxCDF			93.0		%		50-150	11-NOV-17
1,2,3,4,6,7,8-HpCDF			97.0		%		50-150	11-NOV-17
1,2,3,4,7,8,9-HpCDF			96.0		%		50-150	11-NOV-17
OCDF			92.0		%		50-150	11-NOV-17
WG2649387-1 MB								
2,3,7,8-TCDD			<0.13	[U]	pg/g		0.13	11-NOV-17
1,2,3,7,8-PeCDD			<0.087	[U]	pg/g		0.087	11-NOV-17
1,2,3,4,7,8-HxCDD			<0.16	[U]	pg/g		0.16	11-NOV-17
1,2,3,6,7,8-HxCDD			<0.14	[U]	pg/g		0.14	11-NOV-17
1,2,3,7,8,9-HxCDD			<0.15	[U]	pg/g		0.15	11-NOV-17
1,2,3,4,6,7,8-HpCDD			0.47	M,J,R	pg/g		0.15	11-NOV-17
OCDD			2.80	M,J,R	pg/g		0.24	11-NOV-17
2,3,7,8-TCDF			<0.17	[U]	pg/g		0.17	11-NOV-17
1,2,3,7,8-PeCDF			<0.11	[U]	pg/g		0.11	11-NOV-17
2,3,4,7,8-PeCDF			<0.11	[U]	pg/g		0.11	11-NOV-17
1,2,3,4,7,8-HxCDF			<0.14	[U]	pg/g		0.14	11-NOV-17
1,2,3,6,7,8-HxCDF			<0.13	[U]	pg/g		0.13	11-NOV-17
2,3,4,6,7,8-HxCDF			<0.12	[U]	pg/g		0.12	11-NOV-17
1,2,3,7,8,9-HxCDF			<0.21	[U]	pg/g		0.21	11-NOV-17
1,2,3,4,6,7,8-HpCDF			0.27	M,J	pg/g		0.13	11-NOV-17
1,2,3,4,7,8,9-HpCDF			<0.22	[U]	pg/g		0.22	11-NOV-17
OCDF			<0.27	[U]	pg/g		0.27	11-NOV-17
Total-TCDD			<0.13	[U]	pg/g		0.13	11-NOV-17
Total-PeCDD			<0.087	[U]	pg/g		0.087	11-NOV-17
Total-HxCDD			<0.16	[U]	pg/g		0.16	11-NOV-17
Total-HpCDD			0.47	A	pg/g		0.15	11-NOV-17
Total-TCDF			<0.17	[U]	pg/g		0.17	11-NOV-17
Total-PeCDF			0.34	A	pg/g		0.11	11-NOV-17
Total-HxCDF			<0.21	[U]	pg/g		0.21	11-NOV-17
Total-HpCDF			0.56	A	pg/g		0.22	11-NOV-17
Surrogate: 13C12-2,3,7,8-TCDD			78.0		%		40-130	11-NOV-17
Surrogate: 13C12-1,2,3,7,8-PeCDD			58.0		%		40-140	11-NOV-17
Surrogate: 13C12-1,2,3,4,7,8-HxCDD			69.0		%		40-140	11-NOV-17

Quality Control Report

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
DX-R511-HRMS-BU	**Soil**							
Batch R3884799								
WG2649387-1 MB								
Surrogate: 13C12-1,2,3,6,7,8-HxCDD			88.0		%		40-140	11-NOV-17
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD			61.0		%		40-140	11-NOV-17
Surrogate: 13C12-OCDD			52.0		%		40-140	11-NOV-17
Surrogate: 13C12-2,3,7,8-TCDF			72.0		%		40-130	11-NOV-17
Surrogate: 13C12-1,2,3,7,8-PeCDF			63.0		%		40-140	11-NOV-17
Surrogate: 13C12-2,3,4,7,8-PeCDF			60.0		%		40-140	11-NOV-17
Surrogate: 13C12-1,2,3,4,7,8-HxCDF			69.0		%		40-140	11-NOV-17
Surrogate: 13C12-1,2,3,6,7,8-HxCDF			85.0		%		40-140	11-NOV-17
Surrogate: 13C12-2,3,4,6,7,8-HxCDF			76.0		%		40-140	11-NOV-17
Surrogate: 13C12-1,2,3,7,8,9-HxCDF			61.0		%		40-140	11-NOV-17
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF			63.0		%		40-140	11-NOV-17
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF			52.0		%		40-140	11-NOV-17
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)			67.0		%		40-130	11-NOV-17

COMMENTS: There were low levels of selected targets detected in the method blank that were within the reference method control limits.
Low level sample results may be elevated where indicated

EC-WT	**Soil**							
Batch R3852981								
WG2637243-4 DUP		**WG2637243-3**						
Conductivity		0.266	0.253		mS/cm	5.0	20	12-OCT-17
WG2637503-1 LCS								
Conductivity			100.1		%		90-110	12-OCT-17
WG2637243-1 MB								
Conductivity			<0.0040		mS/cm		0.004	12-OCT-17
Batch R3852990								
WG2636178-4 DUP		**WG2636178-3**						
Conductivity		0.179	0.180		mS/cm	0.4	20	12-OCT-17
WG2637500-1 LCS								
Conductivity			100.0		%		90-110	12-OCT-17
WG2636178-1 MB								
Conductivity			<0.0040		mS/cm		0.004	12-OCT-17
Batch R3858632								
WG2642063-8 DUP		**WG2642063-7**						
Conductivity		0.192	0.191		mS/cm	0.3	20	18-OCT-17
WG2642338-1 LCS								
Conductivity			99.6		%		90-110	18-OCT-17
WG2642063-5 MB								

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
EC-WT	**Soil**							
Batch R3858632								
WG2642063-5 MB								
Conductivity			<0.0040		mS/cm		0.004	18-OCT-17
Batch R3870991								
WG2651666-4 DUP		**WG2651666-3**						
Conductivity		0.190	0.191		mS/cm	0.7	20	31-OCT-17
WG2652728-2 LCS								
Conductivity			97.6		%		90-110	31-OCT-17
WG2651666-1 MB								
Conductivity			<0.0040		mS/cm		0.004	31-OCT-17
F1-HS-511-WT	**Soil**							
Batch R3848678								
WG2633606-4 DUP		**WG2633606-3**						
F1 (C6-C10)		7.9	8.2		ug/g	3.1	30	10-OCT-17
WG2633606-2 LCS								
F1 (C6-C10)			94.3		%		80-120	06-OCT-17
WG2633606-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	06-OCT-17
Surrogate: 3,4-Dichlorotoluene			111.9		%		60-140	06-OCT-17
WG2633606-7 MS		**WG2633606-6**						
F1 (C6-C10)			87.5		%		60-140	10-OCT-17
Batch R3851281								
WG2633641-4 DUP		**WG2633641-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	10-OCT-17
WG2633641-2 LCS								
F1 (C6-C10)			98.8		%		80-120	10-OCT-17
WG2633641-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	10-OCT-17
Surrogate: 3,4-Dichlorotoluene			116.6		%		60-140	10-OCT-17
WG2633641-7 MS		**WG2633641-6**						
F1 (C6-C10)			83.1		%		60-140	10-OCT-17
Batch R3857496								
WG2640081-4 DUP		**WG2640081-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	17-OCT-17
WG2640081-2 LCS								
F1 (C6-C10)			83.9		%		80-120	17-OCT-17
WG2640081-1 MB								
F1 (C6-C10)			<5.0				5	

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT	**Soil**							
Batch R3857496								
WG2640081-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	17-OCT-17
Surrogate: 3,4-Dichlorotoluene			88.3		%		60-140	17-OCT-17
WG2640081-7 MS		**WG2640081-6**						
F1 (C6-C10)			96.1		%		60-140	17-OCT-17
F2-F4-511-WT	**Soil**							
Batch R3853919								
WG2635349-3 CRM		**ALS PHC2 IRM**						
F2 (C10-C16)			120.5		%		70-130	13-OCT-17
F3 (C16-C34)			122.1		%		70-130	13-OCT-17
F4 (C34-C50)			128.5		%		70-130	13-OCT-17
WG2635349-5 DUP		**WG2635349-4**						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	13-OCT-17
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	13-OCT-17
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	13-OCT-17
WG2635349-2 LCS								
F2 (C10-C16)			113.0		%		80-120	13-OCT-17
F3 (C16-C34)			112.9		%		80-120	13-OCT-17
F4 (C34-C50)			111.6		%		80-120	13-OCT-17
WG2635349-1 MB								
F2 (C10-C16)			<10		ug/g		10	13-OCT-17
F3 (C16-C34)			<50		ug/g		50	13-OCT-17
F4 (C34-C50)			<50		ug/g		50	13-OCT-17
Surrogate: 2-Bromobenzotrifluoride			83.2		%		60-140	13-OCT-17
Batch R3855568								
WG2636459-3 CRM		**ALS PHC2 IRM**						
F2 (C10-C16)			106.9		%		70-130	13-OCT-17
F3 (C16-C34)			110.5		%		70-130	13-OCT-17
F4 (C34-C50)			116.2		%		70-130	13-OCT-17
WG2636459-5 DUP		**WG2636459-4**						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	16-OCT-17
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	16-OCT-17
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	16-OCT-17
WG2636459-2 LCS								
F2 (C10-C16)			107.8		%		80-120	13-OCT-17
F3 (C16-C34)			108.6		%		80-120	13-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-511-WT	**Soil**							
Batch R3855568								
WG2636459-2 LCS								
F4 (C34-C50)			110.5		%		80-120	13-OCT-17
WG2636459-1 MB								
F2 (C10-C16)			<10		ug/g		10	13-OCT-17
F3 (C16-C34)			<50		ug/g		50	13-OCT-17
F4 (C34-C50)			<50		ug/g		50	13-OCT-17
Surrogate: 2-Bromobenzotrifluoride			80.8		%		60-140	13-OCT-17
Batch R3857175								
WG2636243-3 CRM		**ALS PHC2 IRM**						
F2 (C10-C16)			96.3		%		70-130	16-OCT-17
F3 (C16-C34)			103.2		%		70-130	16-OCT-17
F4 (C34-C50)			104.5		%		70-130	16-OCT-17
WG2636243-5 DUP		**WG2636243-4**						
F2 (C10-C16)		18	16		ug/g	11	30	16-OCT-17
F3 (C16-C34)		177	174		ug/g	1.5	30	16-OCT-17
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	16-OCT-17
WG2636243-2 LCS								
F2 (C10-C16)			106.0		%		80-120	16-OCT-17
F3 (C16-C34)			106.1		%		80-120	16-OCT-17
F4 (C34-C50)			98.3		%		80-120	16-OCT-17
WG2636243-1 MB								
F2 (C10-C16)			<10		ug/g		10	16-OCT-17
F3 (C16-C34)			<50		ug/g		50	16-OCT-17
F4 (C34-C50)			<50		ug/g		50	16-OCT-17
Surrogate: 2-Bromobenzotrifluoride			68.9		%		60-140	16-OCT-17
Batch R3860285								
WG2640807-3 CRM		**ALS PHC2 IRM**						
F2 (C10-C16)			95.6		%		70-130	19-OCT-17
F3 (C16-C34)			92.6		%		70-130	19-OCT-17
F4 (C34-C50)			80.7		%		70-130	19-OCT-17
WG2640807-5 DUP		**WG2640807-4**						
F2 (C10-C16)		61	35	DUP-H	ug/g	26	20	19-OCT-17
F3 (C16-C34)		417	286	DUP-H	ug/g	37	30	19-OCT-17
F4 (C34-C50)		71	50	J	ug/g	21	100	19-OCT-17
WG2640807-2 LCS								
F2 (C10-C16)			110.1		%		80-120	19-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-511-WT	**Soil**							
Batch R3860285								
WG2640807-2 LCS								
F3 (C16-C34)			112.4		%		80-120	19-OCT-17
F4 (C34-C50)			98.6		%		80-120	19-OCT-17
WG2640807-1 MB								
F2 (C10-C16)			<10		ug/g		10	19-OCT-17
F3 (C16-C34)			<50		ug/g		50	19-OCT-17
F4 (C34-C50)			<50		ug/g		50	19-OCT-17
Surrogate: 2-Bromobenzotrifluoride			70.2		%		60-140	19-OCT-17
F4G-ADD-511-WT	**Soil**							
Batch R3854074								
WG2638864-2 LCS								
F4G-SG (GHH-Silica)			99.96		%		60-140	13-OCT-17
WG2638864-1 MB								
F4G-SG (GHH-Silica)			<250		ug/g		250	13-OCT-17
Batch R3857895								
WG2641644-2 LCS								
F4G-SG (GHH-Silica)			96.6		%		60-140	12-OCT-17
WG2641644-1 MB								
F4G-SG (GHH-Silica)			<250		ug/g		250	12-OCT-17
Batch R3857984								
WG2641729-2 LCS								
F4G-SG (GHH-Silica)			92.0		%		60-140	12-OCT-17
WG2641729-1 MB								
F4G-SG (GHH-Silica)			<250		ug/g		250	12-OCT-17
Batch R3863341								
WG2646420-2 LCS								
F4G-SG (GHH-Silica)			88.6		%		60-140	18-OCT-17
WG2646420-1 MB								
F4G-SG (GHH-Silica)			<250		ug/g		250	18-OCT-17
HG-200.2-CVAA-WT	**Soil**							
Batch R3851891								
WG2636150-2 CRM		**WT-CANMET-TILL1**						
Mercury (Hg)			102.5		%		70-130	11-OCT-17
WG2636150-6 DUP		**WG2636150-5**						
Mercury (Hg)		0.0622	0.0587		ug/g	5.8	40	11-OCT-17
WG2636150-3 LCS								
Mercury (Hg)			103.5		%		80-120	11-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-200.2-CVAA-WT	**Soil**							
Batch R3851891								
WG2636150-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	11-OCT-17
Batch R3852818								
WG2637222-2 CRM		**WT-CANMET-TILL1**						
Mercury (Hg)			102.3		%		70-130	12-OCT-17
WG2637222-6 DUP		**WG2637222-5**						
Mercury (Hg)		0.0203	0.0217		ug/g	6.6	40	12-OCT-17
WG2637222-3 LCS								
Mercury (Hg)			111.0		%		80-120	12-OCT-17
WG2637222-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	12-OCT-17
Batch R3858587								
WG2642035-2 CRM		**WT-CANMET-TILL1**						
Mercury (Hg)			100.9		%		70-130	18-OCT-17
WG2642035-6 DUP		**WG2642035-5**						
Mercury (Hg)		0.0169	0.0122		ug/g	32	40	18-OCT-17
WG2642035-3 LCS								
Mercury (Hg)			107.5		%		80-120	18-OCT-17
WG2642035-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	18-OCT-17
Batch R3869387								
WG2651645-2 CRM		**WT-CANMET-TILL1**						
Mercury (Hg)			96.7		%		70-130	30-OCT-17
WG2651645-6 DUP		**WG2651645-5**						
Mercury (Hg)		0.0139	0.0137		ug/g	1.6	40	30-OCT-17
WG2651645-3 LCS								
Mercury (Hg)			103.0		%		80-120	30-OCT-17
WG2651645-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	30-OCT-17
MET-200.2-CCMS-WT	**Soil**							
Batch R3852783								
WG2636150-2 CRM		**WT-CANMET-TILL1**						
Antimony (Sb)			97.7		%		70-130	11-OCT-17
Arsenic (As)			104.8		%		70-130	11-OCT-17
Barium (Ba)			110.6		%		70-130	11-OCT-17
Beryllium (Be)			97.4		%		70-130	11-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3852783								
WG2636150-2 CRM		**WT-CANMET-TILL1**						
Boron (B)			3.6		mg/kg		0-8.2	11-OCT-17
Cadmium (Cd)			100.4		%		70-130	11-OCT-17
Chromium (Cr)			105.8		%		70-130	11-OCT-17
Cobalt (Co)			104.8		%		70-130	11-OCT-17
Copper (Cu)			105.7		%		70-130	11-OCT-17
Lead (Pb)			99.9		%		70-130	11-OCT-17
Molybdenum (Mo)			101.2		%		70-130	11-OCT-17
Nickel (Ni)			104.4		%		70-130	11-OCT-17
Selenium (Se)			0.28		mg/kg		0.11-0.51	11-OCT-17
Silver (Ag)			0.23		mg/kg		0.13-0.33	11-OCT-17
Thallium (Tl)			0.121		mg/kg		0.077-0.18	11-OCT-17
Uranium (U)			93.7		%		70-130	11-OCT-17
Vanadium (V)			108.4		%		70-130	11-OCT-17
Zinc (Zn)			97.9		%		70-130	11-OCT-17
WG2636150-6 DUP		**WG2636150-5**						
Antimony (Sb)		1.42	1.44		ug/g	1.9	30	11-OCT-17
Arsenic (As)		13.4	13.3		ug/g	1.4	30	11-OCT-17
Barium (Ba)		91.9	88.2		ug/g	4.2	40	11-OCT-17
Beryllium (Be)		0.49	0.48		ug/g	2.0	30	11-OCT-17
Boron (B)		16.2	14.1		ug/g	14	30	11-OCT-17
Cadmium (Cd)		2.57	2.69		ug/g	4.4	30	11-OCT-17
Chromium (Cr)		18.6	18.8		ug/g	1.3	30	11-OCT-17
Cobalt (Co)		9.47	9.13		ug/g	3.7	30	11-OCT-17
Copper (Cu)		45.1	44.3		ug/g	1.8	30	11-OCT-17
Lead (Pb)		188	183		ug/g	2.7	40	11-OCT-17
Molybdenum (Mo)		1.95	1.97		ug/g	0.9	40	11-OCT-17
Nickel (Ni)		24.9	24.0		ug/g	3.5	30	11-OCT-17
Selenium (Se)		0.27	0.28		ug/g	3.7	30	11-OCT-17
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	11-OCT-17
Thallium (Tl)		0.231	0.243		ug/g	5.2	30	11-OCT-17
Uranium (U)		1.12	1.11		ug/g	0.6	30	11-OCT-17
Vanadium (V)		35.2	35.1		ug/g	0.2	30	11-OCT-17
Zinc (Zn)		2660	2460		ug/g	2.8	30	11-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3852783								
WG2636150-4 LCS								
Antimony (Sb)			100.1		%		80-120	11-OCT-17
Arsenic (As)			99.1		%		80-120	11-OCT-17
Barium (Ba)			101.0		%		80-120	11-OCT-17
Beryllium (Be)			85.8		%		80-120	11-OCT-17
Boron (B)			81.2		%		80-120	11-OCT-17
Cadmium (Cd)			96.6		%		80-120	11-OCT-17
Chromium (Cr)			98.3		%		80-120	11-OCT-17
Cobalt (Co)			99.1		%		80-120	11-OCT-17
Copper (Cu)			96.0		%		80-120	11-OCT-17
Lead (Pb)			91.3		%		80-120	11-OCT-17
Molybdenum (Mo)			93.1		%		80-120	11-OCT-17
Nickel (Ni)			98.1		%		80-120	11-OCT-17
Selenium (Se)			98.3		%		80-120	11-OCT-17
Silver (Ag)			95.6		%		80-120	11-OCT-17
Thallium (Tl)			92.8		%		80-120	11-OCT-17
Uranium (U)			91.8		%		80-120	11-OCT-17
Vanadium (V)			101.2		%		80-120	11-OCT-17
Zinc (Zn)			89.9		%		80-120	11-OCT-17
WG2636150-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	11-OCT-17
Arsenic (As)			<0.10		mg/kg		0.1	11-OCT-17
Barium (Ba)			<0.50		mg/kg		0.5	11-OCT-17
Beryllium (Be)			<0.10		mg/kg		0.1	11-OCT-17
Boron (B)			<5.0		mg/kg		5	11-OCT-17
Cadmium (Cd)			<0.020		mg/kg		0.02	11-OCT-17
Chromium (Cr)			<0.50		mg/kg		0.5	11-OCT-17
Cobalt (Co)			<0.10		mg/kg		0.1	11-OCT-17
Copper (Cu)			<0.50		mg/kg		0.5	11-OCT-17
Lead (Pb)			<0.50		mg/kg		0.5	11-OCT-17
Molybdenum (Mo)			<0.10		mg/kg		0.1	11-OCT-17
Nickel (Ni)			<0.50		mg/kg		0.5	11-OCT-17
Selenium (Se)			<0.20		mg/kg		0.2	11-OCT-17
Silver (Ag)			<0.10		mg/kg		0.1	11-OCT-17
Thallium (Tl)			<0.050		mg/kg		0.05	11-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3852783								
WG2636150-1 MB								
Uranium (U)			<0.050		mg/kg		0.05	11-OCT-17
Vanadium (V)			<0.20		mg/kg		0.2	11-OCT-17
Zinc (Zn)			<2.0		mg/kg		2	11-OCT-17
Batch R3853032								
WG2637222-2 CRM		**WT-CANMET-TILL1**						
Antimony (Sb)			103.1		%		70-130	12-OCT-17
Arsenic (As)			109.8		%		70-130	12-OCT-17
Barium (Ba)			116.2		%		70-130	12-OCT-17
Beryllium (Be)			102.9		%		70-130	12-OCT-17
Boron (B)			3.2		mg/kg		0-8.2	12-OCT-17
Cadmium (Cd)			101.7		%		70-130	12-OCT-17
Chromium (Cr)			112.9		%		70-130	12-OCT-17
Cobalt (Co)			108.7		%		70-130	12-OCT-17
Copper (Cu)			109.1		%		70-130	12-OCT-17
Lead (Pb)			103.0		%		70-130	12-OCT-17
Molybdenum (Mo)			105.4		%		70-130	12-OCT-17
Nickel (Ni)			108.1		%		70-130	12-OCT-17
Selenium (Se)			0.33		mg/kg		0.11-0.51	12-OCT-17
Silver (Ag)			0.24		mg/kg		0.13-0.33	12-OCT-17
Thallium (Tl)			0.128		mg/kg		0.077-0.18	12-OCT-17
Uranium (U)			98.1		%		70-130	12-OCT-17
Vanadium (V)			113.7		%		70-130	12-OCT-17
Zinc (Zn)			101.8		%		70-130	12-OCT-17
WG2637222-6 DUP		**WG2637222-5**						
Antimony (Sb)		0.21	0.19		ug/g	9.1	30	12-OCT-17
Arsenic (As)		2.18	2.18		ug/g	0.4	30	12-OCT-17
Barium (Ba)		48.1	51.6		ug/g	7.2	40	12-OCT-17
Beryllium (Be)		0.38	0.39		ug/g	4.3	30	12-OCT-17
Boron (B)		8.8	9.8		ug/g	10	30	12-OCT-17
Cadmium (Cd)		1.06	1.09		ug/g	2.7	30	12-OCT-17
Chromium (Cr)		14.0	14.8		ug/g	5.3	30	12-OCT-17
Cobalt (Co)		4.71	4.93		ug/g	4.4	30	12-OCT-17
Copper (Cu)		27.0	28.1		ug/g	3.8	30	12-OCT-17
Lead (Pb)		87.4	91.8		ug/g	4.9	40	12-OCT-17

Quality Control Report

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3853032								
WG2637222-6 DUP		**WG2637222-5**						
Molybdenum (Mo)		0.27	0.28		ug/g	2.5	40	12-OCT-17
Nickel (Ni)		14.1	14.8		ug/g	4.5	30	12-OCT-17
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	12-OCT-17
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	12-OCT-17
Thallium (Tl)		0.149	0.154		ug/g	2.8	30	12-OCT-17
Uranium (U)		0.739	0.794		ug/g	7.2	30	12-OCT-17
Vanadium (V)		23.5	24.8		ug/g	5.3	30	12-OCT-17
Zinc (Zn)		1070	1140		ug/g	5.8	30	12-OCT-17
WG2637222-4 LCS								
Antimony (Sb)			104.2		%		80-120	12-OCT-17
Arsenic (As)			98.9		%		80-120	12-OCT-17
Barium (Ba)			103.0		%		80-120	12-OCT-17
Beryllium (Be)			91.6		%		80-120	12-OCT-17
Boron (B)			86.6		%		80-120	12-OCT-17
Cadmium (Cd)			91.3		%		80-120	12-OCT-17
Chromium (Cr)			96.7		%		80-120	12-OCT-17
Cobalt (Co)			95.5		%		80-120	12-OCT-17
Copper (Cu)			93.6		%		80-120	12-OCT-17
Lead (Pb)			98.0		%		80-120	12-OCT-17
Molybdenum (Mo)			97.8		%		80-120	12-OCT-17
Nickel (Ni)			94.1		%		80-120	12-OCT-17
Selenium (Se)			95.9		%		80-120	12-OCT-17
Silver (Ag)			95.3		%		80-120	12-OCT-17
Thallium (Tl)			97.2		%		80-120	12-OCT-17
Uranium (U)			92.1		%		80-120	12-OCT-17
Vanadium (V)			99.6		%		80-120	12-OCT-17
Zinc (Zn)			86.4		%		80-120	12-OCT-17
WG2637222-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	12-OCT-17
Arsenic (As)			<0.10		mg/kg		0.1	12-OCT-17
Barium (Ba)			<0.50		mg/kg		0.5	12-OCT-17
Beryllium (Be)			<0.10		mg/kg		0.1	12-OCT-17
Boron (B)			<5.0		mg/kg		5	12-OCT-17
Cadmium (Cd)			<0.020		mg/kg		0.02	12-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3853032								
WG2637222-1 MB								
Chromium (Cr)			<0.50		mg/kg		0.5	12-OCT-17
Cobalt (Co)			<0.10		mg/kg		0.1	12-OCT-17
Copper (Cu)			<0.50		mg/kg		0.5	12-OCT-17
Lead (Pb)			<0.50		mg/kg		0.5	12-OCT-17
Molybdenum (Mo)			<0.10		mg/kg		0.1	12-OCT-17
Nickel (Ni)			<0.50		mg/kg		0.5	12-OCT-17
Selenium (Se)			<0.20		mg/kg		0.2	12-OCT-17
Silver (Ag)			<0.10		mg/kg		0.1	12-OCT-17
Thallium (Tl)			<0.050		mg/kg		0.05	12-OCT-17
Uranium (U)			<0.050		mg/kg		0.05	12-OCT-17
Vanadium (V)			<0.20		mg/kg		0.2	12-OCT-17
Zinc (Zn)			<2.0		mg/kg		2	12-OCT-17
Batch R3859743								
WG2642035-2 CRM		**WT-CANMET-TILL1**						
Antimony (Sb)			92.9		%		70-130	18-OCT-17
Arsenic (As)			103.1		%		70-130	18-OCT-17
Barium (Ba)			107.9		%		70-130	18-OCT-17
Beryllium (Be)			100.4		%		70-130	18-OCT-17
Boron (B)			3.3		mg/kg		0-8.2	18-OCT-17
Cadmium (Cd)			108.9		%		70-130	18-OCT-17
Chromium (Cr)			99.8		%		70-130	18-OCT-17
Cobalt (Co)			99.2		%		70-130	18-OCT-17
Copper (Cu)			102.6		%		70-130	18-OCT-17
Lead (Pb)			95.7		%		70-130	18-OCT-17
Molybdenum (Mo)			96.6		%		70-130	18-OCT-17
Nickel (Ni)			103.1		%		70-130	18-OCT-17
Selenium (Se)			0.32		mg/kg		0.11-0.51	18-OCT-17
Silver (Ag)			0.23		mg/kg		0.13-0.33	18-OCT-17
Thallium (Tl)			0.113		mg/kg		0.077-0.18	18-OCT-17
Uranium (U)			91.8		%		70-130	18-OCT-17
Vanadium (V)			104.0		%		70-130	18-OCT-17
Zinc (Zn)			104.7		%		70-130	18-OCT-17
WG2642035-6 DUP		**WG2642035-5**						
Antimony (Sb)		0.16	0.14		ug/g	14	30	18-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3859743								
WG2642035-6 DUP		**WG2642035-5**						
Arsenic (As)		9.39	9.19		ug/g	2.2	30	18-OCT-17
Barium (Ba)		31.5	31.3		ug/g	0.5	40	18-OCT-17
Beryllium (Be)		1.12	1.14		ug/g	1.5	30	18-OCT-17
Boron (B)		15.8	16.8		ug/g	6.1	30	18-OCT-17
Cadmium (Cd)		0.046	0.040		ug/g	14	30	18-OCT-17
Chromium (Cr)		32.2	31.9		ug/g	1.0	30	18-OCT-17
Cobalt (Co)		19.9	19.2		ug/g	3.2	30	18-OCT-17
Copper (Cu)		46.5	44.8		ug/g	3.7	30	18-OCT-17
Lead (Pb)		2.42	2.41		ug/g	0.4	40	18-OCT-17
Molybdenum (Mo)		0.12	0.11		ug/g	15	40	18-OCT-17
Nickel (Ni)		41.0	40.4		ug/g	1.3	30	18-OCT-17
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	18-OCT-17
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	18-OCT-17
Thallium (Tl)		0.102	0.098		ug/g	4.0	30	18-OCT-17
Uranium (U)		0.584	0.609		ug/g	4.1	30	18-OCT-17
Vanadium (V)		40.8	41.0		ug/g	0.5	30	18-OCT-17
Zinc (Zn)		80.1	79.1		ug/g	1.2	30	18-OCT-17
WG2642035-4 LCS								
Antimony (Sb)			96.1		%		80-120	18-OCT-17
Arsenic (As)			95.2		%		80-120	18-OCT-17
Barium (Ba)			94.8		%		80-120	18-OCT-17
Beryllium (Be)			90.4		%		80-120	18-OCT-17
Boron (B)			86.3		%		80-120	18-OCT-17
Cadmium (Cd)			95.0		%		80-120	18-OCT-17
Chromium (Cr)			93.3		%		80-120	18-OCT-17
Cobalt (Co)			88.7		%		80-120	18-OCT-17
Copper (Cu)			91.3		%		80-120	18-OCT-17
Lead (Pb)			92.8		%		80-120	18-OCT-17
Molybdenum (Mo)			88.5		%		80-120	18-OCT-17
Nickel (Ni)			93.5		%		80-120	18-OCT-17
Selenium (Se)			94.5		%		80-120	18-OCT-17
Silver (Ag)			88.8		%		80-120	18-OCT-17
Thallium (Tl)			90.5		%		80-120	18-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3859743								
WG2642035-4 LCS								
Uranium (U)			87.3		%		80-120	18-OCT-17
Vanadium (V)			96.2		%		80-120	18-OCT-17
Zinc (Zn)			88.9		%		80-120	18-OCT-17
WG2642035-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	18-OCT-17
Arsenic (As)			<0.10		mg/kg		0.1	18-OCT-17
Barium (Ba)			<0.50		mg/kg		0.5	18-OCT-17
Beryllium (Be)			<0.10		mg/kg		0.1	18-OCT-17
Boron (B)			<5.0		mg/kg		5	18-OCT-17
Cadmium (Cd)			<0.020		mg/kg		0.02	18-OCT-17
Chromium (Cr)			<0.50		mg/kg		0.5	18-OCT-17
Cobalt (Co)			<0.10		mg/kg		0.1	18-OCT-17
Copper (Cu)			<0.50		mg/kg		0.5	18-OCT-17
Lead (Pb)			<0.50		mg/kg		0.5	18-OCT-17
Molybdenum (Mo)			<0.10		mg/kg		0.1	18-OCT-17
Nickel (Ni)			<0.50		mg/kg		0.5	18-OCT-17
Selenium (Se)			<0.20		mg/kg		0.2	18-OCT-17
Silver (Ag)			<0.10		mg/kg		0.1	18-OCT-17
Thallium (Tl)			<0.050		mg/kg		0.05	18-OCT-17
Uranium (U)			<0.050		mg/kg		0.05	18-OCT-17
Vanadium (V)			<0.20		mg/kg		0.2	18-OCT-17
Zinc (Zn)			<2.0		mg/kg		2	18-OCT-17
Batch R3871055								
WG2651645-2 CRM		**WT-CANMET-TILL1**						
Antimony (Sb)			93.2		%		70-130	30-OCT-17
Arsenic (As)			94.1		%		70-130	30-OCT-17
Barium (Ba)			97.1		%		70-130	30-OCT-17
Beryllium (Be)			93.0		%		70-130	30-OCT-17
Boron (B)			2.8		mg/kg		0-8.2	30-OCT-17
Cadmium (Cd)			92.3		%		70-130	30-OCT-17
Chromium (Cr)			93.7		%		70-130	30-OCT-17
Cobalt (Co)			90.0		%		70-130	30-OCT-17
Copper (Cu)			93.1		%		70-130	30-OCT-17
Lead (Pb)			94.8		%		70-130	30-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3871055								
WG2651645-2 CRM		**WT-CANMET-TILL1**						
Molybdenum (Mo)			94.1		%		70-130	30-OCT-17
Nickel (Ni)			92.5		%		70-130	30-OCT-17
Selenium (Se)			0.24		mg/kg		0.11-0.51	30-OCT-17
Silver (Ag)			0.22		mg/kg		0.13-0.33	30-OCT-17
Thallium (Tl)			0.115		mg/kg		0.077-0.18	30-OCT-17
Uranium (U)			92.2		%		70-130	30-OCT-17
Vanadium (V)			92.8		%		70-130	30-OCT-17
Zinc (Zn)			86.4		%		70-130	30-OCT-17
WG2651645-6 DUP		**WG2651645-5**						
Antimony (Sb)		<0.10	<0.10	RPD-NA	ug/g	N/A	30	30-OCT-17
Arsenic (As)		3.62	3.53		ug/g	2.7	30	30-OCT-17
Barium (Ba)		100	94.7		ug/g	5.5	40	30-OCT-17
Beryllium (Be)		0.49	0.47		ug/g	3.9	30	30-OCT-17
Boron (B)		6.0	5.3		ug/g	12	30	30-OCT-17
Cadmium (Cd)		0.087	0.082		ug/g	5.2	30	30-OCT-17
Chromium (Cr)		23.7	23.4		ug/g	1.3	30	30-OCT-17
Cobalt (Co)		10.5	10.3		ug/g	1.9	30	30-OCT-17
Copper (Cu)		18.9	18.5		ug/g	2.0	30	30-OCT-17
Lead (Pb)		8.21	7.99		ug/g	2.7	40	30-OCT-17
Molybdenum (Mo)		0.65	0.90		ug/g	32	40	30-OCT-17
Nickel (Ni)		23.2	23.1		ug/g	0.7	30	30-OCT-17
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	30-OCT-17
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	30-OCT-17
Thallium (Tl)		0.138	0.136		ug/g	1.6	30	30-OCT-17
Uranium (U)		0.624	0.611		ug/g	2.2	30	30-OCT-17
Vanadium (V)		30.4	29.7		ug/g	2.4	30	30-OCT-17
Zinc (Zn)		37.1	37.2		ug/g	0.2	30	30-OCT-17
WG2651645-4 LCS								
Antimony (Sb)			95.4		%		80-120	30-OCT-17
Arsenic (As)			92.3		%		80-120	30-OCT-17
Barium (Ba)			94.8		%		80-120	30-OCT-17
Beryllium (Be)			92.4		%		80-120	30-OCT-17
Boron (B)			86.4		%		80-120	30-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3871055								
WG2651645-4 LCS								
Cadmium (Cd)			88.6		%		80-120	30-OCT-17
Chromium (Cr)			93.2		%		80-120	30-OCT-17
Cobalt (Co)			90.5		%		80-120	30-OCT-17
Copper (Cu)			90.8		%		80-120	30-OCT-17
Lead (Pb)			90.7		%		80-120	30-OCT-17
Molybdenum (Mo)			97.2		%		80-120	30-OCT-17
Nickel (Ni)			91.1		%		80-120	30-OCT-17
Selenium (Se)			85.7		%		80-120	30-OCT-17
Silver (Ag)			94.1		%		80-120	30-OCT-17
Thallium (Tl)			88.9		%		80-120	30-OCT-17
Uranium (U)			93.0		%		80-120	30-OCT-17
Vanadium (V)			94.8		%		80-120	30-OCT-17
Zinc (Zn)			81.2		%		80-120	30-OCT-17
WG2651645-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	30-OCT-17
Arsenic (As)			<0.10		mg/kg		0.1	30-OCT-17
Barium (Ba)			<0.50		mg/kg		0.5	30-OCT-17
Beryllium (Be)			<0.10		mg/kg		0.1	30-OCT-17
Boron (B)			<5.0		mg/kg		5	30-OCT-17
Cadmium (Cd)			<0.020		mg/kg		0.02	30-OCT-17
Chromium (Cr)			<0.50		mg/kg		0.5	30-OCT-17
Cobalt (Co)			<0.10		mg/kg		0.1	30-OCT-17
Copper (Cu)			<0.50		mg/kg		0.5	30-OCT-17
Lead (Pb)			<0.50		mg/kg		0.5	30-OCT-17
Molybdenum (Mo)			<0.10		mg/kg		0.1	30-OCT-17
Nickel (Ni)			<0.50		mg/kg		0.5	30-OCT-17
Selenium (Se)			<0.20		mg/kg		0.2	30-OCT-17
Silver (Ag)			<0.10		mg/kg		0.1	30-OCT-17
Thallium (Tl)			<0.050		mg/kg		0.05	30-OCT-17
Uranium (U)			<0.050		mg/kg		0.05	30-OCT-17
Vanadium (V)			<0.20		mg/kg		0.2	30-OCT-17
Zinc (Zn)			<2.0		mg/kg		2	30-OCT-17
MOISTURE-BU	**Soil**							

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MOISTURE-BU	**Soil**							
Batch R3877027								
WG2649390-3 DUP		**L2012596-1**						
% Moisture		31.6	30.9		%	2.3	50	07-NOV-17
WG2649390-2 LCS								
% Moisture			95.9		%		50-150	07-NOV-17
WG2649390-1 MB								
% Moisture			<0.10		%		0.1	07-NOV-17
MOISTURE-WT	**Soil**							
Batch R3851169								
WG2635219-3 DUP		**L2001860-1**						
% Moisture		13.5	13.9		%	2.7	20	10-OCT-17
WG2635219-2 LCS								
% Moisture			101.5		%		90-110	10-OCT-17
WG2635219-1 MB								
% Moisture			<0.10		%		0.1	10-OCT-17
Batch R3851618								
WG2635220-3 DUP		**L2003037-13**						
% Moisture		6.51	6.39		%	1.9	20	10-OCT-17
WG2635220-2 LCS								
% Moisture			100.7		%		90-110	10-OCT-17
WG2635220-1 MB								
% Moisture			<0.10		%		0.1	10-OCT-17
Batch R3851647								
WG2635486-3 DUP		**L2003936-1**						
% Moisture		4.28	4.46		%	4.1	20	10-OCT-17
WG2635486-2 LCS								
% Moisture			99.3		%		90-110	10-OCT-17
WG2635486-1 MB								
% Moisture			<0.10		%		0.1	10-OCT-17
Batch R3857370								
WG2640306-3 DUP		**L2006742-50**						
% Moisture		5.68	5.44		%	4.3	20	16-OCT-17
WG2640306-2 LCS								
% Moisture			103.5		%		90-110	16-OCT-17
WG2640306-1 MB								
% Moisture			<0.10		%		0.1	16-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MOISTURE-WT	**Soil**							
Batch R3866393								
WG2648010-4 DUP		**L2012486-7**						
% Moisture		9.26	9.63		%	3.9	20	26-OCT-17
WG2648010-2 LCS								
% Moisture			100.0		%		90-110	26-OCT-17
WG2648010-1 MB								
% Moisture			<0.10		%		0.1	26-OCT-17
PAH-511-WT	**Soil**							
Batch R3855251								
WG2636606-4 DUP		**WG2636606-3**						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	16-OCT-17
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	16-OCT-17
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-OCT-17
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-OCT-17
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-OCT-17
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-OCT-17
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-OCT-17
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-OCT-17
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-OCT-17
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-OCT-17
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-OCT-17
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-OCT-17
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-OCT-17
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-OCT-17
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-OCT-17
Naphthalene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-OCT-17
Phenanthrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-OCT-17
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-OCT-17
WG2636606-2 LCS								
1-Methylnaphthalene			86.3		%		50-140	16-OCT-17
2-Methylnaphthalene			86.0		%		50-140	16-OCT-17
Acenaphthene			88.6		%		50-140	16-OCT-17
Acenaphthylene			85.7		%		50-140	16-OCT-17
Anthracene			86.8		%		50-140	16-OCT-17
Benzo(a)anthracene			81.6		%		50-140	16-OCT-17
Benzo(a)pyrene			82.7		%		50-140	16-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R3855251								
WG2636606-2 LCS								
Benzo(b)fluoranthene			88.0		%		50-140	16-OCT-17
Benzo(g,h,i)perylene			72.7		%		50-140	16-OCT-17
Benzo(k)fluoranthene			96.9		%		50-140	16-OCT-17
Chrysene			92.3		%		50-140	16-OCT-17
Dibenzo(ah)anthracene			77.4		%		50-140	16-OCT-17
Fluoranthene			81.0		%		50-140	16-OCT-17
Fluorene			87.8		%		50-140	16-OCT-17
Indeno(1,2,3-cd)pyrene			67.8		%		50-140	16-OCT-17
Naphthalene			87.9		%		50-140	16-OCT-17
Phenanthrene			83.4		%		50-140	16-OCT-17
Pyrene			82.9		%		50-140	16-OCT-17
WG2636606-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	16-OCT-17
2-Methylnaphthalene			<0.030		ug/g		0.03	16-OCT-17
Acenaphthene			<0.050		ug/g		0.05	16-OCT-17
Acenaphthylene			<0.050		ug/g		0.05	16-OCT-17
Anthracene			<0.050		ug/g		0.05	16-OCT-17
Benzo(a)anthracene			<0.050		ug/g		0.05	16-OCT-17
Benzo(a)pyrene			<0.050		ug/g		0.05	16-OCT-17
Benzo(b)fluoranthene			<0.050		ug/g		0.05	16-OCT-17
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	16-OCT-17
Benzo(k)fluoranthene			<0.050		ug/g		0.05	16-OCT-17
Chrysene			<0.050		ug/g		0.05	16-OCT-17
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	16-OCT-17
Fluoranthene			<0.050		ug/g		0.05	16-OCT-17
Fluorene			<0.050		ug/g		0.05	16-OCT-17
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	16-OCT-17
Naphthalene			<0.050		ug/g		0.05	16-OCT-17
Phenanthrene			<0.050		ug/g		0.05	16-OCT-17
Pyrene			<0.050		ug/g		0.05	16-OCT-17
Surrogate: 2-Fluorobiphenyl			93.6		%		50-140	16-OCT-17
Surrogate: p-Terphenyl d14			93.1		%		50-140	16-OCT-17
WG2636606-5 MS		**WG2636606-3**						
1-Methylnaphthalene			77.7		%		50-140	16-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R3855251								
WG2636606-5 MS		**WG2636606-3**						
2-Methylnaphthalene			77.6		%		50-140	16-OCT-17
Acenaphthene			79.7		%		50-140	16-OCT-17
Acenaphthylene			76.0		%		50-140	16-OCT-17
Anthracene			80.2		%		50-140	16-OCT-17
Benzo(a)anthracene			76.6		%		50-140	16-OCT-17
Benzo(a)pyrene			76.6		%		50-140	16-OCT-17
Benzo(b)fluoranthene			81.4		%		50-140	16-OCT-17
Benzo(g,h,i)perylene			67.3		%		50-140	16-OCT-17
Benzo(k)fluoranthene			88.9		%		50-140	16-OCT-17
Chrysene			87.2		%		50-140	16-OCT-17
Dibenzo(ah)anthracene			70.7		%		50-140	16-OCT-17
Fluoranthene			75.7		%		50-140	16-OCT-17
Fluorene			78.7		%		50-140	16-OCT-17
Indeno(1,2,3-cd)pyrene			62.4		%		50-140	16-OCT-17
Naphthalene			79.2		%		50-140	16-OCT-17
Phenanthrene			76.9		%		50-140	16-OCT-17
Pyrene			77.5		%		50-140	16-OCT-17
Batch R3870401								
WG2650122-4 DUP		**WG2650122-3**						
1-Methylnaphthalene		0.256	0.208		ug/g	21	40	31-OCT-17
2-Methylnaphthalene		0.310	0.243		ug/g	24	40	31-OCT-17
Acenaphthene		0.349	0.162	DUP-H	ug/g	73	40	31-OCT-17
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	31-OCT-17
Anthracene		0.887	0.293	DUP-H	ug/g	101	40	31-OCT-17
Benzo(a)anthracene		2.19	1.29	DUP-H	ug/g	52	40	31-OCT-17
Benzo(a)pyrene		1.99	1.39		ug/g	35	40	31-OCT-17
Benzo(b)fluoranthene		2.38	1.67		ug/g	35	40	31-OCT-17
Benzo(g,h,i)perylene		1.32	0.929		ug/g	35	40	31-OCT-17
Benzo(k)fluoranthene		1.16	0.744	DUP-H	ug/g	44	40	31-OCT-17
Chrysene		2.10	1.24	DUP-H	ug/g	52	40	31-OCT-17
Dibenzo(ah)anthracene		0.399	0.287		ug/g	33	40	31-OCT-17
Fluoranthene		4.18	1.89	DUP-H	ug/g	75	40	31-OCT-17
Fluorene		0.395	0.151	DUP-H	ug/g	89	40	31-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R3870401								
WG2650122-4 DUP		**WG2650122-3**						
Indeno(1,2,3-cd)pyrene		1.40	0.955		ug/g	37	40	31-OCT-17
Naphthalene		0.332	0.229		ug/g	36	40	31-OCT-17
Phenanthrene		3.75	1.50	DUP-H	ug/g	86	40	31-OCT-17
Pyrene		3.31	1.58	DUP-H	ug/g	71	40	31-OCT-17
WG2650122-2 LCS								
1-Methylnaphthalene			84.8		%		50-140	31-OCT-17
2-Methylnaphthalene			83.9		%		50-140	31-OCT-17
Acenaphthene			84.5		%		50-140	31-OCT-17
Acenaphthylene			83.6		%		50-140	31-OCT-17
Anthracene			81.9		%		50-140	31-OCT-17
Benzo(a)anthracene			83.1		%		50-140	31-OCT-17
Benzo(a)pyrene			82.3		%		50-140	31-OCT-17
Benzo(b)fluoranthene			84.6		%		50-140	31-OCT-17
Benzo(g,h,i)perylene			75.0		%		50-140	31-OCT-17
Benzo(k)fluoranthene			84.9		%		50-140	31-OCT-17
Chrysene			87.6		%		50-140	31-OCT-17
Dibenzo(ah)anthracene			75.6		%		50-140	31-OCT-17
Fluoranthene			80.4		%		50-140	31-OCT-17
Fluorene			83.2		%		50-140	31-OCT-17
Indeno(1,2,3-cd)pyrene			71.4		%		50-140	31-OCT-17
Naphthalene			86.7		%		50-140	31-OCT-17
Phenanthrene			82.9		%		50-140	31-OCT-17
Pyrene			81.0		%		50-140	31-OCT-17
WG2650122-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	31-OCT-17
2-Methylnaphthalene			<0.030		ug/g		0.03	31-OCT-17
Acenaphthene			<0.050		ug/g		0.05	31-OCT-17
Acenaphthylene			<0.050		ug/g		0.05	31-OCT-17
Anthracene			<0.050		ug/g		0.05	31-OCT-17
Benzo(a)anthracene			<0.050		ug/g		0.05	31-OCT-17
Benzo(a)pyrene			<0.050		ug/g		0.05	31-OCT-17
Benzo(b)fluoranthene			<0.050		ug/g		0.05	31-OCT-17
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	31-OCT-17
Benzo(k)fluoranthene			<0.050		ug/g		0.05	31-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R3870401								
WG2650122-1 MB								
Chrysene			<0.050		ug/g		0.05	31-OCT-17
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	31-OCT-17
Fluoranthene			<0.050		ug/g		0.05	31-OCT-17
Fluorene			<0.050		ug/g		0.05	31-OCT-17
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	31-OCT-17
Naphthalene			<0.050		ug/g		0.05	31-OCT-17
Phenanthrene			<0.050		ug/g		0.05	31-OCT-17
Pyrene			<0.050		ug/g		0.05	31-OCT-17
Surrogate: 2-Fluorobiphenyl			92.6		%		50-140	31-OCT-17
Surrogate: p-Terphenyl d14			91.9		%		50-140	31-OCT-17
WG2650122-5 MS		**WG2650122-3**						
1-Methylnaphthalene			122.9		%		50-140	31-OCT-17
2-Methylnaphthalene			135.3		%		50-140	31-OCT-17
Acenaphthene			42.5	E	%		50-140	31-OCT-17
Acenaphthylene			85.1		%		50-140	31-OCT-17
Anthracene			N/A	MS-B	%		-	31-OCT-17
Benzo(a)anthracene			N/A	MS-B	%		-	31-OCT-17
Benzo(a)pyrene			N/A	MS-B	%		-	31-OCT-17
Benzo(b)fluoranthene			N/A	MS-B	%		-	31-OCT-17
Benzo(g,h,i)perylene			N/A	MS-B	%		-	31-OCT-17
Benzo(k)fluoranthene			N/A	MS-B	%		-	31-OCT-17
Chrysene			N/A	MS-B	%		-	31-OCT-17
Dibenzo(ah)anthracene			61.7		%		50-140	31-OCT-17
Fluoranthene			N/A	MS-B	%		-	31-OCT-17
Fluorene			40.0	E	%		50-140	31-OCT-17
Indeno(1,2,3-cd)pyrene			N/A	MS-B	%		-	31-OCT-17
Naphthalene			93.8		%		50-140	31-OCT-17
Phenanthrene			N/A	MS-B	%		-	31-OCT-17
Pyrene			N/A	MS-B	%		-	31-OCT-17
PCB-511-WT	**Soil**							
Batch R3853808								
WG2636606-4 DUP		**WG2636606-3**						
Aroclor 1242		<0.010	<0.010	RPD-NA	ug/g	N/A	40	13-OCT-17
Aroclor 1248		<0.010	<0.010	RPD-NA	ug/g	N/A	40	13-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PCB-511-WT	**Soil**							
Batch R3853808								
WG2636606-4 DUP		**WG2636606-3**						
Aroclor 1254		<0.010	<0.010	RPD-NA	ug/g	N/A	40	13-OCT-17
Aroclor 1260		<0.010	<0.010	RPD-NA	ug/g	N/A	40	13-OCT-17
WG2636606-2 LCS								
Aroclor 1242			87.3		%		60-140	13-OCT-17
Aroclor 1248			92.9		%		60-140	13-OCT-17
Aroclor 1254			87.6		%		60-140	13-OCT-17
Aroclor 1260			85.3		%		60-140	13-OCT-17
WG2636606-1 MB								
Aroclor 1242			<0.010		ug/g		0.01	13-OCT-17
Aroclor 1248			<0.010		ug/g		0.01	13-OCT-17
Aroclor 1254			<0.010		ug/g		0.01	13-OCT-17
Aroclor 1260			<0.010		ug/g		0.01	13-OCT-17
Surrogate: d14-Terphenyl			94.5		%		60-140	13-OCT-17
WG2636606-5 MS		**WG2636606-3**						
Aroclor 1242			86.4		%		60-140	13-OCT-17
Aroclor 1254			86.2		%		60-140	13-OCT-17
Aroclor 1260			86.5		%		60-140	13-OCT-17
Batch R3871561								
WG2650352-4 DUP		**WG2650352-3**						
Aroclor 1242		<0.010	<0.010	RPD-NA	ug/g	N/A	40	01-NOV-17
Aroclor 1248		<0.010	<0.010	RPD-NA	ug/g	N/A	40	01-NOV-17
Aroclor 1254		<0.010	<0.010	RPD-NA	ug/g	N/A	40	01-NOV-17
Aroclor 1260		<0.010	<0.010	RPD-NA	ug/g	N/A	40	01-NOV-17
WG2650352-2 LCS								
Aroclor 1242			90.8		%		60-140	01-NOV-17
Aroclor 1248			95.2		%		60-140	01-NOV-17
Aroclor 1254			109.6		%		60-140	01-NOV-17
Aroclor 1260			123.3		%		60-140	01-NOV-17
WG2650352-1 MB								
Aroclor 1242			<0.010		ug/g		0.01	01-NOV-17
Aroclor 1248			<0.010		ug/g		0.01	01-NOV-17
Aroclor 1254			<0.010		ug/g		0.01	01-NOV-17
Aroclor 1260			<0.010		ug/g		0.01	01-NOV-17
Surrogate: d14-Terphenyl			108.8		%		60-140	01-NOV-17
WG2650352-5 MS		**WG2650352-3**						

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PCB-511-WT	**Soil**							
Batch R3871561								
WG2650352-5 MS		**WG2650352-3**						
Aroclor 1242			85.6		%		60-140	01-NOV-17
Aroclor 1254			100.7		%		60-140	01-NOV-17
Aroclor 1260			124.5		%		60-140	01-NOV-17
PH-WT	**Soil**							
Batch R3852970								
WG2635537-1 DUP		**L2003970-5**						
pH		7.56	7.50	J	pH units	0.06	0.3	12-OCT-17
WG2637574-1 LCS								
pH			6.98		pH units		6.9-7.1	12-OCT-17
Batch R3852975								
WG2635192-1 DUP		**L2000556-1**						
pH		7.01	7.02	J	pH units	0.01	0.3	12-OCT-17
WG2637571-1 LCS								
pH			7.00		pH units		6.9-7.1	12-OCT-17
Batch R3858171								
WG2640339-1 DUP		**L2003037-16**						
pH		8.15	8.08	J	pH units	0.07	0.3	17-OCT-17
WG2641518-1 LCS								
pH			6.98		pH units		6.9-7.1	17-OCT-17
Batch R3868753								
WG2649301-1 DUP		**L2012530-1**						
pH		7.72	7.66	J	pH units	0.06	0.3	28-OCT-17
WG2651202-1 LCS								
pH			7.01		pH units		6.9-7.1	28-OCT-17
SAR-R511-WT	**Soil**							
Batch R3852088								
WG2636178-4 DUP		**WG2636178-3**						
Calcium (Ca)		5.1	5.4		mg/L	5.3	30	11-OCT-17
Sodium (Na)		3.5	3.7		mg/L	5.0	30	11-OCT-17
Magnesium (Mg)		<1.0	1.0	RPD-NA	mg/L	N/A	30	11-OCT-17
WG2636178-2 IRM		**WT SAR1**						
Calcium (Ca)			71.0		%		70-130	11-OCT-17
Sodium (Na)			92.3		%		70-130	11-OCT-17
Magnesium (Mg)			76.5		%		70-130	11-OCT-17
WG2636178-1 MB								
							1	

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SAR-R511-WT	**Soil**							
Batch R3852088								
WG2636178-1 MB								
Calcium (Ca)			<1.0		mg/L		1	11-OCT-17
Sodium (Na)			<1.0		mg/L		1	11-OCT-17
Magnesium (Mg)			<1.0		mg/L		1	11-OCT-17
Batch R3852976								
WG2637243-4 DUP		**WG2637243-3**						
Calcium (Ca)		16.2	18.9		mg/L	16	30	12-OCT-17
Sodium (Na)		<1.0	<1.0	RPD-NA	mg/L	N/A	30	12-OCT-17
Magnesium (Mg)		1.4	1.6		mg/L	16	30	12-OCT-17
WG2637243-2 IRM		**WT SAR1**						
Calcium (Ca)			77.8		%		70-130	12-OCT-17
Sodium (Na)			95.9		%		70-130	12-OCT-17
Magnesium (Mg)			81.7		%		70-130	12-OCT-17
WG2637243-1 MB								
Calcium (Ca)			<1.0		mg/L		1	12-OCT-17
Sodium (Na)			<1.0		mg/L		1	12-OCT-17
Magnesium (Mg)			<1.0		mg/L		1	12-OCT-17
Batch R3858841								
WG2642063-8 DUP		**WG2642063-7**						
Calcium (Ca)		6.8	7.1		mg/L	5.0	30	18-OCT-17
Sodium (Na)		5.7	5.9		mg/L	2.6	30	18-OCT-17
Magnesium (Mg)		1.2	1.2		mg/L	5.9	30	18-OCT-17
WG2642063-6 IRM		**WT SAR1**						
Calcium (Ca)			96.5		%		70-130	18-OCT-17
Sodium (Na)			108.2		%		70-130	18-OCT-17
Magnesium (Mg)			96.0		%		70-130	18-OCT-17
WG2642063-5 MB								
Calcium (Ca)			<1.0		mg/L		1	18-OCT-17
Sodium (Na)			<1.0		mg/L		1	18-OCT-17
Magnesium (Mg)			<1.0		mg/L		1	18-OCT-17
Batch R3871109								
WG2651666-4 DUP		**WG2651666-3**						
Calcium (Ca)		7.0	7.2		mg/L	2.3	30	30-OCT-17
Sodium (Na)		1.2	1.2		mg/L	1.6	30	30-OCT-17
Magnesium (Mg)		1.3	1.4		mg/L	7.7	30	30-OCT-17
WG2651666-2 IRM		**WT SAR1**						

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SAR-R511-WT	**Soil**							
Batch R3871109								
WG2651666-2 IRM		**WT SAR1**						
Calcium (Ca)			106.9		%		70-130	30-OCT-17
Sodium (Na)			98.6		%		70-130	30-OCT-17
Magnesium (Mg)			108.3		%		70-130	30-OCT-17
WG2651666-1 MB								
Calcium (Ca)			<1.0		mg/L		1	30-OCT-17
Sodium (Na)			<1.0		mg/L		1	30-OCT-17
Magnesium (Mg)			<1.0		mg/L		1	30-OCT-17
TOC-R511-WT	**Soil**							
Batch R3852982								
WG2637293-3 CRM		**WT-TOC-CRM**						
Total Organic Carbon			104.4		%		70-130	13-OCT-17
WG2637293-4 DUP		**L2003037-8**						
Total Organic Carbon		5.48	5.16		%	6.0	35	13-OCT-17
WG2637293-2 LCS								
Total Organic Carbon			101.8		%		80-120	13-OCT-17
Total Organic Carbon			101.8		%		80-120	13-OCT-17
Total Organic Carbon			101.8		%		80-120	13-OCT-17
WG2637293-1 MB								
Total Organic Carbon			<0.10		%		0.1	13-OCT-17
VOC-511-HS-WT	**Soil**							
Batch R3851281								
WG2633641-4 DUP		**WG2633641-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	10-OCT-17
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	10-OCT-17
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	10-OCT-17
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	10-OCT-17
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	10-OCT-17
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	10-OCT-17
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	10-OCT-17
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	10-OCT-17
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	10-OCT-17
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	10-OCT-17
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	10-OCT-17
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	10-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3851281								
WG2633641-4 DUP		**WG2633641-3**						
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	10-OCT-17
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	10-OCT-17
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	10-OCT-17
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	10-OCT-17
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	10-OCT-17
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	10-OCT-17
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	10-OCT-17
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	10-OCT-17
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	10-OCT-17
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	10-OCT-17
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	10-OCT-17
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	10-OCT-17
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	10-OCT-17
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	10-OCT-17
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	10-OCT-17
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	10-OCT-17
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	10-OCT-17
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	10-OCT-17
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	10-OCT-17
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	10-OCT-17
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	10-OCT-17
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	10-OCT-17
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	10-OCT-17
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	10-OCT-17
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	10-OCT-17
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	10-OCT-17
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	10-OCT-17
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	10-OCT-17
WG2633641-2 LCS								
1,1,1,2-Tetrachloroethane			93.8		%		60-130	10-OCT-17
1,1,2,2-Tetrachloroethane			108.0		%		60-130	10-OCT-17
1,1,1-Trichloroethane			93.0		%		60-130	10-OCT-17
1,1,2-Trichloroethane			99.96		%		60-130	10-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3851281								
WG2633641-2 LCS								
1,1-Dichloroethane			94.5		%		60-130	10-OCT-17
1,1-Dichloroethylene			83.2		%		60-130	10-OCT-17
1,2-Dibromoethane			102.3		%		70-130	10-OCT-17
1,2-Dichlorobenzene			96.9		%		70-130	10-OCT-17
1,2-Dichloroethane			104.2		%		60-130	10-OCT-17
1,2-Dichloropropane			105.1		%		70-130	10-OCT-17
1,3-Dichlorobenzene			90.7		%		70-130	10-OCT-17
1,4-Dichlorobenzene			94.8		%		70-130	10-OCT-17
Acetone			125.2		%		60-140	10-OCT-17
Benzene			101.8		%		70-130	10-OCT-17
Bromodichloromethane			98.3		%		50-140	10-OCT-17
Bromoform			98.0		%		70-130	10-OCT-17
Bromomethane			89.9		%		50-140	10-OCT-17
Carbon tetrachloride			91.3		%		70-130	10-OCT-17
Chlorobenzene			95.3		%		70-130	10-OCT-17
Chloroform			99.4		%		70-130	10-OCT-17
cis-1,2-Dichloroethylene			96.3		%		70-130	10-OCT-17
cis-1,3-Dichloropropene			95.1		%		70-130	10-OCT-17
Dibromochloromethane			104.6		%		60-130	10-OCT-17
Dichlorodifluoromethane			52.1		%		50-140	10-OCT-17
Ethylbenzene			85.1		%		70-130	10-OCT-17
n-Hexane			96.9		%		70-130	10-OCT-17
Methylene Chloride			104.7		%		70-130	10-OCT-17
MTBE			93.6		%		70-130	10-OCT-17
m+p-Xylenes			87.4		%		70-130	10-OCT-17
Methyl Ethyl Ketone			116.0		%		60-140	10-OCT-17
Methyl Isobutyl Ketone			103.7		%		60-140	10-OCT-17
o-Xylene			89.3		%		70-130	10-OCT-17
Styrene			92.0		%		70-130	10-OCT-17
Tetrachloroethylene			83.5		%		60-130	10-OCT-17
Toluene			88.6		%		70-130	10-OCT-17
trans-1,2-Dichloroethylene			93.9		%		60-130	10-OCT-17
trans-1,3-Dichloropropene			85.2		%		70-130	10-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3851281								
WG2633641-2 LCS								
Trichloroethylene			90.9		%		60-130	10-OCT-17
Trichlorofluoromethane			89.6		%		50-140	10-OCT-17
Vinyl chloride			79.1		%		60-140	10-OCT-17
WG2633641-1 MB								
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	10-OCT-17
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	10-OCT-17
1,1,1-Trichloroethane			<0.050		ug/g		0.05	10-OCT-17
1,1,2-Trichloroethane			<0.050		ug/g		0.05	10-OCT-17
1,1-Dichloroethane			<0.050		ug/g		0.05	10-OCT-17
1,1-Dichloroethylene			<0.050		ug/g		0.05	10-OCT-17
1,2-Dibromoethane			<0.050		ug/g		0.05	10-OCT-17
1,2-Dichlorobenzene			<0.050		ug/g		0.05	10-OCT-17
1,2-Dichloroethane			<0.050		ug/g		0.05	10-OCT-17
1,2-Dichloropropane			<0.050		ug/g		0.05	10-OCT-17
1,3-Dichlorobenzene			<0.050		ug/g		0.05	10-OCT-17
1,4-Dichlorobenzene			<0.050		ug/g		0.05	10-OCT-17
Acetone			<0.50		ug/g		0.5	10-OCT-17
Benzene			<0.0068		ug/g		0.0068	10-OCT-17
Bromodichloromethane			<0.050		ug/g		0.05	10-OCT-17
Bromoform			<0.050		ug/g		0.05	10-OCT-17
Bromomethane			<0.050		ug/g		0.05	10-OCT-17
Carbon tetrachloride			<0.050		ug/g		0.05	10-OCT-17
Chlorobenzene			<0.050		ug/g		0.05	10-OCT-17
Chloroform			<0.050		ug/g		0.05	10-OCT-17
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	10-OCT-17
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	10-OCT-17
Dibromochloromethane			<0.050		ug/g		0.05	10-OCT-17
Dichlorodifluoromethane			<0.050		ug/g		0.05	10-OCT-17
Ethylbenzene			<0.018		ug/g		0.018	10-OCT-17
n-Hexane			<0.050		ug/g		0.05	10-OCT-17
Methylene Chloride			<0.050		ug/g		0.05	10-OCT-17
MTBE			<0.050		ug/g		0.05	10-OCT-17
m+p-Xylenes			<0.030		ug/g		0.03	10-OCT-17
Methyl Ethyl Ketone			<0.50		ug/g		0.5	10-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3851281								
WG2633641-1 MB								
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	10-OCT-17
o-Xylene			<0.020		ug/g		0.02	10-OCT-17
Styrene			<0.050		ug/g		0.05	10-OCT-17
Tetrachloroethylene			<0.050		ug/g		0.05	10-OCT-17
Toluene			<0.080		ug/g		0.08	10-OCT-17
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	10-OCT-17
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	10-OCT-17
Trichloroethylene			<0.010		ug/g		0.01	10-OCT-17
Trichlorofluoromethane			<0.050		ug/g		0.05	10-OCT-17
Vinyl chloride			<0.020		ug/g		0.02	10-OCT-17
Surrogate: 1,4-Difluorobenzene			97.7		%		50-140	10-OCT-17
Surrogate: 4-Bromofluorobenzene			95.5		%		50-140	10-OCT-17
WG2633641-5 MS		**WG2633641-3**						
1,1,1,2-Tetrachloroethane			99.9		%		50-140	10-OCT-17
1,1,2,2-Tetrachloroethane			115.5		%		50-140	10-OCT-17
1,1,1-Trichloroethane			97.4		%		50-140	10-OCT-17
1,1,2-Trichloroethane			108.3		%		50-140	10-OCT-17
1,1-Dichloroethane			99.8		%		50-140	10-OCT-17
1,1-Dichloroethylene			87.4		%		50-140	10-OCT-17
1,2-Dibromoethane			111.3		%		50-140	10-OCT-17
1,2-Dichlorobenzene			97.2		%		50-140	10-OCT-17
1,2-Dichloroethane			109.9		%		50-140	10-OCT-17
1,2-Dichloropropane			111.4		%		50-140	10-OCT-17
1,3-Dichlorobenzene			90.0		%		50-140	10-OCT-17
1,4-Dichlorobenzene			92.9		%		50-140	10-OCT-17
Acetone			135.9		%		50-140	10-OCT-17
Benzene			106.9		%		50-140	10-OCT-17
Bromodichloromethane			103.4		%		50-140	10-OCT-17
Bromoform			105.2		%		50-140	10-OCT-17
Bromomethane			95.6		%		50-140	10-OCT-17
Carbon tetrachloride			95.4		%		50-140	10-OCT-17
Chlorobenzene			100.7		%		50-140	10-OCT-17
Chloroform			104.4		%		50-140	10-OCT-17
cis-1,2-Dichloroethylene			100.6		%		50-140	10-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3851281								
WG2633641-5 MS		**WG2633641-3**						
cis-1,3-Dichloropropene			99.1		%		50-140	10-OCT-17
Dibromochloromethane			111.7		%		50-140	10-OCT-17
Dichlorodifluoromethane			58.9		%		50-140	10-OCT-17
Ethylbenzene			90.8		%		50-140	10-OCT-17
n-Hexane			104.2		%		50-140	10-OCT-17
Methylene Chloride			110.4		%		50-140	10-OCT-17
MTBE			98.7		%		50-140	10-OCT-17
m+p-Xylenes			92.1		%		50-140	10-OCT-17
Methyl Ethyl Ketone			126.3		%		50-140	10-OCT-17
Methyl Isobutyl Ketone			111.8		%		50-140	10-OCT-17
o-Xylene			95.2		%		50-140	10-OCT-17
Styrene			97.9		%		50-140	10-OCT-17
Tetrachloroethylene			87.2		%		50-140	10-OCT-17
Toluene			94.8		%		50-140	10-OCT-17
trans-1,2-Dichloroethylene			97.0		%		50-140	10-OCT-17
trans-1,3-Dichloropropene			92.5		%		50-140	10-OCT-17
Trichloroethylene			94.0		%		50-140	10-OCT-17
Trichlorofluoromethane			95.3		%		50-140	10-OCT-17
Vinyl chloride			84.2		%		50-140	10-OCT-17
Batch R3857496								
WG2640081-4 DUP		**WG2640081-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	17-OCT-17
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	17-OCT-17
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	17-OCT-17
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	17-OCT-17
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	17-OCT-17
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	17-OCT-17
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	17-OCT-17
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	17-OCT-17
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	17-OCT-17
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	17-OCT-17
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	17-OCT-17
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	17-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3857496								
WG2640081-4 DUP		**WG2640081-3**						
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	17-OCT-17
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	17-OCT-17
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	17-OCT-17
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	17-OCT-17
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	17-OCT-17
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	17-OCT-17
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	17-OCT-17
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	17-OCT-17
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	17-OCT-17
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	17-OCT-17
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	17-OCT-17
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	17-OCT-17
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	17-OCT-17
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	17-OCT-17
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	17-OCT-17
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	17-OCT-17
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	17-OCT-17
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	17-OCT-17
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	17-OCT-17
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	17-OCT-17
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	17-OCT-17
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	17-OCT-17
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	17-OCT-17
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	17-OCT-17
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	17-OCT-17
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	17-OCT-17
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	17-OCT-17
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	17-OCT-17
WG2640081-2 LCS								
1,1,1,2-Tetrachloroethane			100.2		%		60-130	17-OCT-17
1,1,2,2-Tetrachloroethane			100.2		%		60-130	17-OCT-17
1,1,1-Trichloroethane			97.8		%		60-130	17-OCT-17
1,1,2-Trichloroethane			103.6		%		60-130	17-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3857496								
WG2640081-2 LCS								
1,1-Dichloroethane			97.8		%		60-130	17-OCT-17
1,1-Dichloroethylene			84.7		%		60-130	17-OCT-17
1,2-Dibromoethane			103.4		%		70-130	17-OCT-17
1,2-Dichlorobenzene			102.6		%		70-130	17-OCT-17
1,2-Dichloroethane			103.9		%		60-130	17-OCT-17
1,2-Dichloropropane			102.6		%		70-130	17-OCT-17
1,3-Dichlorobenzene			100.3		%		70-130	17-OCT-17
1,4-Dichlorobenzene			103.3		%		70-130	17-OCT-17
Acetone			100.8		%		60-140	17-OCT-17
Benzene			99.6		%		70-130	17-OCT-17
Bromodichloromethane			99.1		%		50-140	17-OCT-17
Bromoform			99.5		%		70-130	17-OCT-17
Bromomethane			93.7		%		50-140	17-OCT-17
Carbon tetrachloride			96.0		%		70-130	17-OCT-17
Chlorobenzene			100.5		%		70-130	17-OCT-17
Chloroform			101.7		%		70-130	17-OCT-17
cis-1,2-Dichloroethylene			99.0		%		70-130	17-OCT-17
cis-1,3-Dichloropropene			100.1		%		70-130	17-OCT-17
Dibromochloromethane			106.6		%		60-130	17-OCT-17
Dichlorodifluoromethane			48.5	MES	%		50-140	17-OCT-17
Ethylbenzene			103.0		%		70-130	17-OCT-17
n-Hexane			97.3		%		70-130	17-OCT-17
Methylene Chloride			103.5		%		70-130	17-OCT-17
MTBE			92.2		%		70-130	17-OCT-17
m+p-Xylenes			102.9		%		70-130	17-OCT-17
Methyl Ethyl Ketone			105.1		%		60-140	17-OCT-17
Methyl Isobutyl Ketone			112.5		%		60-140	17-OCT-17
o-Xylene			104.8		%		70-130	17-OCT-17
Styrene			105.7		%		70-130	17-OCT-17
Tetrachloroethylene			93.9		%		60-130	17-OCT-17
Toluene			94.3		%		70-130	17-OCT-17
trans-1,2-Dichloroethylene			95.2		%		60-130	17-OCT-17
trans-1,3-Dichloropropene			107.0		%		70-130	17-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3857496								
WG2640081-2 LCS								
Trichloroethylene			98.4		%		60-130	17-OCT-17
Trichlorofluoromethane			92.8		%		50-140	17-OCT-17
Vinyl chloride			82.9		%		60-140	17-OCT-17
WG2640081-1 MB								
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	17-OCT-17
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	17-OCT-17
1,1,1-Trichloroethane			<0.050		ug/g		0.05	17-OCT-17
1,1,2-Trichloroethane			<0.050		ug/g		0.05	17-OCT-17
1,1-Dichloroethane			<0.050		ug/g		0.05	17-OCT-17
1,1-Dichloroethylene			<0.050		ug/g		0.05	17-OCT-17
1,2-Dibromoethane			<0.050		ug/g		0.05	17-OCT-17
1,2-Dichlorobenzene			<0.050		ug/g		0.05	17-OCT-17
1,2-Dichloroethane			<0.050		ug/g		0.05	17-OCT-17
1,2-Dichloropropane			<0.050		ug/g		0.05	17-OCT-17
1,3-Dichlorobenzene			<0.050		ug/g		0.05	17-OCT-17
1,4-Dichlorobenzene			<0.050		ug/g		0.05	17-OCT-17
Acetone			<0.50		ug/g		0.5	17-OCT-17
Benzene			<0.0068		ug/g		0.0068	17-OCT-17
Bromodichloromethane			<0.050		ug/g		0.05	17-OCT-17
Bromoform			<0.050		ug/g		0.05	17-OCT-17
Bromomethane			<0.050		ug/g		0.05	17-OCT-17
Carbon tetrachloride			<0.050		ug/g		0.05	17-OCT-17
Chlorobenzene			<0.050		ug/g		0.05	17-OCT-17
Chloroform			<0.050		ug/g		0.05	17-OCT-17
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	17-OCT-17
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	17-OCT-17
Dibromochloromethane			<0.050		ug/g		0.05	17-OCT-17
Dichlorodifluoromethane			<0.050		ug/g		0.05	17-OCT-17
Ethylbenzene			<0.018		ug/g		0.018	17-OCT-17
n-Hexane			<0.050		ug/g		0.05	17-OCT-17
Methylene Chloride			<0.050		ug/g		0.05	17-OCT-17
MTBE			<0.050		ug/g		0.05	17-OCT-17
m+p-Xylenes			<0.030		ug/g		0.03	17-OCT-17
Methyl Ethyl Ketone			<0.50		ug/g		0.5	17-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3857496								
WG2640081-1 MB								
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	17-OCT-17
o-Xylene			<0.020		ug/g		0.02	17-OCT-17
Styrene			<0.050		ug/g		0.05	17-OCT-17
Tetrachloroethylene			<0.050		ug/g		0.05	17-OCT-17
Toluene			<0.080		ug/g		0.08	17-OCT-17
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	17-OCT-17
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	17-OCT-17
Trichloroethylene			<0.010		ug/g		0.01	17-OCT-17
Trichlorofluoromethane			<0.050		ug/g		0.05	17-OCT-17
Vinyl chloride			<0.020		ug/g		0.02	17-OCT-17
Surrogate: 1,4-Difluorobenzene			103.1		%		50-140	17-OCT-17
Surrogate: 4-Bromofluorobenzene			101.5		%		50-140	17-OCT-17
WG2640081-5 MS		**WG2640081-3**						
1,1,1,2-Tetrachloroethane			99.8		%		50-140	17-OCT-17
1,1,2,2-Tetrachloroethane			93.7		%		50-140	17-OCT-17
1,1,1-Trichloroethane			98.7		%		50-140	17-OCT-17
1,1,2-Trichloroethane			100.6		%		50-140	17-OCT-17
1,1-Dichloroethane			97.4		%		50-140	17-OCT-17
1,1-Dichloroethylene			85.7		%		50-140	17-OCT-17
1,2-Dibromoethane			99.7		%		50-140	17-OCT-17
1,2-Dichlorobenzene			101.4		%		50-140	17-OCT-17
1,2-Dichloroethane			100.1		%		50-140	17-OCT-17
1,2-Dichloropropane			100.2		%		50-140	17-OCT-17
1,3-Dichlorobenzene			100.7		%		50-140	17-OCT-17
1,4-Dichlorobenzene			102.6		%		50-140	17-OCT-17
Acetone			98.0		%		50-140	17-OCT-17
Benzene			98.4		%		50-140	17-OCT-17
Bromodichloromethane			96.5		%		50-140	17-OCT-17
Bromoform			94.7		%		50-140	17-OCT-17
Bromomethane			93.7		%		50-140	17-OCT-17
Carbon tetrachloride			97.2		%		50-140	17-OCT-17
Chlorobenzene			99.95		%		50-140	17-OCT-17
Chloroform			100.6		%		50-140	17-OCT-17
cis-1,2-Dichloroethylene			97.8		%		50-140	17-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3857496								
WG2640081-5 MS		**WG2640081-3**						
cis-1,3-Dichloropropene			96.5		%		50-140	17-OCT-17
Dibromochloromethane			103.9		%		50-140	17-OCT-17
Dichlorodifluoromethane			52.9		%		50-140	17-OCT-17
Ethylbenzene			103.3		%		50-140	17-OCT-17
n-Hexane			100.8		%		50-140	17-OCT-17
Methylene Chloride			101.6		%		50-140	17-OCT-17
MTBE			91.2		%		50-140	17-OCT-17
m+p-Xylenes			103.5		%		50-140	17-OCT-17
Methyl Ethyl Ketone			98.3		%		50-140	17-OCT-17
Methyl Isobutyl Ketone			101.3		%		50-140	17-OCT-17
o-Xylene			104.3		%		50-140	17-OCT-17
Styrene			103.3		%		50-140	17-OCT-17
Tetrachloroethylene			95.4		%		50-140	17-OCT-17
Toluene			94.5		%		50-140	17-OCT-17
trans-1,2-Dichloroethylene			94.6		%		50-140	17-OCT-17
trans-1,3-Dichloropropene			104.5		%		50-140	17-OCT-17
Trichloroethylene			98.2		%		50-140	17-OCT-17
Trichlorofluoromethane			95.6		%		50-140	17-OCT-17
Vinyl chloride			83.9		%		50-140	17-OCT-17

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9
Contact: MICHAEL SHIRY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
A	Method Blank exceeds ALS DQO. Refer to narrative comments for further information.
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.
E	Matrix Spike recovery outside ALS DQO due to heterogeneous analyte background in sample.
J	Duplicate results and limits are expressed in terms of absolute difference.
M,J	A peak has been manually integrated, and the analyte was detected below the calibrated range but above the EDL.
M,J,R	A peak has been manually integrated, the analyte was detected below the calibrated range but above the EDL, and the ion abundance ratio(s) did not meet the acceptance criteria. Value is an estimated maximum.
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.
[U]	The analyte was not detected above the EDL.

Quality Control Report

Workorder: L2003037 Report Date: 16-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
% Moisture							
	11	04-OCT-17 14:20	26-OCT-17 10:22	14	22	days	EHT
	18	04-OCT-17 17:10	26-OCT-17 10:23	14	22	days	EHT
Cyanides							
Cyanide (WAD)-O.Reg 153/04 (July 2011)							
	18	04-OCT-17 17:10	25-OCT-17 19:00	14	21	days	EHT

Legend & Qualifier Definitions:

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
EHTR: Exceeded ALS recommended hold time prior to sample receipt.
EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
EHT: Exceeded ALS recommended hold time prior to analysis.
Rec. HT: ALS recommended hold time (see units).

Notes*:
Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2003037 were received on 05-OCT-17 15:30.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

GRAIN SIZE DETERMINATIONS

Client:	CH2M HILL CANADA LIMITED~WATERLOO	Sample Location:	
Project Number:	11546	Sample ID:	TP17-301-1-3
Sampler:		Sample Depth:	
Technician:	CB6	Date Sampled:	04-10-17
Lab ID Number:	L2003037-8	Date Submitted:	05-10-17
		Date Completed:	20-10-17

Total Sample Weight	66	grams	Specific Gravity:	2.650
Hydro. Sample Weight	50.000	grams	Liquid Specific Gravity:	1.000
% Past #10	0.773	* 100	Grav Factor:	1.606
Sub Factor	1.020			

Sieve Size	Weight Retained (grams)	Percent Retained	Diameter (mm)	Cum. % Retained	Cum. % Passing
38.1 mm. DIA.:	0.000	0.000	38.100	0.000	100.000
25.4 mm. DIA.:	0.000	0.000	25.400	0.000	100.000
19.0 mm. DIA.:	0.000	0.000	19.000	0.000	100.000
9.5 mm. DIA.:	0.000	0.000	9.500	0.000	100.000
NO. 4 SIEVE :	10.000	15.152	4.500	15.152	84.848
NO. 10 SIEVE :	5.000	7.576	2.000	22.727	77.273
NO. 20 SIEVE :	5.000	7.727	0.850	30.455	69.545
NO. 40 SIEVE :	5.000	7.727	0.425	38.182	61.818
NO. 60 SIEVE :	4.000	6.182	0.250	44.364	55.636
NO. 100 SIEVE:	4.000	6.182	0.150	50.545	49.455
NO. 200 SIEVE:	7.000	10.818	0.075	61.364	38.636

Time (min)	Hydrometer Reading	Temperature (C)	Diameter (mm)	% Suspended (Subsample)	% Suspended (Total Sample)
1.00	5.0	20.4	0.053	6.996	5.406
2.00	5.0	20.4	0.037	6.996	5.406
4.00	4.0	20.4	0.027	3.784	2.924
8.00	4.0	20.4	0.019	3.784	2.924
15.00	4.0	20.3	0.014	3.721	2.876
30.00	4.0	20.4	0.010	3.784	2.924
60.00	4.0	20.3	0.007	3.721	2.876
120.00	4.0	20.2	0.005	3.659	2.827
240.00	4.0	19.7	0.003	3.345	2.585
480.00	3.5	19.4	0.002	1.551	1.199
1440.00	3.0	21.0	0.001	0.948	0.732

GRAIN SIZE	% BY WT.	DIA. RANGE (mm)
% GRAVEL :	15.15	> 4.5
% COARSE SAND :	7.58	2.0 - 4.5
% MEDIUM SAND :	15.45	0.425 - 2.0
% FINE SAND :	23.18	0.075 - 0.425
% SILT :	37.61	0.075 - 0.002
% CLAY :	1.03	< 0.002
% CLAY :	2.83	< 0.005

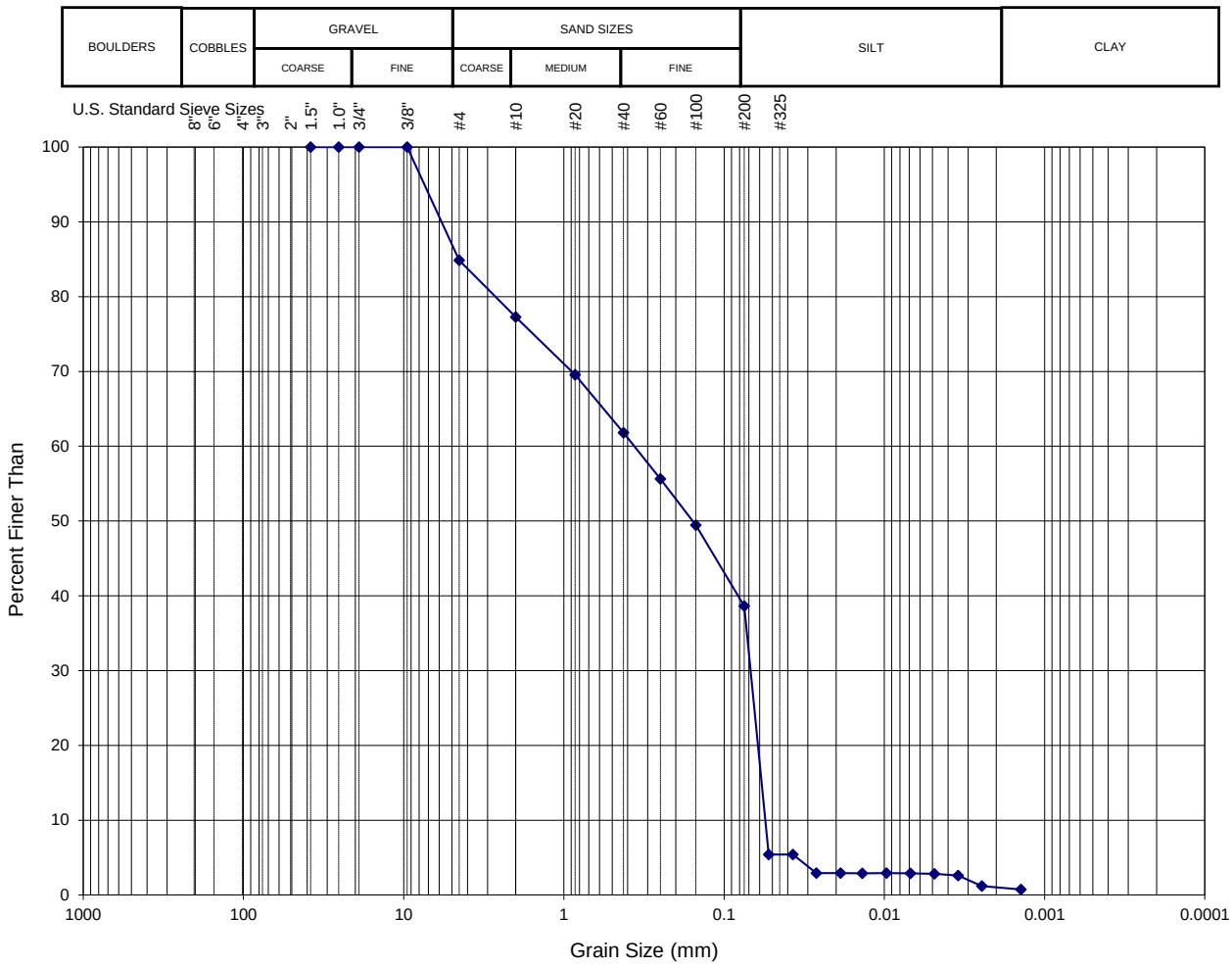
ALS Environmental

WATERLOO

PARTICLE SIZE DISTRIBUTION CURVE

ASTM METHOD D422-63

Project Name:	CH2M HILL CANADA LIMITED~WATERLOO
Project Number:	11546
Sample Location:	
Sample Number:	TP17-301-1-3
Sample Depth:	
Lab ID Number:	L2003037-8
Technician:	CB6
Sampler:	
Dates:	
Collected On:	04-10-17
Analyzed:	20-10-17



DESCRIPTION	SOIL CLASSIFICATION DESCRIPTIVE MODIFIERS		SUMMARY		
SAND AND SILT WITH GRAVEL	AND	36 - 50 %	GRAVEL	15	%
COARSE GRAINED	ADJECTIVE (e.g. sandy)	21 - 35 %	SAND	46	%
ESTIMATED HAZEN NUMBER: 3.06E-03 cm/s	WITH	11 - 20 %	SILT + CLAY	39	%
NOTE: UNIFIED SOIL CLASSIFICATION SYSTEM	TRACE	1 - 10 %			

GRAIN SIZE DETERMINATIONS

Client:	CH2M HILL CANADA LIMITED~WATERLOO	Sample Location:	
Project Number:	11546	Sample ID:	TP17-301-4-5
Sampler:		Sample Depth:	
Technician:	CB6	Date Sampled:	04-10-17
Lab ID Number:	L2003037-9	Date Submitted:	05-10-17
		Date Completed:	20-10-17

Total Sample Weight	151	grams	Specific Gravity:	2.650
Hydro. Sample Weight	50.000	grams	Liquid Specific Gravity:	1.000
% Past #10	0.404	* 100	Grav Factor:	1.606
Sub Factor	1.220			

Sieve Size	Weight Retained (grams)	Percent Retained	Diameter (mm)	Cum. % Retained	Cum. % Passing
38.1 mm. DIA.:	0.000	0.000	38.100	0.000	100.000
25.4 mm. DIA.:	0.000	0.000	25.400	0.000	100.000
19.0 mm. DIA.:	20.000	13.245	19.000	13.245	86.755
9.5 mm. DIA.:	36.000	23.841	9.500	37.086	62.914
NO. 4 SIEVE :	20.000	13.245	4.500	50.331	49.669
NO. 10 SIEVE :	14.000	9.272	2.000	59.603	40.397
NO. 20 SIEVE :	4.000	3.232	0.850	62.834	37.166
NO. 40 SIEVE :	6.000	4.848	0.425	67.682	32.318
NO. 60 SIEVE :	5.000	4.040	0.250	71.722	28.278
NO. 100 SIEVE:	4.000	3.232	0.150	74.954	25.046
NO. 200 SIEVE:	8.000	6.464	0.075	81.417	18.583

Time (min)	Hydrometer Reading	Temperature (C)	Diameter (mm)	% Suspended (Subsample)	% Suspended (Total Sample)
1.00	10.0	20.4	0.050	23.057	9.314
2.00	9.0	20.4	0.036	19.844	8.017
4.00	9.0	20.4	0.025	19.844	8.017
8.00	8.0	20.4	0.018	16.632	6.719
15.00	8.0	20.3	0.013	16.570	6.694
30.00	7.0	20.4	0.009	13.420	5.421
60.00	7.0	20.3	0.007	13.358	5.396
120.00	7.0	20.2	0.005	13.295	5.371
240.00	6.0	19.7	0.003	9.770	3.947
480.00	6.0	19.4	0.002	9.582	3.871
1440.00	5.0	21.0	0.001	7.372	2.978

GRAIN SIZE	% BY WT.	DIA. RANGE (mm)
% GRAVEL :	50.33	> 4.5
% COARSE SAND :	9.27	2.0 - 4.5
% MEDIUM SAND :	8.08	0.425 - 2.0
% FINE SAND :	13.74	0.075 - 0.425
% SILT :	15.01	0.075 - 0.002
% CLAY :	3.57	< 0.002
% CLAY :	5.37	< 0.005

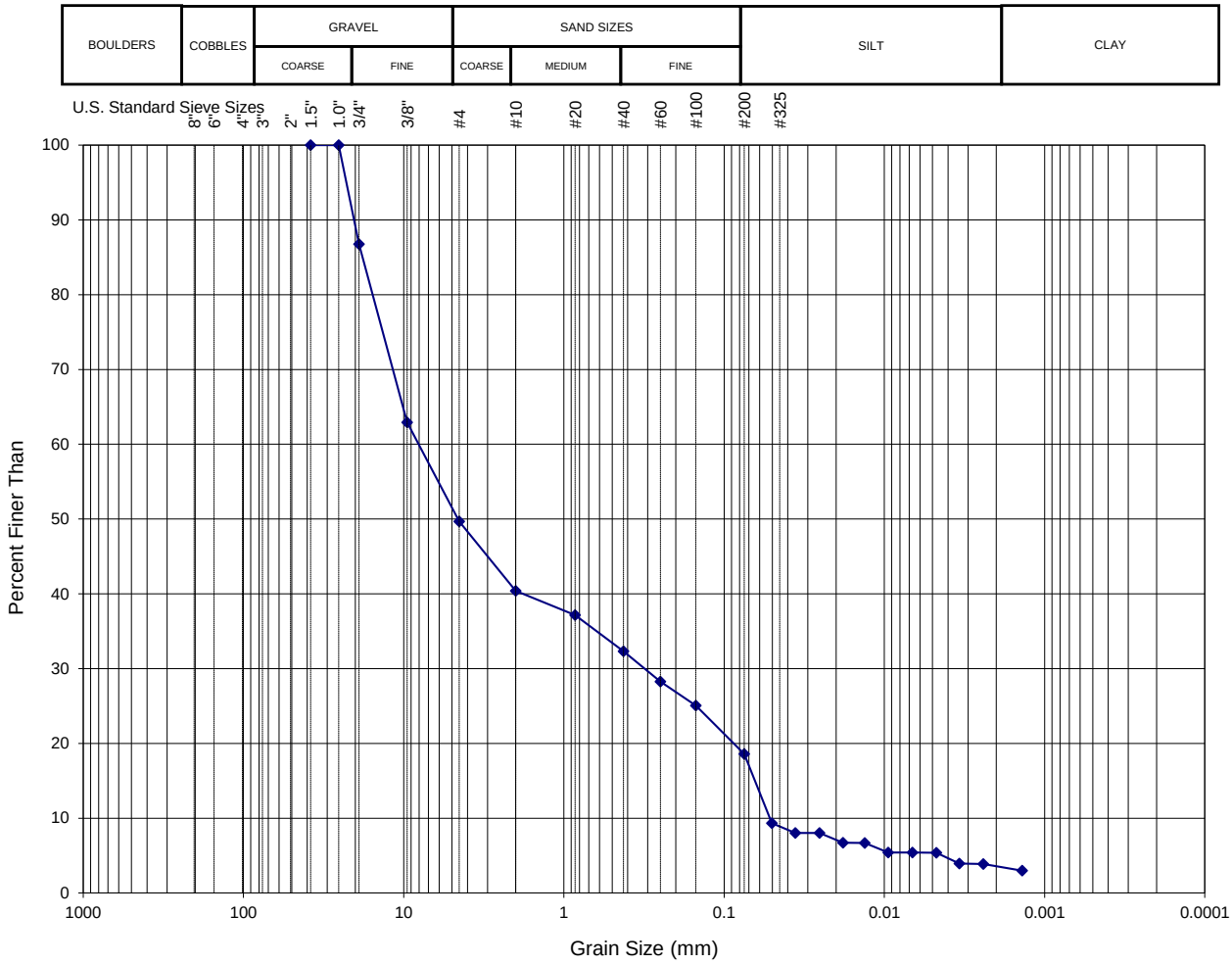
ALS Environmental

WATERLOO

PARTICLE SIZE DISTRIBUTION CURVE

ASTM METHOD D422-63

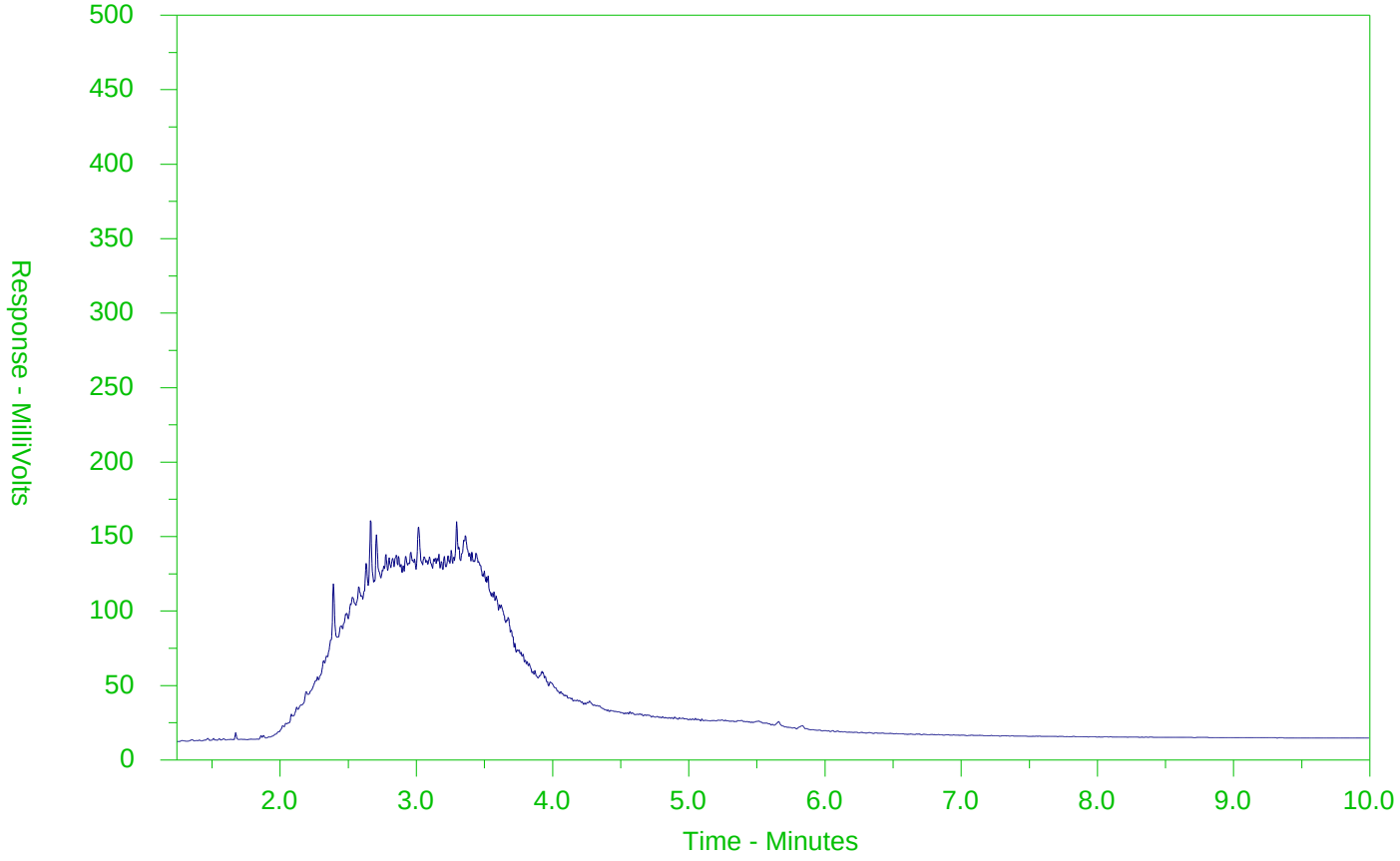
Project Name:	CH2M HILL CANADA LIMITED~WATERLOO
Project Number:	11546
Sample Location:	
Sample Number:	TP17-301-4-5
Sample Depth:	
Lab ID Number:	L2003037-9
Technician:	CB6
Sampler:	
Dates:	
Collected On:	04-10-17
Analyzed:	20-10-17



DESCRIPTION	SOIL CLASSIFICATION DESCRIPTIVE MODIFIERS		SUMMARY		
SANDY GRAVEL WITH SILT, TRACE CLAY	AND	36 - 50 %	GRAVEL	50	%
COARSE GRAINED	ADJECTIVE (e.g. sandy)	21 - 35 %	SAND	31	%
ESTIMATED HAZEN NUMBER: 2.68E-03 cm/s	WITH	11 - 20 %	SILT + CLAY	19	%
NOTE: UNIFIED SOIL CLASSIFICATION SYSTEM	TRACE	1 - 10 %			

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2003037-2
Client Sample ID: TP17-305-5-6



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

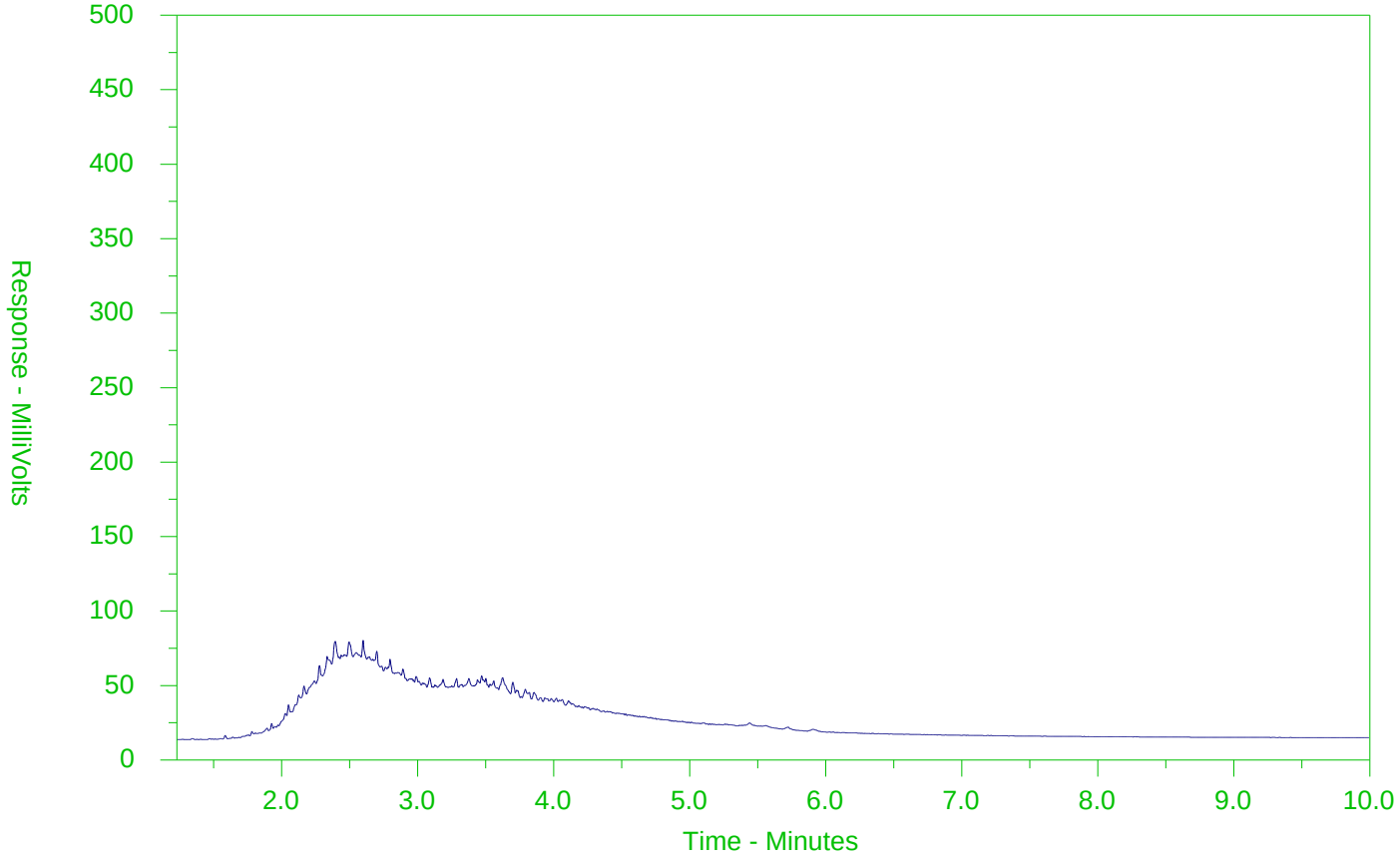
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2003037-3
Client Sample ID: TP17-304-3-4



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

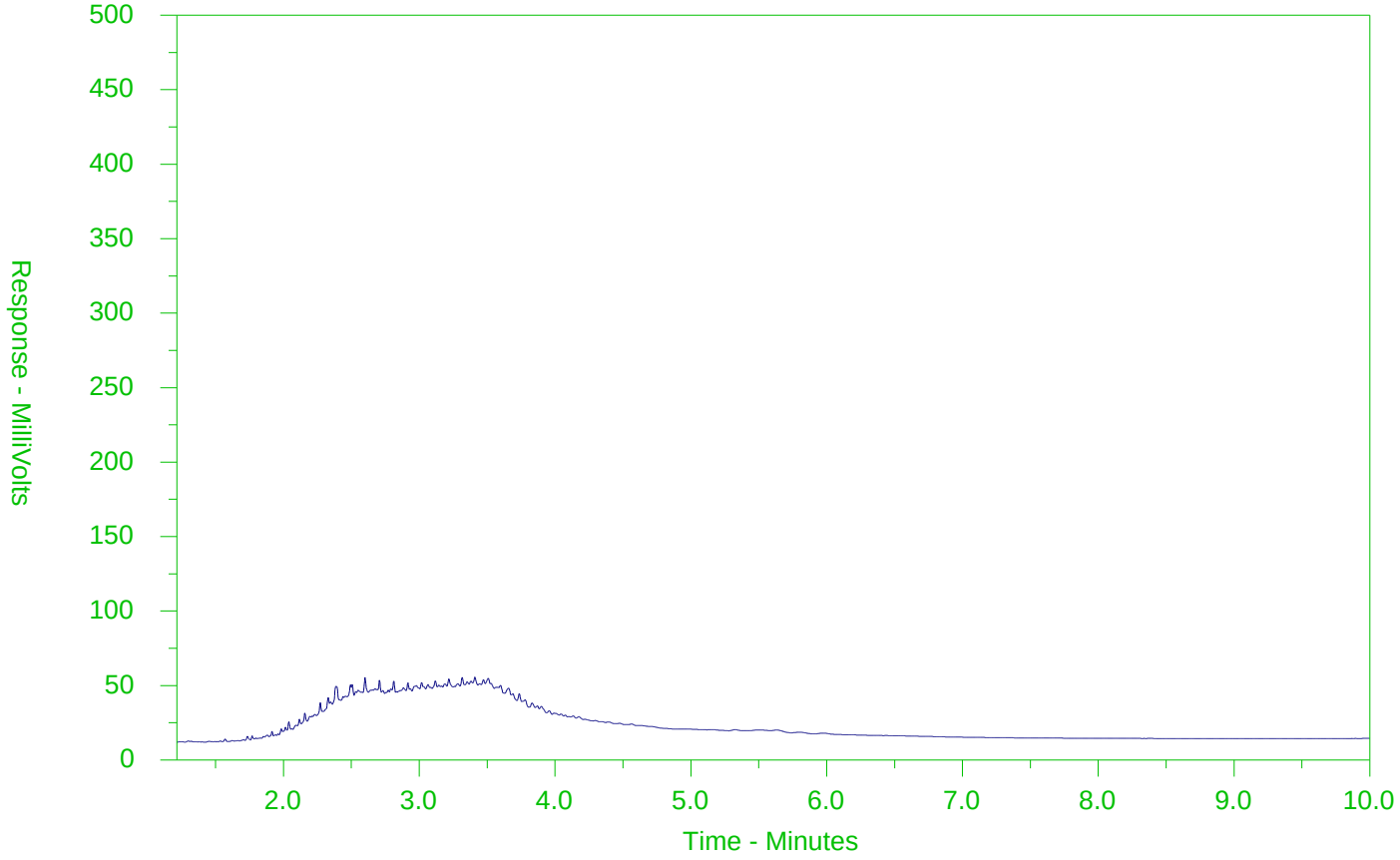
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2003037-4
Client Sample ID: TP17-304-6-7



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

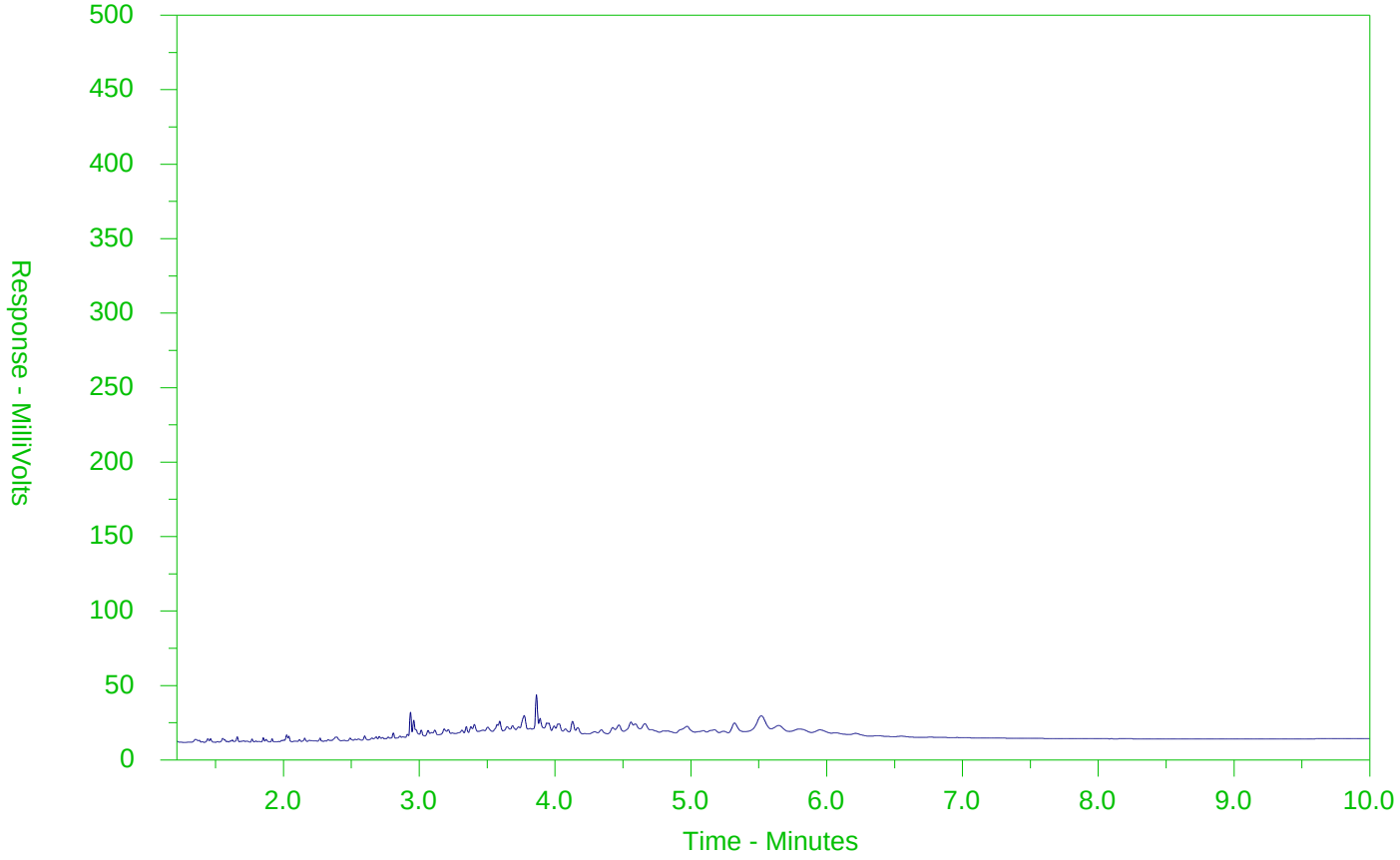
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2003037-5
Client Sample ID: TP17-302-1-3



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

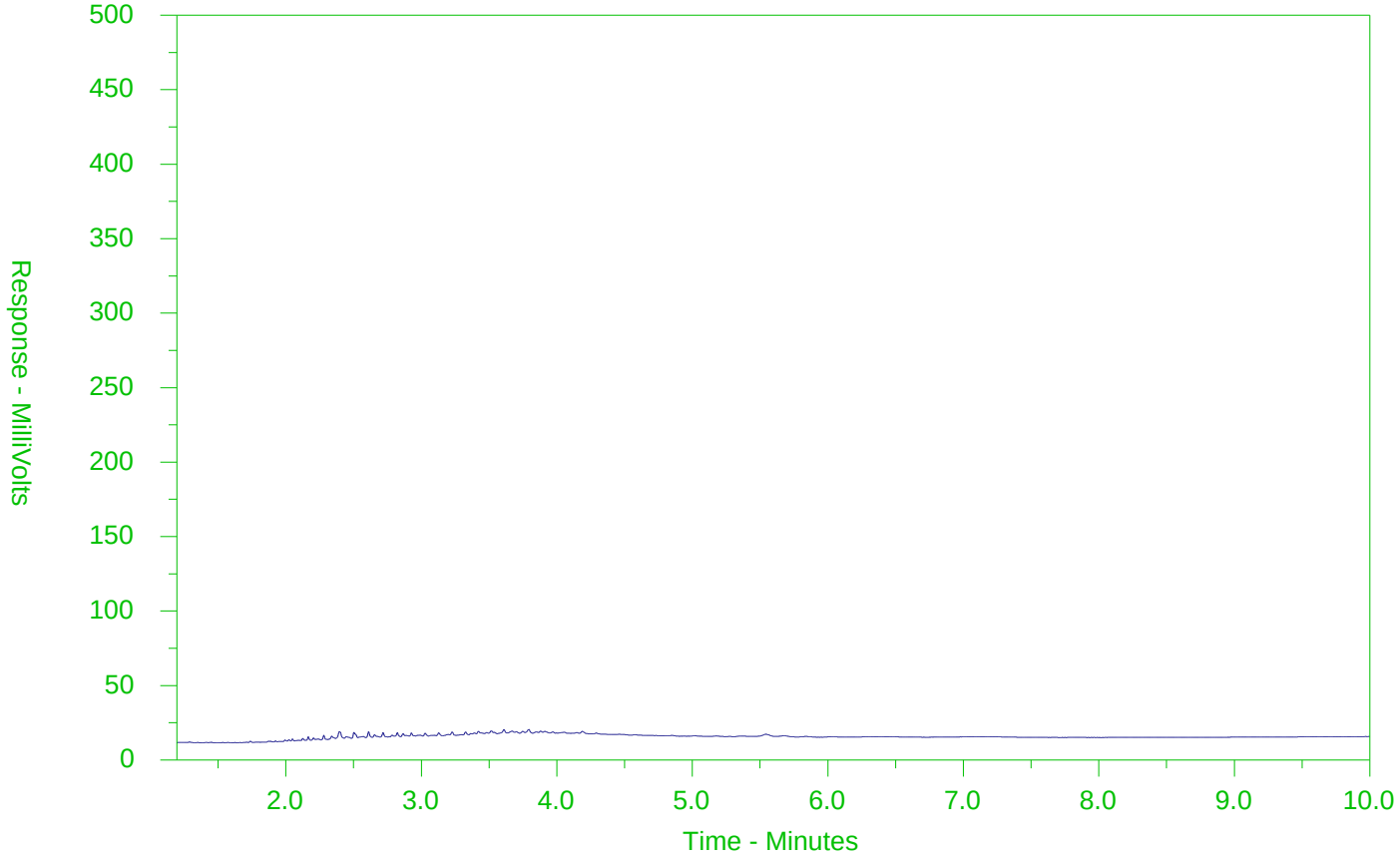
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2003037-7
Client Sample ID: TP17-302-5-7



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

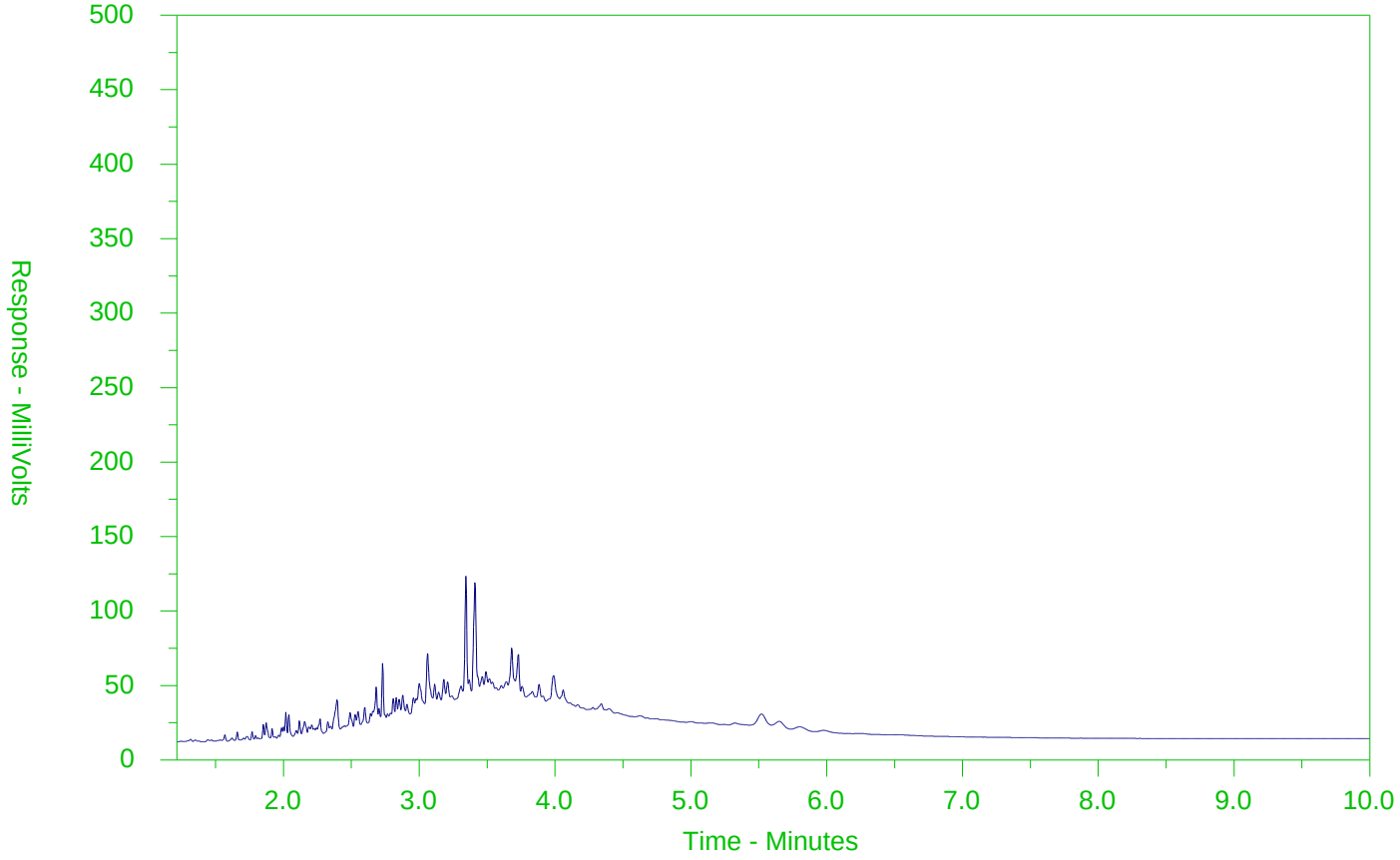
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2003037-8
Client Sample ID: TP17-301-1-3



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

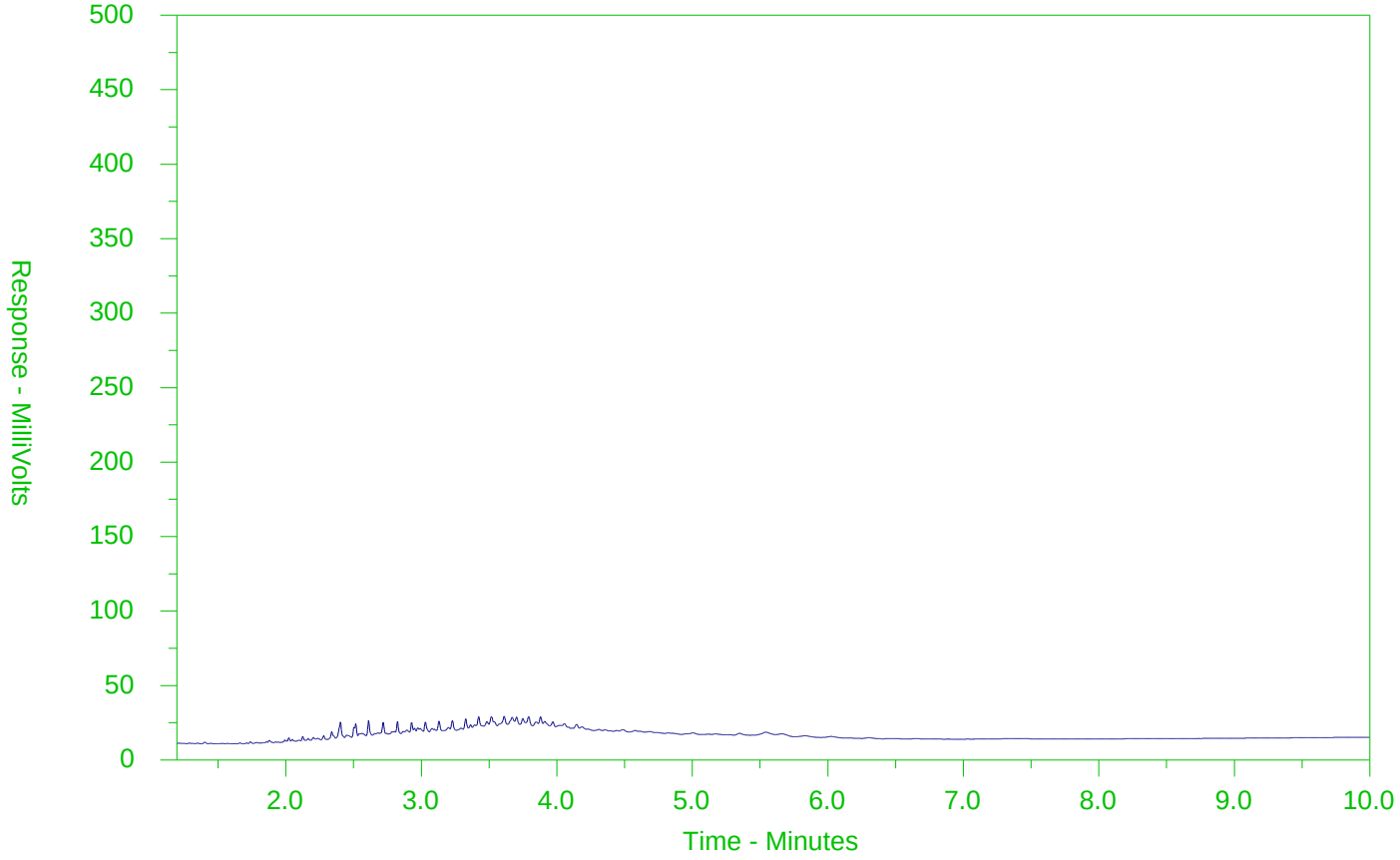
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2003037-9
Client Sample ID: TP17-301-4-5



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

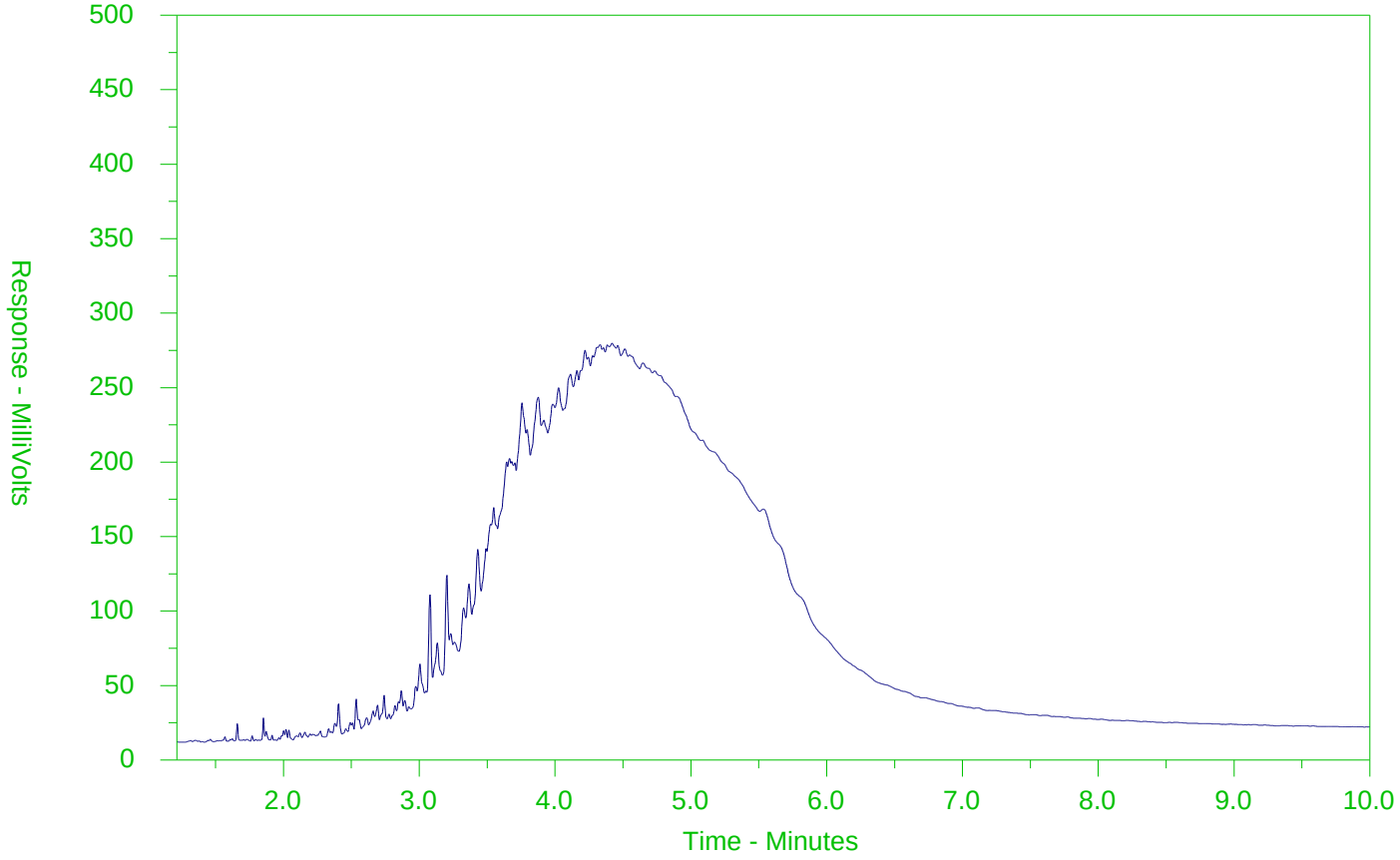
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2003037-12
Client Sample ID: TP17-300-1-2



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

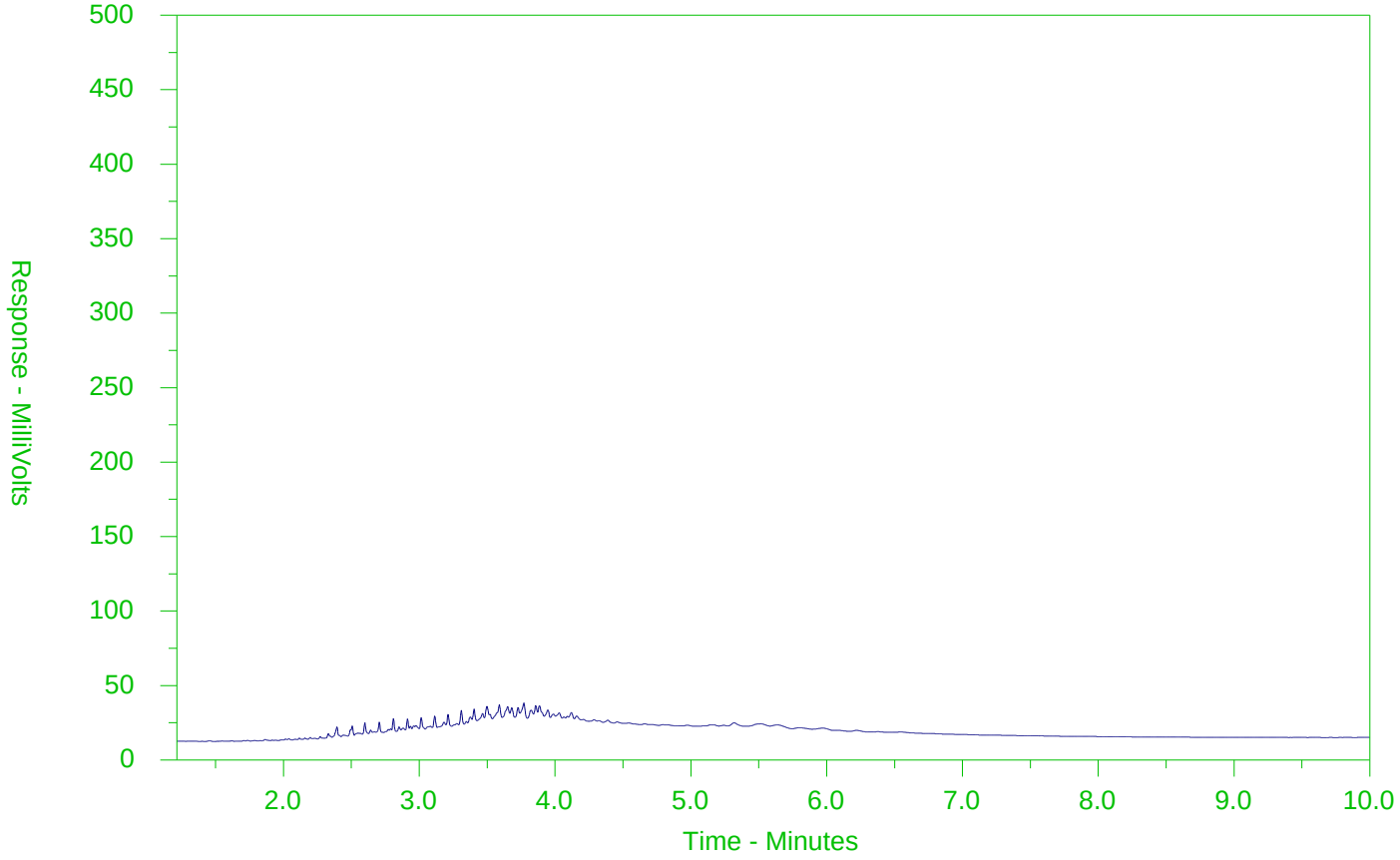
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2003037-13
Client Sample ID: TP17-300-3-4



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

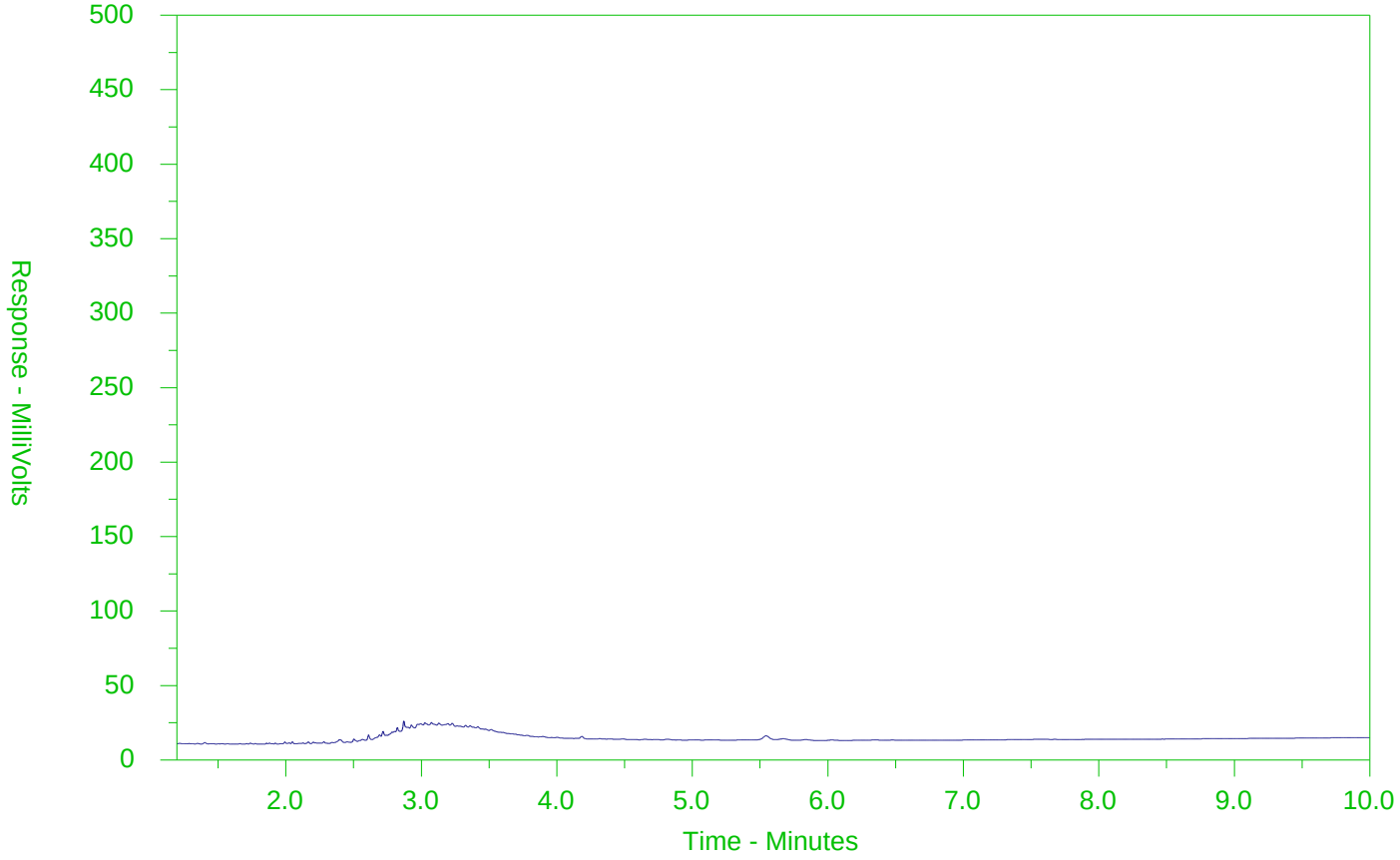
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2003037-14
Client Sample ID: TP17-303-1-2



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

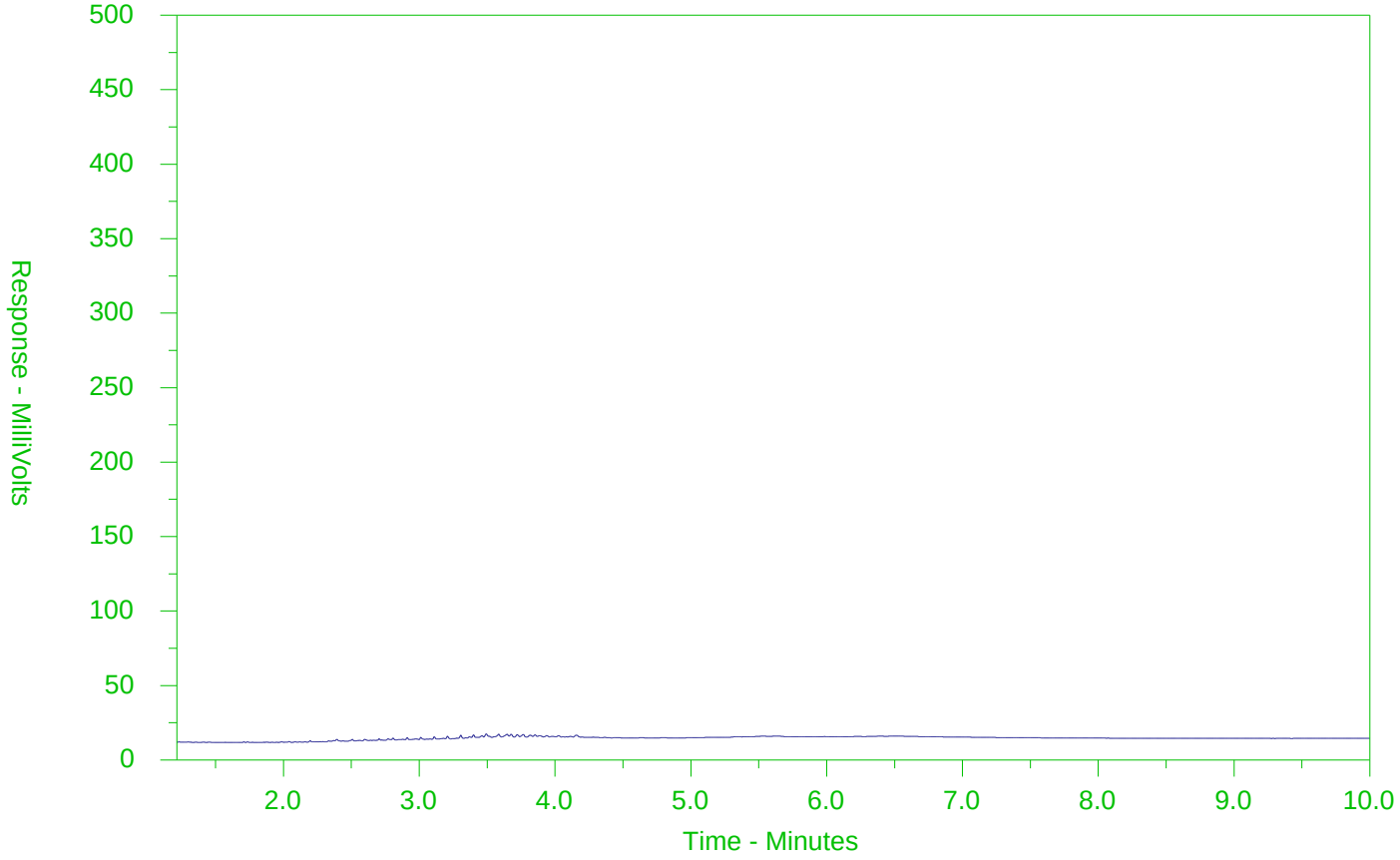
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2003037-15
Client Sample ID: TP17-303-4-5



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

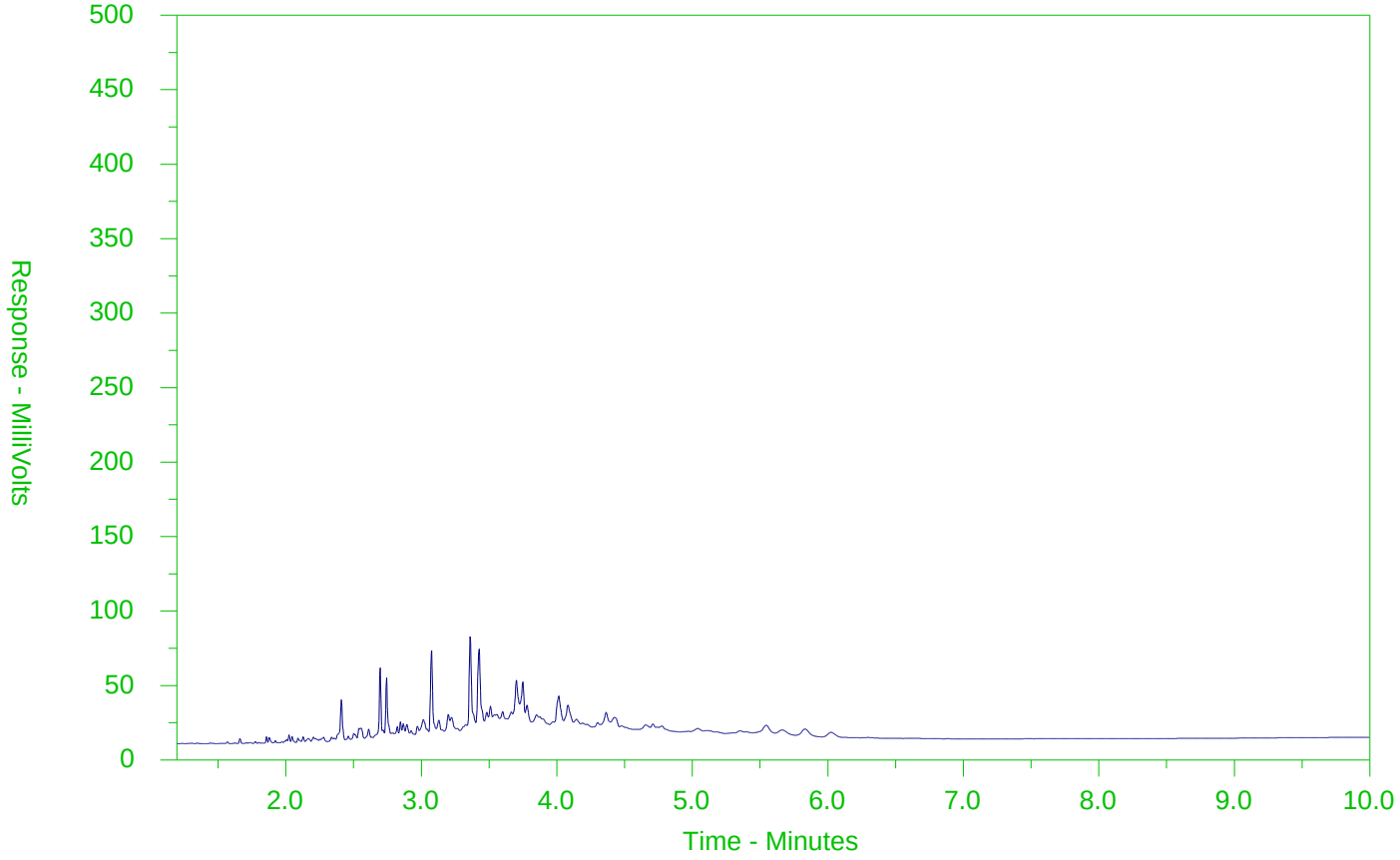
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2003037-17
Client Sample ID: TP17-306-3-4



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

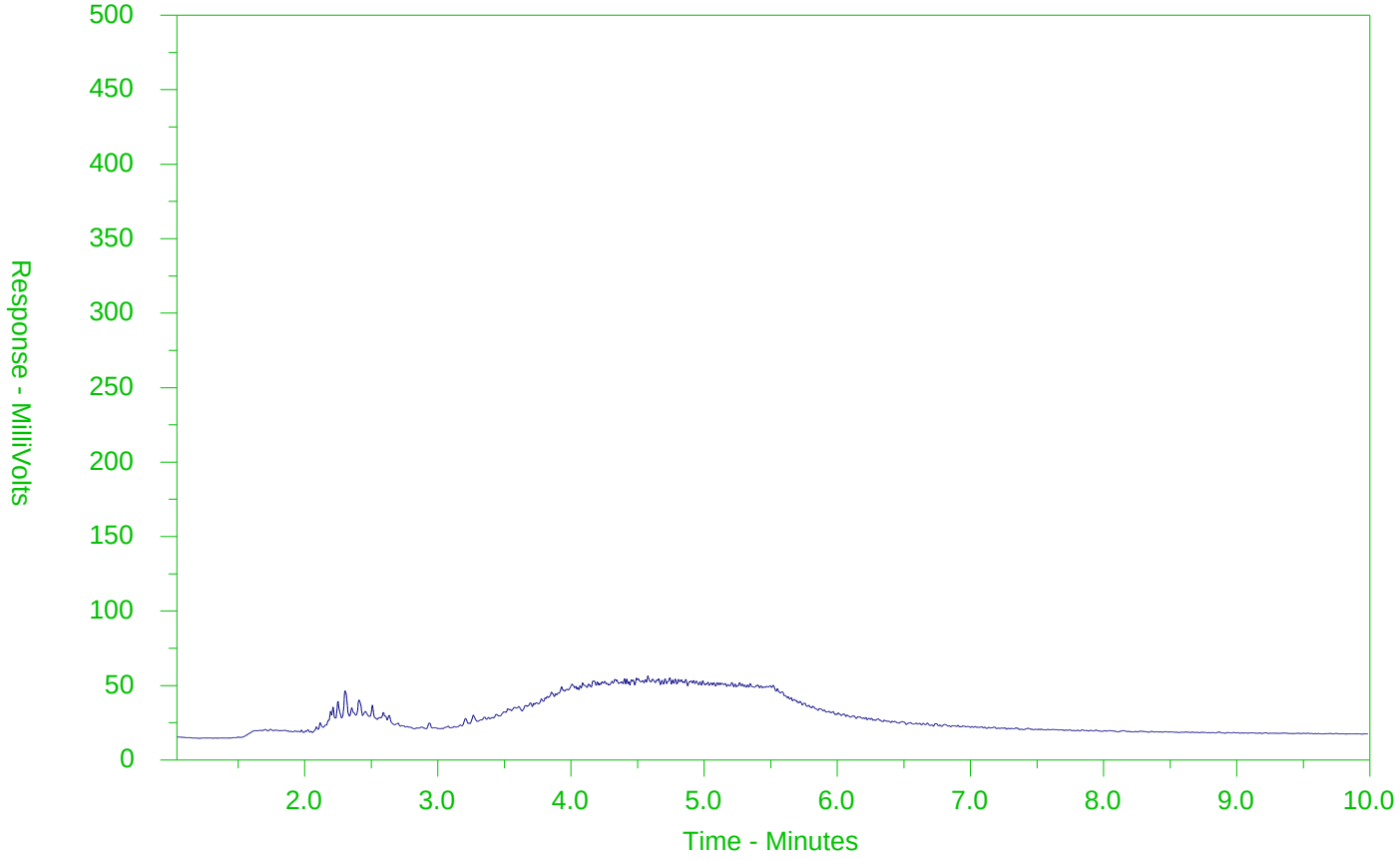
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2003037-19
Client Sample ID: TP17-307-7-8



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

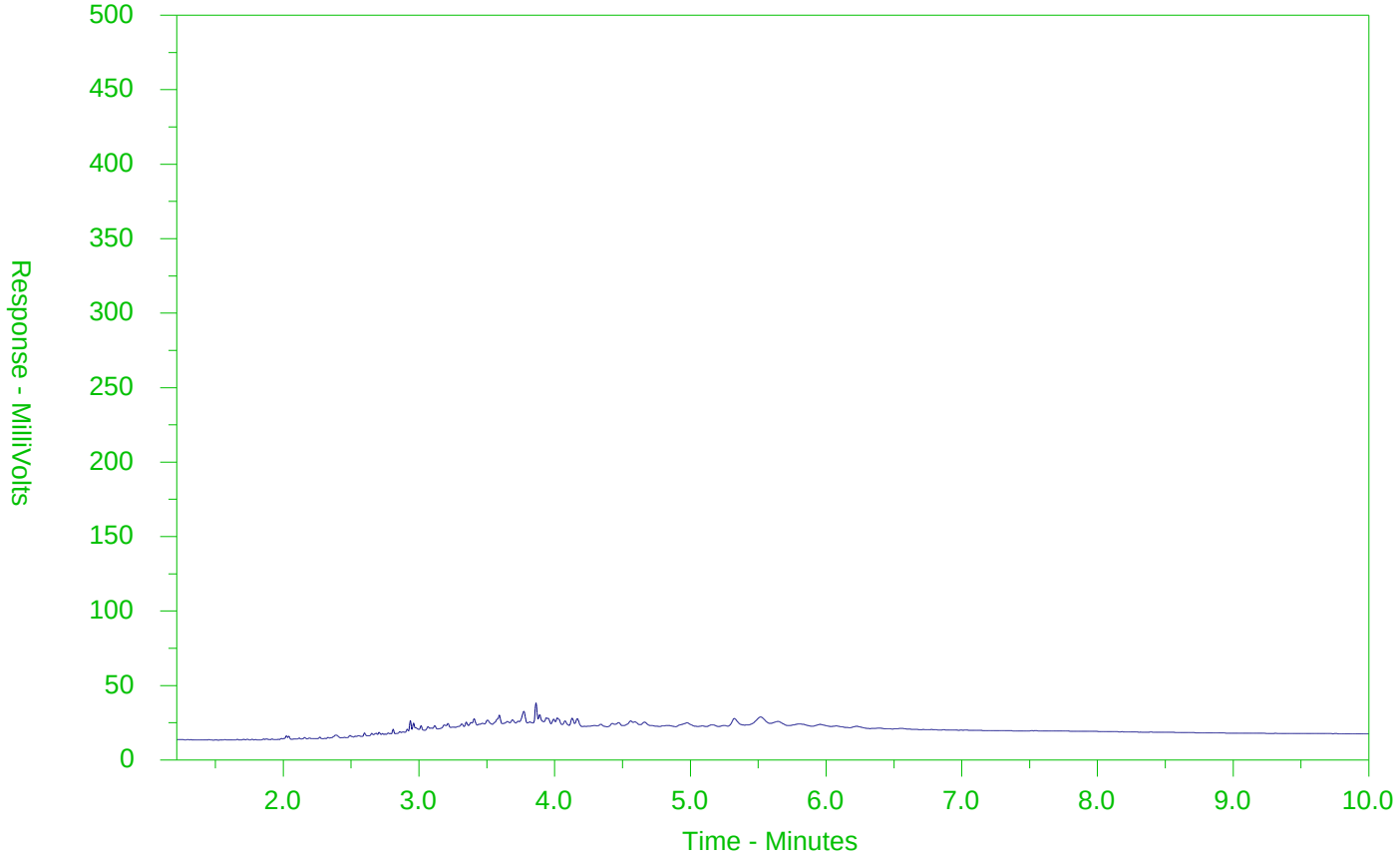
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2003037-20
Client Sample ID: DUP 1



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

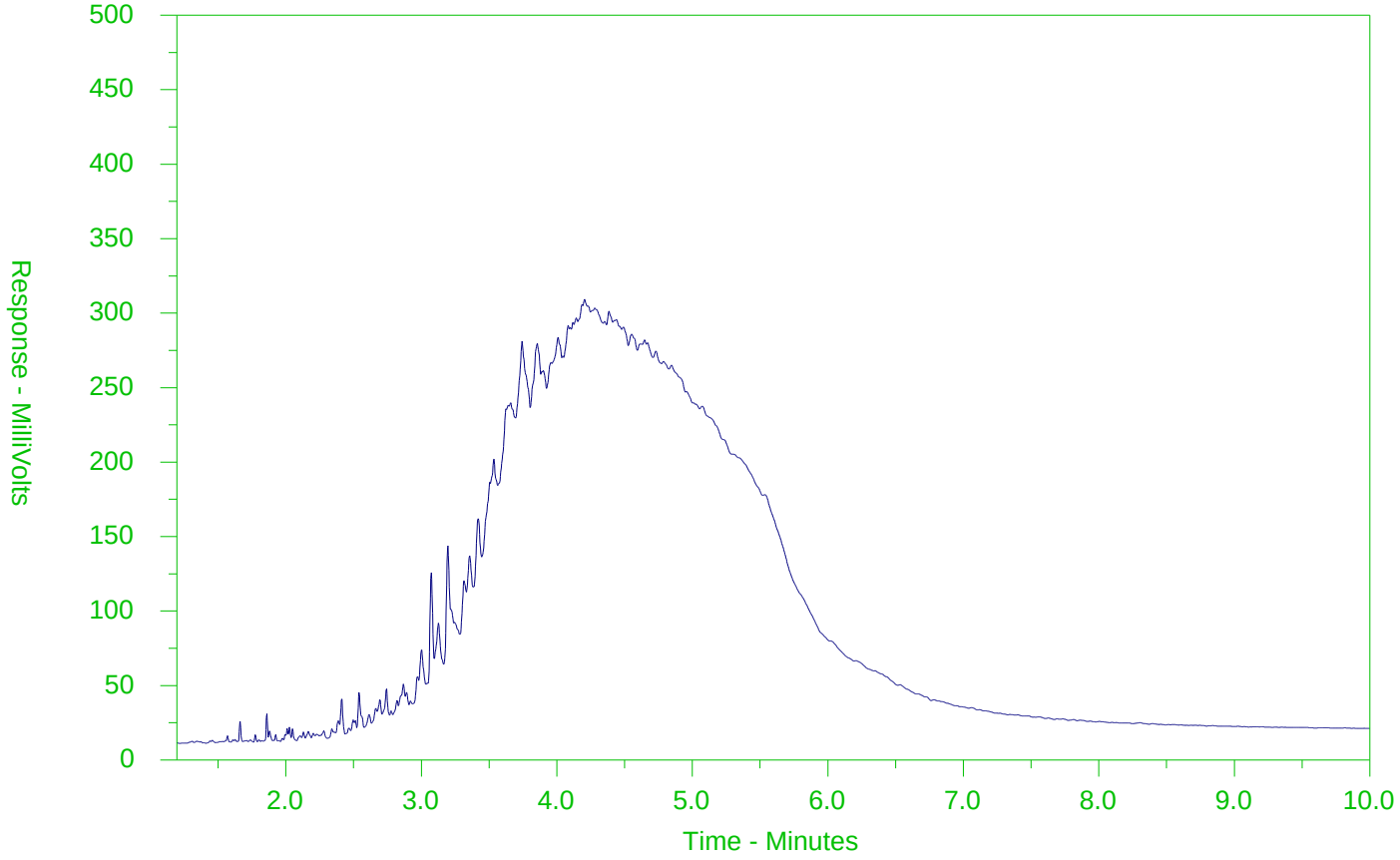
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2003037-23
Client Sample ID: DUP 4



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2003037-COFC

COC Number: 17 - 616667

Report To	Contact and company name below will appear on the final report
Company:	CH2M
Contact:	M. Shiny
Phone:	
Company address below will appear on the final report	
Street:	
City/Province:	
Postal Code:	
Invoice To	Same as Report To [ ] YES [X] NO
	Copy of Invoice with Report [ ] YES [X] NO
Company:	
Contact:	Acc't. Payable

Report Format / Distribution

Select Report Format: [X] PDF [X] EXCEL [X] EDD (DIGITAL)
Quality Control (QC) Report with Report [X] YES [ ] NO
[X] Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax: Same as previous
Email 2: lot Tania, Dirk
Email 3: Michael, Kyrie

Invoice Distribution

Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax
Email 2

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] [X] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] [ ]; 3 day [P3-25%] [ ]; 2 day [P2-50%] [ ]

EMERGENCY: 1 Business day [E-100%] [ ]; Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] [ ]

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q62156
Job #: 6941757
PO / AFE:
LSD: 05P3

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2003037 DA
ALS Contact: Mathy
Sampler: M. Shiny

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	O.Reg Metals + Inorganics	O.Reg PHC + BTEX	O.Reg VOCs	O.Reg PAH	O.Reg Sulfides	O.Reg PCB	TOC	Grain Size Sieve + Hyd	Dioxins / Furans							SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
1	TP17-305-1-2	4-OCT-17	1000	Soil	X	X	X															4
2	TP17-305-5-6		1030		X	X	X															4
3	TP17-304-3-4		1105		X	X	X															4
4	TP17-304-6-7		1110		X	X	X															4
5	TP17-302-1-3		1150		X	X	X	X														5
6	TP17-302-3-4		1215		X			X												X		2
7	TP17-302-5-7		1245		X	X	X	X														5
8	TP17-301-1-3		1320		X	X			X		X	X										7
9	TP17-301-4-5		1340		X	X			X		X	X										7
10	TP17-300-0-1		1415							X			X							X		2
11	TP17-300-1-2A		1420							X			X							X		2
12	TP17-300-1-2		1425		X	X	X		X													5

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] YES [ ] NO
Are samples for human consumption/ use? [ ] YES [ ] NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Table 6 Residential Parkland Institutional

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] SIF Observations Yes [ ] No [ ]
Ice Packs [ ] Ice Cubes [ ] Custody seal intact Yes [ ] No [ ]
Cooling Initiated [ ]

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				-1.7	-4.0		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date: 2017/10/5	Time: 1500	Received by:	Date:	Time:	Received by: DA	Date: 05/10/17	Time: 15:40

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION — WHITE - LABORATORY COPY — YELLOW - CLIENT COPY — JULY 2017 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2003037-COFC

COC Number: 17 - 616668

Report To	Contact and company name below will appear on the final report
Company:	CHZM
Contact:	M. Sluy
Phone:	
Company address below will appear on the final report	
Street:	
City/Province:	
Postal Code:	
Invoice To	Same as Report To [ ] YES [X] NO
	Copy of Invoice with Report [ ] YES [X] NO
Company:	CHZM
Contact:	Acct Payable

Report Format / Distribution

Select Report Format: [X] PDF [ ] EXCEL [X] EDD (DIGITAL)
Quality Control (QC) Report with Report [X] YES [ ] NO
[X] Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax: Travis Dirk
Email 2: Morlad, Kyrie
Email 3:

Invoice Distribution

Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax:
Email 2:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] [X] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] [ ]; 3 day [P3-25%] [ ]; 2 day [P2-50%] [ ]
EMERGENCY: 1 Business day [E-100%] [ ]; Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] [ ]

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q62156
Job #: 644757
PO / AFE:
LSD: 05B

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2003037 DA
ALS Contact: Matthew
Sampler: M. Sluy

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	O.Reg Metals + Inorganics	O.Reg PHC + BTEX	O.Reg VOCs	O.Reg PAHs	O.Reg SVOCs	O.Reg PCBs	TOC	Grain Size	Dioxins / Furans	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
13	TP17-300-3-4	4-OCT-17	1435	Soil	X	X	X		X							5
14	TP17-303-1-2		1520		X	X	X	X								5
15	TP17-303-4-5		1540		X	X	X	X								5
16	TP17-308-8-8.5		1635		X									X		1
17	TP17-306-3-4		1705		X	X	X	X								5
18	TP17-306-5-6		1710			X		X						X		4
19	TP17-307-7-8		1750			X	X							X		3
20	DUP1		—		X	X	X	X								5
21	DUP2		—						X							1
22	DUP3		—							X						1
23	DUP4		—		X	X	X		X							5
24	DUP5		—		X			X								2

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] YES [ ] NO
Are samples for human consumption/ use? [ ] YES [ ] NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Table 6 Res. Fnt. Park.

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] SIF Observations Yes [ ] No [ ]
Ice Packs [ ] Ice Cubes [ ] Custody seal intact Yes [ ] No [ ]
Cooling Initiated [ ]

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				-1.3	-2.0		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date: 2017/10/5	Time: 15:00	Received by:	Date:	Time:	Received by: DA	Date: 05/10/17	Time: 15:30

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION — WHITE - LABORATORY COPY — YELLOW - CLIENT COPY

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1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2003037-COFC

COC Number: 17 - 616669

Report To	Contact and company name below will appear on the final report
Company:	CHZM
Contact:	M. Shay
Phone:	
Company address below will appear on the final report	
Street:	
City/Province:	
Postal Code:	
Invoice To	Same as Report To [ ] YES [ ] NO
	Copy of Invoice with Report [ ] YES [ ] NO
Company:	
Contact:	Acct Payable

Report Format / Distribution

Select Report Format: [X] PDF [X] EXCEL [X] EDD (DIGITAL)
Quality Control (QC) Report with Report [X] YES [ ] NO
[X] Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax: Tanya, Dave
Email 2: Michael Kyme
Email 3:

Invoice Distribution

Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax:
Email 2:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] [X] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] [ ]; 3 day [P3-25%] [ ]; 2 day [P2-50%] [ ]

EMERGENCY: 1 Business day [E-100%] [ ]; Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] [ ]

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q62156
Job #: 694757
PO / AFE:
LSD: OSR
ALS Lab Work Order # (lab use only): L2003037 DA

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#:
Major/Minor Code: Routing Code:
Requisitioner:
Location:
ALS Contact: Matty Sampler: M. Shay

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	O.Gas VOCs + FI	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
25	Trip Blank -TP	5-OCT-17	—	other	X			1

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] YES [ ] NO
Are samples for human consumption/ use? [ ] YES [ ] NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Table 6 Res. Inst. Park

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] SIF Observations Yes [ ] No [ ]
Ice Packs [ ] Ice Cubes [ ] Custody seal intact Yes [ ] No [ ]
Cooling Initiated [ ]

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				-1.3	-4.0		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date: 2017/10/5	Time: 1500	Received by:	Date:	Time:	Received by:	Date: 05/10/17	Time: 15:30

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

ALS 2017 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

CH2M HILL CANADA LIMITED
ATTN: MICHAEL SHIRY
72 VICTORIA ST SOUTH
SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 16-OCT-17
Report Date: 26-OCT-17 10:40 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2007635

Project P.O. #:	NOT SUBMITTED
Job Reference:	694757
C of C Numbers:	17-616670, 17-616671, 17-616673
Legal Site Desc:	

Mathy Mahadeva
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-1	BH17-200-3-3.5									
Sampled By:	M. SHIRY on 10-OCT-17 @ 16:06									
Matrix:	SOIL									
Physical Tests										
	Conductivity	0.178		0.0040	mS/cm	19-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	25.7		0.10	%	18-OCT-17				
	pH	7.39		0.10	pH units	17-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	19-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	0.17		0.10	SAR	19-OCT-17	12	12	5	5
	Calcium (Ca)	8.7		1.0	mg/L	19-OCT-17				
	Magnesium (Mg)	2.4		1.0	mg/L	19-OCT-17				
	Sodium (Na)	2.1		1.0	mg/L	19-OCT-17				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	19-OCT-17	40	50	7.5	7.5
	Arsenic (As)	12.4		1.0	ug/g	19-OCT-17	18	18	18	18
	Barium (Ba)	92.2		1.0	ug/g	19-OCT-17	670	670	390	390
	Beryllium (Be)	0.51		0.50	ug/g	19-OCT-17	8	10	4	5
	Boron (B)	9.9		5.0	ug/g	19-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.87		0.10	ug/g	19-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	1.47		0.50	ug/g	19-OCT-17	1.9	1.9	*1.2	*1.2
	Chromium (Cr)	17.3		1.0	ug/g	19-OCT-17	160	160	160	160
	Cobalt (Co)	8.0		1.0	ug/g	19-OCT-17	80	100	22	22
	Copper (Cu)	15.6		1.0	ug/g	19-OCT-17	230	300	140	180
	Lead (Pb)	134		1.0	ug/g	19-OCT-17	*120	*120	*120	*120
	Mercury (Hg)	0.0892		0.0050	ug/g	19-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	1.2		1.0	ug/g	19-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	11.5		1.0	ug/g	19-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	19-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	19-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	19-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	19-OCT-17	33	33	23	23
	Vanadium (V)	38.1		1.0	ug/g	19-OCT-17	86	86	86	86
	Zinc (Zn)	722		5.0	ug/g	19-OCT-17	*340	*340	*340	*340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	18-OCT-17	8	10	8	10
Polycyclic Aromatic Hydrocarbons										
	1+2-Methylnaphthalenes	<0.042		0.042	ug/g	24-OCT-17	30	42	0.99	3.4
Semi-Volatile Organics										
	Acenaphthene	<0.050		0.050	ug/g	24-OCT-17	21	29	7.9	29
	Acenaphthylene	<0.050		0.050	ug/g	24-OCT-17	0.15	0.17	0.15	0.17
	Anthracene	<0.050		0.050	ug/g	24-OCT-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	<0.050		0.050	ug/g	24-OCT-17	0.96	0.96	0.5	0.63
	Benzo(a)pyrene	<0.050		0.050	ug/g	24-OCT-17	0.3	0.3	0.3	0.3
	Benzo(b)fluoranthene	<0.050		0.050	ug/g	24-OCT-17	0.96	0.96	0.78	0.78
	Benzo(ghi)perylene	<0.050		0.050	ug/g	24-OCT-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	<0.050		0.050	ug/g	24-OCT-17	0.96	0.96	0.78	0.78
	Biphenyl	<0.050		0.050	ug/g	24-OCT-17	52	210	0.31	1.1

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-1	BH17-200-3-3.5									
Sampled By:	M. SHIRY on 10-OCT-17 @ 16:06									
Matrix:	SOIL									
Semi-Volatile Organics										
	4-Chloroaniline	<0.10		0.10	ug/g	24-OCT-17	0.5	0.53	0.5	0.53
	Bis(2-chloroethyl)ether	<0.10		0.10	ug/g	24-OCT-17	0.5	0.5	0.5	0.5
	Bis(2-chloroisopropyl)ether	<0.10		0.10	ug/g	24-OCT-17	11	13	0.67	1.8
	2-Chlorophenol	<0.10		0.10	ug/g	24-OCT-17	3.1	3.9	1.6	2
	Chrysene	<0.050		0.050	ug/g	24-OCT-17	9.6	9.6	7	7.8
	Dibenzo(a,h)anthracene	<0.050		0.050	ug/g	24-OCT-17	0.1	0.1	0.1	0.1
	3,3'-Dichlorobenzidine	<0.10		0.10	ug/g	24-OCT-17	1	1	1	1
	2,4-Dichlorophenol	<0.10		0.10	ug/g	24-OCT-17	0.19	0.27	0.19	0.27
	Diethylphthalate	<0.10		0.10	ug/g	24-OCT-17	0.5	0.5	0.5	0.5
	Dimethylphthalate	<0.10		0.10	ug/g	24-OCT-17	0.5	0.5	0.5	0.5
	2,4-Dimethylphenol	<0.10		0.10	ug/g	24-OCT-17	38	53	38	53
	2,4-Dinitrophenol	<1.0		1.0	ug/g	24-OCT-17	2	2.9	2	2.9
	2,4-Dinitrotoluene	<0.10		0.10	ug/g	24-OCT-17	0.5	0.5	0.5	0.5
	2,6-Dinitrotoluene	<0.10		0.10	ug/g	24-OCT-17	0.5	0.5	0.5	0.5
	2,4+2,6-Dinitrotoluene	<0.14		0.14	ug/g	24-OCT-17				
	Bis(2-ethylhexyl)phthalate	<0.10		0.10	ug/g	24-OCT-17	28	35	5	5
	Fluoranthene	<0.050		0.050	ug/g	24-OCT-17	9.6	9.6	0.69	0.69
	Fluorene	<0.050		0.050	ug/g	24-OCT-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	24-OCT-17	0.76	0.95	0.38	0.48
	1-Methylnaphthalene	<0.030		0.030	ug/g	24-OCT-17	30	42	0.99	3.4
	2-Methylnaphthalene	<0.030		0.030	ug/g	24-OCT-17	30	42	0.99	3.4
	Naphthalene	<0.050		0.050	ug/g	24-OCT-17	9.6	28	0.6	0.75
	Pentachlorophenol	<0.10		0.10	ug/g	24-OCT-17	2.9	3.3	0.1	0.1
	Phenanthrene	<0.050		0.050	ug/g	24-OCT-17	12	16	6.2	7.8
	Phenol	<0.10		0.10	ug/g	24-OCT-17	9.4	9.4	9.4	9.4
	Pyrene	<0.050		0.050	ug/g	24-OCT-17	96	96	78	78
	1,2,4-Trichlorobenzene	<0.050		0.050	ug/g	24-OCT-17	3.2	16	0.36	1.4
	2,4,5-Trichlorophenol	<0.10		0.10	ug/g	24-OCT-17	9.1	10	4.4	5.5
	2,4,6-Trichlorophenol	<0.10		0.10	ug/g	24-OCT-17	2.1	2.9	2.1	2.9
	Surrogate: 2-Fluorobiphenyl	93.9		50-140	%	24-OCT-17				
	Surrogate: Nitrobenzene d5	87.2		50-140	%	24-OCT-17				
	Surrogate: Phenol d5	82.4		30-130	%	24-OCT-17				
	Surrogate: p-Terphenyl d14	96.1		50-140	%	24-OCT-17				
	Surrogate: 2,4,6-Tribromophenol	53.3		50-140	%	24-OCT-17				
L2007635-2	BH17-200-3.5-4									
Sampled By:	M. SHIRY on 10-OCT-17 @ 16:06									
Matrix:	SOIL									
Physical Tests										
	% Moisture	13.1		0.10	%	18-OCT-17				
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	18-OCT-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	18-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	18-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	18-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-2	BH17-200-3.5-4									
Sampled By:	M. SHIRY on 10-OCT-17 @ 16:06									
Matrix:	SOIL									
Volatile Organic Compounds										
	Carbon tetrachloride	<0.050		0.050	ug/g	18-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	18-OCT-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	18-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	18-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	18-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	18-OCT-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	18-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	18-OCT-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	18-OCT-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	18-OCT-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	18-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	18-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	18-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	18-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	18-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	18-OCT-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	18-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	18-OCT-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	18-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	18-OCT-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	18-OCT-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	18-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	18-OCT-17				
	m+p-Xylenes	<0.030		0.030	ug/g	18-OCT-17				
	Xylenes (Total)	<0.050		0.050	ug/g	18-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	95.1		50-140	%	18-OCT-17				
	Surrogate: 1,4-Difluorobenzene	101.7		50-140	%	18-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	18-OCT-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	23-OCT-17	55	65	55	65
	F2 (C10-C16)	<10		10	ug/g	20-OCT-17	230	250	98	150
	F3 (C16-C34)	<50		50	ug/g	20-OCT-17	1700	2500	300	1300
	F4 (C34-C50)	<50		50	ug/g	20-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	<72		72	ug/g	23-OCT-17				

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#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
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ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2007635-2	BH17-200-3.5-4									
Sampled By:	M. SHIRY on 10-OCT-17 @ 16:06									
Matrix:	SOIL						#1	#2	#3	#4
Hydrocarbons										
	Chrom. to baseline at nC50	YES			No Unit	20-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	62.8		60-140	%	20-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	90.7		60-140	%	18-OCT-17				
L2007635-3	BH17-200-4-6									
Sampled By:	M. SHIRY on 10-OCT-17 @ 16:16									
Matrix:	SOIL						#1	#2	#3	#4
Physical Tests										
	Conductivity	0.199		0.0040	mS/cm	19-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	5.03		0.10	%	17-OCT-17				
	pH	8.52		0.10	pH units	17-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	19-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	0.38		0.10	SAR	19-OCT-17	12	12	5	5
	Calcium (Ca)	4.6		1.0	mg/L	19-OCT-17				
	Magnesium (Mg)	2.4		1.0	mg/L	19-OCT-17				
	Sodium (Na)	4.1		1.0	mg/L	19-OCT-17				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	19-OCT-17	40	50	7.5	7.5
	Arsenic (As)	2.0		1.0	ug/g	19-OCT-17	18	18	18	18
	Barium (Ba)	12.3		1.0	ug/g	19-OCT-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	19-OCT-17	8	10	4	5
	Boron (B)	8.6		5.0	ug/g	19-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.15		0.10	ug/g	19-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	<0.50		0.50	ug/g	19-OCT-17	1.9	1.9	1.2	1.2
	Chromium (Cr)	7.9		1.0	ug/g	19-OCT-17	160	160	160	160
	Cobalt (Co)	2.1		1.0	ug/g	19-OCT-17	80	100	22	22
	Copper (Cu)	7.0		1.0	ug/g	19-OCT-17	230	300	140	180
	Lead (Pb)	50.3		1.0	ug/g	19-OCT-17	120	120	120	120
	Mercury (Hg)	0.0163		0.0050	ug/g	19-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	<1.0		1.0	ug/g	19-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	6.1		1.0	ug/g	19-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	19-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	19-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	19-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	19-OCT-17	33	33	23	23
	Vanadium (V)	12.6		1.0	ug/g	19-OCT-17	86	86	86	86
	Zinc (Zn)	335		5.0	ug/g	19-OCT-17	340	340	340	340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	18-OCT-17	8	10	8	10
Polycyclic Aromatic Hydrocarbons										
	1+2-Methylnaphthalenes	<0.042		0.042	ug/g	24-OCT-17	30	42	0.99	3.4
Semi-Volatile Organics										
	Acenaphthene	<0.050		0.050	ug/g	24-OCT-17	21	29	7.9	29

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ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-3	BH17-200-4-6									
Sampled By:	M. SHIRY on 10-OCT-17 @ 16:16									
Matrix:	SOIL									
Semi-Volatile Organics										
	Acenaphthylene	<0.050		0.050	ug/g	24-OCT-17	0.15	0.17	0.15	0.17
	Anthracene	<0.050		0.050	ug/g	24-OCT-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	<0.050		0.050	ug/g	24-OCT-17	0.96	0.96	0.5	0.63
	Benzo(a)pyrene	<0.050		0.050	ug/g	24-OCT-17	0.3	0.3	0.3	0.3
	Benzo(b)fluoranthene	<0.050		0.050	ug/g	24-OCT-17	0.96	0.96	0.78	0.78
	Benzo(ghi)perylene	<0.050		0.050	ug/g	24-OCT-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	<0.050		0.050	ug/g	24-OCT-17	0.96	0.96	0.78	0.78
	Biphenyl	<0.050		0.050	ug/g	24-OCT-17	52	210	0.31	1.1
	4-Chloroaniline	<0.10		0.10	ug/g	24-OCT-17	0.5	0.53	0.5	0.53
	Bis(2-chloroethyl)ether	<0.10		0.10	ug/g	24-OCT-17	0.5	0.5	0.5	0.5
	Bis(2-chloroisopropyl)ether	<0.10		0.10	ug/g	24-OCT-17	11	13	0.67	1.8
	2-Chlorophenol	<0.10		0.10	ug/g	24-OCT-17	3.1	3.9	1.6	2
	Chrysene	<0.050		0.050	ug/g	24-OCT-17	9.6	9.6	7	7.8
	Dibenzo(a,h)anthracene	<0.050		0.050	ug/g	24-OCT-17	0.1	0.1	0.1	0.1
	3,3'-Dichlorobenzidine	<0.10		0.10	ug/g	24-OCT-17	1	1	1	1
	2,4-Dichlorophenol	<0.10		0.10	ug/g	24-OCT-17	0.19	0.27	0.19	0.27
	Diethylphthalate	<0.10		0.10	ug/g	24-OCT-17	0.5	0.5	0.5	0.5
	Dimethylphthalate	<0.10		0.10	ug/g	24-OCT-17	0.5	0.5	0.5	0.5
	2,4-Dimethylphenol	<0.10		0.10	ug/g	24-OCT-17	38	53	38	53
	2,4-Dinitrophenol	<1.0		1.0	ug/g	24-OCT-17	2	2.9	2	2.9
	2,4-Dinitrotoluene	<0.10		0.10	ug/g	24-OCT-17	0.5	0.5	0.5	0.5
	2,6-Dinitrotoluene	<0.10		0.10	ug/g	24-OCT-17	0.5	0.5	0.5	0.5
	2,4+2,6-Dinitrotoluene	<0.14		0.14	ug/g	24-OCT-17				
	Bis(2-ethylhexyl)phthalate	<0.10		0.10	ug/g	24-OCT-17	28	35	5	5
	Fluoranthene	<0.050		0.050	ug/g	24-OCT-17	9.6	9.6	0.69	0.69
	Fluorene	<0.050		0.050	ug/g	24-OCT-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	24-OCT-17	0.76	0.95	0.38	0.48
	1-Methylnaphthalene	<0.030		0.030	ug/g	24-OCT-17	30	42	0.99	3.4
	2-Methylnaphthalene	<0.030		0.030	ug/g	24-OCT-17	30	42	0.99	3.4
	Naphthalene	<0.050		0.050	ug/g	24-OCT-17	9.6	28	0.6	0.75
	Pentachlorophenol	<0.10		0.10	ug/g	24-OCT-17	2.9	3.3	0.1	0.1
	Phenanthrene	<0.050		0.050	ug/g	24-OCT-17	12	16	6.2	7.8
	Phenol	<0.10		0.10	ug/g	24-OCT-17	9.4	9.4	9.4	9.4
	Pyrene	<0.050		0.050	ug/g	24-OCT-17	96	96	78	78
	1,2,4-Trichlorobenzene	<0.050		0.050	ug/g	24-OCT-17	3.2	16	0.36	1.4
	2,4,5-Trichlorophenol	<0.10		0.10	ug/g	24-OCT-17	9.1	10	4.4	5.5
	2,4,6-Trichlorophenol	<0.10		0.10	ug/g	24-OCT-17	2.1	2.9	2.1	2.9
	Surrogate: 2-Fluorobiphenyl	62.9		50-140	%	24-OCT-17				
	Surrogate: Nitrobenzene d5	97.2		50-140	%	24-OCT-17				
	Surrogate: Phenol d5	85.7		30-130	%	24-OCT-17				
	Surrogate: p-Terphenyl d14	94.1		50-140	%	24-OCT-17				
	Surrogate: 2,4,6-Tribromophenol	72.9		50-140	%	24-OCT-17				
L2007635-4	BH17-200-6-6.5									
Sampled By:	M. SHIRY on 10-OCT-17 @ 16:29									
Matrix:	SOIL									

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-4	BH17-200-6-6.5									
Sampled By:	M. SHIRY on 10-OCT-17 @ 16:29									
Matrix:	SOIL									
Physical Tests										
	% Moisture	7.43		0.10	%	17-OCT-17				
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	18-OCT-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	18-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	18-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	18-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	18-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	18-OCT-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	18-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	18-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	18-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	18-OCT-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	18-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	18-OCT-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	18-OCT-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	18-OCT-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	18-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	18-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	18-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	18-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	18-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	18-OCT-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	18-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	18-OCT-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	18-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	18-OCT-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	18-OCT-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	18-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	18-OCT-17				
	m+p-Xylenes	<0.030		0.030	ug/g	18-OCT-17				
	Xylenes (Total)	<0.050		0.050	ug/g	18-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	97.3		50-140	%	18-OCT-17				
	Surrogate: 1,4-Difluorobenzene	102.8		50-140	%	18-OCT-17				

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-4	BH17-200-6-6.5									
Sampled By:	M. SHIRY on 10-OCT-17 @ 16:29									
Matrix:	SOIL									
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	18-OCT-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	23-OCT-17	55	65	55	65
	F2 (C10-C16)	<10		10	ug/g	20-OCT-17	230	250	98	150
	F3 (C16-C34)	<50		50	ug/g	20-OCT-17	1700	2500	300	1300
	F4 (C34-C50)	<50		50	ug/g	20-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	<72		72	ug/g	23-OCT-17				
	Chrom. to baseline at nC50	YES			No Unit	20-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	70.5		60-140	%	20-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	89.6		60-140	%	18-OCT-17				
L2007635-5	BH17-201-0-2									
Sampled By:	M. SHIRY on 10-OCT-17 @ 17:10									
Matrix:	SOIL									
Physical Tests										
	Conductivity	0.260		0.0040	mS/cm	19-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	7.99		0.10	%	17-OCT-17				
	pH	7.71		0.10	pH units	17-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	19-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	0.12		0.10	SAR	19-OCT-17	12	12	5	5
	Calcium (Ca)	13.9		1.0	mg/L	19-OCT-17				
	Magnesium (Mg)	3.2		1.0	mg/L	19-OCT-17				
	Sodium (Na)	1.8		1.0	mg/L	19-OCT-17				
Metals										
	Antimony (Sb)	3.3		1.0	ug/g	19-OCT-17	40	50	7.5	7.5
	Arsenic (As)	11.3		1.0	ug/g	19-OCT-17	18	18	18	18
	Barium (Ba)	85.1		1.0	ug/g	19-OCT-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	19-OCT-17	8	10	4	5
	Boron (B)	6.7		5.0	ug/g	19-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.30		0.10	ug/g	19-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	1.44		0.50	ug/g	19-OCT-17	1.9	1.9	*1.2	*1.2
	Chromium (Cr)	15.3		1.0	ug/g	19-OCT-17	160	160	160	160
	Cobalt (Co)	4.2		1.0	ug/g	19-OCT-17	80	100	22	22
	Copper (Cu)	77.4		1.0	ug/g	19-OCT-17	230	300	140	180
	Lead (Pb)	282		1.0	ug/g	19-OCT-17	*120	*120	*120	*120
	Mercury (Hg)	0.0451		0.0050	ug/g	19-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	1.2		1.0	ug/g	19-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	15.3		1.0	ug/g	19-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	19-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	19-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	19-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	19-OCT-17	33	33	23	23
	Vanadium (V)	27.3		1.0	ug/g	19-OCT-17	86	86	86	86
	Zinc (Zn)	1140	DLHC	40	ug/g	19-OCT-17	*340	*340	*340	*340
Speciated Metals										

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-5	BH17-201-0-2									
Sampled By:	M. SHIRY on 10-OCT-17 @ 17:10									
Matrix:	SOIL									
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	18-OCT-17	8	10	8	10
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	18-OCT-17	55	65	55	65
	F2 (C10-C16)	13		10	ug/g	20-OCT-17	230	250	98	150
	F2-Naphth	13		10	ug/g	24-OCT-17				
	F3 (C16-C34)	521		50	ug/g	20-OCT-17	1700	2500	*300	1300
	F3-PAH	518		50	ug/g	24-OCT-17				
	F4 (C34-C50)	<50		50	ug/g	20-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	535		72	ug/g	24-OCT-17				
	Chrom. to baseline at nC50	YES			No Unit	20-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	74.5		60-140	%	20-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	89.3		60-140	%	18-OCT-17				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.050		0.050	ug/g	24-OCT-17	21	29	7.9	29
	Acenaphthylene	<0.050		0.050	ug/g	24-OCT-17	0.15	0.17	0.15	0.17
	Anthracene	0.101		0.050	ug/g	24-OCT-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	0.339		0.050	ug/g	24-OCT-17	0.96	0.96	0.5	0.63
	Benzo(a)pyrene	0.279		0.050	ug/g	24-OCT-17	0.3	0.3	0.3	0.3
	Benzo(b)fluoranthene	0.398		0.050	ug/g	24-OCT-17	0.96	0.96	0.78	0.78
	Benzo(g,h,i)perylene	0.184		0.050	ug/g	24-OCT-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	0.190		0.050	ug/g	24-OCT-17	0.96	0.96	0.78	0.78
	Chrysene	0.376		0.050	ug/g	24-OCT-17	9.6	9.6	7	7.8
	Dibenzo(ah)anthracene	0.051		0.050	ug/g	24-OCT-17	0.1	0.1	0.1	0.1
	Fluoranthene	0.836		0.050	ug/g	24-OCT-17	9.6	9.6	*0.69	*0.69
	Fluorene	<0.050		0.050	ug/g	24-OCT-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	0.186		0.050	ug/g	24-OCT-17	0.76	0.95	0.38	0.48
	1+2-Methylnaphthalenes	0.133		0.042	ug/g	24-OCT-17	30	42	0.99	3.4
	1-Methylnaphthalene	0.060		0.030	ug/g	24-OCT-17	30	42	0.99	3.4
	2-Methylnaphthalene	0.073		0.030	ug/g	24-OCT-17	30	42	0.99	3.4
	Naphthalene	0.074		0.050	ug/g	24-OCT-17	9.6	28	0.6	0.75
	Phenanthrene	0.497		0.050	ug/g	24-OCT-17	12	16	6.2	7.8
	Pyrene	0.645		0.050	ug/g	24-OCT-17	96	96	78	78
	Surrogate: 2-Fluorobiphenyl	90.6		50-140	%	24-OCT-17				
	Surrogate: p-Terphenyl d14	100.2		50-140	%	24-OCT-17				
L2007635-6	BH17-201-2-3									
Sampled By:	M. SHIRY on 10-OCT-17 @ 17:25									
Matrix:	SOIL									
Physical Tests										
	Conductivity	0.152		0.0040	mS/cm	19-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	3.80		0.10	%	17-OCT-17				
	pH	7.84		0.10	pH units	17-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	19-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-6	BH17-201-2-3									
Sampled By:	M. SHIRY on 10-OCT-17 @ 17:25									
Matrix:	SOIL									
Saturated Paste Extractables										
	SAR	0.20		0.10	SAR	19-OCT-17	12	12	5	5
	Calcium (Ca)	3.4		1.0	mg/L	19-OCT-17				
	Magnesium (Mg)	1.1		1.0	mg/L	19-OCT-17				
	Sodium (Na)	1.7		1.0	mg/L	19-OCT-17				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	19-OCT-17	40	50	7.5	7.5
	Arsenic (As)	2.8		1.0	ug/g	19-OCT-17	18	18	18	18
	Barium (Ba)	24.0		1.0	ug/g	19-OCT-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	19-OCT-17	8	10	4	5
	Boron (B)	<5.0		5.0	ug/g	19-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	<0.10		0.10	ug/g	19-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	<0.50		0.50	ug/g	19-OCT-17	1.9	1.9	1.2	1.2
	Chromium (Cr)	4.2		1.0	ug/g	19-OCT-17	160	160	160	160
	Cobalt (Co)	4.1		1.0	ug/g	19-OCT-17	80	100	22	22
	Copper (Cu)	28.1		1.0	ug/g	19-OCT-17	230	300	140	180
	Lead (Pb)	29.1		1.0	ug/g	19-OCT-17	120	120	120	120
	Mercury (Hg)	0.0144		0.0050	ug/g	19-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	<1.0		1.0	ug/g	19-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	10.2		1.0	ug/g	19-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	19-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	19-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	19-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	19-OCT-17	33	33	23	23
	Vanadium (V)	17.3		1.0	ug/g	19-OCT-17	86	86	86	86
	Zinc (Zn)	446		5.0	ug/g	19-OCT-17	*340	*340	*340	*340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	18-OCT-17	8	10	8	10
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	18-OCT-17	55	65	55	65
	F2 (C10-C16)	<10		10	ug/g	23-OCT-17	230	250	98	150
	F2-Naphth	<10		10	ug/g	24-OCT-17				
	F3 (C16-C34)	229		50	ug/g	23-OCT-17	1700	2500	300	1300
	F3-PAH	229		50	ug/g	24-OCT-17				
	F4 (C34-C50)	<50		50	ug/g	23-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	229		72	ug/g	24-OCT-17				
	Chrom. to baseline at nC50	YES			No Unit	23-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	78.1		60-140	%	23-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	93.6		60-140	%	18-OCT-17				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.050		0.050	ug/g	23-OCT-17	21	29	7.9	29
	Acenaphthylene	<0.050		0.050	ug/g	23-OCT-17	0.15	0.17	0.15	0.17
	Anthracene	<0.050		0.050	ug/g	23-OCT-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	<0.050		0.050	ug/g	23-OCT-17	0.96	0.96	0.5	0.63
	Benzo(a)pyrene	<0.050		0.050	ug/g	23-OCT-17	0.3	0.3	0.3	0.3
	Benzo(b)fluoranthene	<0.050		0.050	ug/g	23-OCT-17	0.96	0.96	0.78	0.78
	Benzo(g,h,i)perylene	<0.050		0.050	ug/g	23-OCT-17	9.6	9.6	6.6	7.8

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-6	BH17-201-2-3									
Sampled By:	M. SHIRY on 10-OCT-17 @ 17:25									
Matrix:	SOIL									
Polycyclic Aromatic Hydrocarbons										
	Benzo(k)fluoranthene	<0.050		0.050	ug/g	23-OCT-17	0.96	0.96	0.78	0.78
	Chrysene	<0.050		0.050	ug/g	23-OCT-17	9.6	9.6	7	7.8
	Dibenzo(ah)anthracene	<0.050		0.050	ug/g	23-OCT-17	0.1	0.1	0.1	0.1
	Fluoranthene	<0.050		0.050	ug/g	23-OCT-17	9.6	9.6	0.69	0.69
	Fluorene	<0.050		0.050	ug/g	23-OCT-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	23-OCT-17	0.76	0.95	0.38	0.48
	1+2-Methylnaphthalenes	<0.042		0.042	ug/g	24-OCT-17	30	42	0.99	3.4
	1-Methylnaphthalene	<0.030		0.030	ug/g	23-OCT-17	30	42	0.99	3.4
	2-Methylnaphthalene	<0.030		0.030	ug/g	23-OCT-17	30	42	0.99	3.4
	Naphthalene	<0.050		0.050	ug/g	23-OCT-17	9.6	28	0.6	0.75
	Phenanthrene	<0.050		0.050	ug/g	23-OCT-17	12	16	6.2	7.8
	Pyrene	<0.050		0.050	ug/g	23-OCT-17	96	96	78	78
	Surrogate: 2-Fluorobiphenyl	85.2		50-140	%	23-OCT-17				
	Surrogate: p-Terphenyl d14	86.7		50-140	%	23-OCT-17				
L2007635-7	BH17-201-0-1									
Sampled By:	M. SHIRY on 10-OCT-17 @ 17:10									
Matrix:	SOIL									
Physical Tests										
	% Moisture	4.01		0.10	%	17-OCT-17				
Polychlorinated Biphenyls										
	Aroclor 1242	<0.010		0.010	ug/g	23-OCT-17				
	Aroclor 1248	<0.010		0.010	ug/g	23-OCT-17				
	Aroclor 1254	<0.010		0.010	ug/g	23-OCT-17				
	Aroclor 1260	<0.0150	DLM	0.015	ug/g	23-OCT-17				
	Total PCBs	<0.0230	DLM	0.023	ug/g	23-OCT-17	1.1	1.1	0.35	0.35
	Surrogate: d14-Terphenyl	97.5		60-140	%	23-OCT-17				
L2007635-9	BH17-202-0-2									
Sampled By:	M. SHIRY on 10-OCT-17 @ 14:22									
Matrix:	SOIL									
Physical Tests										
	Conductivity	0.401		0.0040	mS/cm	19-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	7.60		0.10	%	17-OCT-17				
	pH	8.16		0.10	pH units	17-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	19-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	0.13		0.10	SAR	19-OCT-17	12	12	5	5
	Calcium (Ca)	39.7		1.0	mg/L	19-OCT-17				
	Magnesium (Mg)	1.8		1.0	mg/L	19-OCT-17				
	Sodium (Na)	3.1		1.0	mg/L	19-OCT-17				
Metals										
	Antimony (Sb)	1.5		1.0	ug/g	19-OCT-17	40	50	7.5	7.5
	Arsenic (As)	3.2		1.0	ug/g	19-OCT-17	18	18	18	18
	Barium (Ba)	26.3		1.0	ug/g	19-OCT-17				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2007635-9	BH17-202-0-2									
Sampled By:	M. SHIRY on 10-OCT-17 @ 14:22									
Matrix:	SOIL						#1	#2	#3	#4
Metals										
							670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	19-OCT-17	8	10	4	5
	Boron (B)	5.7		5.0	ug/g	19-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.25		0.10	ug/g	19-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	<0.50		0.50	ug/g	19-OCT-17	1.9	1.9	1.2	1.2
	Chromium (Cr)	12.2		1.0	ug/g	19-OCT-17	160	160	160	160
	Cobalt (Co)	3.2		1.0	ug/g	19-OCT-17	80	100	22	22
	Copper (Cu)	10.2		1.0	ug/g	19-OCT-17	230	300	140	180
	Lead (Pb)	77.9		1.0	ug/g	19-OCT-17	120	120	120	120
	Mercury (Hg)	0.0178		0.0050	ug/g	19-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	<1.0		1.0	ug/g	19-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	8.4		1.0	ug/g	19-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	19-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	19-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	19-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	19-OCT-17	33	33	23	23
	Vanadium (V)	20.7		1.0	ug/g	19-OCT-17	86	86	86	86
	Zinc (Zn)	53.2		5.0	ug/g	19-OCT-17	340	340	340	340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	18-OCT-17	8	10	8	10
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.050		0.050	ug/g	23-OCT-17	21	29	7.9	29
	Acenaphthylene	<0.050		0.050	ug/g	23-OCT-17	0.15	0.17	0.15	0.17
	Anthracene	<0.050		0.050	ug/g	23-OCT-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	0.106		0.050	ug/g	23-OCT-17	0.96	0.96	0.5	0.63
	Benzo(a)pyrene	0.103		0.050	ug/g	23-OCT-17	0.3	0.3	0.3	0.3
	Benzo(b)fluoranthene	0.191		0.050	ug/g	23-OCT-17	0.96	0.96	0.78	0.78
	Benzo(g,h,i)perylene	0.088		0.050	ug/g	23-OCT-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	0.077		0.050	ug/g	23-OCT-17	0.96	0.96	0.78	0.78
	Chrysene	0.164		0.050	ug/g	23-OCT-17	9.6	9.6	7	7.8
	Dibenzo(ah)anthracene	<0.050		0.050	ug/g	23-OCT-17	0.1	0.1	0.1	0.1
	Fluoranthene	0.198		0.050	ug/g	23-OCT-17	9.6	9.6	0.69	0.69
	Fluorene	<0.050		0.050	ug/g	23-OCT-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	0.076		0.050	ug/g	23-OCT-17	0.76	0.95	0.38	0.48
	1+2-Methylnaphthalenes	0.131		0.042	ug/g	24-OCT-17	30	42	0.99	3.4
	1-Methylnaphthalene	0.058		0.030	ug/g	23-OCT-17	30	42	0.99	3.4
	2-Methylnaphthalene	0.073		0.030	ug/g	23-OCT-17	30	42	0.99	3.4
	Naphthalene	0.064		0.050	ug/g	23-OCT-17	9.6	28	0.6	0.75
	Phenanthrene	0.136		0.050	ug/g	23-OCT-17	12	16	6.2	7.8
	Pyrene	0.159		0.050	ug/g	23-OCT-17	96	96	78	78
	Surrogate: 2-Fluorobiphenyl	89.5		50-140	%	23-OCT-17				
	Surrogate: p-Terphenyl d14	89.1		50-140	%	23-OCT-17				
L2007635-10	BH17-202-2-4									
Sampled By:	M. SHIRY on 10-OCT-17 @ 14:30									
Matrix:	SOIL						#1	#2	#3	#4

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-10	BH17-202-2-4									
Sampled By:	M. SHIRY on 10-OCT-17 @ 14:30									
Matrix:	SOIL									
Physical Tests										
	% Moisture	6.64		0.10	%	17-OCT-17				
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	18-OCT-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	18-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	18-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	18-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	18-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	18-OCT-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	18-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	18-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	18-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	18-OCT-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	18-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	18-OCT-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	18-OCT-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	18-OCT-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	18-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	18-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	18-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	18-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	18-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	18-OCT-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	18-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	18-OCT-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	18-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	18-OCT-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	18-OCT-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	18-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	18-OCT-17				
	m+p-Xylenes	<0.030		0.030	ug/g	18-OCT-17				
	Xylenes (Total)	<0.050		0.050	ug/g	18-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	92.0		50-140	%	18-OCT-17				
	Surrogate: 1,4-Difluorobenzene	100.8		50-140	%	18-OCT-17				

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2007635-10	BH17-202-2-4									
Sampled By:	M. SHIRY on 10-OCT-17 @ 14:30									
Matrix:	SOIL						#1	#2	#3	#4
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	18-OCT-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	23-OCT-17	55	65	55	65
	F2 (C10-C16)	<10		10	ug/g	20-OCT-17	230	250	98	150
	F3 (C16-C34)	<50		50	ug/g	20-OCT-17	1700	2500	300	1300
	F4 (C34-C50)	<50		50	ug/g	20-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	<72		72	ug/g	23-OCT-17				
	Chrom. to baseline at nC50	YES			No Unit	20-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	70.5		60-140	%	20-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	81.9		60-140	%	18-OCT-17				
L2007635-11	BH17-202-4-6									
Sampled By:	M. SHIRY on 10-OCT-17 @ 14:40									
Matrix:	SOIL						#1	#2	#3	#4
Physical Tests										
	Conductivity	0.208		0.0040	mS/cm	19-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	5.60		0.10	%	17-OCT-17				
	pH	8.57		0.10	pH units	17-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	19-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	0.43		0.10	SAR	19-OCT-17	12	12	5	5
	Calcium (Ca)	5.8		1.0	mg/L	19-OCT-17				
	Magnesium (Mg)	1.7		1.0	mg/L	19-OCT-17				
	Sodium (Na)	4.6		1.0	mg/L	19-OCT-17				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	19-OCT-17	40	50	7.5	7.5
	Arsenic (As)	9.3		1.0	ug/g	19-OCT-17	18	18	18	18
	Barium (Ba)	17.9		1.0	ug/g	19-OCT-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	19-OCT-17	8	10	4	5
	Boron (B)	6.7		5.0	ug/g	19-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.22		0.10	ug/g	19-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	1.29		0.50	ug/g	19-OCT-17	1.9	1.9	*1.2	*1.2
	Chromium (Cr)	7.9		1.0	ug/g	19-OCT-17	160	160	160	160
	Cobalt (Co)	3.8		1.0	ug/g	19-OCT-17	80	100	22	22
	Copper (Cu)	23.5		1.0	ug/g	19-OCT-17	230	300	140	180
	Lead (Pb)	95.6		1.0	ug/g	19-OCT-17	120	120	120	120
	Mercury (Hg)	0.0309		0.0050	ug/g	19-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	<1.0		1.0	ug/g	19-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	10.3		1.0	ug/g	19-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	19-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	19-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	19-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	19-OCT-17	33	33	23	23
	Vanadium (V)	17.9		1.0	ug/g	19-OCT-17	86	86	86	86
	Zinc (Zn)	548		5.0	ug/g	19-OCT-17	*340	*340	*340	*340
Speciated Metals										

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-11 BH17-202-4-6										
Sampled By: M. SHIRY on 10-OCT-17 @ 14:40										
Matrix: SOIL										
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	18-OCT-17	8	10	8	10
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.050		0.050	ug/g	23-OCT-17	21	29	7.9	29
	Acenaphthylene	<0.050		0.050	ug/g	23-OCT-17	0.15	0.17	0.15	0.17
	Anthracene	<0.050		0.050	ug/g	23-OCT-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	<0.050		0.050	ug/g	23-OCT-17	0.96	0.96	0.5	0.63
	Benzo(a)pyrene	<0.050		0.050	ug/g	23-OCT-17	0.3	0.3	0.3	0.3
	Benzo(b)fluoranthene	<0.050		0.050	ug/g	23-OCT-17	0.96	0.96	0.78	0.78
	Benzo(g,h,i)perylene	<0.050		0.050	ug/g	23-OCT-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	<0.050		0.050	ug/g	23-OCT-17	0.96	0.96	0.78	0.78
	Chrysene	<0.050		0.050	ug/g	23-OCT-17	9.6	9.6	7	7.8
	Dibenzo(ah)anthracene	<0.050		0.050	ug/g	23-OCT-17	0.1	0.1	0.1	0.1
	Fluoranthene	<0.050		0.050	ug/g	23-OCT-17	9.6	9.6	0.69	0.69
	Fluorene	<0.050		0.050	ug/g	23-OCT-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	23-OCT-17	0.76	0.95	0.38	0.48
	1+2-Methylnaphthalenes	<0.042		0.042	ug/g	24-OCT-17	30	42	0.99	3.4
	1-Methylnaphthalene	<0.030		0.030	ug/g	23-OCT-17	30	42	0.99	3.4
	2-Methylnaphthalene	<0.030		0.030	ug/g	23-OCT-17	30	42	0.99	3.4
	Naphthalene	<0.050		0.050	ug/g	23-OCT-17	9.6	28	0.6	0.75
	Phenanthrene	<0.050		0.050	ug/g	23-OCT-17	12	16	6.2	7.8
	Pyrene	<0.050		0.050	ug/g	23-OCT-17	96	96	78	78
	Surrogate: 2-Fluorobiphenyl	89.9		50-140	%	23-OCT-17				
	Surrogate: p-Terphenyl d14	88.9		50-140	%	23-OCT-17				
L2007635-12 BH17-202-6-7										
Sampled By: M. SHIRY on 10-OCT-17 @ 15:12										
Matrix: SOIL										
Physical Tests										
	% Moisture	5.41		0.10	%	17-OCT-17				
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	18-OCT-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	18-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	18-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	18-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	18-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	18-OCT-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	18-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	18-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	18-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.47	0.6	0.47	0.6

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2007635-12	BH17-202-6-7									
Sampled By:	M. SHIRY on 10-OCT-17 @ 15:12									
Matrix:	SOIL						#1	#2	#3	#4
Volatile Organic Compounds										
	1,2-Dichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	18-OCT-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	18-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	18-OCT-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	18-OCT-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	18-OCT-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	18-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	18-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	18-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	18-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	18-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	18-OCT-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	18-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	18-OCT-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	18-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	18-OCT-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	18-OCT-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	18-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	18-OCT-17				
	m+p-Xylenes	<0.030		0.030	ug/g	18-OCT-17				
	Xylenes (Total)	<0.050		0.050	ug/g	18-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	97.9		50-140	%	18-OCT-17				
	Surrogate: 1,4-Difluorobenzene	103.6		50-140	%	18-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	18-OCT-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	23-OCT-17	55	65	55	65
	F2 (C10-C16)	14		10	ug/g	20-OCT-17	230	250	98	150
	F3 (C16-C34)	91		50	ug/g	20-OCT-17	1700	2500	300	1300
	F4 (C34-C50)	<50		50	ug/g	20-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	105		72	ug/g	23-OCT-17				
	Chrom. to baseline at nC50	YES			No Unit	20-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	84.2		60-140	%	20-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	98.7		60-140	%	18-OCT-17				
L2007635-13	BH17-203-0-2									
Sampled By:	M. SHIRY on 11-OCT-17 @ 10:06									
Matrix:	SOIL						#1	#2	#3	#4
Physical Tests										
	% Moisture	11.1		0.10	%	17-OCT-17				
Volatile Organic Compounds										

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-13	BH17-203-0-2									
Sampled By:	M. SHIRY on 11-OCT-17 @ 10:06									
Matrix:	SOIL									
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	18-OCT-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	18-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	18-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	18-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	18-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	18-OCT-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	18-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	18-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	18-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	18-OCT-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	18-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	18-OCT-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	18-OCT-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	18-OCT-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	18-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	0.156		0.050	ug/g	18-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	18-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	18-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	18-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	18-OCT-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	18-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	18-OCT-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	18-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	18-OCT-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	18-OCT-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	18-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	18-OCT-17				
	m+p-Xylenes	<0.030		0.030	ug/g	18-OCT-17				
	Xylenes (Total)	<0.050		0.050	ug/g	18-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	95.0		50-140	%	18-OCT-17				
	Surrogate: 1,4-Difluorobenzene	102.1		50-140	%	18-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	18-OCT-17	55	65	55	65

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-13	BH17-203-0-2									
Sampled By:	M. SHIRY on 11-OCT-17 @ 10:06									
Matrix:	SOIL									
Hydrocarbons										
	F1-BTEX	<5.0		5.0	ug/g	23-OCT-17	55	65	55	65
	F2 (C10-C16)	<10		10	ug/g	20-OCT-17	230	250	98	150
	F3 (C16-C34)	<50		50	ug/g	20-OCT-17	1700	2500	300	1300
	F4 (C34-C50)	<50		50	ug/g	20-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	<72		72	ug/g	23-OCT-17				
	Chrom. to baseline at nC50	YES			No Unit	20-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	62.6		60-140	%	20-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	91.1		60-140	%	18-OCT-17				
L2007635-14	BH17-203-6-8									
Sampled By:	M. SHIRY on 11-OCT-17 @ 10:42									
Matrix:	SOIL									
Organic / Inorganic Carbon										
	Fraction Organic Carbon	0.0024		0.0010	No Unit	17-OCT-17				
	Fraction Organic Carbon	0.0025		0.0010	No Unit	17-OCT-17				
	Fraction Organic Carbon	0.0026		0.0010	No Unit	17-OCT-17				
	Average Fraction Organic Carbon	0.0025		0.0010	No Unit	17-OCT-17				
	Total Organic Carbon	0.24		0.10	%	17-OCT-17				
	Total Organic Carbon	0.25		0.10	%	17-OCT-17				
	Total Organic Carbon	0.26		0.10	%	17-OCT-17				
L2007635-15	MW17-108S-0-1									
Sampled By:	M. SHIRY on 11-OCT-17 @ 11:08									
Matrix:	SOIL									
Organic / Inorganic Carbon										
	Fraction Organic Carbon	0.0291		0.0010	No Unit	17-OCT-17				
	Fraction Organic Carbon	0.0316		0.0010	No Unit	17-OCT-17				
	Fraction Organic Carbon	0.0324		0.0010	No Unit	17-OCT-17				
	Average Fraction Organic Carbon	0.0310		0.0010	No Unit	17-OCT-17				
	Total Organic Carbon	2.91		0.10	%	17-OCT-17				
	Total Organic Carbon	3.16		0.10	%	17-OCT-17				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-15	MW17-108S-0-1									
Sampled By:	M. SHIRY on 11-OCT-17 @ 11:08									
Matrix:	SOIL									
Organic / Inorganic Carbon										
	Total Organic Carbon	3.24		0.10	%	17-OCT-17				
L2007635-17	MW17-108S-2-4									
Sampled By:	M. SHIRY on 11-OCT-17 @ 11:15									
Matrix:	SOIL									
Physical Tests										
	Conductivity	0.478		0.0040	mS/cm	19-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	5.12		0.10	%	17-OCT-17				
	pH	7.76		0.10	pH units	17-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	19-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	0.31		0.10	SAR	19-OCT-17	12	12	5	5
	Calcium (Ca)	15.4		1.0	mg/L	19-OCT-17				
	Magnesium (Mg)	19.0		1.0	mg/L	19-OCT-17				
	Sodium (Na)	7.8		1.0	mg/L	19-OCT-17				
Metals										
	Antimony (Sb)	5.9		1.0	ug/g	19-OCT-17	40	50	7.5	7.5
	Arsenic (As)	12.3		1.0	ug/g	19-OCT-17	18	18	18	18
	Barium (Ba)	28.7		1.0	ug/g	19-OCT-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	19-OCT-17	8	10	4	5
	Boron (B)	15.3		5.0	ug/g	19-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.34		0.10	ug/g	19-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	41.4		0.50	ug/g	19-OCT-17	*1.9	*1.9	*1.2	*1.2
	Chromium (Cr)	55.1		1.0	ug/g	19-OCT-17	160	160	160	160
	Cobalt (Co)	2.6		1.0	ug/g	19-OCT-17	80	100	22	22
	Copper (Cu)	69.6		1.0	ug/g	19-OCT-17	230	300	140	180
	Lead (Pb)	197		1.0	ug/g	19-OCT-17	*120	*120	*120	*120
	Mercury (Hg)	0.0893		0.0050	ug/g	19-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	2.2		1.0	ug/g	19-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	10.3		1.0	ug/g	19-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	19-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	19-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	19-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	19-OCT-17	33	33	23	23
	Vanadium (V)	41.1		1.0	ug/g	19-OCT-17	86	86	86	86
	Zinc (Zn)	24400	DLHC	800	ug/g	19-OCT-17	*340	*340	*340	*340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	18-OCT-17	8	10	8	10
Polycyclic Aromatic Hydrocarbons										
	1+2-Methylnaphthalenes	<0.042		0.042	ug/g	24-OCT-17	30	42	0.99	3.4
Semi-Volatile Organics										

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* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-17	MW17-108S-2-4									
Sampled By:	M. SHIRY on 11-OCT-17 @ 11:15									
Matrix:	SOIL									
Semi-Volatile Organics										
	Acenaphthene	<0.050		0.050	ug/g	24-OCT-17	21	29	7.9	29
	Acenaphthylene	<0.050		0.050	ug/g	24-OCT-17	0.15	0.17	0.15	0.17
	Anthracene	<0.050		0.050	ug/g	24-OCT-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	<0.050		0.050	ug/g	24-OCT-17	0.96	0.96	0.5	0.63
	Benzo(a)pyrene	<0.050		0.050	ug/g	24-OCT-17	0.3	0.3	0.3	0.3
	Benzo(b)fluoranthene	<0.050		0.050	ug/g	24-OCT-17	0.96	0.96	0.78	0.78
	Benzo(ghi)perylene	<0.050		0.050	ug/g	24-OCT-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	<0.050		0.050	ug/g	24-OCT-17	0.96	0.96	0.78	0.78
	Biphenyl	<0.050		0.050	ug/g	24-OCT-17	52	210	0.31	1.1
	4-Chloroaniline	<0.10		0.10	ug/g	24-OCT-17	0.5	0.53	0.5	0.53
	Bis(2-chloroethyl)ether	<0.10		0.10	ug/g	24-OCT-17	0.5	0.5	0.5	0.5
	Bis(2-chloroisopropyl)ether	<0.10		0.10	ug/g	24-OCT-17	11	13	0.67	1.8
	2-Chlorophenol	<0.10		0.10	ug/g	24-OCT-17	3.1	3.9	1.6	2
	Chrysene	0.081		0.050	ug/g	24-OCT-17	9.6	9.6	7	7.8
	Dibenzo(a,h)anthracene	<0.050		0.050	ug/g	24-OCT-17	0.1	0.1	0.1	0.1
	3,3'-Dichlorobenzidine	<0.10		0.10	ug/g	24-OCT-17	1	1	1	1
	2,4-Dichlorophenol	<0.10		0.10	ug/g	24-OCT-17	0.19	0.27	0.19	0.27
	Diethylphthalate	<0.10		0.10	ug/g	24-OCT-17	0.5	0.5	0.5	0.5
	Dimethylphthalate	<0.10		0.10	ug/g	24-OCT-17	0.5	0.5	0.5	0.5
	2,4-Dimethylphenol	<0.10		0.10	ug/g	24-OCT-17	38	53	38	53
	2,4-Dinitrophenol	<1.0		1.0	ug/g	24-OCT-17	2	2.9	2	2.9
	2,4-Dinitrotoluene	<0.10		0.10	ug/g	24-OCT-17	0.5	0.5	0.5	0.5
	2,6-Dinitrotoluene	<0.10		0.10	ug/g	24-OCT-17	0.5	0.5	0.5	0.5
	2,4+2,6-Dinitrotoluene	<0.14		0.14	ug/g	24-OCT-17				
	Bis(2-ethylhexyl)phthalate	<0.10		0.10	ug/g	24-OCT-17	28	35	5	5
	Fluoranthene	<0.050		0.050	ug/g	24-OCT-17	9.6	9.6	0.69	0.69
	Fluorene	<0.050		0.050	ug/g	24-OCT-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	24-OCT-17	0.76	0.95	0.38	0.48
	1-Methylnaphthalene	<0.030		0.030	ug/g	24-OCT-17	30	42	0.99	3.4
	2-Methylnaphthalene	<0.030		0.030	ug/g	24-OCT-17	30	42	0.99	3.4
	Naphthalene	<0.050		0.050	ug/g	24-OCT-17	9.6	28	0.6	0.75
	Pentachlorophenol	<0.10		0.10	ug/g	24-OCT-17	2.9	3.3	0.1	0.1
	Phenanthrene	0.064		0.050	ug/g	24-OCT-17	12	16	6.2	7.8
	Phenol	<0.10		0.10	ug/g	24-OCT-17	9.4	9.4	9.4	9.4
	Pyrene	<0.050		0.050	ug/g	24-OCT-17	96	96	78	78
	1,2,4-Trichlorobenzene	<0.050		0.050	ug/g	24-OCT-17	3.2	16	0.36	1.4
	2,4,5-Trichlorophenol	<0.10		0.10	ug/g	24-OCT-17	9.1	10	4.4	5.5
	2,4,6-Trichlorophenol	<0.10		0.10	ug/g	24-OCT-17	2.1	2.9	2.1	2.9
	Surrogate: 2-Fluorobiphenyl	102.3		50-140	%	24-OCT-17				
	Surrogate: Nitrobenzene d5	90.2		50-140	%	24-OCT-17				
	Surrogate: Phenol d5	87.9		30-130	%	24-OCT-17				
	Surrogate: p-Terphenyl d14	91.3		50-140	%	24-OCT-17				
	Surrogate: 2,4,6-Tribromophenol	67.7		50-140	%	24-OCT-17				

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#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-18	MW17-108S-8-9									
Sampled By:	M. SHIRY on 11-OCT-17 @ 12:04									
Matrix:	SOIL									
Physical Tests										
	Conductivity	0.352		0.0040	mS/cm	19-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	7.57		0.10	%	17-OCT-17				
	pH	7.39		0.10	pH units	17-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	19-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	0.18		0.10	SAR	19-OCT-17	12	12	5	5
	Calcium (Ca)	9.5		1.0	mg/L	19-OCT-17				
	Magnesium (Mg)	12.9		1.0	mg/L	19-OCT-17				
	Sodium (Na)	3.6		1.0	mg/L	19-OCT-17				
Metals										
	Antimony (Sb)	6.5		1.0	ug/g	19-OCT-17	40	50	7.5	7.5
	Arsenic (As)	8.7		1.0	ug/g	19-OCT-17	18	18	18	18
	Barium (Ba)	50.5		1.0	ug/g	19-OCT-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	19-OCT-17	8	10	4	5
	Boron (B)	21.3		5.0	ug/g	19-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.35		0.10	ug/g	19-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	83.4		0.50	ug/g	19-OCT-17	*1.9	*1.9	*1.2	*1.2
	Chromium (Cr)	26.2		1.0	ug/g	19-OCT-17	160	160	160	160
	Cobalt (Co)	4.5		1.0	ug/g	19-OCT-17	80	100	22	22
	Copper (Cu)	364		1.0	ug/g	19-OCT-17	*230	*300	*140	*180
	Lead (Pb)	121		1.0	ug/g	19-OCT-17	*120	*120	*120	*120
	Mercury (Hg)	0.0108		0.0050	ug/g	19-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	<1.0		1.0	ug/g	19-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	10.5		1.0	ug/g	19-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	19-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	19-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	19-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	19-OCT-17	33	33	23	23
	Vanadium (V)	56.4		1.0	ug/g	19-OCT-17	86	86	86	86
	Zinc (Zn)	67200	DLHC	800	ug/g	19-OCT-17	*340	*340	*340	*340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	18-OCT-17	8	10	8	10
L2007635-19	MW17-108S-9-9.5									
Sampled By:	M. SHIRY on 11-OCT-17 @ 12:20									
Matrix:	SOIL									
Physical Tests										
	% Moisture	7.77		0.10	%	17-OCT-17				
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	18-OCT-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	18-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	18-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	18-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05

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ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-19	MW17-108S-9-9.5									
Sampled By:	M. SHIRY on 11-OCT-17 @ 12:20									
Matrix:	SOIL									
Volatile Organic Compounds										
	Carbon tetrachloride	<0.050		0.050	ug/g	18-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	18-OCT-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	18-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	18-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	18-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	18-OCT-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	18-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	18-OCT-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	18-OCT-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	18-OCT-17	0.059	0.081	0.05	0.081
	1,4-Dioxane	<0.20		0.20	mg/kg	18-OCT-17	1.8	1.8	1.8	1.8
	Ethylbenzene	<0.018		0.018	ug/g	18-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	18-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	18-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	18-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	18-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	18-OCT-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	18-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.20	DLVH	0.20	ug/g	18-OCT-17	**0.05	**0.094	**0.05	**0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	18-OCT-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	18-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	18-OCT-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	18-OCT-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	18-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	18-OCT-17				
	m+p-Xylenes	<0.030		0.030	ug/g	18-OCT-17				
	Xylenes (Total)	<0.050		0.050	ug/g	18-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	105.4		50-140	%	18-OCT-17				
	Surrogate: 1,4-Difluorobenzene	104.1		50-140	%	18-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	18-OCT-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	23-OCT-17	55	65	55	65
	F2 (C10-C16)	345		10	ug/g	20-OCT-17	*230	*250	*98	*150
	F3 (C16-C34)	14700		50	ug/g	20-OCT-17	*1700	*2500	*300	*1300
	F4 (C34-C50)	981		50	ug/g	20-OCT-17	3300	6600	2800	5600

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ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2007635-19	MW17-108S-9-9.5									
Sampled By:	M. SHIRY on 11-OCT-17 @ 12:20									
Matrix:	SOIL						#1	#2	#3	#4
Hydrocarbons										
	Total Hydrocarbons (C6-C50)	16000		72	ug/g	23-OCT-17				
	Chrom. to baseline at nC50	YES			No Unit	20-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	87.0		60-140	%	20-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	48.9	SOL:MI	60-140	%	18-OCT-17				
L2007635-20	MW17-108S-10-10.5									
Sampled By:	M. SHIRY on 11-OCT-17 @ 12:32									
Matrix:	SOIL						#1	#2	#3	#4
Physical Tests										
	% Moisture	7.38		0.10	%	17-OCT-17				
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	18-OCT-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	18-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	18-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	18-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	18-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	18-OCT-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	18-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	18-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	18-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	18-OCT-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	18-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	18-OCT-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	18-OCT-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	18-OCT-17	0.059	0.081	0.05	0.081
	1,4-Dioxane	<0.20		0.20	mg/kg	18-OCT-17	1.8	1.8	1.8	1.8
	Ethylbenzene	<0.018		0.018	ug/g	18-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	18-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	18-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	18-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	18-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	18-OCT-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	18-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	18-OCT-17	6.4	9	2.3	6

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-20	MW17-108S-10-10.5									
Sampled By:	M. SHIRY on 11-OCT-17 @ 12:32									
Matrix:	SOIL									
Volatile Organic Compounds										
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	18-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	18-OCT-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	18-OCT-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	18-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	18-OCT-17				
	m+p-Xylenes	<0.030		0.030	ug/g	18-OCT-17				
	Xylenes (Total)	<0.050		0.050	ug/g	18-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	104.7		50-140	%	18-OCT-17				
	Surrogate: 1,4-Difluorobenzene	103.1		50-140	%	18-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	18-OCT-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	24-OCT-17	55	65	55	65
	F2 (C10-C16)	55		10	ug/g	20-OCT-17	230	250	98	150
	F2-Naphth	55		10	ug/g	24-OCT-17				
	F3 (C16-C34)	2280		50	ug/g	20-OCT-17	*1700	2500	*300	*1300
	F3-PAH	2280		50	ug/g	24-OCT-17				
	F4 (C34-C50)	142		50	ug/g	20-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	2480		72	ug/g	24-OCT-17				
	Chrom. to baseline at nC50	YES			No Unit	20-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	78.8		60-140	%	20-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	77.3		60-140	%	18-OCT-17				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.050		0.050	ug/g	23-OCT-17	21	29	7.9	29
	Acenaphthylene	<0.050		0.050	ug/g	23-OCT-17	0.15	0.17	0.15	0.17
	Anthracene	<0.050		0.050	ug/g	23-OCT-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	<0.050		0.050	ug/g	23-OCT-17	0.96	0.96	0.5	0.63
	Benzo(a)pyrene	<0.050		0.050	ug/g	23-OCT-17	0.3	0.3	0.3	0.3
	Benzo(b)fluoranthene	<0.050		0.050	ug/g	23-OCT-17	0.96	0.96	0.78	0.78
	Benzo(g,h,i)perylene	<0.050		0.050	ug/g	23-OCT-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	<0.050		0.050	ug/g	23-OCT-17	0.96	0.96	0.78	0.78
	Chrysene	0.192		0.050	ug/g	23-OCT-17	9.6	9.6	7	7.8
	Dibenzo(ah)anthracene	<0.050		0.050	ug/g	23-OCT-17	0.1	0.1	0.1	0.1
	Fluoranthene	<0.050		0.050	ug/g	23-OCT-17	9.6	9.6	0.69	0.69
	Fluorene	0.052		0.050	ug/g	23-OCT-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	23-OCT-17	0.76	0.95	0.38	0.48
	1+2-Methylnaphthalenes	<0.042		0.042	ug/g	24-OCT-17	30	42	0.99	3.4
	1-Methylnaphthalene	<0.030		0.030	ug/g	23-OCT-17	30	42	0.99	3.4
	2-Methylnaphthalene	<0.030		0.030	ug/g	23-OCT-17	30	42	0.99	3.4
	Naphthalene	<0.050		0.050	ug/g	23-OCT-17	9.6	28	0.6	0.75
	Phenanthrene	<0.050		0.050	ug/g	23-OCT-17	12	16	6.2	7.8
	Pyrene	0.085		0.050	ug/g	23-OCT-17	96	96	78	78
	Surrogate: 2-Fluorobiphenyl	95.4		50-140	%	23-OCT-17				
	Surrogate: p-Terphenyl d14	108.6		50-140	%	23-OCT-17				

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-21	DUP 6									
Sampled By:	M. SHIRY on 11-OCT-17									
Matrix:	SOIL									
Physical Tests										
	Conductivity	0.445		0.0040	mS/cm	20-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	5.25		0.10	%	17-OCT-17				
	pH	7.75		0.10	pH units	17-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	19-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	0.34		0.10	SAR	20-OCT-17	12	12	5	5
	Calcium (Ca)	14.5		1.0	mg/L	20-OCT-17				
	Magnesium (Mg)	18.1		1.0	mg/L	20-OCT-17				
	Sodium (Na)	8.2		1.0	mg/L	20-OCT-17				
Metals										
	Antimony (Sb)	6.6		1.0	ug/g	19-OCT-17	40	50	7.5	7.5
	Arsenic (As)	10.6		1.0	ug/g	19-OCT-17	18	18	18	18
	Barium (Ba)	33.2		1.0	ug/g	19-OCT-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	19-OCT-17	8	10	4	5
	Boron (B)	15.3		5.0	ug/g	19-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.35		0.10	ug/g	19-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	38.3		0.50	ug/g	19-OCT-17	*1.9	*1.9	*1.2	*1.2
	Chromium (Cr)	54.8		1.0	ug/g	19-OCT-17	160	160	160	160
	Cobalt (Co)	2.5		1.0	ug/g	19-OCT-17	80	100	22	22
	Copper (Cu)	74.8		1.0	ug/g	19-OCT-17	230	300	140	180
	Lead (Pb)	233		1.0	ug/g	19-OCT-17	*120	*120	*120	*120
	Mercury (Hg)	0.112		0.0050	ug/g	19-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	1.8		1.0	ug/g	19-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	9.7		1.0	ug/g	19-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	19-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	19-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	19-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	19-OCT-17	33	33	23	23
	Vanadium (V)	43.2		1.0	ug/g	19-OCT-17	86	86	86	86
	Zinc (Zn)	25300	DLHC	800	ug/g	19-OCT-17	*340	*340	*340	*340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	18-OCT-17	8	10	8	10
Polycyclic Aromatic Hydrocarbons										
	1+2-Methylnaphthalenes	<0.042		0.042	ug/g	24-OCT-17	30	42	0.99	3.4
Semi-Volatile Organics										
	Acenaphthene	<0.050		0.050	ug/g	24-OCT-17	21	29	7.9	29
	Acenaphthylene	<0.050		0.050	ug/g	24-OCT-17	0.15	0.17	0.15	0.17
	Anthracene	<0.050		0.050	ug/g	24-OCT-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	0.075		0.050	ug/g	24-OCT-17	0.96	0.96	0.5	0.63
	Benzo(a)pyrene	0.067		0.050	ug/g	24-OCT-17	0.3	0.3	0.3	0.3
	Benzo(b)fluoranthene	0.073		0.050	ug/g	24-OCT-17	0.96	0.96	0.78	0.78
	Benzo(ghi)perylene	0.074		0.050	ug/g	24-OCT-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	0.066		0.050	ug/g	24-OCT-17	0.96	0.96	0.78	0.78
	Biphenyl	<0.050		0.050	ug/g	24-OCT-17	52	210	0.31	1.1

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-21	DUP 6									
Sampled By:	M. SHIRY on 11-OCT-17									
Matrix:	SOIL									
Semi-Volatile Organics										
	4-Chloroaniline	<0.10		0.10	ug/g	24-OCT-17	0.5	0.53	0.5	0.53
	Bis(2-chloroethyl)ether	<0.10		0.10	ug/g	24-OCT-17	0.5	0.5	0.5	0.5
	Bis(2-chloroisopropyl)ether	<0.10		0.10	ug/g	24-OCT-17	11	13	0.67	1.8
	2-Chlorophenol	<0.10		0.10	ug/g	24-OCT-17	3.1	3.9	1.6	2
	Chrysene	0.158		0.050	ug/g	24-OCT-17	9.6	9.6	7	7.8
	Dibenzo(a,h)anthracene	<0.050		0.050	ug/g	24-OCT-17	0.1	0.1	0.1	0.1
	3,3'-Dichlorobenzidine	<0.10		0.10	ug/g	24-OCT-17	1	1	1	1
	2,4-Dichlorophenol	<0.10		0.10	ug/g	24-OCT-17	0.19	0.27	0.19	0.27
	Diethylphthalate	<0.10		0.10	ug/g	24-OCT-17	0.5	0.5	0.5	0.5
	Dimethylphthalate	<0.10		0.10	ug/g	24-OCT-17	0.5	0.5	0.5	0.5
	2,4-Dimethylphenol	<0.10		0.10	ug/g	24-OCT-17	38	53	38	53
	2,4-Dinitrophenol	<1.0		1.0	ug/g	24-OCT-17	2	2.9	2	2.9
	2,4-Dinitrotoluene	<0.10		0.10	ug/g	24-OCT-17	0.5	0.5	0.5	0.5
	2,6-Dinitrotoluene	<0.10		0.10	ug/g	24-OCT-17	0.5	0.5	0.5	0.5
	2,4+2,6-Dinitrotoluene	<0.14		0.14	ug/g	24-OCT-17				
	Bis(2-ethylhexyl)phthalate	<0.10		0.10	ug/g	24-OCT-17	28	35	5	5
	Fluoranthene	0.145		0.050	ug/g	24-OCT-17	9.6	9.6	0.69	0.69
	Fluorene	<0.050		0.050	ug/g	24-OCT-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	0.091		0.050	ug/g	24-OCT-17	0.76	0.95	0.38	0.48
	1-Methylnaphthalene	<0.030		0.030	ug/g	24-OCT-17	30	42	0.99	3.4
	2-Methylnaphthalene	<0.030		0.030	ug/g	24-OCT-17	30	42	0.99	3.4
	Naphthalene	<0.050		0.050	ug/g	24-OCT-17	9.6	28	0.6	0.75
	Pentachlorophenol	<0.10		0.10	ug/g	24-OCT-17	2.9	3.3	0.1	0.1
	Phenanthrene	0.144		0.050	ug/g	24-OCT-17	12	16	6.2	7.8
	Phenol	<0.10		0.10	ug/g	24-OCT-17	9.4	9.4	9.4	9.4
	Pyrene	0.135		0.050	ug/g	24-OCT-17	96	96	78	78
	1,2,4-Trichlorobenzene	<0.050		0.050	ug/g	24-OCT-17	3.2	16	0.36	1.4
	2,4,5-Trichlorophenol	<0.10		0.10	ug/g	24-OCT-17	9.1	10	4.4	5.5
	2,4,6-Trichlorophenol	<0.10		0.10	ug/g	24-OCT-17	2.1	2.9	2.1	2.9
	Surrogate: 2-Fluorobiphenyl	83.8		50-140	%	24-OCT-17				
	Surrogate: Nitrobenzene d5	90.5		50-140	%	24-OCT-17				
	Surrogate: Phenol d5	87.5		30-130	%	24-OCT-17				
	Surrogate: p-Terphenyl d14	86.6		50-140	%	24-OCT-17				
	Surrogate: 2,4,6-Tribromophenol	70.5		50-140	%	24-OCT-17				
L2007635-22	MW17-107S-0.5-2									
Sampled By:	M. SHIRY on 12-OCT-17 @ 09:40									
Matrix:	SOIL									
Physical Tests										
	Conductivity	0.172		0.0040	mS/cm	20-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	11.8		0.10	%	17-OCT-17				
	pH	7.80		0.10	pH units	17-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	19-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	<0.11	SAR:DL	0.11	SAR	20-OCT-17	12	12	5	5

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-22	MW17-107S-0.5-2									
Sampled By:	M. SHIRY on 12-OCT-17 @ 09:40									
Matrix:	SOIL									
Saturated Paste Extractables										
	Calcium (Ca)	5.9		1.0	mg/L	20-OCT-17				
	Magnesium (Mg)	<1.0		1.0	mg/L	20-OCT-17				
	Sodium (Na)	<1.0		1.0	mg/L	20-OCT-17				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	19-OCT-17	40	50	7.5	7.5
	Arsenic (As)	2.8		1.0	ug/g	19-OCT-17	18	18	18	18
	Barium (Ba)	20.3		1.0	ug/g	19-OCT-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	19-OCT-17	8	10	4	5
	Boron (B)	<5.0		5.0	ug/g	19-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.18		0.10	ug/g	19-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	<0.50		0.50	ug/g	19-OCT-17	1.9	1.9	1.2	1.2
	Chromium (Cr)	6.9		1.0	ug/g	19-OCT-17	160	160	160	160
	Cobalt (Co)	3.2		1.0	ug/g	19-OCT-17	80	100	22	22
	Copper (Cu)	8.9		1.0	ug/g	19-OCT-17	230	300	140	180
	Lead (Pb)	33.1		1.0	ug/g	19-OCT-17	120	120	120	120
	Mercury (Hg)	0.0061		0.0050	ug/g	19-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	<1.0		1.0	ug/g	19-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	7.0		1.0	ug/g	19-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	19-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	19-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	19-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	19-OCT-17	33	33	23	23
	Vanadium (V)	13.9		1.0	ug/g	19-OCT-17	86	86	86	86
	Zinc (Zn)	53.4		5.0	ug/g	19-OCT-17	340	340	340	340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	18-OCT-17	8	10	8	10
Volatile Organic Compounds										
	Acetone	<1.0	DLVH	1.0	ug/g	18-OCT-17	16	28	16	28
	Benzene	0.0452		0.0068	ug/g	18-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	18-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	18-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	18-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	18-OCT-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	18-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	18-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	18-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.9	2.5	1.9	2.5

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-22	MW17-107S-0.5-2									
Sampled By:	M. SHIRY on 12-OCT-17 @ 09:40									
Matrix:	SOIL									
Volatile Organic Compounds										
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.43	DLVH	0.43	ug/g	18-OCT-17	1.6	2	**0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	18-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	18-OCT-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	18-OCT-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	18-OCT-17	0.059	0.081	0.05	0.081
	Ethylbenzene	0.053		0.018	ug/g	18-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	0.861		0.050	ug/g	18-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	18-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	18-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	18-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	18-OCT-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	18-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.9	2.5	0.28	2.3
	Toluene	0.211		0.080	ug/g	18-OCT-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	18-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	18-OCT-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	18-OCT-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	18-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	0.121		0.020	ug/g	18-OCT-17				
	m+p-Xylenes	0.133		0.030	ug/g	18-OCT-17				
	Xylenes (Total)	0.254		0.050	ug/g	18-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	101.4		50-140	%	18-OCT-17				
	Surrogate: 1,4-Difluorobenzene	101.7		50-140	%	18-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	11.4		5.0	ug/g	18-OCT-17	55	65	55	65
	F1-BTEX	10.8		5.0	ug/g	24-OCT-17	55	65	55	65
	F2 (C10-C16)	<10		10	ug/g	20-OCT-17	230	250	98	150
	F2-Naphth	<10		10	ug/g	24-OCT-17				
	F3 (C16-C34)	<50		50	ug/g	20-OCT-17	1700	2500	300	1300
	F3-PAH	<50		50	ug/g	24-OCT-17				
	F4 (C34-C50)	<50		50	ug/g	20-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	<72		72	ug/g	24-OCT-17				
	Chrom. to baseline at nC50	YES			No Unit	20-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	70.6		60-140	%	20-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	82.5		60-140	%	18-OCT-17				
Polycyclic Aromatic Hydrocarbons										
	1+2-Methylnaphthalenes	0.141		0.042	ug/g	24-OCT-17	30	42	0.99	3.4
Semi-Volatile Organics										
	Acenaphthene	<0.050		0.050	ug/g	24-OCT-17	21	29	7.9	29
	Acenaphthylene	<0.050		0.050	ug/g	24-OCT-17	0.15	0.17	0.15	0.17
	Anthracene	<0.050		0.050	ug/g	24-OCT-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	0.053		0.050	ug/g	24-OCT-17	0.96	0.96	0.5	0.63
	Benzo(a)pyrene	<0.050		0.050	ug/g	24-OCT-17	0.3	0.3	0.3	0.3

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-22	MW17-107S-0.5-2									
Sampled By:	M. SHIRY on 12-OCT-17 @ 09:40									
Matrix:	SOIL									
Semi-Volatile Organics										
	Benzo(b)fluoranthene	0.063		0.050	ug/g	24-OCT-17	0.96	0.96	0.78	0.78
	Benzo(ghi)perylene	<0.050		0.050	ug/g	24-OCT-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	<0.050		0.050	ug/g	24-OCT-17	0.96	0.96	0.78	0.78
	Biphenyl	<0.050		0.050	ug/g	24-OCT-17	52	210	0.31	1.1
	4-Chloroaniline	<0.10		0.10	ug/g	24-OCT-17	0.5	0.53	0.5	0.53
	Bis(2-chloroethyl)ether	<0.10		0.10	ug/g	24-OCT-17	0.5	0.5	0.5	0.5
	Bis(2-chloroisopropyl)ether	<0.10		0.10	ug/g	24-OCT-17	11	13	0.67	1.8
	2-Chlorophenol	<0.10		0.10	ug/g	24-OCT-17	3.1	3.9	1.6	2
	Chrysene	0.066		0.050	ug/g	24-OCT-17	9.6	9.6	7	7.8
	Dibenzo(a,h)anthracene	<0.050		0.050	ug/g	24-OCT-17	0.1	0.1	0.1	0.1
	3,3'-Dichlorobenzidine	<0.10		0.10	ug/g	24-OCT-17	1	1	1	1
	2,4-Dichlorophenol	<0.10		0.10	ug/g	24-OCT-17	0.19	0.27	0.19	0.27
	Diethylphthalate	<0.10		0.10	ug/g	24-OCT-17	0.5	0.5	0.5	0.5
	Dimethylphthalate	<0.10		0.10	ug/g	24-OCT-17	0.5	0.5	0.5	0.5
	2,4-Dimethylphenol	<0.10		0.10	ug/g	24-OCT-17	38	53	38	53
	2,4-Dinitrophenol	<1.0		1.0	ug/g	24-OCT-17	2	2.9	2	2.9
	2,4-Dinitrotoluene	<0.10		0.10	ug/g	24-OCT-17	0.5	0.5	0.5	0.5
	2,6-Dinitrotoluene	<0.10		0.10	ug/g	24-OCT-17	0.5	0.5	0.5	0.5
	2,4+2,6-Dinitrotoluene	<0.14		0.14	ug/g	24-OCT-17				
	Bis(2-ethylhexyl)phthalate	<0.10		0.10	ug/g	24-OCT-17	28	35	5	5
	Fluoranthene	0.092		0.050	ug/g	24-OCT-17	9.6	9.6	0.69	0.69
	Fluorene	<0.050		0.050	ug/g	24-OCT-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	24-OCT-17	0.76	0.95	0.38	0.48
	1-Methylnaphthalene	0.073		0.030	ug/g	24-OCT-17	30	42	0.99	3.4
	2-Methylnaphthalene	0.068		0.030	ug/g	24-OCT-17	30	42	0.99	3.4
	Naphthalene	<0.050		0.050	ug/g	24-OCT-17	9.6	28	0.6	0.75
	Pentachlorophenol	<0.10		0.10	ug/g	24-OCT-17	2.9	3.3	0.1	0.1
	Phenanthrene	0.099		0.050	ug/g	24-OCT-17	12	16	6.2	7.8
	Phenol	<0.10		0.10	ug/g	24-OCT-17	9.4	9.4	9.4	9.4
	Pyrene	0.083		0.050	ug/g	24-OCT-17	96	96	78	78
	1,2,4-Trichlorobenzene	<0.050		0.050	ug/g	24-OCT-17	3.2	16	0.36	1.4
	2,4,5-Trichlorophenol	<0.10		0.10	ug/g	24-OCT-17	9.1	10	4.4	5.5
	2,4,6-Trichlorophenol	<0.10		0.10	ug/g	24-OCT-17	2.1	2.9	2.1	2.9
	Surrogate: 2-Fluorobiphenyl	89.6		50-140	%	24-OCT-17				
	Surrogate: Nitrobenzene d5	88.2		50-140	%	24-OCT-17				
	Surrogate: Phenol d5	86.4		30-130	%	24-OCT-17				
	Surrogate: p-Terphenyl d14	102.6		50-140	%	24-OCT-17				
	Surrogate: 2,4,6-Tribromophenol	61.9		50-140	%	24-OCT-17				
L2007635-23	MW17-107S-4.5-5.5									
Sampled By:	M. SHIRY on 12-OCT-17 @ 10:01									
Matrix:	SOIL									
Physical Tests										
	Conductivity	0.162		0.0040	mS/cm	20-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	7.78		0.10	%	18-OCT-17				
	pH	8.86		0.10	pH units	17-OCT-17				

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-23	MW17-107S-4.5-5.5									
Sampled By:	M. SHIRY on 12-OCT-17 @ 10:01									
Matrix:	SOIL									
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	19-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	0.29		0.10	SAR	20-OCT-17	12	12	5	5
	Calcium (Ca)	4.9		1.0	mg/L	20-OCT-17				
	Magnesium (Mg)	1.2		1.0	mg/L	20-OCT-17				
	Sodium (Na)	2.8		1.0	mg/L	20-OCT-17				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	19-OCT-17	40	50	7.5	7.5
	Arsenic (As)	2.4		1.0	ug/g	19-OCT-17	18	18	18	18
	Barium (Ba)	22.4		1.0	ug/g	19-OCT-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	19-OCT-17	8	10	4	5
	Boron (B)	6.3		5.0	ug/g	19-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.11		0.10	ug/g	19-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	0.58		0.50	ug/g	19-OCT-17	1.9	1.9	1.2	1.2
	Chromium (Cr)	11.3		1.0	ug/g	19-OCT-17	160	160	160	160
	Cobalt (Co)	4.7		1.0	ug/g	19-OCT-17	80	100	22	22
	Copper (Cu)	13.9		1.0	ug/g	19-OCT-17	230	300	140	180
	Lead (Pb)	75.1		1.0	ug/g	19-OCT-17	120	120	120	120
	Mercury (Hg)	0.0235		0.0050	ug/g	19-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	<1.0		1.0	ug/g	19-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	11.6		1.0	ug/g	19-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	19-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	19-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	19-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	19-OCT-17	33	33	23	23
	Vanadium (V)	19.6		1.0	ug/g	19-OCT-17	86	86	86	86
	Zinc (Zn)	534		5.0	ug/g	19-OCT-17	*340	*340	*340	*340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	18-OCT-17	8	10	8	10
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	18-OCT-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	18-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	18-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	18-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	18-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	18-OCT-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	18-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	18-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	18-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.47	0.6	0.47	0.6

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-23	MW17-107S-4.5-5.5									
Sampled By:	M. SHIRY on 12-OCT-17 @ 10:01									
Matrix:	SOIL									
Volatile Organic Compounds										
	1,2-Dichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	18-OCT-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	18-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	18-OCT-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	18-OCT-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	18-OCT-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	18-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	18-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	18-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	18-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	18-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	18-OCT-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	18-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	18-OCT-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	18-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	18-OCT-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	18-OCT-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	18-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	18-OCT-17				
	m+p-Xylenes	<0.030		0.030	ug/g	18-OCT-17				
	Xylenes (Total)	<0.050		0.050	ug/g	18-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	96.5		50-140	%	18-OCT-17				
	Surrogate: 1,4-Difluorobenzene	100.8		50-140	%	18-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	18-OCT-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	24-OCT-17	55	65	55	65
	F2 (C10-C16)	<10		10	ug/g	20-OCT-17	230	250	98	150
	F2-Naphth	<10		10	ug/g	24-OCT-17				
	F3 (C16-C34)	<50		50	ug/g	20-OCT-17	1700	2500	300	1300
	F3-PAH	<50		50	ug/g	24-OCT-17				
	F4 (C34-C50)	<50		50	ug/g	20-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	<72		72	ug/g	24-OCT-17				
	Chrom. to baseline at nC50	YES			No Unit	20-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	61.3		60-140	%	20-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	84.4		60-140	%	18-OCT-17				
Polycyclic Aromatic Hydrocarbons										
	1+2-Methylnaphthalenes	<0.042		0.042	ug/g	24-OCT-17	30	42	0.99	3.4
Semi-Volatile Organics										
	Acenaphthene	<0.050		0.050	ug/g	24-OCT-17	21	29	7.9	29
	Acenaphthylene	<0.050		0.050	ug/g	24-OCT-17	0.15	0.17	0.15	0.17

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-23	MW17-107S-4.5-5.5									
Sampled By:	M. SHIRY on 12-OCT-17 @ 10:01									
Matrix:	SOIL									
Semi-Volatile Organics										
	Anthracene	<0.050		0.050	ug/g	24-OCT-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	<0.050		0.050	ug/g	24-OCT-17	0.96	0.96	0.5	0.63
	Benzo(a)pyrene	<0.050		0.050	ug/g	24-OCT-17	0.3	0.3	0.3	0.3
	Benzo(b)fluoranthene	<0.050		0.050	ug/g	24-OCT-17	0.96	0.96	0.78	0.78
	Benzo(ghi)perylene	<0.050		0.050	ug/g	24-OCT-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	<0.050		0.050	ug/g	24-OCT-17	0.96	0.96	0.78	0.78
	Biphenyl	<0.050		0.050	ug/g	24-OCT-17	52	210	0.31	1.1
	4-Chloroaniline	<0.10		0.10	ug/g	24-OCT-17	0.5	0.53	0.5	0.53
	Bis(2-chloroethyl)ether	<0.10		0.10	ug/g	24-OCT-17	0.5	0.5	0.5	0.5
	Bis(2-chloroisopropyl)ether	<0.10		0.10	ug/g	24-OCT-17	11	13	0.67	1.8
	2-Chlorophenol	<0.10		0.10	ug/g	24-OCT-17	3.1	3.9	1.6	2
	Chrysene	<0.050		0.050	ug/g	24-OCT-17	9.6	9.6	7	7.8
	Dibenzo(a,h)anthracene	<0.050		0.050	ug/g	24-OCT-17	0.1	0.1	0.1	0.1
	3,3'-Dichlorobenzidine	<0.10		0.10	ug/g	24-OCT-17	1	1	1	1
	2,4-Dichlorophenol	<0.10		0.10	ug/g	24-OCT-17	0.19	0.27	0.19	0.27
	Diethylphthalate	<0.10		0.10	ug/g	24-OCT-17	0.5	0.5	0.5	0.5
	Dimethylphthalate	<0.10		0.10	ug/g	24-OCT-17	0.5	0.5	0.5	0.5
	2,4-Dimethylphenol	<0.10		0.10	ug/g	24-OCT-17	38	53	38	53
	2,4-Dinitrophenol	<1.0		1.0	ug/g	24-OCT-17	2	2.9	2	2.9
	2,4-Dinitrotoluene	<0.10		0.10	ug/g	24-OCT-17	0.5	0.5	0.5	0.5
	2,6-Dinitrotoluene	<0.10		0.10	ug/g	24-OCT-17	0.5	0.5	0.5	0.5
	2,4+2,6-Dinitrotoluene	<0.14		0.14	ug/g	24-OCT-17				
	Bis(2-ethylhexyl)phthalate	<0.10		0.10	ug/g	24-OCT-17	28	35	5	5
	Fluoranthene	<0.050		0.050	ug/g	24-OCT-17	9.6	9.6	0.69	0.69
	Fluorene	<0.050		0.050	ug/g	24-OCT-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	24-OCT-17	0.76	0.95	0.38	0.48
	1-Methylnaphthalene	<0.030		0.030	ug/g	24-OCT-17	30	42	0.99	3.4
	2-Methylnaphthalene	<0.030		0.030	ug/g	24-OCT-17	30	42	0.99	3.4
	Naphthalene	<0.050		0.050	ug/g	24-OCT-17	9.6	28	0.6	0.75
	Pentachlorophenol	<0.10		0.10	ug/g	24-OCT-17	2.9	3.3	0.1	0.1
	Phenanthrene	<0.050		0.050	ug/g	24-OCT-17	12	16	6.2	7.8
	Phenol	<0.10		0.10	ug/g	24-OCT-17	9.4	9.4	9.4	9.4
	Pyrene	<0.050		0.050	ug/g	24-OCT-17	96	96	78	78
	1,2,4-Trichlorobenzene	<0.050		0.050	ug/g	24-OCT-17	3.2	16	0.36	1.4
	2,4,5-Trichlorophenol	<0.10		0.10	ug/g	24-OCT-17	9.1	10	4.4	5.5
	2,4,6-Trichlorophenol	<0.10		0.10	ug/g	24-OCT-17	2.1	2.9	2.1	2.9
	Surrogate: 2-Fluorobiphenyl	78.3		50-140	%	24-OCT-17				
	Surrogate: Nitrobenzene d5	91.2		50-140	%	24-OCT-17				
	Surrogate: Phenol d5	92.1		30-130	%	24-OCT-17				
	Surrogate: p-Terphenyl d14	92.1		50-140	%	24-OCT-17				
	Surrogate: 2,4,6-Tribromophenol	64.3		50-140	%	24-OCT-17				
L2007635-24	MW17-111S-0-1									
Sampled By:	M. SHIRY on 12-OCT-17 @ 14:55									
Matrix:	SOIL									
Physical Tests										

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-24	MW17-111S-0-1									
Sampled By:	M. SHIRY on 12-OCT-17 @ 14:55									
Matrix:	SOIL									
Physical Tests										
	% Moisture	10.2		0.10	%	18-OCT-17				
Polychlorinated Biphenyls										
	Aroclor 1242	<0.010		0.010	ug/g	23-OCT-17				
	Aroclor 1248	<0.010		0.010	ug/g	23-OCT-17				
	Aroclor 1254	<0.010		0.010	ug/g	23-OCT-17				
	Aroclor 1260	<0.010		0.010	ug/g	23-OCT-17				
	Total PCBs	<0.020		0.020	ug/g	23-OCT-17	1.1	1.1	0.35	0.35
	Surrogate: d14-Terphenyl	106.7		60-140	%	23-OCT-17				
L2007635-25	MW17-111S-0-2									
Sampled By:	M. SHIRY on 12-OCT-17 @ 14:55									
Matrix:	SOIL									
Physical Tests										
	Conductivity	0.112		0.0040	mS/cm	20-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	3.92		0.10	%	18-OCT-17				
	pH	7.13		0.10	pH units	17-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	19-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	0.21	SAR:M	0.10	SAR	20-OCT-17	12	12	5	5
	Calcium (Ca)	2.9		1.0	mg/L	20-OCT-17				
	Magnesium (Mg)	<1.0		1.0	mg/L	20-OCT-17				
	Sodium (Na)	1.3		1.0	mg/L	20-OCT-17				
Metals										
	Antimony (Sb)	1.1		1.0	ug/g	19-OCT-17	40	50	7.5	7.5
	Arsenic (As)	10.2		1.0	ug/g	19-OCT-17	18	18	18	18
	Barium (Ba)	51.3		1.0	ug/g	19-OCT-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	19-OCT-17	8	10	4	5
	Boron (B)	6.7		5.0	ug/g	19-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.30		0.10	ug/g	19-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	<0.50		0.50	ug/g	19-OCT-17	1.9	1.9	1.2	1.2
	Chromium (Cr)	27.9		1.0	ug/g	19-OCT-17	160	160	160	160
	Cobalt (Co)	7.4		1.0	ug/g	19-OCT-17	80	100	22	22
	Copper (Cu)	26.5		1.0	ug/g	19-OCT-17	230	300	140	180
	Lead (Pb)	34.9		1.0	ug/g	19-OCT-17	120	120	120	120
	Mercury (Hg)	0.0102		0.0050	ug/g	19-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	1.5		1.0	ug/g	19-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	18.4		1.0	ug/g	19-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	19-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	19-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	19-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	19-OCT-17	33	33	23	23
	Vanadium (V)	41.3		1.0	ug/g	19-OCT-17	86	86	86	86
	Zinc (Zn)	85.5		5.0	ug/g	19-OCT-17	340	340	340	340
Speciated Metals										

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#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2007635-25	MW17-111S-0-2									
Sampled By:	M. SHIRY on 12-OCT-17 @ 14:55									
Matrix:	SOIL						#1	#2	#3	#4
Speciated Metals										
	Chromium, Hexavalent	0.21		0.20	ug/g	18-OCT-17	8	10	8	10
L2007635-26	MW17-111S-2-4									
Sampled By:	M. SHIRY on 12-OCT-17 @ 15:09									
Matrix:	SOIL						#1	#2	#3	#4
Physical Tests										
	% Moisture	8.38		0.10	%	18-OCT-17				
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	18-OCT-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	18-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	18-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	18-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	18-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	18-OCT-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	18-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	18-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	18-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	18-OCT-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	18-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	18-OCT-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	18-OCT-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	18-OCT-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	18-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	18-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	18-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	18-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	18-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	18-OCT-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	18-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	18-OCT-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	18-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	18-OCT-17	0.55	0.61	0.061	0.52

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#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
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#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-26	MW17-111S-2-4									
Sampled By:	M. SHIRY on 12-OCT-17 @ 15:09									
Matrix:	SOIL									
Volatile Organic Compounds										
	Trichlorofluoromethane	<0.050		0.050	ug/g	18-OCT-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	18-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	18-OCT-17				
	m+p-Xylenes	<0.030		0.030	ug/g	18-OCT-17				
	Xylenes (Total)	<0.050		0.050	ug/g	18-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	95.1		50-140	%	18-OCT-17				
	Surrogate: 1,4-Difluorobenzene	100.8		50-140	%	18-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	18-OCT-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	23-OCT-17	55	65	55	65
	F2 (C10-C16)	<10		10	ug/g	20-OCT-17	230	250	98	150
	F3 (C16-C34)	<50		50	ug/g	20-OCT-17	1700	2500	300	1300
	F4 (C34-C50)	<50		50	ug/g	20-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	<72		72	ug/g	23-OCT-17				
	Chrom. to baseline at nC50	YES			No Unit	20-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	74.7		60-140	%	20-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	82.1		60-140	%	18-OCT-17				
L2007635-27	MW17-111S-6-7									
Sampled By:	M. SHIRY on 12-OCT-17 @ 15:35									
Matrix:	SOIL									
Physical Tests										
	% Moisture	7.00		0.10	%	18-OCT-17				
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	18-OCT-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	18-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	18-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	18-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	18-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	18-OCT-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	18-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	18-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	18-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	18-OCT-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	18-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	18-OCT-17				

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#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
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#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-27	MW17-111S-6-7									
Sampled By:	M. SHIRY on 12-OCT-17 @ 15:35									
Matrix:	SOIL									
Volatile Organic Compounds										
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	18-OCT-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	18-OCT-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	18-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	18-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	18-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	18-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	18-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	18-OCT-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	18-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	18-OCT-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	18-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	18-OCT-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	18-OCT-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	18-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	18-OCT-17				
	m+p-Xylenes	<0.030		0.030	ug/g	18-OCT-17				
	Xylenes (Total)	<0.050		0.050	ug/g	18-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	98.3		50-140	%	18-OCT-17				
	Surrogate: 1,4-Difluorobenzene	103.8		50-140	%	18-OCT-17				
L2007635-28	MW17-100S-1-1.5									
Sampled By:	M. SHIRY on 12-OCT-17 @ 11:33									
Matrix:	SOIL									
Physical Tests										
	Conductivity	0.343		0.0040	mS/cm	20-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	11.3		0.10	%	18-OCT-17				
	pH	9.45		0.10	pH units	18-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	19-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	0.28		0.10	SAR	20-OCT-17	12	12	5	5
	Calcium (Ca)	32.6		1.0	mg/L	20-OCT-17				
	Magnesium (Mg)	1.5		1.0	mg/L	20-OCT-17				
	Sodium (Na)	6.0		1.0	mg/L	20-OCT-17				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	19-OCT-17	40	50	7.5	7.5
	Arsenic (As)	3.3		1.0	ug/g	19-OCT-17	18	18	18	18
	Barium (Ba)	33.6		1.0	ug/g	19-OCT-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	19-OCT-17	8	10	4	5
	Boron (B)	6.4		5.0	ug/g	19-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.20		0.10	ug/g	20-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	<0.50		0.50	ug/g	19-OCT-17	1.9	1.9	1.2	1.2
	Chromium (Cr)	18.1		1.0	ug/g	19-OCT-17	160	160	160	160

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

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Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-28	MW17-100S-1-1.5									
Sampled By:	M. SHIRY on 12-OCT-17 @ 11:33									
Matrix:	SOIL									
Metals										
	Cobalt (Co)	3.6		1.0	ug/g	19-OCT-17	80	100	22	22
	Copper (Cu)	15.6		1.0	ug/g	19-OCT-17	230	300	140	180
	Lead (Pb)	20.4		1.0	ug/g	19-OCT-17	120	120	120	120
	Mercury (Hg)	0.0066		0.0050	ug/g	19-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	<1.0		1.0	ug/g	19-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	7.7		1.0	ug/g	19-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	19-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	19-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	19-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	19-OCT-17	33	33	23	23
	Vanadium (V)	39.9		1.0	ug/g	19-OCT-17	86	86	86	86
	Zinc (Zn)	42.7		5.0	ug/g	19-OCT-17	340	340	340	340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	18-OCT-17	8	10	8	10
Volatile Organic Compounds										
	Benzene	<0.0068		0.0068	ug/g	18-OCT-17	0.32	0.4	0.21	0.17
	Ethylbenzene	<0.018		0.018	ug/g	18-OCT-17	1.1	1.6	1.1	1.6
	Toluene	<0.080		0.080	ug/g	18-OCT-17	6.4	9	2.3	6
	o-Xylene	<0.020		0.020	ug/g	18-OCT-17				
	m+p-Xylenes	<0.030		0.030	ug/g	18-OCT-17				
	Xylenes (Total)	<0.050		0.050	ug/g	18-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	102.7		50-140	%	18-OCT-17				
	Surrogate: 1,4-Difluorobenzene	100.6		50-140	%	18-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	18-OCT-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	24-OCT-17	55	65	55	65
	F2 (C10-C16)	<10		10	ug/g	24-OCT-17	230	250	98	150
	F3 (C16-C34)	<50		50	ug/g	24-OCT-17	1700	2500	300	1300
	F4 (C34-C50)	<50		50	ug/g	24-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	<72		72	ug/g	24-OCT-17				
	Chrom. to baseline at nC50	YES			No Unit	24-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	92.1		60-140	%	24-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	106.2		60-140	%	18-OCT-17				
L2007635-29	MW17-100S-4.5-6									
Sampled By:	M. SHIRY on 12-OCT-17 @ 12:14									
Matrix:	SOIL									
Physical Tests										
	Conductivity	0.157		0.0040	mS/cm	20-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	3.42		0.10	%	18-OCT-17				
	pH	8.21		0.10	pH units	18-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	19-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	0.49		0.10	SAR	20-OCT-17	12	12	5	5

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-29	MW17-100S-4.5-6									
Sampled By:	M. SHIRY on 12-OCT-17 @ 12:14									
Matrix:	SOIL									
Saturated Paste Extractables										
	Calcium (Ca)	3.2		1.0	mg/L	20-OCT-17				
	Magnesium (Mg)	1.4		1.0	mg/L	20-OCT-17				
	Sodium (Na)	4.2		1.0	mg/L	20-OCT-17				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	19-OCT-17	40	50	7.5	7.5
	Arsenic (As)	2.1		1.0	ug/g	19-OCT-17	18	18	18	18
	Barium (Ba)	35.7		1.0	ug/g	19-OCT-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	19-OCT-17	8	10	4	5
	Boron (B)	5.3		5.0	ug/g	19-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	<0.10		0.10	ug/g	20-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	0.88		0.50	ug/g	19-OCT-17	1.9	1.9	1.2	1.2
	Chromium (Cr)	53.6		1.0	ug/g	19-OCT-17	160	160	160	160
	Cobalt (Co)	9.0		1.0	ug/g	19-OCT-17	80	100	22	22
	Copper (Cu)	47.3		1.0	ug/g	19-OCT-17	230	300	140	180
	Lead (Pb)	116		1.0	ug/g	19-OCT-17	120	120	120	120
	Mercury (Hg)	0.0191		0.0050	ug/g	19-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	<1.0		1.0	ug/g	19-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	21.9		1.0	ug/g	19-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	19-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	19-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	19-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	19-OCT-17	33	33	23	23
	Vanadium (V)	100		1.0	ug/g	19-OCT-17	*86	*86	*86	*86
	Zinc (Zn)	724		5.0	ug/g	19-OCT-17	*340	*340	*340	*340
Speciated Metals										
	Chromium, Hexavalent	0.32		0.20	ug/g	18-OCT-17	8	10	8	10
L2007635-30	MW17-100S-6-7									
Sampled By:	M. SHIRY on 12-OCT-17 @ 12:25									
Matrix:	SOIL									
Physical Tests										
	% Moisture	4.27		0.10	%	18-OCT-17				
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	18-OCT-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	18-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	18-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	18-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	18-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	18-OCT-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	18-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	18-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	9.6	12	4.8	6

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

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Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-30	MW17-100S-6-7									
Sampled By:	M. SHIRY on 12-OCT-17 @ 12:25									
Matrix:	SOIL									
Volatile Organic Compounds										
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	18-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	18-OCT-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	18-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	18-OCT-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	18-OCT-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	18-OCT-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	18-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	18-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	18-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	18-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	18-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	18-OCT-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	18-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	18-OCT-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	18-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	18-OCT-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	18-OCT-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	18-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	18-OCT-17				
	m+p-Xylenes	0.030		0.030	ug/g	18-OCT-17				
	Xylenes (Total)	<0.050		0.050	ug/g	18-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	104.2		50-140	%	18-OCT-17				
	Surrogate: 1,4-Difluorobenzene	107.0		50-140	%	18-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	18-OCT-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	23-OCT-17	55	65	55	65
	F2 (C10-C16)	<10		10	ug/g	20-OCT-17	230	250	98	150
	F3 (C16-C34)	<50		50	ug/g	20-OCT-17	1700	2500	300	1300
	F4 (C34-C50)	<50		50	ug/g	20-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	<72		72	ug/g	23-OCT-17				
	Chrom. to baseline at nC50	YES			No Unit	20-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	85.5		60-140	%	20-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	95.6		60-140	%	18-OCT-17				
L2007635-31	DUP 7									
Sampled By:	M. SHIRY on 12-OCT-17									
Matrix:	SOIL									

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2007635-31	DUP 7									
Sampled By:	M. SHIRY on 12-OCT-17									
Matrix:	SOIL						#1	#2	#3	#4
Physical Tests										
	% Moisture	11.6		0.10	%	18-OCT-17				
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	18-OCT-17	16	28	16	28
	Benzene	0.0109		0.0068	ug/g	19-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	18-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	18-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	18-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	18-OCT-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	18-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	18-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	18-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	18-OCT-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	18-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	18-OCT-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	18-OCT-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	19-OCT-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	18-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	18-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	18-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	18-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	18-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	18-OCT-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	18-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	18-OCT-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	18-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	18-OCT-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	18-OCT-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	18-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	0.064		0.020	ug/g	18-OCT-17				
	m+p-Xylenes	0.075		0.030	ug/g	18-OCT-17				
	Xylenes (Total)	0.139		0.050	ug/g	19-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	101.2		50-140	%	18-OCT-17				
	Surrogate: 1,4-Difluorobenzene	104.7		50-140	%	18-OCT-17				

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#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)

#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

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Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2007635-31	DUP 7									
Sampled By:	M. SHIRY on 12-OCT-17									
Matrix:	SOIL						#1	#2	#3	#4
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	18-OCT-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	23-OCT-17	55	65	55	65
	F2 (C10-C16)	11		10	ug/g	20-OCT-17	230	250	98	150
	F3 (C16-C34)	63		50	ug/g	20-OCT-17	1700	2500	300	1300
	F4 (C34-C50)	<50		50	ug/g	20-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	74		72	ug/g	23-OCT-17				
	Chrom. to baseline at nC50	YES			No Unit	20-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	63.2		60-140	%	20-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	90.1		60-140	%	18-OCT-17				
L2007635-32	DUP 8									
Sampled By:	M. SHIRY on 12-OCT-17									
Matrix:	SOIL						#1	#2	#3	#4
Physical Tests										
	Conductivity	0.108		0.0040	mS/cm	20-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	4.26		0.10	%	18-OCT-17				
	pH	7.05		0.10	pH units	18-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	20-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	0.22	SAR:M	0.10	SAR	20-OCT-17	12	12	5	5
	Calcium (Ca)	2.5		1.0	mg/L	20-OCT-17				
	Magnesium (Mg)	<1.0		1.0	mg/L	20-OCT-17				
	Sodium (Na)	1.3		1.0	mg/L	20-OCT-17				
Metals										
	Antimony (Sb)	1.3		1.0	ug/g	19-OCT-17	40	50	7.5	7.5
	Arsenic (As)	10.9		1.0	ug/g	19-OCT-17	18	18	18	18
	Barium (Ba)	50.8		1.0	ug/g	19-OCT-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	19-OCT-17	8	10	4	5
	Boron (B)	5.9		5.0	ug/g	19-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.30		0.10	ug/g	20-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	<0.50		0.50	ug/g	19-OCT-17	1.9	1.9	1.2	1.2
	Chromium (Cr)	30.2		1.0	ug/g	19-OCT-17	160	160	160	160
	Cobalt (Co)	7.6		1.0	ug/g	19-OCT-17	80	100	22	22
	Copper (Cu)	27.7		1.0	ug/g	19-OCT-17	230	300	140	180
	Lead (Pb)	31.5		1.0	ug/g	19-OCT-17	120	120	120	120
	Mercury (Hg)	0.0092		0.0050	ug/g	19-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	1.4		1.0	ug/g	19-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	19.4		1.0	ug/g	19-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	19-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	19-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	19-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	19-OCT-17	33	33	23	23
	Vanadium (V)	43.6		1.0	ug/g	19-OCT-17	86	86	86	86
	Zinc (Zn)	79.1		5.0	ug/g	19-OCT-17	340	340	340	340
Speciated Metals										

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#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

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Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2007635-32 DUP 8										
Sampled By: M. SHIRY on 12-OCT-17										
Matrix: SOIL							#1	#2	#3	#4
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	18-OCT-17	8	10	8	10
L2007635-33 TRIP BLANK D1										
Sampled By: M. SHIRY on 16-OCT-17										
Matrix: SOIL							#1	#2	#3	#4
Physical Tests										
	% Moisture	<0.10		0.10	%	18-OCT-17				
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	18-OCT-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	18-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	18-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	18-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	18-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	18-OCT-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	18-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	18-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	18-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	18-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	18-OCT-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	18-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	18-OCT-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	18-OCT-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	18-OCT-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	18-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	18-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	18-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	18-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	18-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	18-OCT-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	18-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	18-OCT-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	18-OCT-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	18-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	18-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	18-OCT-17	0.55	0.61	0.061	0.52

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ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2007635-33	TRIP BLANK D1									
Sampled By:	M. SHIRY on 16-OCT-17									
Matrix:	SOIL									
Volatile Organic Compounds										
	Trichlorofluoromethane	<0.050		0.050	ug/g	18-OCT-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	18-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	18-OCT-17				
	m+p-Xylenes	<0.030		0.030	ug/g	18-OCT-17				
	Xylenes (Total)	<0.050		0.050	ug/g	18-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	111.7		50-140	%	18-OCT-17				
	Surrogate: 1,4-Difluorobenzene	116.3		50-140	%	18-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	18-OCT-17	55	65	55	65
	Surrogate: 3,4-Dichlorotoluene	90.3		60-140	%	18-OCT-17				

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Reference Information

Sample Parameter Qualifier key listed:

Qualifier	Description
DLVH	Detection Limit raised due to interference from Volatile Hydrocarbons on VOC method. Chromatographic elution of interfering peaks in the same region as test analytes prevents a determination of whether VOC analyte is present or absent (above/below regular detection limits).
SAR:M	Reported SAR represents a maximum value. Actual SAR may be lower if both Ca and Mg were detectable.
G	QC result did not meet ALS DQO. Refer to narrative comments for further information.
SAR:DL	SAR is incalculable due to undetectable Na. Detection Limit represents maximum possible SAR value.
SOL:MI	Surrogate recovery outside acceptable limits due to matrix interference
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference***
1,4-DIOXANE-WT	Soil	1,4-Dioxane by GCMS Headspace	EPA 8260

An aliquot of soil/sediment is extract with methanol, and this extract is analyzed directly by headspace technology, followed by GC/MS using isotopic dilution. Results are reported on a dry weight basis.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

625-511-WT	Soil	ABN-O.Reg 153/04 (July 2011)	SW846 8270 (511)

Soil and sediment samples are dried by mixing with a desiccant prior to extraction. The extracts are dried, concentrated and exchanged into a solvent and analyzed by GC/MS. Depending on the analytical GC/MS column used benzo(j)fluoranthene may chromatographically co-elute with benzo(b)fluoranthene or benzo(k)fluoranthene.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B

A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

BTX-511-HS-WT	Soil	BTEX-O.Reg 153/04 (July 2011)	SW846 8260

BTX is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD

The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

DINITROTOL-CALC-WT	Soil	ABN-Calculated Parameters	SW846 8270
EC-WT	Soil	Conductivity (EC)	MOEE E3138

A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

Reference Information

F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Soil	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Soil	F2-F4-O.Reg 153/04 (July 2011)	CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from soil with 1:1 hexane:acetone using a rotary extractor. Extracts are treated with silica gel to remove polar organic interferences. F2, F3, & F4 are analyzed by GC-FID. F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where both F4 (C34-C50) and F4G-sg are reported for a sample, the larger of the two values is used for comparison against the relevant CCME guideline for F4.
7. F4G-sg cannot be added to the C6 to C50 hydrocarbon results to obtain an estimate of total extractable hydrocarbons.
8. This method is validated for use.
9. Data from analysis of validation and quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram, unless otherwise indicated.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

HG-200.2-CVAA-WT	Soil	Mercury in Soil by CVAAS	EPA 200.2/1631E (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)

This method uses a heated strong acid digestion with HNO3 and HCl and is intended to liberate metals that may be environmentally available. Silicate minerals are not solubilized. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. Analysis is by Collision/Reaction Cell ICPMS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

Reference Information

METHYLNAPS-CALC-WT	Soil	ABN-Calculated Parameters	SW846 8270
MOISTURE-WT	Soil	% Moisture	Gravimetric: Oven Dried
PAH-511-WT	Soil	PAH-O.Reg 153/04 (July 2011)	SW846 3510/8270

A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking techniqueis used to extract the sample with a mixture of methanol and toluene. The extracts are concentrated and analyzed by GC/MS. Depending on the analytical GC/MS column used benzo(j)fluoranthene may chromatographically co-elute with benzo(b)fluoranthene or benzo(k)fluoranthene.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PCB-511-WT	Soil	PCB-O.Reg 153/04 (July 2011)	SW846 3510/8082

An aliquot of a solid sample is extracted with a solvent, extract is cleaned up and analyzed on the GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

PH-WT	Soil	pH	MOEE E3137A

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C

A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

TOC-R511-WT	Soil	TOC & FOC-O.Reg 153/04 (July 2011)	CARTER 21.3.2

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

VOC-1,3-DCP-CALC-WT	Soil	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Soil	VOC-O.Reg 153/04 (July 2011)	SW846 8260 (511)

Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

*** ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody numbers:

17-616670 17-616671 17-616673

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA		

Reference Information

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.

Quality Control Report

Workorder: L2007635 Report Date: 26-OCT-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
1,4-DIOXANE-WT	**Soil**							
Batch R3858453								
WG2641040-4 DUP		**WG2641040-3**						
1,4-Dioxane		<0.20	<0.20	RPD-NA	mg/kg	N/A	40	18-OCT-17
WG2641040-2 LCS								
1,4-Dioxane			106.4		%		60-140	18-OCT-17
WG2641040-1 MB								
1,4-Dioxane			<0.20		mg/kg		0.2	18-OCT-17
WG2641040-5 MS		**WG2641040-3**						
1,4-Dioxane			101.0		%		60-140	18-OCT-17
625-511-WT	**Soil**							
Batch R3864428								
WG2643231-4 DUP		**WG2643231-3**						
1-Methylnaphthalene		<6.0	<6.0	RPD-NA	ug/g	N/A	40	24-OCT-17
1,2,4-Trichlorobenzene		<0.10	<0.10	RPD-NA	ug/g	N/A	40	24-OCT-17
2-Chlorophenol		<0.20	<0.20	RPD-NA	ug/g	N/A	40	24-OCT-17
2-Methylnaphthalene		<6.0	<6.0	RPD-NA	ug/g	N/A	40	24-OCT-17
2,4-Dichlorophenol		<0.19	<0.19	RPD-NA	ug/g	N/A	40	24-OCT-17
2,4-Dimethylphenol		<0.20	<0.20	RPD-NA	ug/g	N/A	40	24-OCT-17
2,4-Dinitrophenol		<2.0	<2.0	RPD-NA	ug/g	N/A	40	24-OCT-17
2,4-Dinitrotoluene		<0.20	<0.20	RPD-NA	ug/g	N/A	40	24-OCT-17
2,4,5-Trichlorophenol		<0.20	<0.20	RPD-NA	ug/g	N/A	40	24-OCT-17
2,4,6-Trichlorophenol		<0.20	<0.20	RPD-NA	ug/g	N/A	40	24-OCT-17
2,6-Dinitrotoluene		<0.20	<0.20	RPD-NA	ug/g	N/A	40	24-OCT-17
3,3'-Dichlorobenzidine		<0.20	<0.20	RPD-NA	ug/g	N/A	40	24-OCT-17
4-Chloroaniline		<0.20	<0.20	RPD-NA	ug/g	N/A	40	24-OCT-17
Acenaphthene		<5.0	<5.0	RPD-NA	ug/g	N/A	40	24-OCT-17
Acenaphthylene		<0.10	<0.10	RPD-NA	ug/g	N/A	40	24-OCT-17
Anthracene		<0.30	<0.30	RPD-NA	ug/g	N/A	40	24-OCT-17
Benzo(a)anthracene		<0.50	<0.50	RPD-NA	ug/g	N/A	40	24-OCT-17
Benzo(a)pyrene		0.37	0.33		ug/g	11	40	24-OCT-17
Benzo(b)fluoranthene		<0.50	<0.50	RPD-NA	ug/g	N/A	40	24-OCT-17
Benzo(ghi)perylene		<5.0	<5.0	RPD-NA	ug/g	N/A	40	24-OCT-17
Benzo(k)fluoranthene		<0.50	<0.50	RPD-NA	ug/g	N/A	40	24-OCT-17
Biphenyl		<0.10	<0.10	RPD-NA	ug/g	N/A	40	24-OCT-17
Bis(2-chloroethyl)ether		<0.20	<0.20	RPD-NA	ug/g	N/A	40	24-OCT-17
Bis(2-chloroisopropyl)ether		<0.20	<0.20	RPD-NA	ug/g	N/A	40	24-OCT-17

Quality Control Report

Workorder: L2007635 Report Date: 26-OCT-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Soil**							
Batch R3864428								
WG2643231-4 DUP		**WG2643231-3**						
Bis(2-ethylhexyl)phthalate		<10	<10	RPD-NA	ug/g	N/A	40	24-OCT-17
Chrysene		<5.0	<5.0	RPD-NA	ug/g	N/A	40	24-OCT-17
Dibenzo(a,h)anthracene		<0.10	<0.10	RPD-NA	ug/g	N/A	40	24-OCT-17
Diethylphthalate		<0.20	<0.20	RPD-NA	ug/g	N/A	40	24-OCT-17
Dimethylphthalate		<0.20	<0.20	RPD-NA	ug/g	N/A	40	24-OCT-17
Fluoranthene		<5.0	<5.0	RPD-NA	ug/g	N/A	40	24-OCT-17
Fluorene		<10	<10	RPD-NA	ug/g	N/A	40	24-OCT-17
Indeno(1,2,3-cd)pyrene		0.26	<0.25	RPD-NA	ug/g	N/A	40	24-OCT-17
Naphthalene		<2.5	<2.5	RPD-NA	ug/g	N/A	40	24-OCT-17
Pentachlorophenol		<0.80	<0.80	RPD-NA	ug/g	N/A	40	24-OCT-17
Phenanthrene		<5.0	<5.0	RPD-NA	ug/g	N/A	40	24-OCT-17
Phenol		<5.0	<5.0	RPD-NA	ug/g	N/A	40	24-OCT-17
Pyrene		<5.0	<5.0	RPD-NA	ug/g	N/A	40	24-OCT-17
WG2643231-2 LCS								
1-Methylnaphthalene			100.5		%		50-140	24-OCT-17
1,2,4-Trichlorobenzene			87.2		%		50-140	24-OCT-17
2-Chlorophenol			96.6		%		50-140	24-OCT-17
2-Methylnaphthalene			85.6		%		50-140	24-OCT-17
2,4-Dichlorophenol			99.2		%		50-140	24-OCT-17
2,4-Dimethylphenol			94.8		%		30-130	24-OCT-17
2,4-Dinitrophenol			68.8		%		30-130	24-OCT-17
2,4-Dinitrotoluene			105.5		%		50-140	24-OCT-17
2,4,5-Trichlorophenol			82.2		%		50-140	24-OCT-17
2,4,6-Trichlorophenol			80.5		%		50-140	24-OCT-17
2,6-Dinitrotoluene			76.5		%		50-140	24-OCT-17
3,3'-Dichlorobenzidine			71.2		%		30-130	24-OCT-17
4-Chloroaniline			96.6		%		30-130	24-OCT-17
Acenaphthene			73.1		%		50-140	24-OCT-17
Acenaphthylene			79.2		%		50-140	24-OCT-17
Anthracene			90.7		%		50-140	24-OCT-17
Benzo(a)anthracene			92.6		%		50-140	24-OCT-17
Benzo(a)pyrene			90.0		%		50-140	24-OCT-17
Benzo(b)fluoranthene			98.0		%		50-140	24-OCT-17

Quality Control Report

Workorder: L2007635 Report Date: 26-OCT-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Soil**							
Batch R3864428								
WG2643231-2 LCS								
Benzo(ghi)perylene			71.3		%		50-140	24-OCT-17
Benzo(k)fluoranthene			102.4		%		50-140	24-OCT-17
Biphenyl			81.5		%		50-140	24-OCT-17
Bis(2-chloroethyl)ether			91.5		%		50-140	24-OCT-17
Bis(2-chloroisopropyl)ether			88.3		%		50-140	24-OCT-17
Bis(2-ethylhexyl)phthalate			81.8		%		50-140	24-OCT-17
Chrysene			94.6		%		50-140	24-OCT-17
Dibenzo(a,h)anthracene			68.1		%		50-140	24-OCT-17
Diethylphthalate			98.2		%		50-140	24-OCT-17
Dimethylphthalate			72.9		%		50-140	24-OCT-17
Fluoranthene			79.5		%		50-140	24-OCT-17
Fluorene			102.4		%		50-140	24-OCT-17
Indeno(1,2,3-cd)pyrene			74.9		%		50-140	24-OCT-17
Naphthalene			87.1		%		50-140	24-OCT-17
Pentachlorophenol			93.9		%		50-140	24-OCT-17
Phenanthrene			89.1		%		50-140	24-OCT-17
Phenol			97.3		%		30-130	24-OCT-17
Pyrene			82.6		%		50-140	24-OCT-17
WG2643231-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	24-OCT-17
1,2,4-Trichlorobenzene			<0.050		ug/g		0.05	24-OCT-17
2-Chlorophenol			<0.10		ug/g		0.1	24-OCT-17
2-Methylnaphthalene			<0.030		ug/g		0.03	24-OCT-17
2,4-Dichlorophenol			<0.10		ug/g		0.1	24-OCT-17
2,4-Dimethylphenol			<0.10		ug/g		0.1	24-OCT-17
2,4-Dinitrophenol			<1.0		ug/g		1	24-OCT-17
2,4-Dinitrotoluene			<0.10		ug/g		0.1	24-OCT-17
2,4,5-Trichlorophenol			<0.10		ug/g		0.1	24-OCT-17
2,4,6-Trichlorophenol			<0.10		ug/g		0.1	24-OCT-17
2,6-Dinitrotoluene			<0.10		ug/g		0.1	24-OCT-17
3,3'-Dichlorobenzidine			<0.10		ug/g		0.1	24-OCT-17
4-Chloroaniline			<0.10		ug/g		0.1	24-OCT-17
Acenaphthene			<0.050		ug/g		0.05	24-OCT-17
Acenaphthylene			<0.050		ug/g		0.05	24-OCT-17

Quality Control Report

Workorder: L2007635 Report Date: 26-OCT-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Soil**							
Batch R3864428								
WG2643231-1 MB								
Anthracene			<0.050		ug/g		0.05	24-OCT-17
Benzo(a)anthracene			<0.050		ug/g		0.05	24-OCT-17
Benzo(a)pyrene			<0.050		ug/g		0.05	24-OCT-17
Benzo(b)fluoranthene			<0.050		ug/g		0.05	24-OCT-17
Benzo(ghi)perylene			<0.050		ug/g		0.05	24-OCT-17
Benzo(k)fluoranthene			<0.050		ug/g		0.05	24-OCT-17
Biphenyl			<0.050		ug/g		0.05	24-OCT-17
Bis(2-chloroethyl)ether			<0.10		ug/g		0.1	24-OCT-17
Bis(2-chloroisopropyl)ether			<0.10		ug/g		0.1	24-OCT-17
Bis(2-ethylhexyl)phthalate			<0.10		ug/g		0.1	24-OCT-17
Chrysene			<0.050		ug/g		0.05	24-OCT-17
Dibenzo(a,h)anthracene			<0.050		ug/g		0.05	24-OCT-17
Diethylphthalate			<0.10		ug/g		0.1	24-OCT-17
Dimethylphthalate			<0.10		ug/g		0.1	24-OCT-17
Fluoranthene			<0.050		ug/g		0.05	24-OCT-17
Fluorene			<0.050		ug/g		0.05	24-OCT-17
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	24-OCT-17
Naphthalene			<0.050		ug/g		0.05	24-OCT-17
Pentachlorophenol			<0.10		ug/g		0.1	24-OCT-17
Phenanthrene			<0.050		ug/g		0.05	24-OCT-17
Phenol			<0.10		ug/g		0.1	24-OCT-17
Pyrene			<0.050		ug/g		0.05	24-OCT-17
Surrogate: 2-Fluorobiphenyl			70.2		%		50-140	24-OCT-17
Surrogate: 2,4,6-Tribromophenol			68.3		%		50-140	24-OCT-17
Surrogate: Nitrobenzene d5			82.0		%		50-140	24-OCT-17
Surrogate: p-Terphenyl d14			102.5		%		50-140	24-OCT-17
Surrogate: Phenol d5			83.3		%		30-130	24-OCT-17
WG2643231-5 MS		**WG2643231-3**						
1-Methylnaphthalene			110.7		%		50-140	24-OCT-17
1,2,4-Trichlorobenzene			91.8		%		50-140	24-OCT-17
2-Chlorophenol			97.8		%		50-140	24-OCT-17
2-Methylnaphthalene			87.0		%		50-140	24-OCT-17
2,4-Dichlorophenol			91.8		%		50-140	24-OCT-17
2,4-Dimethylphenol			107.6		%		30-150	24-OCT-17

Quality Control Report

Workorder: L2007635 Report Date: 26-OCT-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Soil**							
Batch R3864428								
WG2643231-5 MS		**WG2643231-3**						
2,4-Dinitrophenol			58.6		%		30-150	24-OCT-17
2,4-Dinitrotoluene			76.7		%		50-140	24-OCT-17
2,4,5-Trichlorophenol			99.8		%		50-140	24-OCT-17
2,4,6-Trichlorophenol			96.4		%		50-140	24-OCT-17
2,6-Dinitrotoluene			81.0		%		50-140	24-OCT-17
3,3'-Dichlorobenzidine			82.7		%		30-130	24-OCT-17
4-Chloroaniline			90.3		%		30-130	24-OCT-17
Acenaphthene			77.4		%		50-140	24-OCT-17
Acenaphthylene			85.2		%		50-140	24-OCT-17
Anthracene			99.4		%		50-140	24-OCT-17
Benzo(a)anthracene			101.5		%		50-140	24-OCT-17
Benzo(a)pyrene			97.7		%		50-140	24-OCT-17
Benzo(b)fluoranthene			104.0		%		50-140	24-OCT-17
Benzo(ghi)perylene			107.5		%		50-140	24-OCT-17
Benzo(k)fluoranthene			108.7		%		50-140	24-OCT-17
Biphenyl			101.6		%		50-140	24-OCT-17
Bis(2-chloroethyl)ether			93.9		%		50-140	24-OCT-17
Bis(2-chloroisopropyl)ether			98.1		%		50-140	24-OCT-17
Bis(2-ethylhexyl)phthalate			87.0		%		50-140	24-OCT-17
Chrysene			100.3		%		50-140	24-OCT-17
Dibenzo(a,h)anthracene			100.1		%		50-140	24-OCT-17
Diethylphthalate			73.2		%		50-140	24-OCT-17
Dimethylphthalate			75.5		%		50-140	24-OCT-17
Fluoranthene			90.7		%		50-140	24-OCT-17
Fluorene			79.1		%		50-140	24-OCT-17
Indeno(1,2,3-cd)pyrene			113.0		%		50-140	24-OCT-17
Naphthalene			95.9		%		50-140	24-OCT-17
Pentachlorophenol			84.4		%		50-140	24-OCT-17
Phenanthrene			104.9		%		50-140	24-OCT-17
Phenol			107.0		%		30-130	24-OCT-17
Pyrene			91.3		%		50-140	24-OCT-17
B-HWS-R511-WT	**Soil**							

Quality Control Report

Workorder: L2007635 Report Date: 26-OCT-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT	**Soil**							
Batch R3859800								
WG2643175-4 DUP		**L2007390-2**						
Boron (B), Hot Water Ext.		0.11	0.12		ug/g	6.4	30	19-OCT-17
WG2643175-2 IRM		**HOTB-SAL_SOIL5**						
Boron (B), Hot Water Ext.			87.8		%		70-130	19-OCT-17
WG2643175-3 LCS								
Boron (B), Hot Water Ext.			105.6		%		70-130	19-OCT-17
WG2643175-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	19-OCT-17
Batch R3860400								
WG2644307-4 DUP		**L2008585-2**						
Boron (B), Hot Water Ext.		0.13	0.14		ug/g	4.8	30	20-OCT-17
WG2644307-2 IRM		**HOTB-SAL_SOIL5**						
Boron (B), Hot Water Ext.			73.4		%		70-130	20-OCT-17
WG2644307-3 LCS								
Boron (B), Hot Water Ext.			107.3		%		70-130	20-OCT-17
WG2644307-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	20-OCT-17
BTX-511-HS-WT	**Soil**							
Batch R3858311								
WG2641096-4 DUP		**WG2641096-3**						
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	18-OCT-17
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	18-OCT-17
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	18-OCT-17
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	18-OCT-17
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	18-OCT-17
WG2641096-2 LCS								
Benzene			101.7		%		70-130	18-OCT-17
Ethylbenzene			97.5		%		70-130	18-OCT-17
m+p-Xylenes			100.7		%		70-130	18-OCT-17
o-Xylene			101.7		%		70-130	18-OCT-17
Toluene			98.7		%		70-130	18-OCT-17
WG2641096-1 MB								
Benzene			<0.0068		ug/g		0.0068	18-OCT-17
Ethylbenzene			<0.018		ug/g		0.018	18-OCT-17
m+p-Xylenes			<0.030		ug/g		0.03	18-OCT-17
o-Xylene			<0.020		ug/g		0.02	18-OCT-17

Quality Control Report

Workorder: L2007635 Report Date: 26-OCT-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTX-511-HS-WT	**Soil**							
Batch R3858311								
WG2641096-1 MB								
Toluene			<0.080		ug/g		0.08	18-OCT-17
Surrogate: 1,4-Difluorobenzene			98.6		%		50-140	18-OCT-17
Surrogate: 4-Bromofluorobenzene			95.7		%		50-140	18-OCT-17
WG2641096-5 MS		**WG2641096-3**						
Benzene			107.6		%		60-140	18-OCT-17
Ethylbenzene			108.1		%		60-140	18-OCT-17
m+p-Xylenes			105.6		%		60-140	18-OCT-17
o-Xylene			111.5		%		60-140	18-OCT-17
Toluene			105.8		%		60-140	18-OCT-17
CN-WAD-R511-WT	**Soil**							
Batch R3860732								
WG2642496-3 DUP		**L2007635-32**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	20-OCT-17
WG2642496-2 LCS								
Cyanide, Weak Acid Diss			91.3		%		80-120	20-OCT-17
WG2642496-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	20-OCT-17
WG2642496-4 MS		**L2007635-32**						
Cyanide, Weak Acid Diss			99.9		%		70-130	20-OCT-17
Batch R3863185								
WG2641087-3 DUP		**L2007170-1**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	19-OCT-17
WG2641087-2 LCS								
Cyanide, Weak Acid Diss			88.0		%		80-120	19-OCT-17
WG2641087-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	19-OCT-17
WG2641087-4 MS		**L2007170-1**						
Cyanide, Weak Acid Diss			100.0		%		70-130	19-OCT-17
CR-CR6-IC-WT	**Soil**							
Batch R3858341								
WG2641224-3 CRM		**WT-SQC012**						
Chromium, Hexavalent			97.2		%		70-130	18-OCT-17
WG2641224-4 DUP		**L2007733-1**						
Chromium, Hexavalent		0.31	0.25		ug/g	19	35	18-OCT-17
WG2641224-2 LCS								
Chromium, Hexavalent			92.8		%		80-120	18-OCT-17

Quality Control Report

Workorder: L2007635 Report Date: 26-OCT-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CR-CR6-IC-WT	**Soil**							
Batch R3858341								
WG2641224-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	18-OCT-17
EC-WT	**Soil**							
Batch R3859522								
WG2643169-4 DUP		**WG2643169-3**						
Conductivity		0.267	0.261		mS/cm	2.3	20	19-OCT-17
WG2643497-1 LCS								
Conductivity			99.9		%		90-110	19-OCT-17
WG2643169-1 MB								
Conductivity			<0.0040		mS/cm		0.004	19-OCT-17
Batch R3860460								
WG2644313-4 DUP		**WG2644313-3**						
Conductivity		0.0972	0.0981		mS/cm	0.9	20	20-OCT-17
WG2644591-1 LCS								
Conductivity			100.4		%		90-110	20-OCT-17
WG2644313-1 MB								
Conductivity			<0.0040		mS/cm		0.004	20-OCT-17
F1-HS-511-WT	**Soil**							
Batch R3858311								
WG2641096-4 DUP		**WG2641096-3**						
F1 (C6-C10)		5.1	<5.0	RPD-NA	ug/g	N/A	30	18-OCT-17
WG2641096-2 LCS								
F1 (C6-C10)			94.6		%		80-120	18-OCT-17
WG2641096-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	18-OCT-17
Surrogate: 3,4-Dichlorotoluene			107.9		%		60-140	18-OCT-17
WG2641096-7 MS		**WG2641096-6**						
F1 (C6-C10)			99.0		%		60-140	18-OCT-17
Batch R3858369								
WG2641128-4 DUP		**WG2641128-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	18-OCT-17
WG2641128-2 LCS								
F1 (C6-C10)			100.5		%		80-120	18-OCT-17
WG2641128-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	18-OCT-17
Surrogate: 3,4-Dichlorotoluene			95.0		%		60-140	18-OCT-17

Quality Control Report

Workorder: L2007635 Report Date: 26-OCT-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT	**Soil**							
Batch R3858369								
WG2641128-7 MS		**WG2641128-6**						
F1 (C6-C10)			94.4		%		60-140	18-OCT-17
Batch R3858453								
WG2641040-4 DUP		**WG2641040-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	18-OCT-17
WG2641040-2 LCS								
F1 (C6-C10)			96.9		%		80-120	18-OCT-17
WG2641040-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	18-OCT-17
Surrogate: 3,4-Dichlorotoluene			103.6		%		60-140	18-OCT-17
WG2641040-7 MS		**WG2641040-6**						
F1 (C6-C10)			80.8		%		60-140	18-OCT-17
F2-F4-511-WT	**Soil**							
Batch R3862841								
WG2641627-4 CRM		**ALS PHC2 IRM**						
F2 (C10-C16)			104.5		%		70-130	20-OCT-17
F3 (C16-C34)			106.2		%		70-130	20-OCT-17
F4 (C34-C50)			107.4		%		70-130	20-OCT-17
WG2641627-3 DUP		**WG2641627-5**						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	23-OCT-17
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	23-OCT-17
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	23-OCT-17
COMMENTS: Surrogate recovery marginally exceeded ALS DQO. Samples deemed unaffected.								
WG2641627-2 LCS								
F2 (C10-C16)			110.7		%		80-120	20-OCT-17
F3 (C16-C34)			108.2		%		80-120	20-OCT-17
F4 (C34-C50)			110.8		%		80-120	20-OCT-17
WG2641627-1 MB								
F2 (C10-C16)			<10		ug/g		10	20-OCT-17
F3 (C16-C34)			<50		ug/g		50	20-OCT-17
F4 (C34-C50)			<50		ug/g		50	20-OCT-17
Surrogate: 2-Bromobenzotrifluoride			55.5	MBS	%		60-140	20-OCT-17
Batch R3864167								
WG2645864-4 CRM		**ALS PHC2 IRM**						
F2 (C10-C16)			107.9		%		70-130	24-OCT-17
F3 (C16-C34)			110.1		%		70-130	24-OCT-17

Quality Control Report

Workorder: L2007635 Report Date: 26-OCT-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-511-WT	**Soil**							
Batch R3864167								
WG2645864-4 CRM		**ALS PHC2 IRM**						
F4 (C34-C50)			115.0		%		70-130	24-OCT-17
WG2645864-3 DUP		**WG2645864-5**						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	24-OCT-17
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	24-OCT-17
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	24-OCT-17
WG2645864-2 LCS								
F2 (C10-C16)			104.8		%		80-120	24-OCT-17
F3 (C16-C34)			104.9		%		80-120	24-OCT-17
F4 (C34-C50)			106.0		%		80-120	24-OCT-17
WG2645864-1 MB								
F2 (C10-C16)			<10		ug/g		10	24-OCT-17
F3 (C16-C34)			<50		ug/g		50	24-OCT-17
F4 (C34-C50)			<50		ug/g		50	24-OCT-17
Surrogate: 2-Bromobenzotrifluoride			95.0		%		60-140	24-OCT-17
HG-200.2-CVAA-WT	**Soil**							
Batch R3859655								
WG2643153-2 CRM		**WT-CANMET-TILL1**						
Mercury (Hg)			104.2		%		70-130	19-OCT-17
WG2643153-6 DUP		**WG2643153-5**						
Mercury (Hg)		0.0309	0.0315		ug/g	2.1	40	19-OCT-17
WG2643153-3 LCS								
Mercury (Hg)			105.5		%		80-120	19-OCT-17
WG2643153-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	19-OCT-17
MET-200.2-CCMS-WT	**Soil**							
Batch R3860352								
WG2643153-2 CRM		**WT-CANMET-TILL1**						
Antimony (Sb)			87.7		%		70-130	19-OCT-17
Arsenic (As)			95.2		%		70-130	19-OCT-17
Barium (Ba)			101.1		%		70-130	19-OCT-17
Beryllium (Be)			88.1		%		70-130	19-OCT-17
Boron (B)			3.0		mg/kg		0-8.2	19-OCT-17
Cadmium (Cd)			96.3		%		70-130	19-OCT-17
Chromium (Cr)			97.0		%		70-130	19-OCT-17
Cobalt (Co)			95.7		%		70-130	19-OCT-17

Quality Control Report

Workorder: L2007635 Report Date: 26-OCT-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3860352								
WG2643153-2 CRM		**WT-CANMET-TILL1**						
Copper (Cu)			97.0		%		70-130	19-OCT-17
Lead (Pb)			87.2		%		70-130	19-OCT-17
Molybdenum (Mo)			91.5		%		70-130	19-OCT-17
Nickel (Ni)			96.3		%		70-130	19-OCT-17
Selenium (Se)			0.34		mg/kg		0.11-0.51	19-OCT-17
Silver (Ag)			0.21		mg/kg		0.13-0.33	19-OCT-17
Thallium (Tl)			0.107		mg/kg		0.077-0.18	19-OCT-17
Uranium (U)			80.4		%		70-130	19-OCT-17
Vanadium (V)			97.1		%		70-130	19-OCT-17
Zinc (Zn)			92.5		%		70-130	19-OCT-17
WG2643153-6 DUP		**WG2643153-5**						
Antimony (Sb)		0.15	0.16		ug/g	6.0	30	19-OCT-17
Arsenic (As)		9.34	10.1		ug/g	7.8	30	19-OCT-17
Barium (Ba)		17.9	20.1		ug/g	11	40	19-OCT-17
Beryllium (Be)		0.21	0.25		ug/g	17	30	19-OCT-17
Boron (B)		6.7	7.3		ug/g	9.1	30	19-OCT-17
Cadmium (Cd)		1.29	1.40		ug/g	8.2	30	19-OCT-17
Chromium (Cr)		7.95	9.31		ug/g	16	30	19-OCT-17
Cobalt (Co)		3.82	4.24		ug/g	11	30	19-OCT-17
Copper (Cu)		23.5	26.7		ug/g	12	30	19-OCT-17
Lead (Pb)		95.6	101		ug/g	5.9	40	19-OCT-17
Molybdenum (Mo)		0.74	0.87		ug/g	16	40	19-OCT-17
Nickel (Ni)		10.3	11.2		ug/g	8.7	30	19-OCT-17
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	19-OCT-17
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	19-OCT-17
Thallium (Tl)		0.079	0.090		ug/g	13	30	19-OCT-17
Uranium (U)		0.463	0.472		ug/g	1.8	30	19-OCT-17
Vanadium (V)		17.9	20.3		ug/g	13	30	19-OCT-17
Zinc (Zn)		548	608		ug/g	10	30	19-OCT-17
WG2643153-4 LCS								
Antimony (Sb)			106.9		%		80-120	19-OCT-17
Arsenic (As)			105.8		%		80-120	19-OCT-17
Barium (Ba)			109.4		%		80-120	19-OCT-17

Quality Control Report

Workorder: L2007635 Report Date: 26-OCT-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3860352								
WG2643153-4 LCS								
Beryllium (Be)			94.4		%		80-120	19-OCT-17
Boron (B)			84.9		%		80-120	19-OCT-17
Cadmium (Cd)			104.0		%		80-120	19-OCT-17
Chromium (Cr)			107.0		%		80-120	19-OCT-17
Cobalt (Co)			106.3		%		80-120	19-OCT-17
Copper (Cu)			102.8		%		80-120	19-OCT-17
Lead (Pb)			101.7		%		80-120	19-OCT-17
Molybdenum (Mo)			102.4		%		80-120	19-OCT-17
Nickel (Ni)			104.0		%		80-120	19-OCT-17
Selenium (Se)			107.9		%		80-120	19-OCT-17
Silver (Ag)			97.7		%		80-120	19-OCT-17
Thallium (Tl)			101.4		%		80-120	19-OCT-17
Uranium (U)			90.4		%		80-120	19-OCT-17
Vanadium (V)			109.9		%		80-120	19-OCT-17
Zinc (Zn)			99.5		%		80-120	19-OCT-17
WG2643153-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	19-OCT-17
Arsenic (As)			<0.10		mg/kg		0.1	19-OCT-17
Barium (Ba)			<0.50		mg/kg		0.5	19-OCT-17
Beryllium (Be)			<0.10		mg/kg		0.1	19-OCT-17
Boron (B)			<5.0		mg/kg		5	19-OCT-17
Cadmium (Cd)			<0.020		mg/kg		0.02	19-OCT-17
Chromium (Cr)			<0.50		mg/kg		0.5	19-OCT-17
Cobalt (Co)			<0.10		mg/kg		0.1	19-OCT-17
Copper (Cu)			<0.50		mg/kg		0.5	19-OCT-17
Lead (Pb)			<0.50		mg/kg		0.5	19-OCT-17
Molybdenum (Mo)			<0.10		mg/kg		0.1	19-OCT-17
Nickel (Ni)			<0.50		mg/kg		0.5	19-OCT-17
Selenium (Se)			<0.20		mg/kg		0.2	19-OCT-17
Silver (Ag)			<0.10		mg/kg		0.1	19-OCT-17
Thallium (Tl)			<0.050		mg/kg		0.05	19-OCT-17
Uranium (U)			<0.050		mg/kg		0.05	19-OCT-17
Vanadium (V)			<0.20		mg/kg		0.2	19-OCT-17
Zinc (Zn)			<2.0		mg/kg		2	19-OCT-17

Quality Control Report

Workorder: L2007635 Report Date: 26-OCT-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MOISTURE-WT	**Soil**							
Batch R3858272								
WG2641065-3 DUP		**L2006742-30**						
% Moisture		9.98	9.64		%	3.5	20	18-OCT-17
WG2641065-2 LCS								
% Moisture			99.0		%		90-110	18-OCT-17
WG2641065-1 MB								
% Moisture			<0.10		%		0.1	18-OCT-17
Batch R3858277								
WG2641149-3 DUP		**L2005633-7**						
% Moisture		24.1	24.1		%	0.0	20	18-OCT-17
WG2641149-2 LCS								
% Moisture			100.1		%		90-110	18-OCT-17
WG2641149-1 MB								
% Moisture			<0.10		%		0.1	18-OCT-17
Batch R3858280								
WG2641585-3 DUP		**L2003830-14**						
% Moisture		17.9	17.8		%	0.5	20	17-OCT-17
WG2641585-2 LCS								
% Moisture			99.5		%		90-110	17-OCT-17
WG2641585-1 MB								
% Moisture			<0.10		%		0.1	17-OCT-17
Batch R3858285								
WG2641076-3 DUP		**L2006981-54**						
% Moisture		9.21	9.72		%	5.4	20	17-OCT-17
WG2641076-2 LCS								
% Moisture			99.7		%		90-110	17-OCT-17
WG2641076-1 MB								
% Moisture			<0.10		%		0.1	17-OCT-17
PAH-511-WT	**Soil**							
Batch R3862874								
WG2641066-7 DUP		**WG2641066-6**						
1-Methylnaphthalene		0.060	0.066		ug/g	9.6	40	24-OCT-17
2-Methylnaphthalene		0.073	0.082		ug/g	11	40	24-OCT-17
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-OCT-17
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-OCT-17
Anthracene		0.101	0.116		ug/g	14	40	24-OCT-17
Benzo(a)anthracene		0.339	0.386		ug/g	13	40	24-OCT-17
Benzo(a)pyrene		0.279	0.335		ug/g	18	40	24-OCT-17

Quality Control Report

Workorder: L2007635 Report Date: 26-OCT-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R3862874								
WG2641066-7 DUP		**WG2641066-6**						
Benzo(b)fluoranthene		0.398	0.468		ug/g	16	40	24-OCT-17
Benzo(g,h,i)perylene		0.184	0.245		ug/g	28	40	24-OCT-17
Benzo(k)fluoranthene		0.190	0.209		ug/g	9.4	40	24-OCT-17
Chrysene		0.376	0.446		ug/g	17	40	24-OCT-17
Dibenzo(ah)anthracene		0.051	0.070		ug/g	31	40	24-OCT-17
Fluoranthene		0.836	0.912		ug/g	8.7	40	24-OCT-17
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-OCT-17
Indeno(1,2,3-cd)pyrene		0.186	0.232		ug/g	22	40	24-OCT-17
Naphthalene		0.074	0.081		ug/g	8.2	40	24-OCT-17
Phenanthrene		0.497	0.534		ug/g	7.2	40	24-OCT-17
Pyrene		0.645	0.702		ug/g	8.5	40	24-OCT-17
WG2641066-2 LCS								
1-Methylnaphthalene			88.3		%		50-140	23-OCT-17
2-Methylnaphthalene			88.7		%		50-140	23-OCT-17
Acenaphthene			88.2		%		50-140	23-OCT-17
Acenaphthylene			90.6		%		50-140	23-OCT-17
Anthracene			84.8		%		50-140	23-OCT-17
Benzo(a)anthracene			93.3		%		50-140	23-OCT-17
Benzo(a)pyrene			86.6		%		50-140	23-OCT-17
Benzo(b)fluoranthene			89.3		%		50-140	23-OCT-17
Benzo(g,h,i)perylene			69.5		%		50-140	23-OCT-17
Benzo(k)fluoranthene			96.5		%		50-140	23-OCT-17
Chrysene			87.4		%		50-140	23-OCT-17
Dibenzo(ah)anthracene			79.5		%		50-140	23-OCT-17
Fluoranthene			89.1		%		50-140	23-OCT-17
Fluorene			84.7		%		50-140	23-OCT-17
Indeno(1,2,3-cd)pyrene			80.1		%		50-140	23-OCT-17
Naphthalene			90.3		%		50-140	23-OCT-17
Phenanthrene			86.3		%		50-140	23-OCT-17
Pyrene			89.5		%		50-140	23-OCT-17
WG2641066-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	23-OCT-17
2-Methylnaphthalene			<0.030		ug/g		0.03	23-OCT-17
Acenaphthene			<0.050		ug/g		0.05	

Quality Control Report

Workorder: L2007635 Report Date: 26-OCT-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R3862874								
WG2641066-1 MB								
Acenaphthene			<0.050		ug/g		0.05	23-OCT-17
Acenaphthylene			<0.050		ug/g		0.05	23-OCT-17
Anthracene			<0.050		ug/g		0.05	23-OCT-17
Benzo(a)anthracene			<0.050		ug/g		0.05	23-OCT-17
Benzo(a)pyrene			<0.050		ug/g		0.05	23-OCT-17
Benzo(b)fluoranthene			<0.050		ug/g		0.05	23-OCT-17
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	23-OCT-17
Benzo(k)fluoranthene			<0.050		ug/g		0.05	23-OCT-17
Chrysene			<0.050		ug/g		0.05	23-OCT-17
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	23-OCT-17
Fluoranthene			<0.050		ug/g		0.05	23-OCT-17
Fluorene			<0.050		ug/g		0.05	23-OCT-17
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	23-OCT-17
Naphthalene			<0.050		ug/g		0.05	23-OCT-17
Phenanthrene			<0.050		ug/g		0.05	23-OCT-17
Pyrene			<0.050		ug/g		0.05	23-OCT-17
Surrogate: 2-Fluorobiphenyl			95.0		%		50-140	23-OCT-17
Surrogate: p-Terphenyl d14			100.6		%		50-140	23-OCT-17
WG2641066-8 MS		**WG2641066-6**						
1-Methylnaphthalene			84.6		%		50-140	24-OCT-17
2-Methylnaphthalene			85.2		%		50-140	24-OCT-17
Acenaphthene			84.5		%		50-140	24-OCT-17
Acenaphthylene			86.4		%		50-140	24-OCT-17
Anthracene			84.9		%		50-140	24-OCT-17
Benzo(a)anthracene			78.5		%		50-140	24-OCT-17
Benzo(a)pyrene			69.5		%		50-140	24-OCT-17
Benzo(b)fluoranthene			71.1		%		50-140	24-OCT-17
Benzo(g,h,i)perylene			72.2		%		50-140	24-OCT-17
Benzo(k)fluoranthene			73.8		%		50-140	24-OCT-17
Chrysene			79.5		%		50-140	24-OCT-17
Dibenzo(ah)anthracene			80.8		%		50-140	24-OCT-17
Fluoranthene			67.8		%		50-140	24-OCT-17
Fluorene			86.6		%		50-140	24-OCT-17
Indeno(1,2,3-cd)pyrene			70.7		%		50-140	24-OCT-17

Quality Control Report

Workorder: L2007635 Report Date: 26-OCT-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R3862874								
WG2641066-8 MS		**WG2641066-6**						
Naphthalene			85.4		%		50-140	24-OCT-17
Phenanthrene			71.9		%		50-140	24-OCT-17
Pyrene			73.8		%		50-140	24-OCT-17
PCB-511-WT	**Soil**							
Batch R3862926								
WG2641066-4 DUP		**WG2641066-3**						
Aroclor 1242		<0.0170	<0.0170	RPD-NA	ug/g	N/A	40	23-OCT-17
Aroclor 1248		<0.010	<0.010	RPD-NA	ug/g	N/A	40	23-OCT-17
Aroclor 1254		<0.010	<0.010	RPD-NA	ug/g	N/A	40	23-OCT-17
Aroclor 1260		<0.0120	<0.0120	RPD-NA	ug/g	N/A	40	23-OCT-17
WG2641066-2 LCS								
Aroclor 1242			91.3		%		60-140	23-OCT-17
Aroclor 1248			93.7		%		60-140	23-OCT-17
Aroclor 1254			92.8		%		60-140	23-OCT-17
Aroclor 1260			99.3		%		60-140	23-OCT-17
WG2641066-1 MB								
Aroclor 1242			<0.010		ug/g		0.01	23-OCT-17
Aroclor 1248			<0.010		ug/g		0.01	23-OCT-17
Aroclor 1254			<0.010		ug/g		0.01	23-OCT-17
Aroclor 1260			<0.010		ug/g		0.01	23-OCT-17
Surrogate: d14-Terphenyl			101.8		%		60-140	23-OCT-17
WG2641066-5 MS		**WG2641066-3**						
Aroclor 1242			86.9		%		60-140	23-OCT-17
Aroclor 1254			88.7		%		60-140	23-OCT-17
Aroclor 1260			94.4		%		60-140	23-OCT-17
PH-WT	**Soil**							
Batch R3857902								
WG2641028-1 DUP		**L2007170-3**						
pH		7.41	7.29	J	pH units	0.12	0.3	17-OCT-17
WG2641525-1 LCS								
pH			7.01		pH units		6.9-7.1	17-OCT-17
Batch R3859059								
WG2641083-1 DUP		**L2007635-32**						
pH		7.05	7.07	J	pH units	0.02	0.3	18-OCT-17
WG2642331-1 LCS								

Quality Control Report

Workorder: L2007635 Report Date: 26-OCT-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH-WT	**Soil**							
Batch R3859059								
WG2642331-1 LCS								
pH			7.00		pH units		6.9-7.1	18-OCT-17
SAR-R511-WT	**Soil**							
Batch R3859807								
WG2643169-4 DUP		**WG2643169-3**						
Calcium (Ca)		4.4	4.4		mg/L	1.3	30	19-OCT-17
Sodium (Na)		17.5	17.6		mg/L	0.7	30	19-OCT-17
Magnesium (Mg)		1.7	1.7		mg/L	1.4	30	19-OCT-17
WG2643169-2 IRM		**WT SAR1**						
Calcium (Ca)			88.0		%		70-130	19-OCT-17
Sodium (Na)			98.0		%		70-130	19-OCT-17
Magnesium (Mg)			89.0		%		70-130	19-OCT-17
WG2643169-1 MB								
Calcium (Ca)			<1.0		mg/L		1	19-OCT-17
Sodium (Na)			<1.0		mg/L		1	19-OCT-17
Magnesium (Mg)			<1.0		mg/L		1	19-OCT-17
Batch R3860522								
WG2644313-4 DUP		**WG2644313-3**						
Calcium (Ca)		2.5	2.1		mg/L	16	30	20-OCT-17
Sodium (Na)		1.2	1.1		mg/L	10	30	20-OCT-17
Magnesium (Mg)		<1.0	<1.0	RPD-NA	mg/L	N/A	30	20-OCT-17
WG2644313-2 IRM		**WT SAR1**						
Calcium (Ca)			86.7		%		70-130	20-OCT-17
Sodium (Na)			101.1		%		70-130	20-OCT-17
Magnesium (Mg)			87.1		%		70-130	20-OCT-17
WG2644313-1 MB								
Calcium (Ca)			<1.0		mg/L		1	20-OCT-17
Sodium (Na)			<1.0		mg/L		1	20-OCT-17
Magnesium (Mg)			<1.0		mg/L		1	20-OCT-17
TOC-R511-WT	**Soil**							
Batch R3857798								
WG2641061-3 CRM		**WT-TOC-CRM**						
Total Organic Carbon			106.8		%		70-130	17-OCT-17
WG2641061-4 DUP		**L1995878-2**						
Total Organic Carbon		3.77	3.81		%	1.2	35	17-OCT-17

Quality Control Report

Workorder: L2007635 Report Date: 26-OCT-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
TOC-R511-WT	**Soil**							
Batch R3857798								
WG2641061-2 LCS								
Total Organic Carbon			103.7		%		80-120	17-OCT-17
Total Organic Carbon			103.7		%		80-120	17-OCT-17
Total Organic Carbon			103.7		%		80-120	17-OCT-17
WG2641061-1 MB								
Total Organic Carbon			<0.10		%		0.1	17-OCT-17
VOC-511-HS-WT	**Soil**							
Batch R3858369								
WG2641128-4 DUP		**WG2641128-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	18-OCT-17
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	18-OCT-17
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	18-OCT-17
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	18-OCT-17

Quality Control Report

Workorder: L2007635 Report Date: 26-OCT-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3858369								
WG2641128-4 DUP		**WG2641128-3**						
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	18-OCT-17
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	18-OCT-17
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	18-OCT-17
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	18-OCT-17
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	18-OCT-17
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	18-OCT-17
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	18-OCT-17
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	18-OCT-17
WG2641128-2 LCS								
1,1,1,2-Tetrachloroethane			99.6		%		60-130	18-OCT-17
1,1,2,2-Tetrachloroethane			96.7		%		60-130	18-OCT-17
1,1,1-Trichloroethane			98.8		%		60-130	18-OCT-17
1,1,2-Trichloroethane			98.1		%		60-130	18-OCT-17
1,1-Dichloroethane			96.0		%		60-130	18-OCT-17
1,1-Dichloroethylene			84.6		%		60-130	18-OCT-17
1,2-Dibromoethane			97.4		%		70-130	18-OCT-17
1,2-Dichlorobenzene			104.4		%		70-130	18-OCT-17
1,2-Dichloroethane			96.9		%		60-130	18-OCT-17
1,2-Dichloropropane			100.9		%		70-130	18-OCT-17
1,3-Dichlorobenzene			104.1		%		70-130	18-OCT-17
1,4-Dichlorobenzene			106.0		%		70-130	18-OCT-17
Acetone			99.0		%		60-140	18-OCT-17
Benzene			99.9		%		70-130	18-OCT-17
Bromodichloromethane			96.1		%		50-140	18-OCT-17
Bromoform			95.7		%		70-130	18-OCT-17
Bromomethane			86.2		%		50-140	18-OCT-17

Quality Control Report

Workorder: L2007635 Report Date: 26-OCT-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3858369								
WG2641128-2 LCS								
Carbon tetrachloride			97.4		%		70-130	18-OCT-17
Chlorobenzene			102.9		%		70-130	18-OCT-17
Chloroform			99.0		%		70-130	18-OCT-17
cis-1,2-Dichloroethylene			97.2		%		70-130	18-OCT-17
cis-1,3-Dichloropropene			102.5		%		70-130	18-OCT-17
Dibromochloromethane			101.8		%		60-130	18-OCT-17
Dichlorodifluoromethane			44.0	MES	%		50-140	18-OCT-17
Ethylbenzene			103.2		%		70-130	18-OCT-17
n-Hexane			100.5		%		70-130	18-OCT-17
Methylene Chloride			95.7		%		70-130	18-OCT-17
MTBE			100.5		%		70-130	18-OCT-17
m+p-Xylenes			104.3		%		70-130	18-OCT-17
Methyl Ethyl Ketone			97.9		%		60-140	18-OCT-17
Methyl Isobutyl Ketone			98.0		%		60-140	18-OCT-17
o-Xylene			103.3		%		70-130	18-OCT-17
Styrene			102.5		%		70-130	18-OCT-17
Tetrachloroethylene			101.6		%		60-130	18-OCT-17
Toluene			101.8		%		70-130	18-OCT-17
trans-1,2-Dichloroethylene			97.7		%		60-130	18-OCT-17
trans-1,3-Dichloropropene			102.5		%		70-130	18-OCT-17
Trichloroethylene			101.2		%		60-130	18-OCT-17
Trichlorofluoromethane			90.3		%		50-140	18-OCT-17
Vinyl chloride			79.2		%		60-140	18-OCT-17
WG2641128-1 MB								
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	18-OCT-17
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	18-OCT-17
1,1,1-Trichloroethane			<0.050		ug/g		0.05	18-OCT-17
1,1,2-Trichloroethane			<0.050		ug/g		0.05	18-OCT-17
1,1-Dichloroethane			<0.050		ug/g		0.05	18-OCT-17
1,1-Dichloroethylene			<0.050		ug/g		0.05	18-OCT-17
1,2-Dibromoethane			<0.050		ug/g		0.05	18-OCT-17
1,2-Dichlorobenzene			<0.050		ug/g		0.05	18-OCT-17
1,2-Dichloroethane			<0.050		ug/g		0.05	18-OCT-17
1,2-Dichloropropane			<0.050		ug/g		0.05	18-OCT-17

Quality Control Report

Workorder: L2007635 Report Date: 26-OCT-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3858369								
WG2641128-1 MB								
1,3-Dichlorobenzene			<0.050		ug/g		0.05	18-OCT-17
1,4-Dichlorobenzene			<0.050		ug/g		0.05	18-OCT-17
Acetone			<0.50		ug/g		0.5	18-OCT-17
Benzene			<0.0068		ug/g		0.0068	18-OCT-17
Bromodichloromethane			<0.050		ug/g		0.05	18-OCT-17
Bromoform			<0.050		ug/g		0.05	18-OCT-17
Bromomethane			<0.050		ug/g		0.05	18-OCT-17
Carbon tetrachloride			<0.050		ug/g		0.05	18-OCT-17
Chlorobenzene			<0.050		ug/g		0.05	18-OCT-17
Chloroform			<0.050		ug/g		0.05	18-OCT-17
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	18-OCT-17
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	18-OCT-17
Dibromochloromethane			<0.050		ug/g		0.05	18-OCT-17
Dichlorodifluoromethane			<0.050		ug/g		0.05	18-OCT-17
Ethylbenzene			<0.018		ug/g		0.018	18-OCT-17
n-Hexane			<0.050		ug/g		0.05	18-OCT-17
Methylene Chloride			<0.050		ug/g		0.05	18-OCT-17
MTBE			<0.050		ug/g		0.05	18-OCT-17
m+p-Xylenes			<0.030		ug/g		0.03	18-OCT-17
Methyl Ethyl Ketone			<0.50		ug/g		0.5	18-OCT-17
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	18-OCT-17
o-Xylene			<0.020		ug/g		0.02	18-OCT-17
Styrene			<0.050		ug/g		0.05	18-OCT-17
Tetrachloroethylene			<0.050		ug/g		0.05	18-OCT-17
Toluene			<0.080		ug/g		0.08	18-OCT-17
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	18-OCT-17
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	18-OCT-17
Trichloroethylene			<0.010		ug/g		0.01	18-OCT-17
Trichlorofluoromethane			<0.050		ug/g		0.05	18-OCT-17
Vinyl chloride			<0.020		ug/g		0.02	18-OCT-17
Surrogate: 1,4-Difluorobenzene			100.6		%		50-140	18-OCT-17
Surrogate: 4-Bromofluorobenzene			99.5		%		50-140	18-OCT-17
WG2641128-5 MS		**WG2641128-3**						
1,1,1,2-Tetrachloroethane			99.2		%		50-140	18-OCT-17

Quality Control Report

Workorder: L2007635 Report Date: 26-OCT-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3858369								
WG2641128-5 MS		**WG2641128-3**						
1,1,2,2-Tetrachloroethane			97.0		%		50-140	18-OCT-17
1,1,1-Trichloroethane			99.2		%		50-140	18-OCT-17
1,1,2-Trichloroethane			99.98		%		50-140	18-OCT-17
1,1-Dichloroethane			97.1		%		50-140	18-OCT-17
1,1-Dichloroethylene			86.3		%		50-140	18-OCT-17
1,2-Dibromoethane			99.2		%		50-140	18-OCT-17
1,2-Dichlorobenzene			102.7		%		50-140	18-OCT-17
1,2-Dichloroethane			99.4		%		50-140	18-OCT-17
1,2-Dichloropropane			102.3		%		50-140	18-OCT-17
1,3-Dichlorobenzene			102.5		%		50-140	18-OCT-17
1,4-Dichlorobenzene			104.6		%		50-140	18-OCT-17
Acetone			99.0		%		50-140	18-OCT-17
Benzene			100.3		%		50-140	18-OCT-17
Bromodichloromethane			97.6		%		50-140	18-OCT-17
Bromoform			96.6		%		50-140	18-OCT-17
Bromomethane			91.2		%		50-140	18-OCT-17
Carbon tetrachloride			96.9		%		50-140	18-OCT-17
Chlorobenzene			102.3		%		50-140	18-OCT-17
Chloroform			100.2		%		50-140	18-OCT-17
cis-1,2-Dichloroethylene			98.1		%		50-140	18-OCT-17
cis-1,3-Dichloropropene			102.6		%		50-140	18-OCT-17
Dibromochloromethane			103.2		%		50-140	18-OCT-17
Dichlorodifluoromethane			53.8		%		50-140	18-OCT-17
Ethylbenzene			101.6		%		50-140	18-OCT-17
n-Hexane			101.0		%		50-140	18-OCT-17
Methylene Chloride			98.4		%		50-140	18-OCT-17
MTBE			100.3		%		50-140	18-OCT-17
m+p-Xylenes			102.5		%		50-140	18-OCT-17
Methyl Ethyl Ketone			100.8		%		50-140	18-OCT-17
Methyl Isobutyl Ketone			100.2		%		50-140	18-OCT-17
o-Xylene			101.6		%		50-140	18-OCT-17
Styrene			95.5		%		50-140	18-OCT-17
Tetrachloroethylene			99.2		%		50-140	18-OCT-17

Quality Control Report

Workorder: L2007635 Report Date: 26-OCT-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3858369								
WG2641128-5 MS		**WG2641128-3**						
Toluene			101.1		%		50-140	18-OCT-17
trans-1,2-Dichloroethylene			98.3		%		50-140	18-OCT-17
trans-1,3-Dichloropropene			103.6		%		50-140	18-OCT-17
Trichloroethylene			100.6		%		50-140	18-OCT-17
Trichlorofluoromethane			93.3		%		50-140	18-OCT-17
Vinyl chloride			85.6		%		50-140	18-OCT-17
Batch R3858453								
WG2641040-4 DUP		**WG2641040-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
1,1,2,2-Tetrachloroethane		<0.20	<0.25	RPD-NA	ug/g	N/A	40	18-OCT-17
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	18-OCT-17
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	18-OCT-17
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	18-OCT-17
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	18-OCT-17

Quality Control Report

Workorder: L2007635 Report Date: 26-OCT-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3858453								
WG2641040-4 DUP		**WG2641040-3**						
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	18-OCT-17
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	18-OCT-17
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	18-OCT-17
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	18-OCT-17
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	18-OCT-17
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	18-OCT-17
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	18-OCT-17
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-OCT-17
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	18-OCT-17
WG2641040-2 LCS								
1,1,1,2-Tetrachloroethane			100.9		%		60-130	18-OCT-17
1,1,2,2-Tetrachloroethane			103.5		%		60-130	18-OCT-17
1,1,1-Trichloroethane			100.2		%		60-130	18-OCT-17
1,1,2-Trichloroethane			106.2		%		60-130	18-OCT-17
1,1-Dichloroethane			100.9		%		60-130	18-OCT-17
1,1-Dichloroethylene			88.5		%		60-130	18-OCT-17
1,2-Dibromoethane			106.1		%		70-130	18-OCT-17
1,2-Dichlorobenzene			105.8		%		70-130	18-OCT-17
1,2-Dichloroethane			106.6		%		60-130	18-OCT-17
1,2-Dichloropropane			106.6		%		70-130	18-OCT-17
1,3-Dichlorobenzene			102.6		%		70-130	18-OCT-17
1,4-Dichlorobenzene			105.7		%		70-130	18-OCT-17
Acetone			113.7		%		60-140	18-OCT-17
Benzene			104.5		%		70-130	18-OCT-17
Bromodichloromethane			102.7		%		50-140	18-OCT-17
Bromoform			102.2		%		70-130	18-OCT-17
Bromomethane			97.0		%		50-140	18-OCT-17

Quality Control Report

Workorder: L2007635 Report Date: 26-OCT-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3858453								
WG2641040-2 LCS								
Carbon tetrachloride			98.2		%		70-130	18-OCT-17
Chlorobenzene			102.8		%		70-130	18-OCT-17
Chloroform			104.6		%		70-130	18-OCT-17
cis-1,2-Dichloroethylene			104.0		%		70-130	18-OCT-17
cis-1,3-Dichloropropene			107.2		%		70-130	18-OCT-17
Dibromochloromethane			106.7		%		60-130	18-OCT-17
Dichlorodifluoromethane			46.0	MES	%		50-140	18-OCT-17
Ethylbenzene			99.0		%		70-130	18-OCT-17
n-Hexane			101.3		%		70-130	18-OCT-17
Methylene Chloride			105.9		%		70-130	18-OCT-17
MTBE			98.2		%		70-130	18-OCT-17
m+p-Xylenes			101.3		%		70-130	18-OCT-17
Methyl Ethyl Ketone			113.9		%		60-140	18-OCT-17
Methyl Isobutyl Ketone			108.5		%		60-140	18-OCT-17
o-Xylene			100.0		%		70-130	18-OCT-17
Styrene			107.9		%		70-130	18-OCT-17
Tetrachloroethylene			98.2		%		60-130	18-OCT-17
Toluene			98.6		%		70-130	18-OCT-17
trans-1,2-Dichloroethylene			99.5		%		60-130	18-OCT-17
trans-1,3-Dichloropropene			104.3		%		70-130	18-OCT-17
Trichloroethylene			102.8		%		60-130	18-OCT-17
Trichlorofluoromethane			95.1		%		50-140	18-OCT-17
Vinyl chloride			86.4		%		60-140	18-OCT-17
WG2641040-1 MB								
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	18-OCT-17
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	18-OCT-17
1,1,1-Trichloroethane			<0.050		ug/g		0.05	18-OCT-17
1,1,2-Trichloroethane			<0.050		ug/g		0.05	18-OCT-17
1,1-Dichloroethane			<0.050		ug/g		0.05	18-OCT-17
1,1-Dichloroethylene			<0.050		ug/g		0.05	18-OCT-17
1,2-Dibromoethane			<0.050		ug/g		0.05	18-OCT-17
1,2-Dichlorobenzene			<0.050		ug/g		0.05	18-OCT-17
1,2-Dichloroethane			<0.050		ug/g		0.05	18-OCT-17
1,2-Dichloropropane			<0.050		ug/g		0.05	18-OCT-17

Quality Control Report

Workorder: L2007635 Report Date: 26-OCT-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3858453								
WG2641040-1 MB								
1,3-Dichlorobenzene			<0.050		ug/g		0.05	18-OCT-17
1,4-Dichlorobenzene			<0.050		ug/g		0.05	18-OCT-17
Acetone			<0.50		ug/g		0.5	18-OCT-17
Benzene			<0.0068		ug/g		0.0068	18-OCT-17
Bromodichloromethane			<0.050		ug/g		0.05	18-OCT-17
Bromoform			<0.050		ug/g		0.05	18-OCT-17
Bromomethane			<0.050		ug/g		0.05	18-OCT-17
Carbon tetrachloride			<0.050		ug/g		0.05	18-OCT-17
Chlorobenzene			<0.050		ug/g		0.05	18-OCT-17
Chloroform			<0.050		ug/g		0.05	18-OCT-17
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	18-OCT-17
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	18-OCT-17
Dibromochloromethane			<0.050		ug/g		0.05	18-OCT-17
Dichlorodifluoromethane			<0.050		ug/g		0.05	18-OCT-17
Ethylbenzene			<0.018		ug/g		0.018	18-OCT-17
n-Hexane			<0.050		ug/g		0.05	18-OCT-17
Methylene Chloride			<0.050		ug/g		0.05	18-OCT-17
MTBE			<0.050		ug/g		0.05	18-OCT-17
m+p-Xylenes			<0.030		ug/g		0.03	18-OCT-17
Methyl Ethyl Ketone			<0.50		ug/g		0.5	18-OCT-17
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	18-OCT-17
o-Xylene			<0.020		ug/g		0.02	18-OCT-17
Styrene			<0.050		ug/g		0.05	18-OCT-17
Tetrachloroethylene			<0.050		ug/g		0.05	18-OCT-17
Toluene			<0.080		ug/g		0.08	18-OCT-17
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	18-OCT-17
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	18-OCT-17
Trichloroethylene			<0.010		ug/g		0.01	18-OCT-17
Trichlorofluoromethane			<0.050		ug/g		0.05	18-OCT-17
Vinyl chloride			<0.020		ug/g		0.02	18-OCT-17
Surrogate: 1,4-Difluorobenzene			109.2		%		50-140	18-OCT-17
Surrogate: 4-Bromofluorobenzene			101.6		%		50-140	18-OCT-17
WG2641040-5 MS		**WG2641040-3**						
1,1,1,2-Tetrachloroethane			101.2		%		50-140	18-OCT-17

Quality Control Report

Workorder: L2007635 Report Date: 26-OCT-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3858453								
WG2641040-5 MS		**WG2641040-3**						
1,1,2,2-Tetrachloroethane			111.7		%		50-140	18-OCT-17
1,1,1-Trichloroethane			97.3		%		50-140	18-OCT-17
1,1,2-Trichloroethane			119.0		%		50-140	18-OCT-17
1,1-Dichloroethane			100.3		%		50-140	18-OCT-17
1,1-Dichloroethylene			86.2		%		50-140	18-OCT-17
1,2-Dibromoethane			119.3		%		50-140	18-OCT-17
1,2-Dichlorobenzene			101.1		%		50-140	18-OCT-17
1,2-Dichloroethane			111.8		%		50-140	18-OCT-17
1,2-Dichloropropane			108.3		%		50-140	18-OCT-17
1,3-Dichlorobenzene			94.6		%		50-140	18-OCT-17
1,4-Dichlorobenzene			96.2		%		50-140	18-OCT-17
Acetone			122.6		%		50-140	18-OCT-17
Benzene			103.7		%		50-140	18-OCT-17
Bromodichloromethane			103.6		%		50-140	18-OCT-17
Bromoform			109.2		%		50-140	18-OCT-17
Bromomethane			96.2		%		50-140	18-OCT-17
Carbon tetrachloride			93.5		%		50-140	18-OCT-17
Chlorobenzene			101.0		%		50-140	18-OCT-17
Chloroform			105.3		%		50-140	18-OCT-17
cis-1,2-Dichloroethylene			104.4		%		50-140	18-OCT-17
cis-1,3-Dichloropropene			103.2		%		50-140	18-OCT-17
Dibromochloromethane			115.8		%		50-140	18-OCT-17
Dichlorodifluoromethane			48.3	MES	%		50-140	18-OCT-17
Ethylbenzene			93.3		%		50-140	18-OCT-17
n-Hexane			93.6		%		50-140	18-OCT-17
Methylene Chloride			109.1		%		50-140	18-OCT-17
MTBE			97.3		%		50-140	18-OCT-17
m+p-Xylenes			91.7		%		50-140	18-OCT-17
Methyl Ethyl Ketone			130.0		%		50-140	18-OCT-17
Methyl Isobutyl Ketone			125.3		%		50-140	18-OCT-17
o-Xylene			93.6		%		50-140	18-OCT-17
Styrene			104.2		%		50-140	18-OCT-17
Tetrachloroethylene			91.7		%		50-140	18-OCT-17

Quality Control Report

Workorder: L2007635 Report Date: 26-OCT-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3858453								
WG2641040-5 MS		**WG2641040-3**						
Toluene			99.7		%		50-140	18-OCT-17
trans-1,2-Dichloroethylene			95.1		%		50-140	18-OCT-17
trans-1,3-Dichloropropene			109.9		%		50-140	18-OCT-17
Trichloroethylene			97.5		%		50-140	18-OCT-17
Trichlorofluoromethane			93.6		%		50-140	18-OCT-17
Vinyl chloride			86.5		%		50-140	18-OCT-17

Quality Control Report

Workorder: L2007635 Report Date: 26-OCT-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9
Contact: MICHAEL SHIRY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MBS	Surrogate recovery in Method Blank was outside ALS DQO. Moderately low-biased results in the MB do not significantly affect its purpose.
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

GRAIN SIZE DETERMINATIONS

Client:	CH2M HILL		Sample Location:	
Project Number:	11546		Sample ID:	MW17-108S-1-3
Sampler:			Sample Depth:	
Technician:	CB6		Date Sampled:	11-10-17
Lab ID Number:	L2007635-16		Date Submitted:	16-10-17
			Date Completed:	25-10-17

Total Sample Weight	184	grams	Specific Gravity:	2.650
Hydro. Sample Weight	50.000	grams	Liquid Specific Gravity:	1.000
% Past #10	0.440	* 100	Grav Factor:	1.606
Sub Factor	1.620			

Sieve Size	Weight Retained (grams)	Percent Retained	Diameter (mm)	Cum. % Retained	Cum. % Passing
38.1 mm. DIA.:	0.000	0.000	38.100	0.000	100.000
25.4 mm. DIA.:	0.000	0.000	25.400	0.000	100.000
19.0 mm. DIA.:	23.000	12.500	19.000	12.500	87.500
9.5 mm. DIA.:	34.000	18.478	9.500	30.978	69.022
NO. 4 SIEVE :	24.000	13.043	4.500	44.022	55.978
NO. 10 SIEVE :	22.000	11.957	2.000	55.978	44.022
NO. 20 SIEVE :	9.000	7.924	0.850	63.902	36.098
NO. 40 SIEVE :	8.000	7.043	0.425	70.946	29.054
NO. 60 SIEVE :	6.000	5.283	0.250	76.228	23.772
NO. 100 SIEVE:	4.000	3.522	0.150	79.750	20.250
NO. 200 SIEVE:	4.000	3.522	0.075	83.272	16.728

Time (min)	Hydrometer Reading	Temperature (C)	Diameter (mm)	% Suspended (Subsample)	% Suspended (Total Sample)
1.00	9.0	19.1	0.052	19.030	8.377
2.00	9.0	19.1	0.036	19.030	8.377
4.00	8.0	19.1	0.026	15.818	6.963
8.00	7.0	19.1	0.019	12.606	5.549
15.00	7.0	19.0	0.014	12.543	5.522
30.00	7.0	18.9	0.010	12.481	5.494
60.00	6.0	19.4	0.007	9.582	4.218
120.00	5.0	20.0	0.005	6.745	2.969
240.00	5.0	20.5	0.003	7.059	3.107
480.00	5.0	20.6	0.002	7.121	3.135
1440.00	4.0	19.1	0.001	2.970	1.307

GRAIN SIZE	% BY WT.	DIA. RANGE (mm)
% GRAVEL :	44.02	> 4.5
% COARSE SAND :	11.96	2.0 - 4.5
% MEDIUM SAND :	14.97	0.425 - 2.0
% FINE SAND :	12.33	0.075 - 0.425
% SILT :	14.23	0.075 - 0.002
% CLAY :	2.50	< 0.002
% CLAY :	3.09	< 0.005

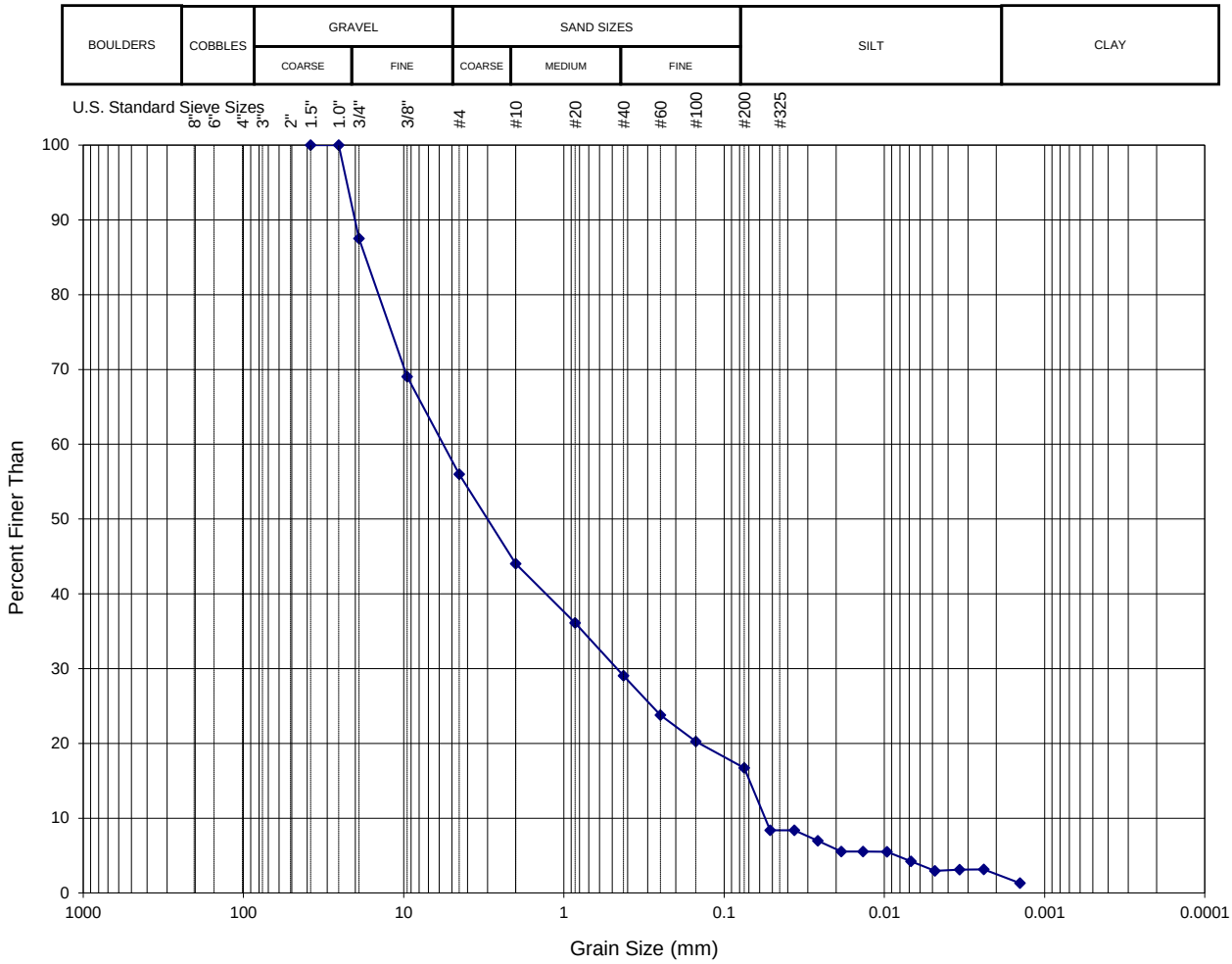
ALS Environmental

WATERLOO

PARTICLE SIZE DISTRIBUTION CURVE

ASTM METHOD D422-63

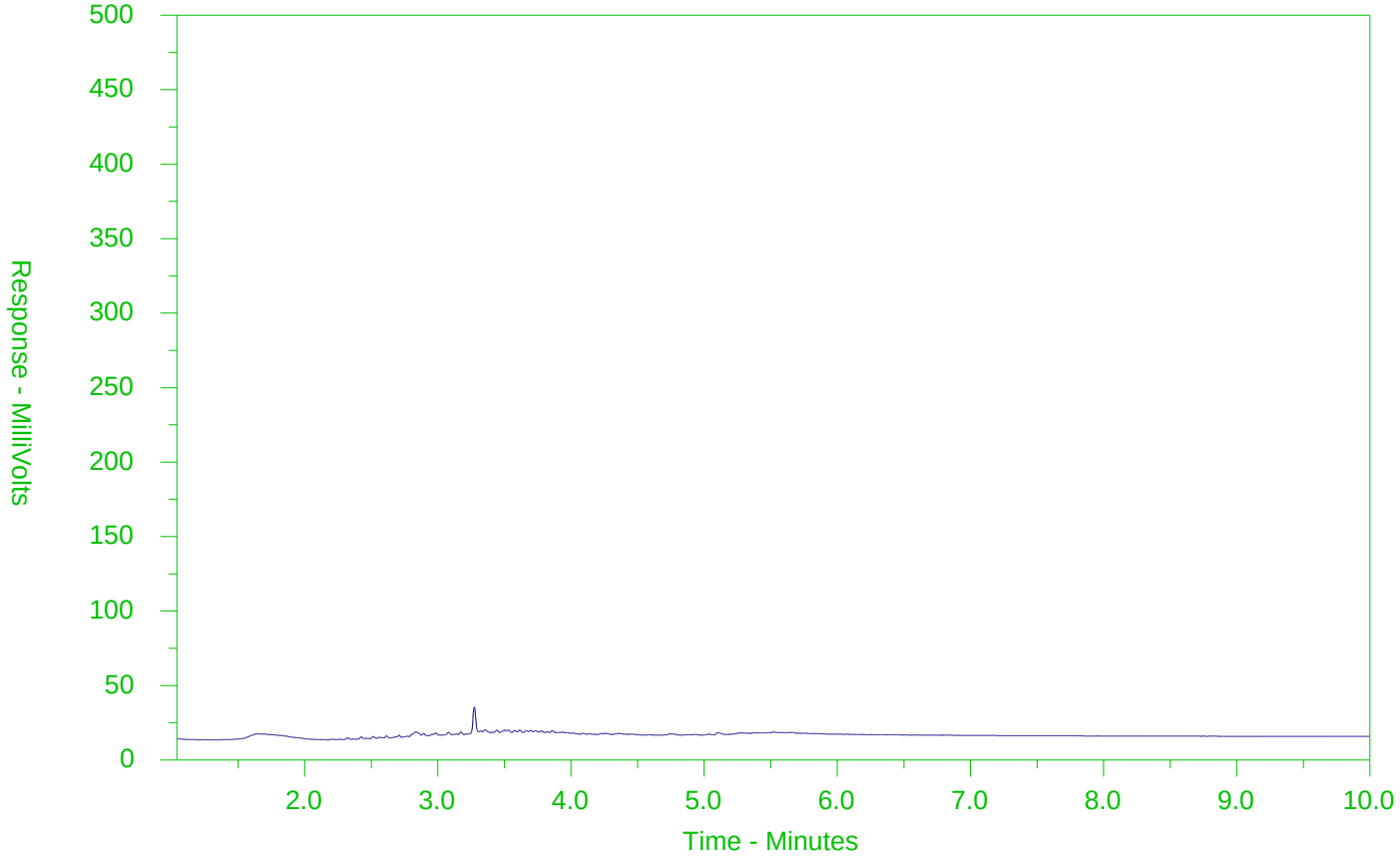
Project Name:	CH2M HILL
Project Number:	11546
Sample Location:	
Sample Number:	MW17-108S-1-3
Sample Depth:	
Lab ID Number:	L2007635-16
Technician:	CB6
Sampler:	
Dates:	
Collected On:	11-10-17
Analyzed:	25-10-17



DESCRIPTION	SOIL CLASSIFICATION DESCRIPTIVE MODIFIERS		SUMMARY		
GRAVEL AND SAND WITH SILT, TRACE CLAY	AND	36 - 50 %	GRAVEL	44	%
COARSE GRAINED	ADJECTIVE (e.g. sandy)	21 - 35 %	SAND	39	%
ESTIMATED HAZEN NUMBER: 3.08E-03 cm/s	WITH	11 - 20 %	SILT + CLAY	17	%
NOTE: UNIFIED SOIL CLASSIFICATION SYSTEM	TRACE	1 - 10 %			

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2007635-2
Client Sample ID: BH17-200-3.5-4



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

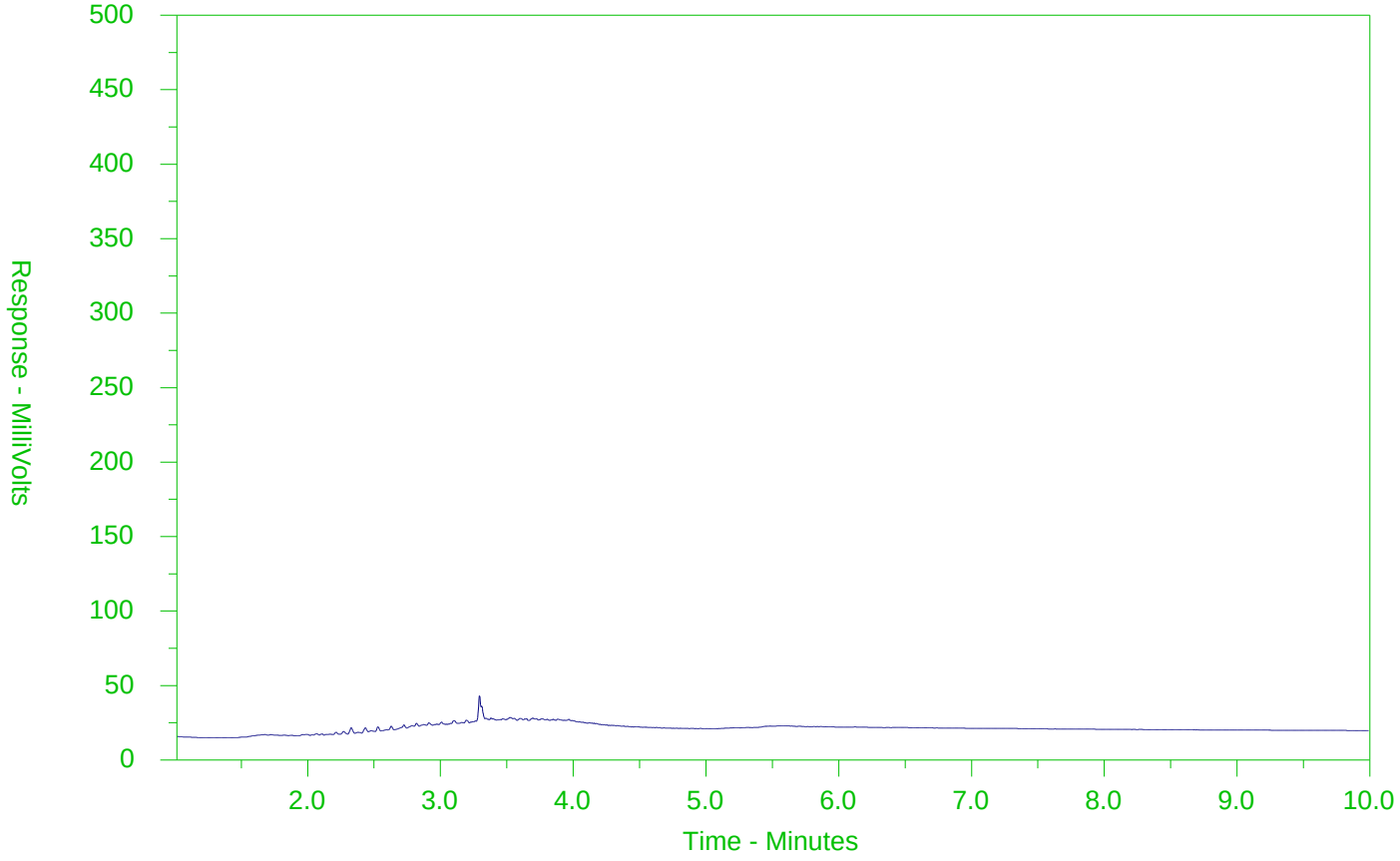
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2007635-4
Client Sample ID: BH17-200-6-6.5



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

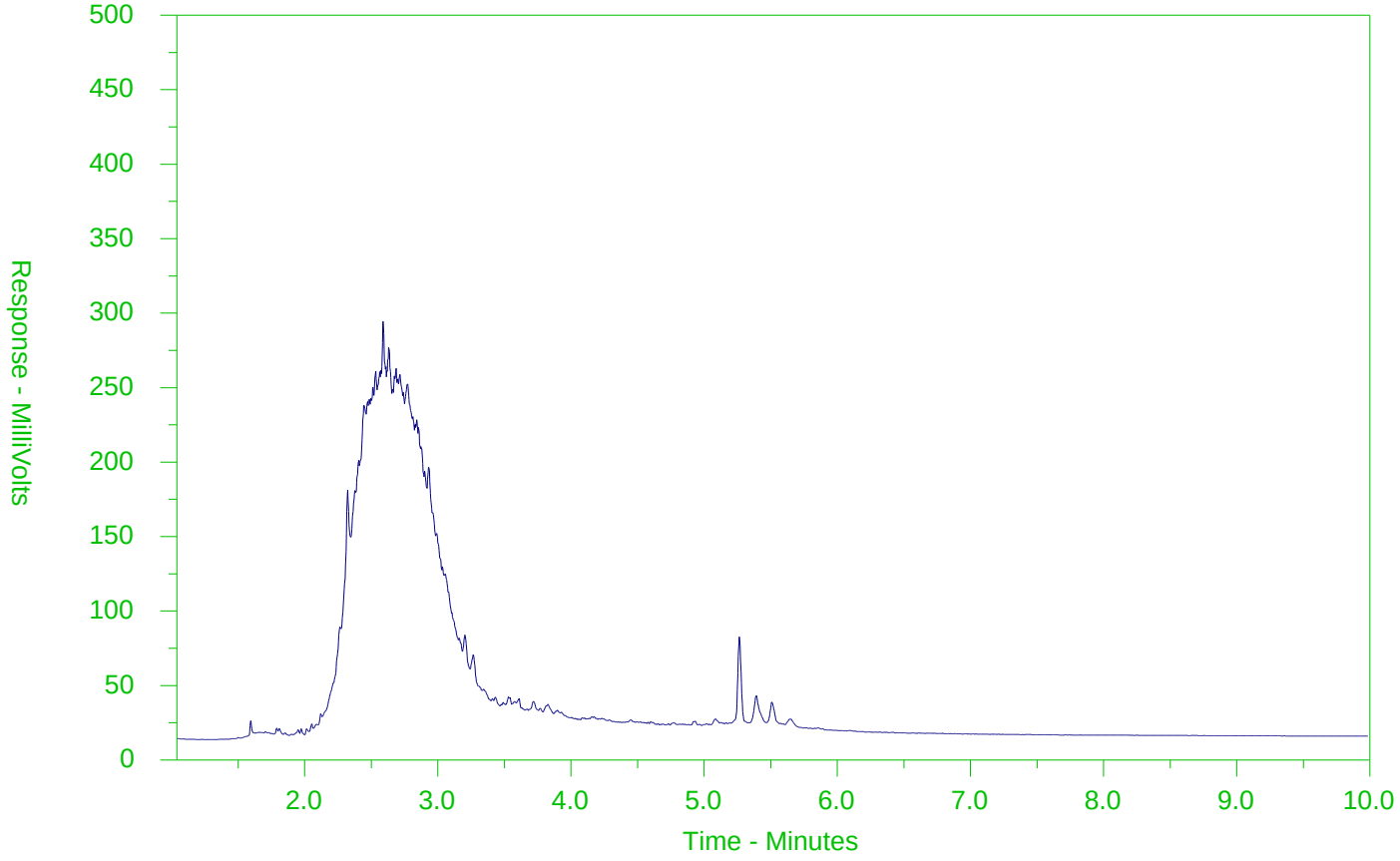
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2007635-5
Client Sample ID: BH17-201-0-2



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

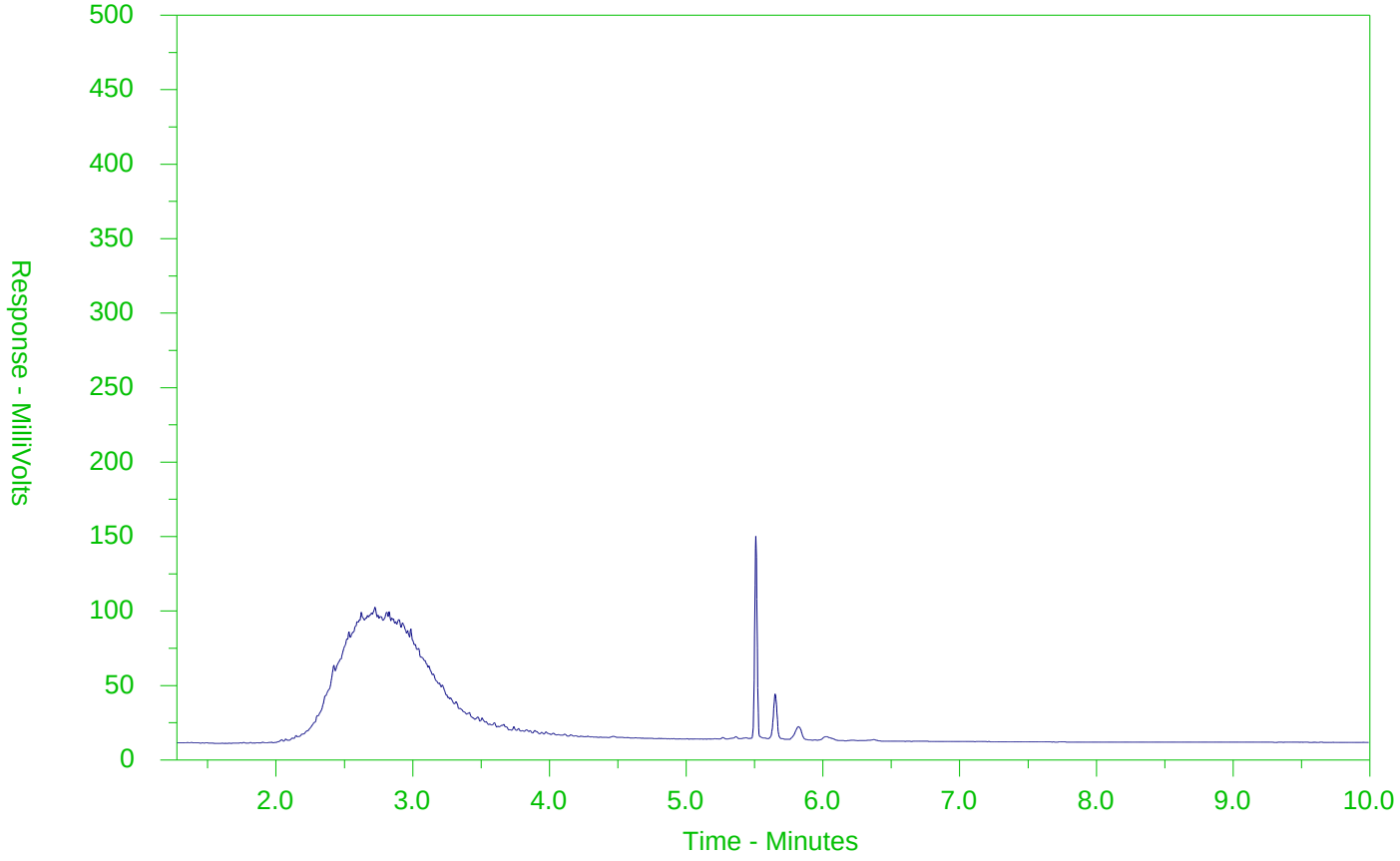
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2007635-6
Client Sample ID: BH17-201-2-3



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

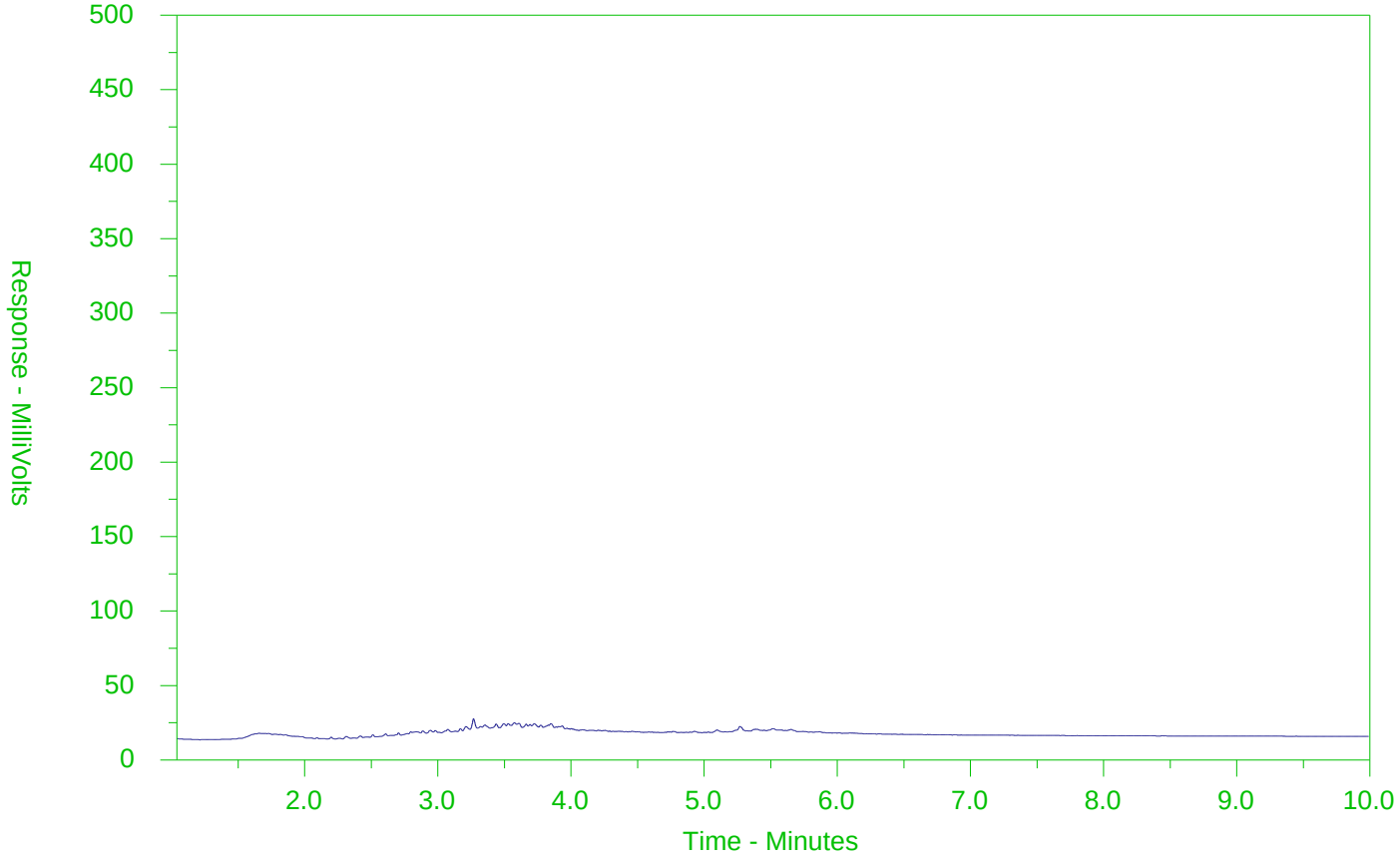
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2007635-10
Client Sample ID: BH17-202-2-4



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

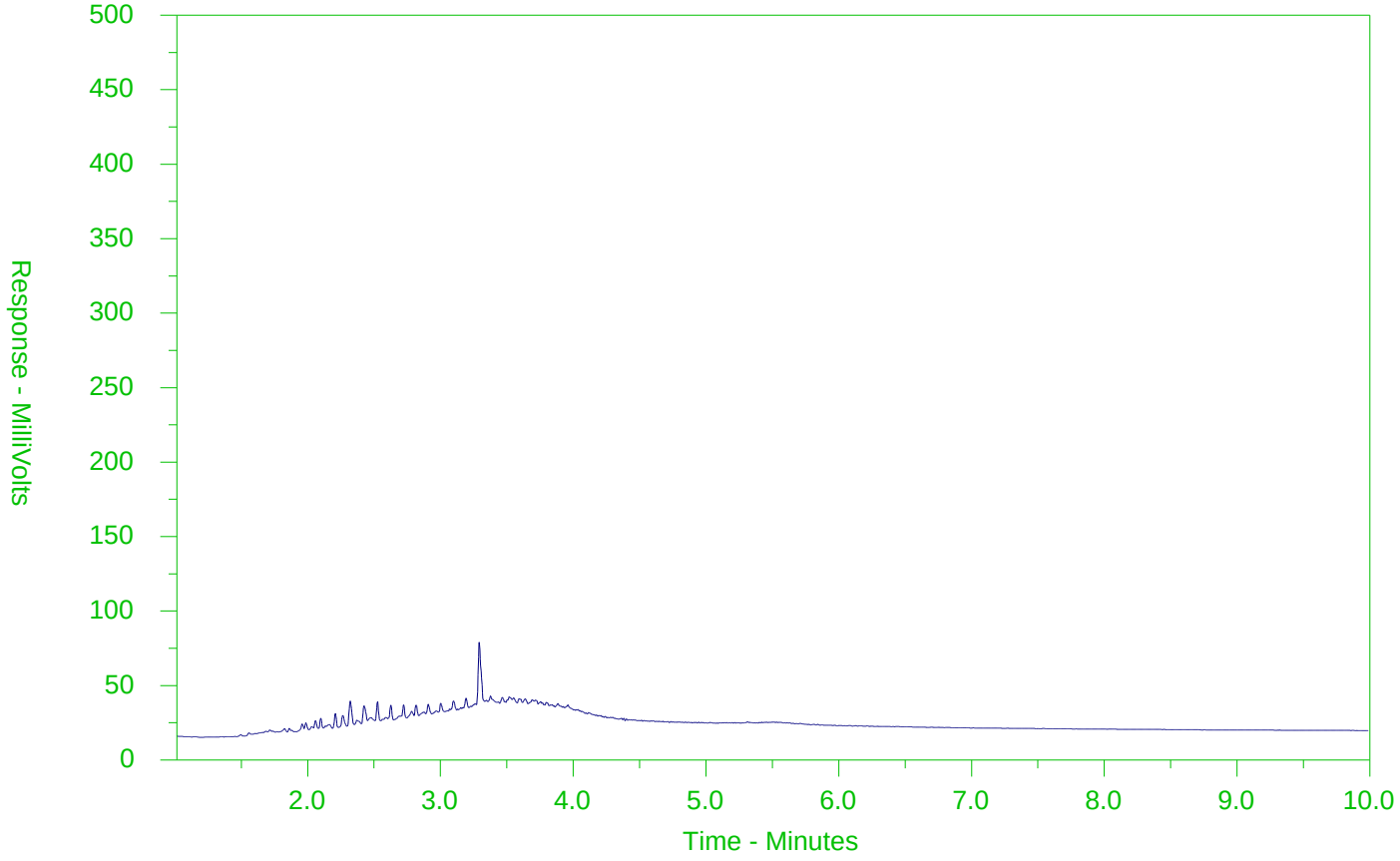
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2007635-12
Client Sample ID: BH17-202-6-7



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

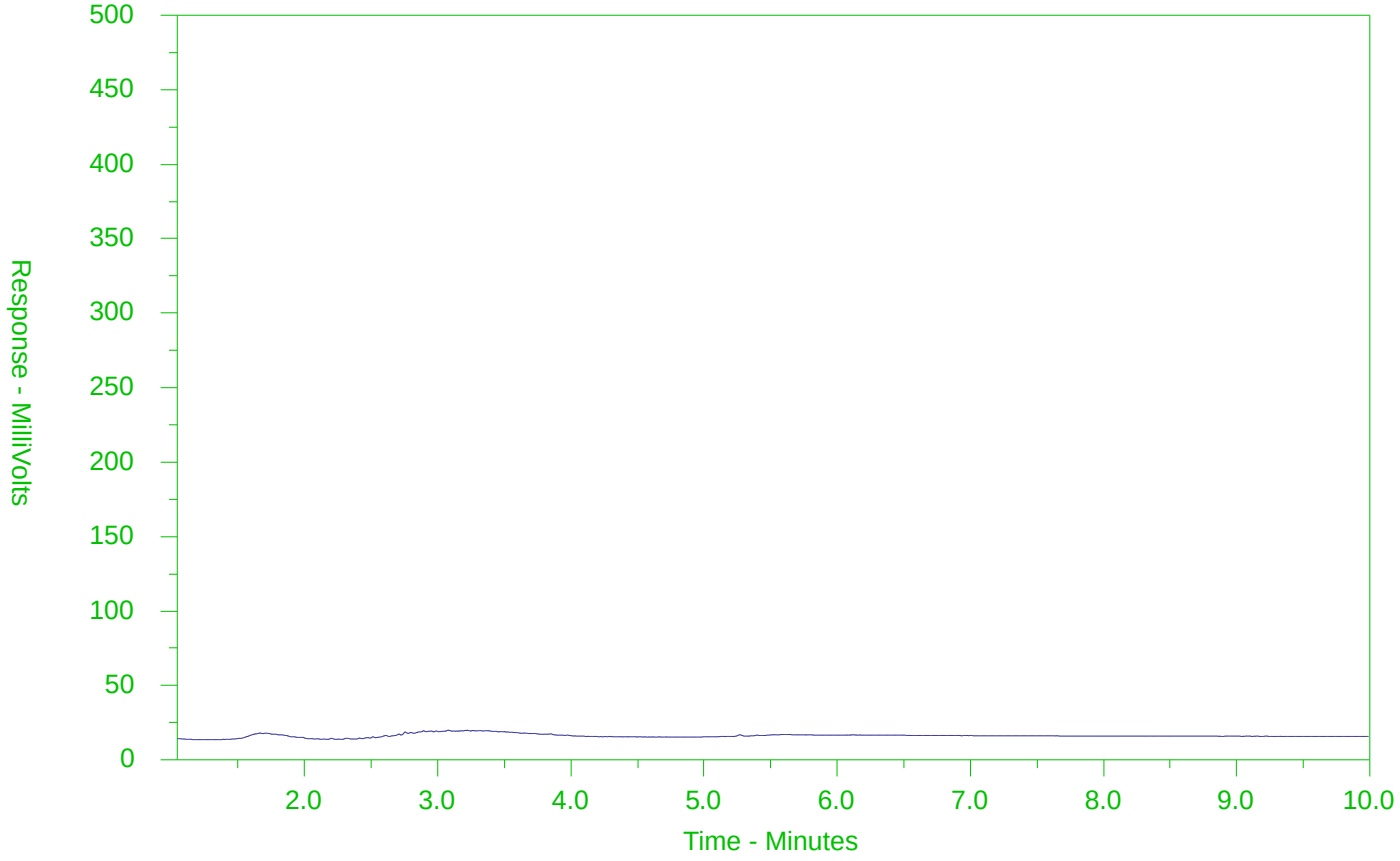
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2007635-13
Client Sample ID: BH17-203-0-2



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

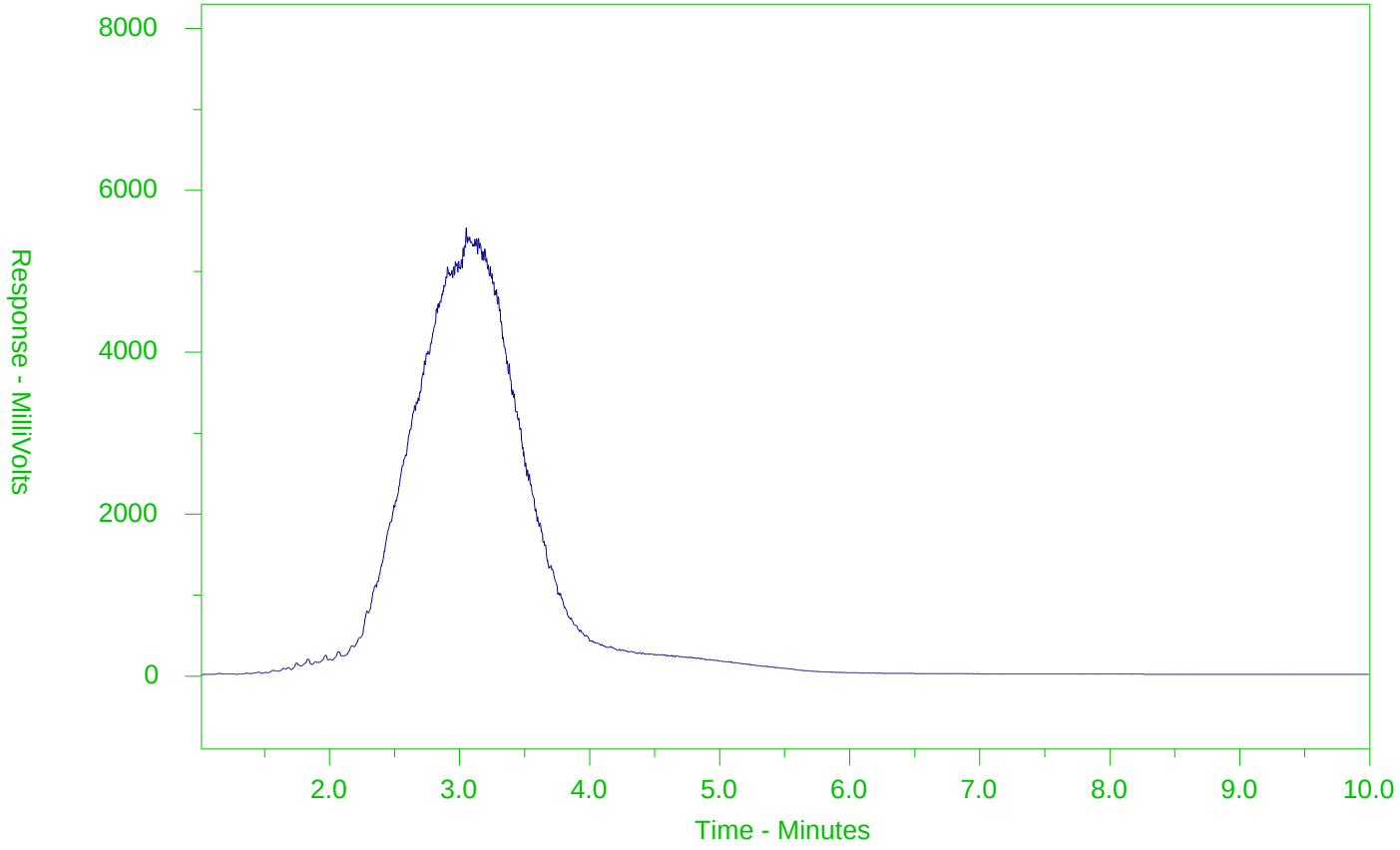
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2007635-19
Client Sample ID: MW17-108S-9-9.5



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

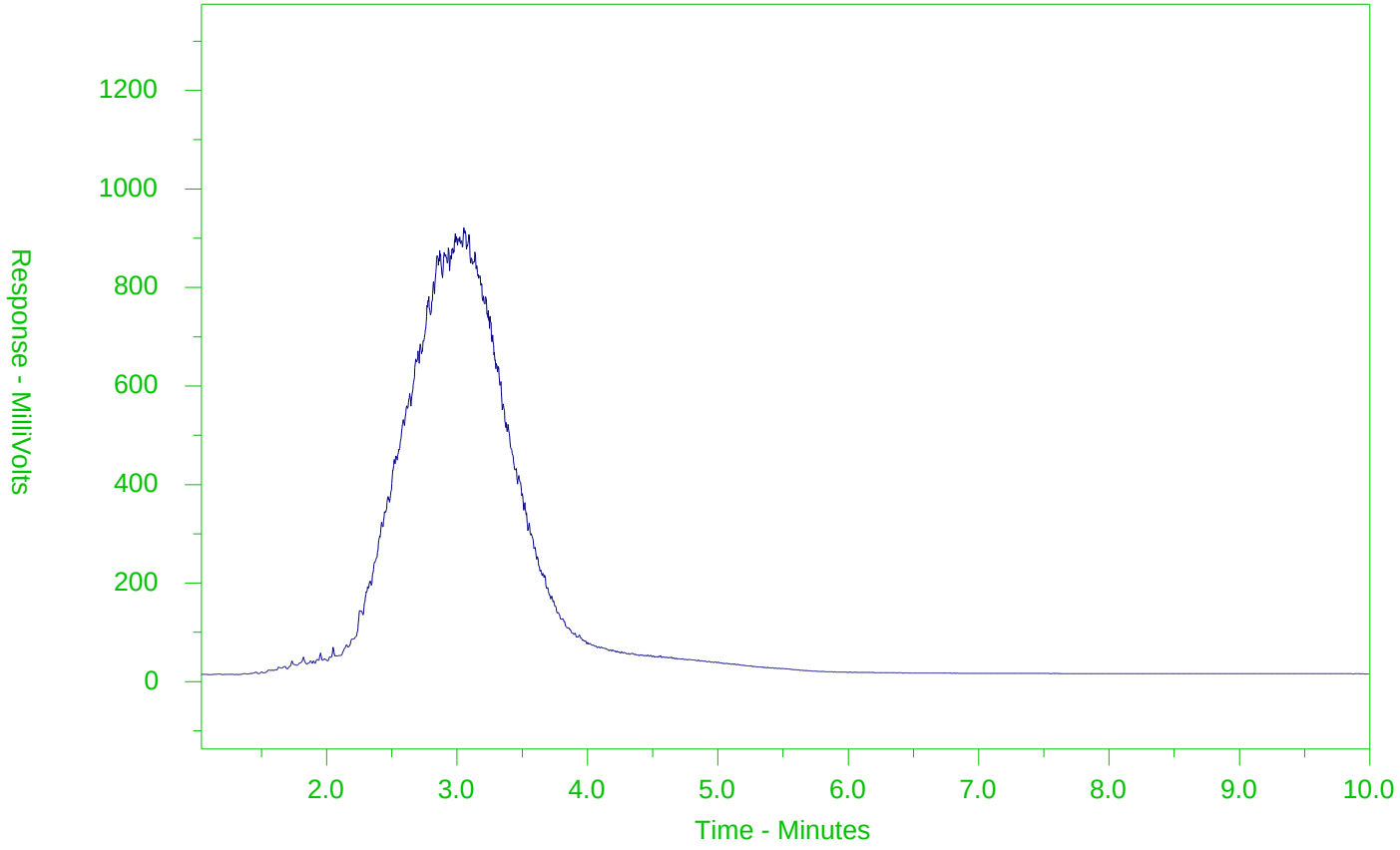
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2007635-20
Client Sample ID: MW17-108S-10-10.5



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

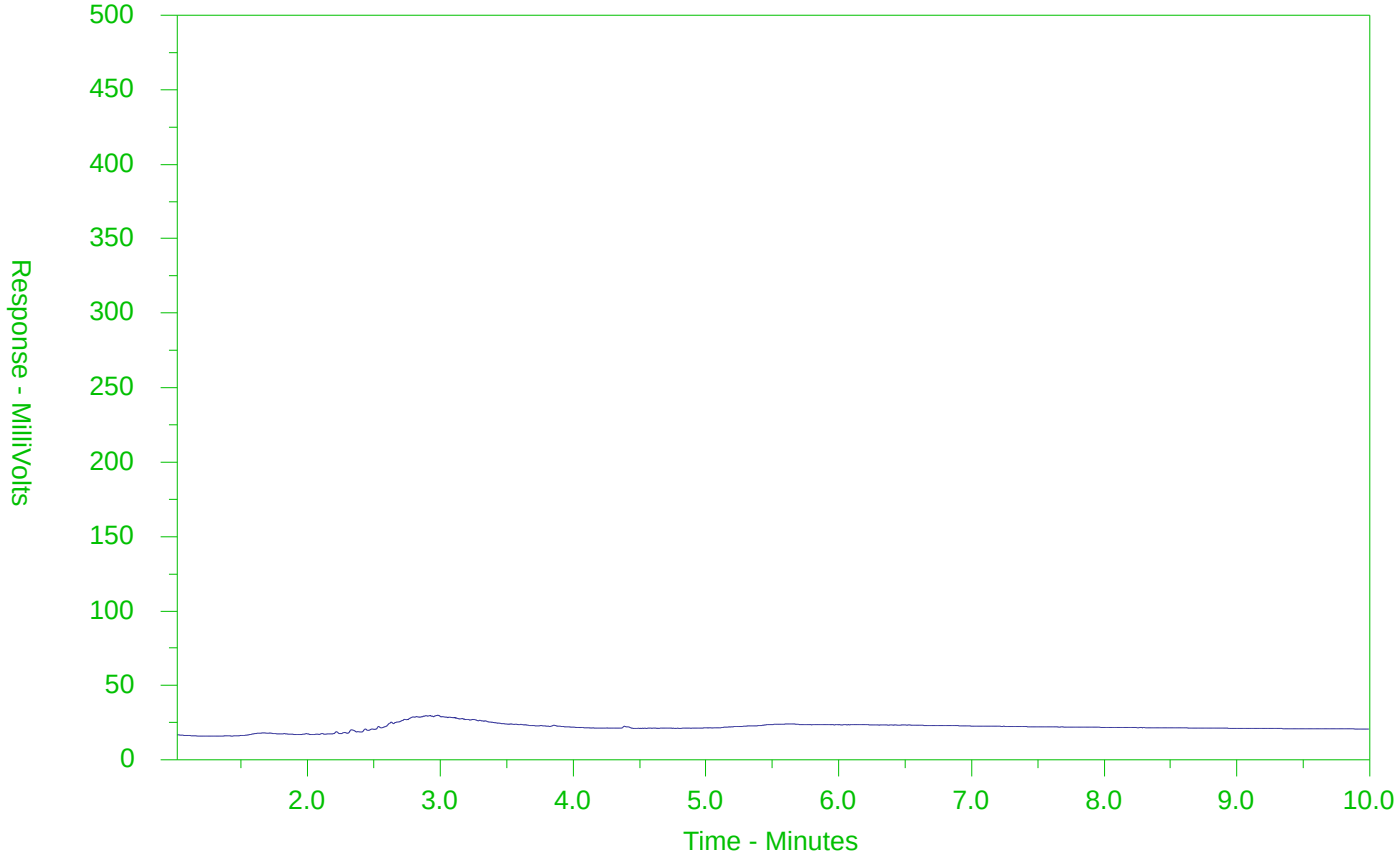
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2007635-22
Client Sample ID: MW17-107S-0.5-2



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

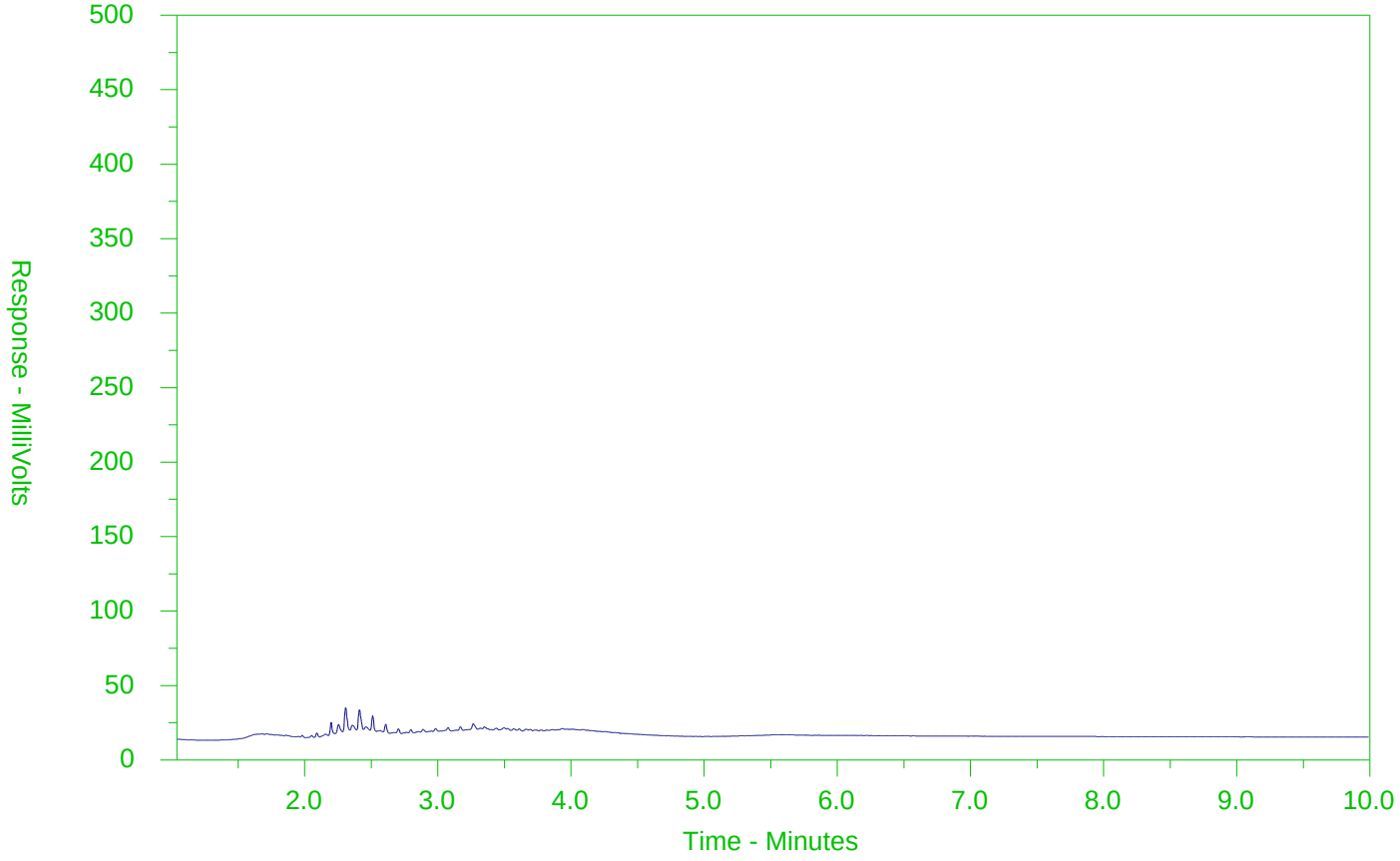
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2007635-23
Client Sample ID: MW17-107S-4.5-5.5



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

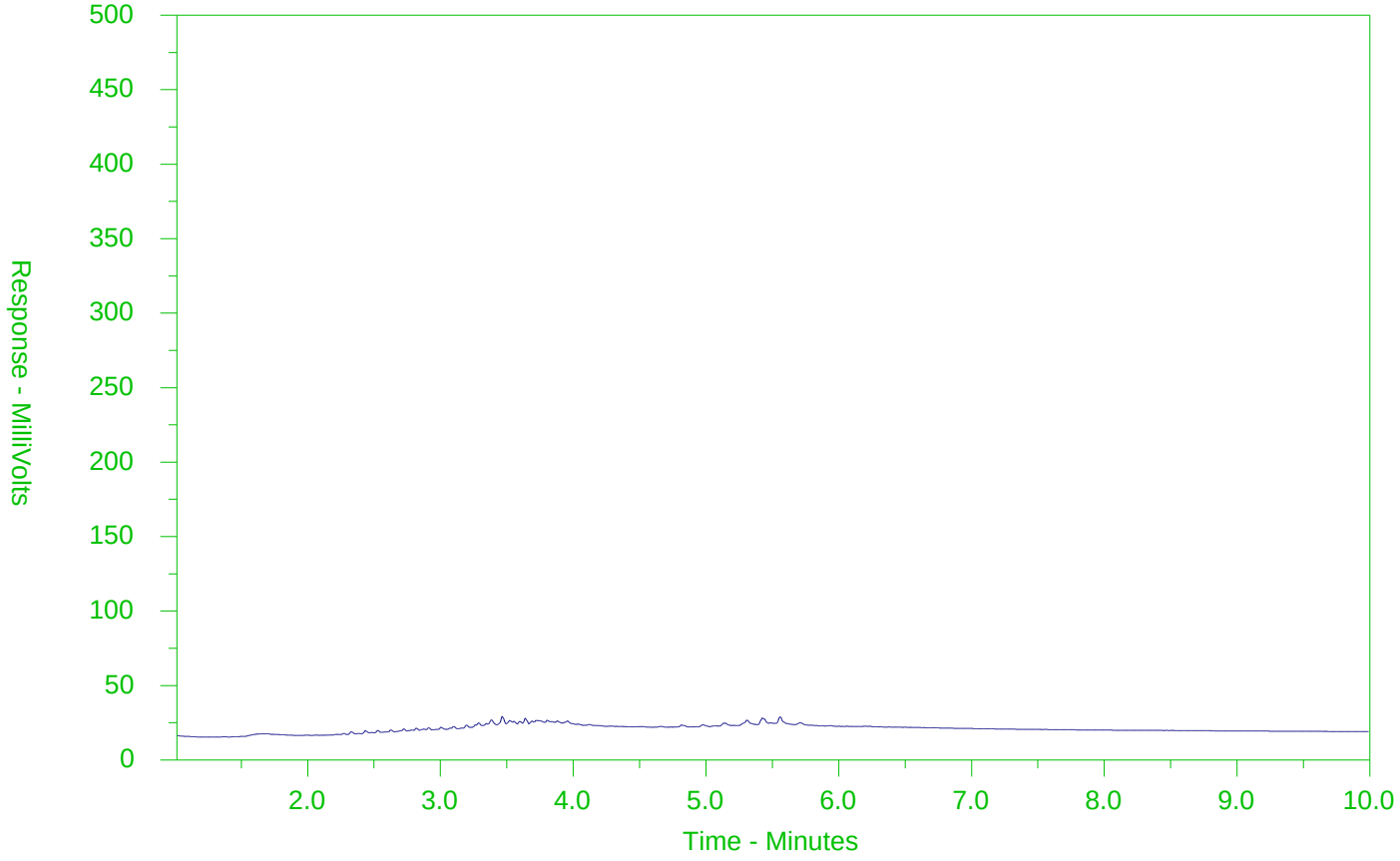
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2007635-26
Client Sample ID: MW17-111S-2-4



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

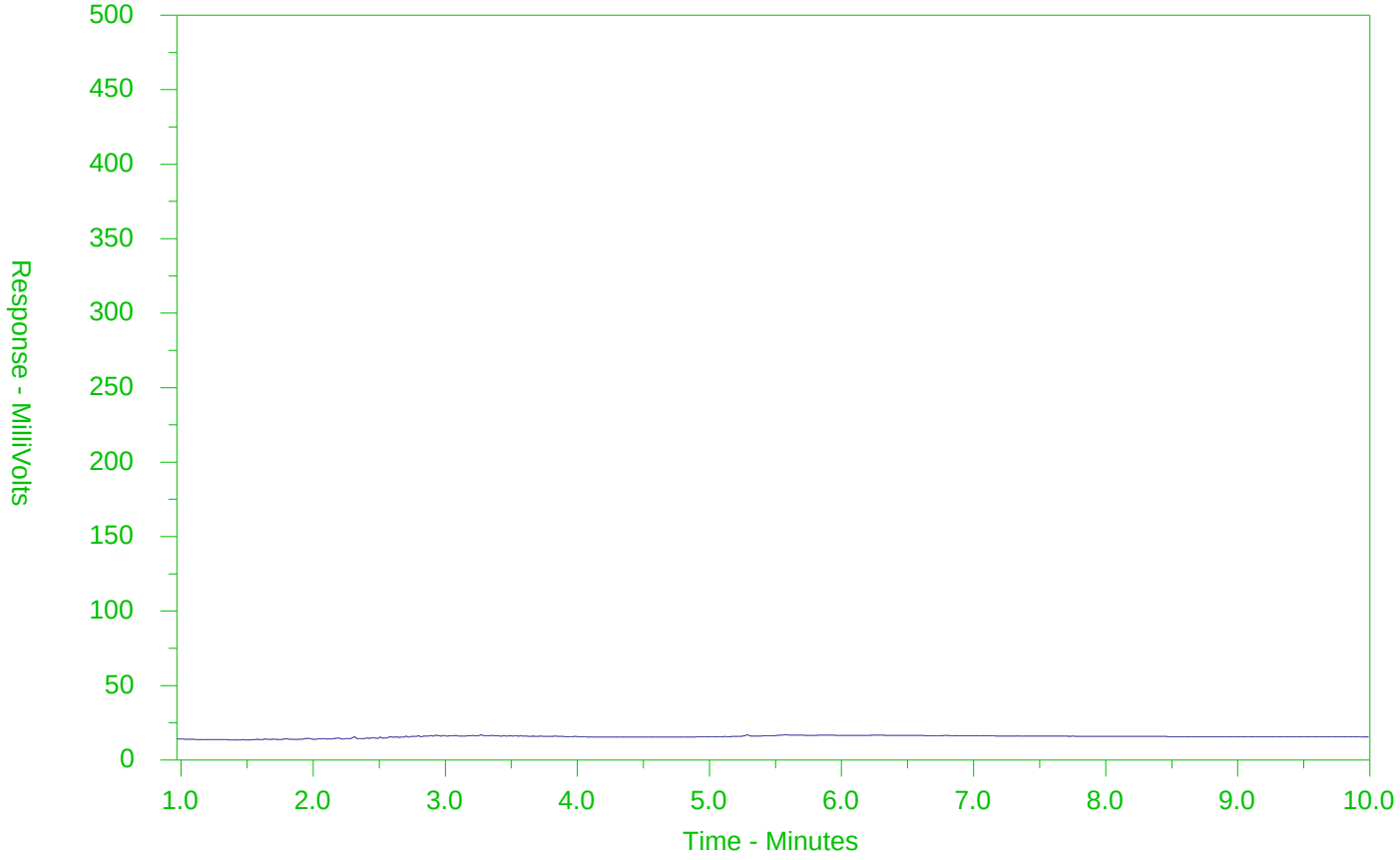
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2007635-28
Client Sample ID: MW17-100S-1-1.5



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

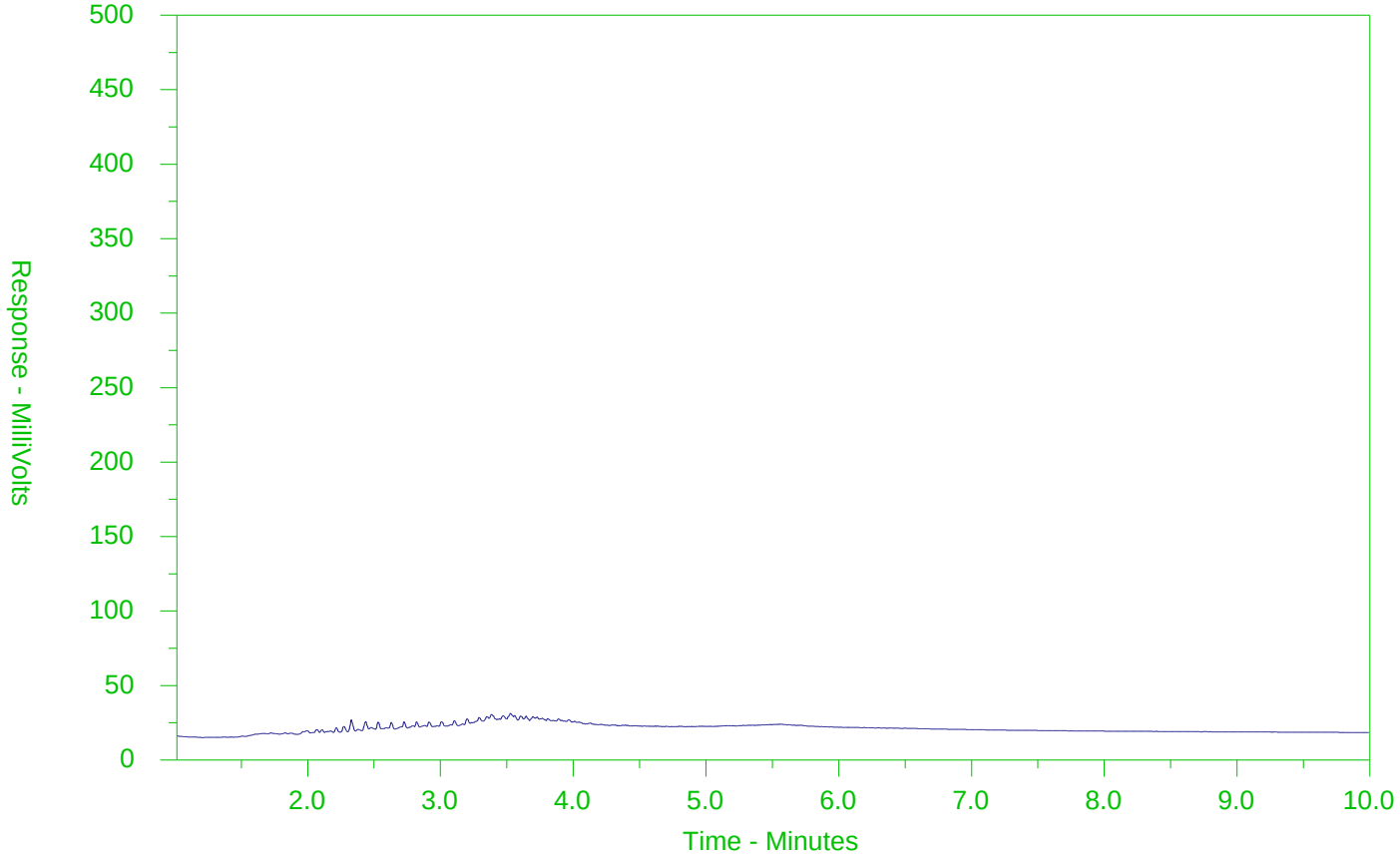
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2007635-30
Client Sample ID: MW17-100S-6-7



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

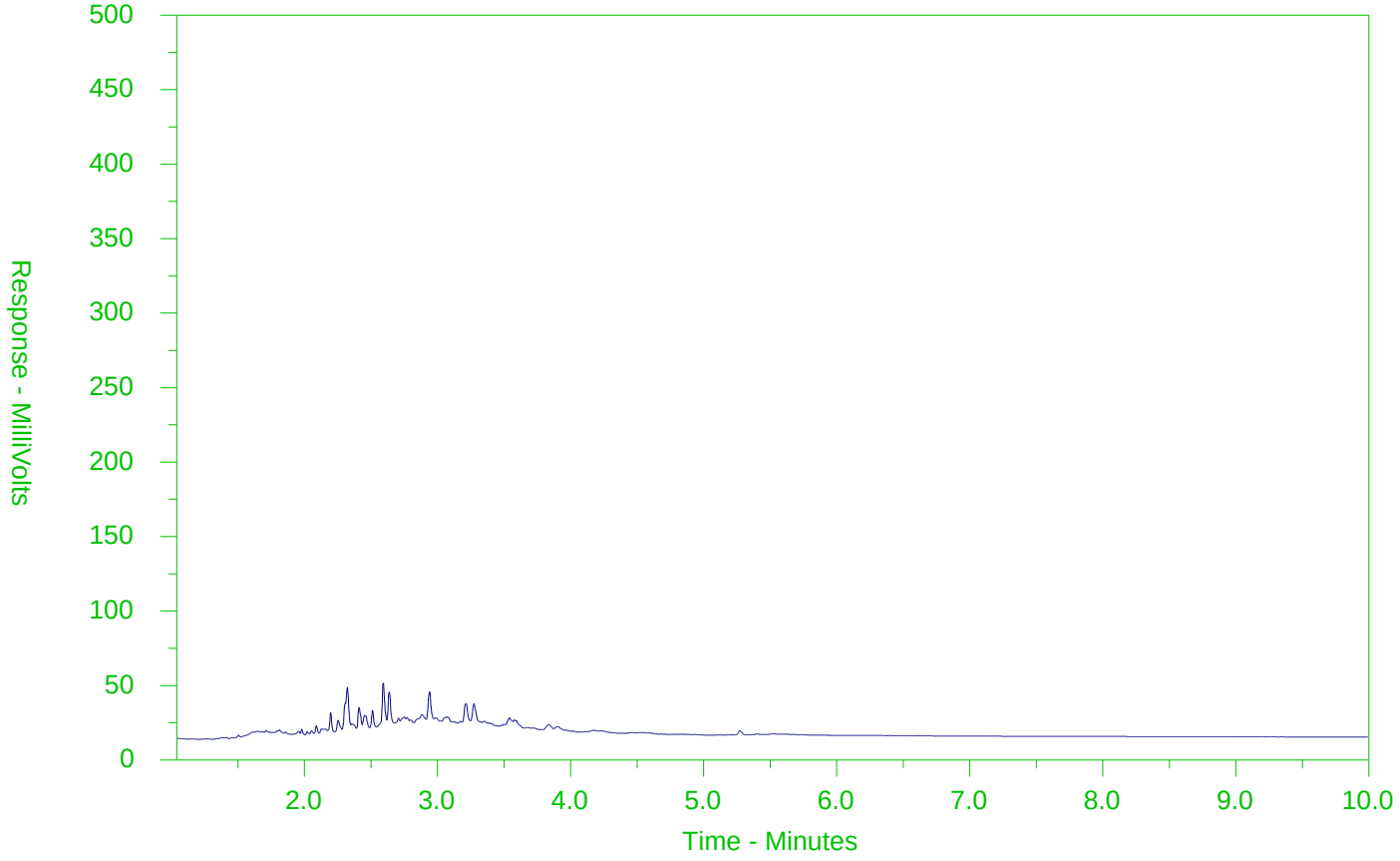
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2007635-31
Client Sample ID: DUP 7



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2007635-COFC

COC Number: 17 - 616670

Report To	Contact and company name below will appear on the final report
Company:	CH2M
Contact:	M. Sliny
Phone:	
Company address below will appear on the final report	
Street:	
City/Province:	
Postal Code:	
Invoice To	Same as Report To [X] YES [X] NO
	Copy of Invoice with Report [ ] YES [X] NO
Company:	
Contact:	Acct Payable

Project Information

ALS Account # / Quote #:	Q62156
Job #:	694757
PO / AFE:	
LSD:	

Report Format / Distribution

Select Report Format: [X] PDF [X] EXCEL [X] EDD (DIGITAL)
Quality Control (QC) Report with Report [X] YES [ ] NO
[ ] Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX

Email 1 or Fax	Michael Dark
Email 2	Kyrie
Email 3	

Invoice Distribution

Select Invoice Distribution: [ ] EMAIL [ ] MAIL [ ] FAX

Email 1 or Fax	
Email 2	

Oil and Gas Required Fields (client use)

AFE/Cost Center:		PO#	
Major/Minor Code:		Routing Code:	
Requisitioner:			
Location:			

ALS Lab Work Order # (lab use only): L2007635
ALS Contact: Matty
Sampler: M. Sliny

Select Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] [X] Standard TAT if received by 3 pm - business days - no surcharges apply

Priority (Business Days)		Emergency	
4 day [P4-20%]	[ ]	1 Business day [E-100%]	[ ]
3 day [P3-25%]	[ ]	Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)]	[ ]
2 day [P2-50%]	[ ]		

[redacted] Date and Time Required for all E&P TATs: [redacted] dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Metals + Inorganics	O.Reg PAH	O.Reg SVOC	O.Reg PHC	O.Reg VOC	O.Reg PCB	Dioxin/Furans	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
1	BH17-200-3-3.5	10-Oct-17	1606	Soil	X		X							2
2	BH17-200-3.5-4		1606					X	X					2
3	BH17-200-4-6		1616		X		X							2
4	BH17-200-6-6.5		1629					X	X					3
5	BH17-201-0-2		1710		X	X		X						5
6	BH17-201-2-3		1725		X	X		X						5
7	BH17-201-0-1		1710							X	(H)	X		2
8	BH17-201-1-2		1710							H	H	X		2
9	BH17-202-0-2		1422		X	X								2
10	BH17-202-2-4		1430					X	X					3
11	BH17-202-4-6		1440		X	X								2
12	BH17-202-6-7		1512					X	X					3

Drinking Water (DW) Samples' (client use)

Are samples taken from a Regulated DW System? [ ] YES [ ] NO
Are samples for human consumption/ use? [ ] YES [ ] NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Table 6 RPI.

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] SIF Observations Yes [ ] No [ ]
Ice Packs [ ] Ice Cubes [ ] Custody seal intact Yes [ ] No [ ]
Cooling initiated [ ]

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				9.9			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date: 2017/10/16	Time: 1005	Received by:	Date:	Time:	Received by: AP	Date: 10-16-17	Time: 15:00

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JULY 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2007635-COFC

COC Number: 17 - 616673

Report To	Contact and company name below will appear on the final report
Company:	CH2M
Contact:	M. Shiry
Phone:	
Company address below will appear on the final report	
Street:	
City/Province:	
Postal Code:	
Invoice To	Same as Report To ~~YES~~ [X] NO
	Copy of Invoice with Report [ ] YES [X] NO
Company:	
Contact:	Acct Payable

Project Information

ALS Account # / Quote #:	Q621156
Job #:	694757
PO / AFE:	
LSD:	
ALS Lab Work Order # (lab use only):	

Report Format / Distribution

Select Report Format: [X] PDF [X] EXCEL [X] EDD (DIGITAL)
Quality Control (QC) Report with Report [X] YES [ ] NO
[ ] Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX

Email 1 or Fax	Michael / Derek
Email 2	Kyrie
Email 3	

Invoice Distribution

Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX

Email 1 or Fax	
Email 2	

Oil and Gas Required Fields (client use)

AFE/Cost Center:		PO#	
Major/Minor Code:		Routing Code:	
Requisitioner:			
Location:			
ALS Contact:	Mathx	Sampler:	M. Shiry

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] [X] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] [ ]; 3 day [P3-25%] [ ]; 2 day [P2-50%] [ ]

EMERGENCY: 1 Business day [E-100%] [ ]; Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] [ ]

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	O.Reg Metals + Hg	O.Reg PAH	O.Reg SVOCs	O.Reg PHC + BTEX	O.Reg VOCs	O.Reg PCBs	TOC	1,4-Dioxane	Grain Size - Sieve + Hydrometer							SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
13	BH17-203-0-2"	11-Oct-17	1006	Soil				X	X													3
14	BH17-203-6-8		1042								X											1
15	MW17-108S-0-1		1108								X											1
16	MW17-108S-1-3		1108										X									1
17	MW17-108S-2-4		~~[illegible]~~ 1115		X		X															2
18	MW17-108S-8-9		1200		X																	1
19	MW17-108S-9-9.5		1220					X	X			X										3
20	MW17-108S-10-10.5		1232			X		X	X			X		Limited sample								~~4~~ 3
21	DUP6		—		X		X															2
22	MW17-107S-0.5-2	12-OCT-17	940		X		X	X	X													5
23	MW17-107S-4.5-5.5		1001		X		X	X	X													5
24	MW17-111S-0-1		1455							X												1

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] YES [ ] NO

Are samples for human consumption/ use? [ ] YES [ ] NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Table 6 RPI

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] SIF Observations Yes [ ] No [ ]
Ice Packs [ ] Ice Cubes [ ] Custody seal intact Yes [ ] No [ ]
Cooling Initiated [ ]

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date: 2017/10/16	Time: 1005	Received by:	Date:	Time:	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

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1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

ALL TO FRONT

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ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2007635-COFC

COC Number: 17 - 616671

Report To	Contact and company name below will appear on the final report
Company:	CH2M
Contact:	M. Shiry
Phone:	
Company address below will appear on the final report	
Street:	
City/Province:	
Postal Code:	
Invoice To	Same as Report To [ ] YES [X] NO
	Copy of Invoice with Report [ ] YES [X] NO
Company:	
Contact:	Acct Payable

Project Information

ALS Account # / Quote #:	Q62156
Job #:	694757
PO / AFE:	
LSD:	
ALS Lab Work Order # (lab use only):	
ALS Contact:	Mathy
Sampler:	M. Shiry

Report Format

Select Report Format: [X] PDF [X] EXCEL [X] EDD (DIGITAL)
Quality Control (QC) Report with Report [X] YES [ ] NO
[X] Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax: M. Shiry / Dirk
Email 2: Kyle
Email 3:

Invoice Distribution

Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax:
Email 2:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#:
Major/Minor Code: Routing Code:
Requisitioner:
Location:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] [X] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
4 day [P4-20%]	[ ]	1 Business day [E-100%]	[ ]
3 day [P3-25%]	[ ]	Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)]	[ ]
2 day [P2-50%]	[ ]		

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	6 Reg Metals + Ions	0.2 Reg PAH	0.2 Reg SVOC	0.2 Reg PHC + BTEX	0.2 Reg VOC	6 Reg VOCs + F1	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
25	MW17-111S-0-2	12-Oct-17	1455	Soil	X								1
26	MW17-111S-2-4	↓	1509	↓				X	X				3
27	MW17-111S-6-7		1535						X				1
28	MW17-100S-1-1.5		1133		X			X					4
29	MW17-100S-4.5-6		1214		X								1
30	MW17-100S-6-7		1225					X	X				3
31	DUP 7	↓	—					X	X				3
32	DUP 8	12-Oct-17	—	↓	X								1
33	Trip Blank D1	16-Oct-17	—	Other						X			1

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] YES [ ] NO
Are samples for human consumption/ use? [ ] YES [ ] NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Table 6 RPI

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] SIF Observations Yes [ ] No [ ]
Ice Packs [ ] Ice Cubes [ ] Custody seal intact Yes [ ] No [ ]
Cooling Initiated [ ]

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: MS	Date: 2017/10/17	Time: 1005	Received by:	Date:	Time:	Received by:	Date:	Time:

Incomplete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.
If samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

CH2M HILL CANADA LIMITED
ATTN: MICHAEL SHIRY
72 VICTORIA ST SOUTH
SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 20-OCT-17
Report Date: 10-NOV-17 12:03 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2010780

Project P.O. #:	NOT SUBMITTED
Job Reference:	694757
C of C Numbers:	17-616672
Legal Site Desc:	

Mathy Mahadeva
Account Manager

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ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2010780-1	MW17-109S-0-1									
Sampled By:	M.SHIRY on 16-OCT-17 @ 09:38									
Matrix:	SOIL									
Physical Tests										
	% Moisture	7.90		0.10	%	24-OCT-17				
Polychlorinated Biphenyls										
	Aroclor 1242	<0.010		0.010	ug/g	26-OCT-17				
	Aroclor 1248	<0.010		0.010	ug/g	26-OCT-17				
	Aroclor 1254	<0.010		0.010	ug/g	26-OCT-17				
	Aroclor 1260	<0.010		0.010	ug/g	26-OCT-17				
	Total PCBs	<0.020		0.020	ug/g	26-OCT-17	1.1	1.1	0.35	0.35
	Surrogate: d14-Terphenyl	89.3		60-140	%	26-OCT-17				
L2010780-3	MW17-109S-0-2									
Sampled By:	M.SHIRY on 16-OCT-17 @ 09:38									
Matrix:	SOIL									
Physical Tests										
	Conductivity	0.127		0.0040	mS/cm	26-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	7.83		0.10	%	21-OCT-17				
	pH	7.63		0.10	pH units	24-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	24-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	0.31	SAR:M	0.10	SAR	26-OCT-17	12	12	5	5
	Calcium (Ca)	2.3		1.0	mg/L	26-OCT-17				
	Magnesium (Mg)	<1.0		1.0	mg/L	26-OCT-17				
	Sodium (Na)	1.7		1.0	mg/L	26-OCT-17				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	26-OCT-17	40	50	7.5	7.5
	Arsenic (As)	6.0		1.0	ug/g	26-OCT-17	18	18	18	18
	Barium (Ba)	16.8		1.0	ug/g	26-OCT-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	26-OCT-17	8	10	4	5
	Boron (B)	6.0		5.0	ug/g	26-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	<0.10		0.10	ug/g	26-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	<0.50		0.50	ug/g	26-OCT-17	1.9	1.9	1.2	1.2
	Chromium (Cr)	8.1		1.0	ug/g	26-OCT-17	160	160	160	160
	Cobalt (Co)	3.3		1.0	ug/g	26-OCT-17	80	100	22	22
	Copper (Cu)	12.0		1.0	ug/g	26-OCT-17	230	300	140	180
	Lead (Pb)	7.9		1.0	ug/g	26-OCT-17	120	120	120	120
	Mercury (Hg)	0.0089		0.0050	ug/g	26-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	<1.0		1.0	ug/g	26-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	6.0		1.0	ug/g	26-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	26-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	26-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	26-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	26-OCT-17	33	33	23	23
	Vanadium (V)	19.7		1.0	ug/g	26-OCT-17	86	86	86	86
	Zinc (Zn)	56.6		5.0	ug/g	26-OCT-17	340	340	340	340
Speciated Metals										

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2010780-3	MW17-109S-0-2									
Sampled By:	M.SHIRY on 16-OCT-17 @ 09:38									
Matrix:	SOIL						#1	#2	#3	#4
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	24-OCT-17	8	10	8	10
L2010780-4	MW17-109S-4-5									
Sampled By:	M.SHIRY on 16-OCT-17 @ 09:56									
Matrix:	SOIL						#1	#2	#3	#4
Physical Tests										
	Conductivity	0.153		0.0040	mS/cm	26-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	15.0		0.10	%	21-OCT-17				
	pH	8.14		0.10	pH units	24-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	24-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	0.26		0.10	SAR	26-OCT-17	12	12	5	5
	Calcium (Ca)	3.2		1.0	mg/L	26-OCT-17				
	Magnesium (Mg)	1.5		1.0	mg/L	26-OCT-17				
	Sodium (Na)	2.3		1.0	mg/L	26-OCT-17				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	26-OCT-17	40	50	7.5	7.5
	Arsenic (As)	2.0		1.0	ug/g	26-OCT-17	18	18	18	18
	Barium (Ba)	18.3		1.0	ug/g	26-OCT-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	26-OCT-17	8	10	4	5
	Boron (B)	15.4		5.0	ug/g	26-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.14		0.10	ug/g	26-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	11.7		0.50	ug/g	26-OCT-17	*1.9	*1.9	*1.2	*1.2
	Chromium (Cr)	6.0		1.0	ug/g	26-OCT-17	160	160	160	160
	Cobalt (Co)	3.7		1.0	ug/g	26-OCT-17	80	100	22	22
	Copper (Cu)	11.8		1.0	ug/g	26-OCT-17	230	300	140	180
	Lead (Pb)	158		1.0	ug/g	26-OCT-17	*120	*120	*120	*120
	Mercury (Hg)	0.0960		0.0050	ug/g	26-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	1.3		1.0	ug/g	26-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	8.0		1.0	ug/g	26-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	26-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	26-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	26-OCT-17	3.3	3.3	1	1
	Uranium (U)	1.7		1.0	ug/g	26-OCT-17	33	33	23	23
	Vanadium (V)	10.9		1.0	ug/g	26-OCT-17	86	86	86	86
	Zinc (Zn)	3900	DLHC	40	ug/g	28-OCT-17	*340	*340	*340	*340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	24-OCT-17	8	10	8	10
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	24-OCT-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	24-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	24-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	24-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	24-OCT-17	0.05	0.05	0.05	0.05

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2010780-4	MW17-109S-4-5									
Sampled By:	M.SHIRY on 16-OCT-17 @ 09:56									
Matrix:	SOIL									
Volatile Organic Compounds										
	Carbon tetrachloride	<0.050		0.050	ug/g	24-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	24-OCT-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	24-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	24-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	24-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	24-OCT-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	24-OCT-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	24-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	24-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	24-OCT-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	24-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	24-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	24-OCT-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	24-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	24-OCT-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	24-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	24-OCT-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	24-OCT-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	25-OCT-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	24-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	0.164		0.050	ug/g	24-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	24-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	24-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	24-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	24-OCT-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	24-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	24-OCT-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	24-OCT-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	24-OCT-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	24-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	24-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	24-OCT-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	24-OCT-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	24-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	24-OCT-17				
	m+p-Xylenes	0.032		0.030	ug/g	24-OCT-17				
	Xylenes (Total)	<0.050		0.050	ug/g	25-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	94.6		50-140	%	24-OCT-17				
	Surrogate: 1,4-Difluorobenzene	96.8		50-140	%	24-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	8.0		5.0	ug/g	24-OCT-17	55	65	55	65
	F1-BTEX	8.0		5.0	ug/g	25-OCT-17	55	65	55	65
	F2 (C10-C16)	38		10	ug/g	25-OCT-17	230	250	98	150
	F3 (C16-C34)	232		50	ug/g	25-OCT-17	1700	2500	300	1300
	F4 (C34-C50)	63		50	ug/g	25-OCT-17	3300	6600	2800	5600
	F4G-SG (GHH-Silica)	360		250	ug/g	24-OCT-17	3300	6600	2800	5600

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2010780-4	MW17-109S-4-5									
Sampled By:	M.SHIRY on 16-OCT-17 @ 09:56									
Matrix:	SOIL						#1	#2	#3	#4
Hydrocarbons										
	Total Hydrocarbons (C6-C50)	341		72	ug/g	25-OCT-17				
	Chrom. to baseline at nC50	NO			No Unit	25-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	86.9		60-140	%	25-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	96.9		60-140	%	24-OCT-17				
L2010780-5	MW17-110S-0-2									
Sampled By:	M.SHIRY on 16-OCT-17 @ 15:38									
Matrix:	SOIL						#1	#2	#3	#4
Physical Tests										
	Conductivity	0.161		0.0040	mS/cm	26-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	18.2		0.10	%	21-OCT-17				
	pH	7.32		0.10	pH units	24-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	24-OCT-17	0.051	0.051	0.051	0.051
Organic / Inorganic Carbon										
	Fraction Organic Carbon	0.0051		0.0010	No Unit	26-OCT-17				
	Fraction Organic Carbon	0.0052		0.0010	No Unit	26-OCT-17				
	Fraction Organic Carbon	0.0053		0.0010	No Unit	26-OCT-17				
	Average Fraction Organic Carbon	0.0052		0.0010	No Unit	26-OCT-17				
	Total Organic Carbon	0.51		0.10	%	26-OCT-17				
	Total Organic Carbon	0.52		0.10	%	26-OCT-17				
	Total Organic Carbon	0.53		0.10	%	26-OCT-17				
Saturated Paste Extractables										
	SAR	<0.11	SAR:DL	0.11	SAR	26-OCT-17	12	12	5	5
	Calcium (Ca)	4.5		1.0	mg/L	26-OCT-17				
	Magnesium (Mg)	1.3		1.0	mg/L	26-OCT-17				
	Sodium (Na)	<1.0		1.0	mg/L	26-OCT-17				
Metals										
	Antimony (Sb)	2.9		1.0	ug/g	26-OCT-17	40	50	7.5	7.5
	Arsenic (As)	9.9		1.0	ug/g	26-OCT-17	18	18	18	18
	Barium (Ba)	46.2		1.0	ug/g	26-OCT-17	670	670	390	390
	Beryllium (Be)	0.56		0.50	ug/g	26-OCT-17	8	10	4	5
	Boron (B)	9.3		5.0	ug/g	26-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.49		0.10	ug/g	26-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	<0.50		0.50	ug/g	26-OCT-17	1.9	1.9	1.2	1.2
	Chromium (Cr)	12.7		1.0	ug/g	26-OCT-17	160	160	160	160
	Cobalt (Co)	5.9		1.0	ug/g	26-OCT-17	80	100	22	22

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2010780-5	MW17-110S-0-2									
Sampled By:	M.SHIRY on 16-OCT-17 @ 15:38									
Matrix:	SOIL									
Metals										
	Copper (Cu)	44.0		1.0	ug/g	26-OCT-17	230	300	140	180
	Lead (Pb)	149		1.0	ug/g	26-OCT-17	*120	*120	*120	*120
	Mercury (Hg)	0.0605		0.0050	ug/g	26-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	1.7		1.0	ug/g	26-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	16.2		1.0	ug/g	26-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	26-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	26-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	26-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	26-OCT-17	33	33	23	23
	Vanadium (V)	17.1		1.0	ug/g	26-OCT-17	86	86	86	86
	Zinc (Zn)	130		5.0	ug/g	26-OCT-17	340	340	340	340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	24-OCT-17	8	10	8	10
Polycyclic Aromatic Hydrocarbons										
	1+2-Methylnaphthalenes	3.59		0.042	ug/g	27-OCT-17	30	42	*0.99	*3.4
Semi-Volatile Organics										
	Acenaphthene	0.098	R	0.050	ug/g	27-OCT-17	21	29	7.9	29
	Acenaphthylene	0.091		0.050	ug/g	27-OCT-17	0.15	0.17	0.15	0.17
	Anthracene	0.189		0.050	ug/g	27-OCT-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	0.970		0.050	ug/g	27-OCT-17	*0.96	*0.96	*0.5	*0.63
	Benzo(a)pyrene	0.837		0.050	ug/g	27-OCT-17	*0.3	*0.3	*0.3	*0.3
	Benzo(b)fluoranthene	1.03		0.050	ug/g	27-OCT-17	*0.96	*0.96	*0.78	*0.78
	Benzo(ghi)perylene	0.634		0.050	ug/g	27-OCT-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	0.723		0.050	ug/g	27-OCT-17	0.96	0.96	0.78	0.78
	Biphenyl	0.237		0.050	ug/g	27-OCT-17	52	210	0.31	1.1
	4-Chloroaniline	<0.10		0.10	ug/g	27-OCT-17	0.5	0.53	0.5	0.53
	Bis(2-chloroethyl)ether	<0.10		0.10	ug/g	27-OCT-17	0.5	0.5	0.5	0.5
	Bis(2-chloroisopropyl)ether	<0.10		0.10	ug/g	27-OCT-17	11	13	0.67	1.8
	2-Chlorophenol	<0.10		0.10	ug/g	27-OCT-17	3.1	3.9	1.6	2
	Chrysene	1.43		0.050	ug/g	27-OCT-17	9.6	9.6	7	7.8
	Dibenzo(a,h)anthracene	0.185		0.050	ug/g	27-OCT-17	*0.1	*0.1	*0.1	*0.1
	3,3'-Dichlorobenzidine	<0.10		0.10	ug/g	27-OCT-17	1	1	1	1
	2,4-Dichlorophenol	<0.10		0.10	ug/g	27-OCT-17	0.19	0.27	0.19	0.27
	Diethylphthalate	<0.10		0.10	ug/g	27-OCT-17	0.5	0.5	0.5	0.5
	Dimethylphthalate	<0.10		0.10	ug/g	27-OCT-17	0.5	0.5	0.5	0.5
	2,4-Dimethylphenol	<0.10		0.10	ug/g	27-OCT-17	38	53	38	53
	2,4-Dinitrophenol	<1.0		1.0	ug/g	27-OCT-17	2	2.9	2	2.9
	2,4-Dinitrotoluene	<0.10		0.10	ug/g	27-OCT-17	0.5	0.5	0.5	0.5
	2,6-Dinitrotoluene	<0.10		0.10	ug/g	27-OCT-17	0.5	0.5	0.5	0.5
	2,4+2,6-Dinitrotoluene	<0.14		0.14	ug/g	27-OCT-17				
	Bis(2-ethylhexyl)phthalate	<0.10		0.10	ug/g	27-OCT-17	28	35	5	5
	Fluoranthene	1.92		0.050	ug/g	27-OCT-17	9.6	9.6	*0.69	*0.69
	Fluorene	0.151		0.050	ug/g	27-OCT-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	0.648		0.050	ug/g	27-OCT-17	0.76	0.95	*0.38	*0.48
	1-Methylnaphthalene	1.80		0.030	ug/g	27-OCT-17	30	42	*0.99	3.4

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2010780-5	MW17-110S-0-2									
Sampled By:	M.SHIRY on 16-OCT-17 @ 15:38									
Matrix:	SOIL									
Semi-Volatile Organics										
	2-Methylnaphthalene	1.79		0.030	ug/g	27-OCT-17	30	42	*0.99	3.4
	Naphthalene	1.04		0.050	ug/g	27-OCT-17	9.6	28	*0.6	*0.75
	Pentachlorophenol	<0.10		0.10	ug/g	27-OCT-17	2.9	3.3	0.1	0.1
	Phenanthrene	2.71		0.050	ug/g	27-OCT-17	12	16	6.2	7.8
	Phenol	<0.10		0.10	ug/g	27-OCT-17	9.4	9.4	9.4	9.4
	Pyrene	1.56		0.050	ug/g	27-OCT-17	96	96	78	78
	1,2,4-Trichlorobenzene	<0.050		0.050	ug/g	27-OCT-17	3.2	16	0.36	1.4
	2,4,5-Trichlorophenol	<0.10		0.10	ug/g	27-OCT-17	9.1	10	4.4	5.5
	2,4,6-Trichlorophenol	<0.10		0.10	ug/g	27-OCT-17	2.1	2.9	2.1	2.9
	Surrogate: 2-Fluorobiphenyl	83.6		50-140	%	27-OCT-17				
	Surrogate: Nitrobenzene d5	83.7		50-140	%	27-OCT-17				
	Surrogate: Phenol d5	76.6		30-130	%	27-OCT-17				
	Surrogate: p-Terphenyl d14	84.6		50-140	%	27-OCT-17				
	Surrogate: 2,4,6-Tribromophenol	69.8		50-140	%	27-OCT-17				
L2010780-6	MW17-110S-4-6									
Sampled By:	M.SHIRY on 16-OCT-17 @ 15:54									
Matrix:	SOIL									
Physical Tests										
	Conductivity	0.163		0.0040	mS/cm	26-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	3.10		0.10	%	21-OCT-17				
	pH	8.38		0.10	pH units	24-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	24-OCT-17	0.051	0.051	0.051	0.051
Organic / Inorganic Carbon										
	Fraction Organic Carbon	0.237		0.0010	No Unit	26-OCT-17				
	Fraction Organic Carbon	0.242		0.0010	No Unit	26-OCT-17				
	Fraction Organic Carbon	0.251		0.0010	No Unit	26-OCT-17				
	Average Fraction Organic Carbon	0.243		0.0010	No Unit	26-OCT-17				
	Total Organic Carbon	23.7		0.10	%	26-OCT-17				
	Total Organic Carbon	24.2		0.10	%	26-OCT-17				
	Total Organic Carbon	25.1		0.10	%	26-OCT-17				
Saturated Paste Extractables										
	SAR	0.26		0.10	SAR	26-OCT-17	12	12	5	5
	Calcium (Ca)	2.8		1.0	mg/L	26-OCT-17				
	Magnesium (Mg)	3.2		1.0	mg/L	26-OCT-17				
	Sodium (Na)	2.7		1.0	mg/L	26-OCT-17				

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ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2010780-6	MW17-110S-4-6									
Sampled By:	M.SHIRY on 16-OCT-17 @ 15:54									
Matrix:	SOIL									
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	26-OCT-17	40	50	7.5	7.5
	Arsenic (As)	2.4		1.0	ug/g	26-OCT-17	18	18	18	18
	Barium (Ba)	19.0		1.0	ug/g	26-OCT-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	26-OCT-17	8	10	4	5
	Boron (B)	8.6		5.0	ug/g	26-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.17		0.10	ug/g	26-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	<0.50		0.50	ug/g	26-OCT-17	1.9	1.9	1.2	1.2
	Chromium (Cr)	7.3		1.0	ug/g	26-OCT-17	160	160	160	160
	Cobalt (Co)	2.8		1.0	ug/g	26-OCT-17	80	100	22	22
	Copper (Cu)	5.3		1.0	ug/g	26-OCT-17	230	300	140	180
	Lead (Pb)	65.3		1.0	ug/g	26-OCT-17	120	120	120	120
	Mercury (Hg)	0.0313		0.0050	ug/g	26-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	<1.0		1.0	ug/g	26-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	6.3		1.0	ug/g	26-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	26-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	26-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	26-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	26-OCT-17	33	33	23	23
	Vanadium (V)	14.5		1.0	ug/g	26-OCT-17	86	86	86	86
	Zinc (Zn)	398		5.0	ug/g	26-OCT-17	*340	*340	*340	*340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	24-OCT-17	8	10	8	10
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	24-OCT-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	24-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	24-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	24-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	24-OCT-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	24-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	24-OCT-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	24-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	24-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	24-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	24-OCT-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	24-OCT-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	24-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	24-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	24-OCT-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	24-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	24-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	24-OCT-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	24-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	24-OCT-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	24-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	24-OCT-17				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2010780-6	MW17-110S-4-6									
Sampled By:	M.SHIRY on 16-OCT-17 @ 15:54									
Matrix:	SOIL									
Volatile Organic Compounds										
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	24-OCT-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	25-OCT-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	24-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	24-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	24-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	24-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	24-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	24-OCT-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	24-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	24-OCT-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	24-OCT-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	24-OCT-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	24-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	24-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	24-OCT-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	24-OCT-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	24-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	24-OCT-17				
	m+p-Xylenes	<0.030		0.030	ug/g	24-OCT-17				
	Xylenes (Total)	<0.050		0.050	ug/g	25-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	99.4		50-140	%	24-OCT-17				
	Surrogate: 1,4-Difluorobenzene	100.4		50-140	%	24-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	24-OCT-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	26-OCT-17	55	65	55	65
	F2 (C10-C16)	<10		10	ug/g	25-OCT-17	230	250	98	150
	F2-Naphth	<10		10	ug/g	26-OCT-17				
	F3 (C16-C34)	128		50	ug/g	25-OCT-17	1700	2500	300	1300
	F3-PAH	128		50	ug/g	26-OCT-17				
	F4 (C34-C50)	94		50	ug/g	25-OCT-17	3300	6600	2800	5600
	F4G-SG (GHH-Silica)	350		250	ug/g	24-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	222		72	ug/g	26-OCT-17				
	Chrom. to baseline at nC50	NO			No Unit	25-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	85.8		60-140	%	25-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	90.8		60-140	%	24-OCT-17				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.050		0.050	ug/g	25-OCT-17	21	29	7.9	29
	Acenaphthylene	<0.050		0.050	ug/g	25-OCT-17	0.15	0.17	0.15	0.17
	Anthracene	<0.050		0.050	ug/g	25-OCT-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	<0.050		0.050	ug/g	25-OCT-17	0.96	0.96	0.5	0.63
	Benzo(a)pyrene	<0.050		0.050	ug/g	25-OCT-17	0.3	0.3	0.3	0.3
	Benzo(b)fluoranthene	<0.050		0.050	ug/g	25-OCT-17	0.96	0.96	0.78	0.78
	Benzo(g,h,i)perylene	<0.050		0.050	ug/g	25-OCT-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	<0.050		0.050	ug/g	25-OCT-17	0.96	0.96	0.78	0.78
	Chrysene	<0.050		0.050	ug/g	25-OCT-17	9.6	9.6	7	7.8
	Dibenzo(ah)anthracene	<0.050		0.050	ug/g	25-OCT-17	0.1	0.1	0.1	0.1

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2010780-6	MW17-110S-4-6									
Sampled By:	M.SHIRY on 16-OCT-17 @ 15:54									
Matrix:	SOIL						#1	#2	#3	#4
Polycyclic Aromatic Hydrocarbons										
	Fluoranthene	<0.050		0.050	ug/g	25-OCT-17	9.6	9.6	0.69	0.69
	Fluorene	<0.050		0.050	ug/g	25-OCT-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	25-OCT-17	0.76	0.95	0.38	0.48
	1+2-Methylnaphthalenes	<0.042		0.042	ug/g	26-OCT-17	30	42	0.99	3.4
	1-Methylnaphthalene	<0.030		0.030	ug/g	25-OCT-17	30	42	0.99	3.4
	2-Methylnaphthalene	<0.030		0.030	ug/g	25-OCT-17	30	42	0.99	3.4
	Naphthalene	<0.050		0.050	ug/g	25-OCT-17	9.6	28	0.6	0.75
	Phenanthrene	<0.050		0.050	ug/g	25-OCT-17	12	16	6.2	7.8
	Pyrene	<0.050		0.050	ug/g	25-OCT-17	96	96	78	78
	Surrogate: 2-Fluorobiphenyl	85.9		50-140	%	25-OCT-17				
	Surrogate: p-Terphenyl d14	84.3		50-140	%	25-OCT-17				
L2010780-7	MW17-104S/D-2-4									
Sampled By:	M.SHIRY on 17-OCT-17 @ 10:08									
Matrix:	SOIL						#1	#2	#3	#4
Physical Tests										
	Conductivity	0.241		0.0040	mS/cm	26-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	14.4		0.10	%	21-OCT-17				
	pH	8.09		0.10	pH units	24-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	24-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	0.19		0.10	SAR	26-OCT-17	12	12	5	5
	Calcium (Ca)	2.2		1.0	mg/L	26-OCT-17				
	Magnesium (Mg)	14.5		1.0	mg/L	26-OCT-17				
	Sodium (Na)	3.6		1.0	mg/L	26-OCT-17				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	26-OCT-17	40	50	7.5	7.5
	Arsenic (As)	9.3		1.0	ug/g	26-OCT-17	18	18	18	18
	Barium (Ba)	106		1.0	ug/g	26-OCT-17	670	670	390	390
	Beryllium (Be)	0.57		0.50	ug/g	26-OCT-17	8	10	4	5
	Boron (B)	8.4		5.0	ug/g	26-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.48		0.10	ug/g	26-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	2.35		0.50	ug/g	26-OCT-17	*1.9	*1.9	*1.2	*1.2
	Chromium (Cr)	17.0		1.0	ug/g	26-OCT-17	160	160	160	160
	Cobalt (Co)	8.5		1.0	ug/g	26-OCT-17	80	100	22	22
	Copper (Cu)	32.7		1.0	ug/g	26-OCT-17	230	300	140	180
	Lead (Pb)	142		1.0	ug/g	26-OCT-17	*120	*120	*120	*120
	Mercury (Hg)	0.0993		0.0050	ug/g	26-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	<1.0		1.0	ug/g	26-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	24.7		1.0	ug/g	26-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	26-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	26-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	26-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	26-OCT-17	33	33	23	23

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#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2010780-7	MW17-104S/D-2-4									
Sampled By:	M.SHIRY on 17-OCT-17 @ 10:08									
Matrix:	SOIL									
Metals										
	Vanadium (V)	31.1		1.0	ug/g	26-OCT-17	86	86	86	86
	Zinc (Zn)	725		5.0	ug/g	26-OCT-17	*340	*340	*340	*340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	25-OCT-17	8	10	8	10
Polycyclic Aromatic Hydrocarbons										
	1+2-Methylnaphthalenes	<0.042		0.042	ug/g	30-OCT-17	30	42	0.99	3.4
Semi-Volatile Organics										
	Acenaphthene	<0.050		0.050	ug/g	30-OCT-17	21	29	7.9	29
	Acenaphthylene	<0.050		0.050	ug/g	30-OCT-17	0.15	0.17	0.15	0.17
	Anthracene	<0.050		0.050	ug/g	30-OCT-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	<0.050		0.050	ug/g	30-OCT-17	0.96	0.96	0.5	0.63
	Benzo(a)pyrene	<0.050		0.050	ug/g	30-OCT-17	0.3	0.3	0.3	0.3
	Benzo(b)fluoranthene	<0.050		0.050	ug/g	30-OCT-17	0.96	0.96	0.78	0.78
	Benzo(ghi)perylene	<0.050		0.050	ug/g	30-OCT-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	<0.050		0.050	ug/g	30-OCT-17	0.96	0.96	0.78	0.78
	Biphenyl	<0.050		0.050	ug/g	30-OCT-17	52	210	0.31	1.1
	4-Chloroaniline	<0.10		0.10	ug/g	30-OCT-17	0.5	0.53	0.5	0.53
	Bis(2-chloroethyl)ether	<0.10		0.10	ug/g	30-OCT-17	0.5	0.5	0.5	0.5
	Bis(2-chloroisopropyl)ether	<0.10		0.10	ug/g	30-OCT-17	11	13	0.67	1.8
	2-Chlorophenol	<0.10		0.10	ug/g	30-OCT-17	3.1	3.9	1.6	2
	Chrysene	<0.050		0.050	ug/g	30-OCT-17	9.6	9.6	7	7.8
	Dibenzo(a,h)anthracene	<0.050		0.050	ug/g	30-OCT-17	0.1	0.1	0.1	0.1
	3,3'-Dichlorobenzidine	<0.10		0.10	ug/g	30-OCT-17	1	1	1	1
	2,4-Dichlorophenol	<0.10		0.10	ug/g	30-OCT-17	0.19	0.27	0.19	0.27
	Diethylphthalate	<0.10		0.10	ug/g	30-OCT-17	0.5	0.5	0.5	0.5
	Dimethylphthalate	<0.10		0.10	ug/g	30-OCT-17	0.5	0.5	0.5	0.5
	2,4-Dimethylphenol	<0.10		0.10	ug/g	30-OCT-17	38	53	38	53
	2,4-Dinitrophenol	<1.0		1.0	ug/g	30-OCT-17	2	2.9	2	2.9
	2,4-Dinitrotoluene	<0.10		0.10	ug/g	30-OCT-17	0.5	0.5	0.5	0.5
	2,6-Dinitrotoluene	<0.10		0.10	ug/g	30-OCT-17	0.5	0.5	0.5	0.5
	2,4+2,6-Dinitrotoluene	<0.14		0.14	ug/g	30-OCT-17				
	Bis(2-ethylhexyl)phthalate	<0.10		0.10	ug/g	30-OCT-17	28	35	5	5
	Fluoranthene	<0.050		0.050	ug/g	30-OCT-17	9.6	9.6	0.69	0.69
	Fluorene	<0.050		0.050	ug/g	30-OCT-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	30-OCT-17	0.76	0.95	0.38	0.48
	1-Methylnaphthalene	<0.030		0.030	ug/g	30-OCT-17	30	42	0.99	3.4
	2-Methylnaphthalene	<0.030		0.030	ug/g	30-OCT-17	30	42	0.99	3.4
	Naphthalene	<0.050		0.050	ug/g	30-OCT-17	9.6	28	0.6	0.75
	Pentachlorophenol	<0.10		0.10	ug/g	30-OCT-17	2.9	3.3	0.1	0.1
	Phenanthrene	<0.050		0.050	ug/g	30-OCT-17	12	16	6.2	7.8
	Phenol	<0.10		0.10	ug/g	30-OCT-17	9.4	9.4	9.4	9.4
	Pyrene	<0.050		0.050	ug/g	30-OCT-17	96	96	78	78
	1,2,4-Trichlorobenzene	<0.050		0.050	ug/g	30-OCT-17	3.2	16	0.36	1.4
	2,4,5-Trichlorophenol	<0.10		0.10	ug/g	30-OCT-17	9.1	10	4.4	5.5
	2,4,6-Trichlorophenol	<0.10		0.10	ug/g	30-OCT-17	2.1	2.9	2.1	2.9

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2010780-7	MW17-104S/D-2-4									
Sampled By:	M.SHIRY on 17-OCT-17 @ 10:08									
Matrix:	SOIL									
Semi-Volatile Organics										
Surrogate:	2-Fluorobiphenyl	83.6		50-140	%	30-OCT-17				
Surrogate:	Nitrobenzene d5	82.0		50-140	%	30-OCT-17				
Surrogate:	Phenol d5	78.2		30-130	%	30-OCT-17				
Surrogate:	p-Terphenyl d14	87.3		50-140	%	30-OCT-17				
Surrogate:	2,4,6-Tribromophenol	67.1		50-140	%	30-OCT-17				
L2010780-8	MW17-104S/D-4-6									
Sampled By:	M.SHIRY on 17-OCT-17 @ 10:18									
Matrix:	SOIL									
Physical Tests										
% Moisture		4.03		0.10	%	21-OCT-17				
Volatile Organic Compounds										
Acetone		<0.50		0.50	ug/g	24-OCT-17	16	28	16	28
Benzene		<0.0068		0.0068	ug/g	24-OCT-17	0.32	0.4	0.21	0.17
Bromodichloromethane		<0.050		0.050	ug/g	24-OCT-17	1.5	1.9	1.5	1.9
Bromoform		<0.050		0.050	ug/g	24-OCT-17	0.61	1.7	0.27	0.26
Bromomethane		<0.050		0.050	ug/g	24-OCT-17	0.05	0.05	0.05	0.05
Carbon tetrachloride		<0.050		0.050	ug/g	24-OCT-17	0.21	0.71	0.05	0.12
Chlorobenzene		<0.050		0.050	ug/g	24-OCT-17	2.4	2.7	2.4	2.7
Dibromochloromethane		<0.050		0.050	ug/g	24-OCT-17	2.3	2.9	2.3	2.9
Chloroform		<0.050		0.050	ug/g	24-OCT-17	0.47	0.18	0.05	0.17
1,2-Dibromoethane		<0.050		0.050	ug/g	24-OCT-17	0.05	0.05	0.05	0.05
1,2-Dichlorobenzene		<0.050		0.050	ug/g	24-OCT-17	1.2	1.7	1.2	1.7
1,3-Dichlorobenzene		<0.050		0.050	ug/g	24-OCT-17	9.6	12	4.8	6
1,4-Dichlorobenzene		<0.050		0.050	ug/g	24-OCT-17	0.2	0.57	0.083	0.097
Dichlorodifluoromethane		<0.050		0.050	ug/g	24-OCT-17	16	25	16	25
1,1-Dichloroethane		<0.050		0.050	ug/g	24-OCT-17	0.47	0.6	0.47	0.6
1,2-Dichloroethane		<0.050		0.050	ug/g	24-OCT-17	0.05	0.05	0.05	0.05
1,1-Dichloroethylene		<0.050		0.050	ug/g	24-OCT-17	0.064	0.48	0.05	0.05
cis-1,2-Dichloroethylene		<0.050		0.050	ug/g	24-OCT-17	1.9	2.5	1.9	2.5
trans-1,2-Dichloroethylene		<0.050		0.050	ug/g	24-OCT-17	1.3	2.5	0.084	0.75
Methylene Chloride		<0.050		0.050	ug/g	24-OCT-17	1.6	2	0.1	0.96
1,2-Dichloropropane		<0.050		0.050	ug/g	24-OCT-17	0.16	0.68	0.05	0.085
cis-1,3-Dichloropropene		<0.030		0.030	ug/g	24-OCT-17				
trans-1,3-Dichloropropene		<0.030		0.030	ug/g	24-OCT-17				
1,3-Dichloropropene (cis & trans)		<0.042		0.042	ug/g	25-OCT-17	0.059	0.081	0.05	0.081
Ethylbenzene		<0.018		0.018	ug/g	24-OCT-17	1.1	1.6	1.1	1.6
n-Hexane		<0.050		0.050	ug/g	24-OCT-17	46	88	2.8	34
Methyl Ethyl Ketone		<0.50		0.50	ug/g	24-OCT-17	70	88	16	44
Methyl Isobutyl Ketone		<0.50		0.50	ug/g	24-OCT-17	31	210	1.7	4.3
MTBE		<0.050		0.050	ug/g	24-OCT-17	1.6	2.3	0.75	1.4
Styrene		<0.050		0.050	ug/g	24-OCT-17	34	43	0.7	2.2
1,1,1,2-Tetrachloroethane		<0.050		0.050	ug/g	24-OCT-17	0.087	0.11	0.058	0.05
1,1,2,2-Tetrachloroethane		<0.050		0.050	ug/g	24-OCT-17	0.05	0.094	0.05	0.05
Tetrachloroethylene		<0.050		0.050	ug/g	24-OCT-17	1.9	2.5	0.28	2.3
Toluene		<0.080		0.080	ug/g	24-OCT-17	6.4	9	2.3	6

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2010780-8	MW17-104S/D-4-6									
Sampled By:	M.SHIRY on 17-OCT-17 @ 10:18									
Matrix:	SOIL									
Volatile Organic Compounds										
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	24-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	24-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	24-OCT-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	24-OCT-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	24-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	24-OCT-17				
	m+p-Xylenes	<0.030		0.030	ug/g	24-OCT-17				
	Xylenes (Total)	<0.050		0.050	ug/g	25-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	92.7		50-140	%	24-OCT-17				
	Surrogate: 1,4-Difluorobenzene	94.5		50-140	%	24-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	24-OCT-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	25-OCT-17	55	65	55	65
	F2 (C10-C16)	14		10	ug/g	25-OCT-17	230	250	98	150
	F3 (C16-C34)	59		50	ug/g	25-OCT-17	1700	2500	300	1300
	F4 (C34-C50)	<50		50	ug/g	25-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	72		72	ug/g	25-OCT-17				
	Chrom. to baseline at nC50	YES			No Unit	25-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	79.8		60-140	%	25-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	103.1		60-140	%	24-OCT-17				
L2010780-10	BH17-204-0.5-2									
Sampled By:	M.SHIRY on 18-OCT-17 @ 12:45									
Matrix:	SOIL									
Physical Tests										
	Conductivity	0.346		0.0040	mS/cm	26-OCT-17	1.4	1.4	0.7	0.7
	% Moisture	12.3		0.10	%	21-OCT-17				
	pH	10.64		0.10	pH units	24-OCT-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	25-OCT-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	0.43	SAR:M	0.10	SAR	26-OCT-17	12	12	5	5
	Calcium (Ca)	33.4		1.0	mg/L	26-OCT-17				
	Magnesium (Mg)	<1.0		1.0	mg/L	26-OCT-17				
	Sodium (Na)	9.1		1.0	mg/L	26-OCT-17				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	26-OCT-17	40	50	7.5	7.5
	Arsenic (As)	2.5		1.0	ug/g	26-OCT-17	18	18	18	18
	Barium (Ba)	33.8		1.0	ug/g	26-OCT-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	26-OCT-17	8	10	4	5
	Boron (B)	6.0		5.0	ug/g	26-OCT-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.22		0.10	ug/g	26-OCT-17	2	2	1.5	1.5
	Cadmium (Cd)	<0.50		0.50	ug/g	26-OCT-17	1.9	1.9	1.2	1.2
	Chromium (Cr)	8.7		1.0	ug/g	26-OCT-17	160	160	160	160
	Cobalt (Co)	2.9		1.0	ug/g	26-OCT-17	80	100	22	22
	Copper (Cu)	12.8		1.0	ug/g	26-OCT-17	230	300	140	180

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2010780-10	BH17-204-0.5-2									
Sampled By:	M.SHIRY on 18-OCT-17 @ 12:45									
Matrix:	SOIL									
Metals										
	Lead (Pb)	10.0		1.0	ug/g	26-OCT-17	120	120	120	120
	Mercury (Hg)	0.0054		0.0050	ug/g	26-OCT-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	<1.0		1.0	ug/g	26-OCT-17	40	40	6.9	6.9
	Nickel (Ni)	9.1		1.0	ug/g	26-OCT-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	26-OCT-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	26-OCT-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	26-OCT-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	26-OCT-17	33	33	23	23
	Vanadium (V)	12.3		1.0	ug/g	26-OCT-17	86	86	86	86
	Zinc (Zn)	37.5		5.0	ug/g	26-OCT-17	340	340	340	340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	25-OCT-17	8	10	8	10
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	24-OCT-17	16	28	16	28
	Benzene	0.0120		0.0068	ug/g	24-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	24-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	24-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	24-OCT-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	24-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	24-OCT-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	24-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	24-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	24-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	24-OCT-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	24-OCT-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	24-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	24-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	24-OCT-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	24-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	24-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	24-OCT-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	24-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	24-OCT-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	24-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	24-OCT-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	24-OCT-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	25-OCT-17	0.059	0.081	0.05	0.081
	Ethylbenzene	0.039		0.018	ug/g	24-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	0.053		0.050	ug/g	24-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	24-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	24-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	24-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	24-OCT-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	24-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	24-OCT-17	0.05	0.094	0.05	0.05

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2010780-10	BH17-204-0.5-2									
Sampled By:	M.SHIRY on 18-OCT-17 @ 12:45									
Matrix:	SOIL									
Volatile Organic Compounds										
	Tetrachloroethylene	<0.050		0.050	ug/g	24-OCT-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	24-OCT-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	24-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	24-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	24-OCT-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	24-OCT-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	24-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	0.333		0.020	ug/g	24-OCT-17				
	m+p-Xylenes	0.158		0.030	ug/g	24-OCT-17				
	Xylenes (Total)	0.491		0.050	ug/g	25-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	100.5		50-140	%	24-OCT-17				
	Surrogate: 1,4-Difluorobenzene	105.0		50-140	%	24-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	13.8		5.0	ug/g	24-OCT-17	55	65	55	65
	F1-BTEX	13.2		5.0	ug/g	30-OCT-17	55	65	55	65
	F2 (C10-C16)	<10		10	ug/g	24-OCT-17	230	250	98	150
	F2-Naphth	<10		10	ug/g	30-OCT-17				
	F3 (C16-C34)	70		50	ug/g	24-OCT-17	1700	2500	300	1300
	F3-PAH	68		50	ug/g	30-OCT-17				
	F4 (C34-C50)	<50		50	ug/g	24-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	83		72	ug/g	30-OCT-17				
	Chrom. to baseline at nC50	YES			No Unit	24-OCT-17				
	Surrogate: 2-Bromobenzotrifluoride	91.5		60-140	%	24-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	112.8		60-140	%	24-OCT-17				
Polycyclic Aromatic Hydrocarbons										
	1+2-Methylnaphthalenes	0.193		0.042	ug/g	30-OCT-17	30	42	0.99	3.4
Semi-Volatile Organics										
	Acenaphthene	<0.050		0.050	ug/g	30-OCT-17	21	29	7.9	29
	Acenaphthylene	<0.050		0.050	ug/g	30-OCT-17	0.15	0.17	0.15	0.17
	Anthracene	<0.050		0.050	ug/g	30-OCT-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	0.096		0.050	ug/g	30-OCT-17	0.96	0.96	0.5	0.63
	Benzo(a)pyrene	0.131		0.050	ug/g	30-OCT-17	0.3	0.3	0.3	0.3
	Benzo(b)fluoranthene	0.201		0.050	ug/g	30-OCT-17	0.96	0.96	0.78	0.78
	Benzo(ghi)perylene	0.180		0.050	ug/g	30-OCT-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	0.106		0.050	ug/g	30-OCT-17	0.96	0.96	0.78	0.78
	Biphenyl	<0.050		0.050	ug/g	30-OCT-17	52	210	0.31	1.1
	4-Chloroaniline	<0.10		0.10	ug/g	30-OCT-17	0.5	0.53	0.5	0.53
	Bis(2-chloroethyl)ether	<0.10		0.10	ug/g	30-OCT-17	0.5	0.5	0.5	0.5
	Bis(2-chloroisopropyl)ether	<0.10		0.10	ug/g	30-OCT-17	11	13	0.67	1.8
	2-Chlorophenol	<0.10		0.10	ug/g	30-OCT-17	3.1	3.9	1.6	2
	Chrysene	0.162		0.050	ug/g	30-OCT-17	9.6	9.6	7	7.8
	Dibenzo(a,h)anthracene	<0.050		0.050	ug/g	30-OCT-17	0.1	0.1	0.1	0.1
	3,3'-Dichlorobenzidine	<0.10		0.10	ug/g	30-OCT-17	1	1	1	1
	2,4-Dichlorophenol	<0.10		0.10	ug/g	30-OCT-17	0.19	0.27	0.19	0.27
	Diethylphthalate	<0.10		0.10	ug/g	30-OCT-17	0.5	0.5	0.5	0.5
	Dimethylphthalate	<0.10		0.10	ug/g	30-OCT-17	0.5	0.5	0.5	0.5

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2010780-10	BH17-204-0.5-2									
Sampled By:	M.SHIRY on 18-OCT-17 @ 12:45									
Matrix:	SOIL									
Semi-Volatile Organics										
	2,4-Dimethylphenol	<0.10		0.10	ug/g	30-OCT-17	38	53	38	53
	2,4-Dinitrophenol	<1.0		1.0	ug/g	30-OCT-17	2	2.9	2	2.9
	2,4-Dinitrotoluene	<0.10		0.10	ug/g	30-OCT-17	0.5	0.5	0.5	0.5
	2,6-Dinitrotoluene	<0.10		0.10	ug/g	30-OCT-17	0.5	0.5	0.5	0.5
	2,4+2,6-Dinitrotoluene	<0.14		0.14	ug/g	30-OCT-17				
	Bis(2-ethylhexyl)phthalate	<0.10		0.10	ug/g	30-OCT-17	28	35	5	5
	Fluoranthene	0.132		0.050	ug/g	30-OCT-17	9.6	9.6	0.69	0.69
	Fluorene	<0.050		0.050	ug/g	30-OCT-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	0.138		0.050	ug/g	30-OCT-17	0.76	0.95	0.38	0.48
	1-Methylnaphthalene	0.097		0.030	ug/g	30-OCT-17	30	42	0.99	3.4
	2-Methylnaphthalene	0.096		0.030	ug/g	30-OCT-17	30	42	0.99	3.4
	Naphthalene	0.066		0.050	ug/g	30-OCT-17	9.6	28	0.6	0.75
	Pentachlorophenol	<0.10		0.10	ug/g	30-OCT-17	2.9	3.3	0.1	0.1
	Phenanthrene	0.151		0.050	ug/g	30-OCT-17	12	16	6.2	7.8
	Phenol	<0.10		0.10	ug/g	30-OCT-17	9.4	9.4	9.4	9.4
	Pyrene	0.109		0.050	ug/g	30-OCT-17	96	96	78	78
	1,2,4-Trichlorobenzene	<0.050		0.050	ug/g	30-OCT-17	3.2	16	0.36	1.4
	2,4,5-Trichlorophenol	<0.10		0.10	ug/g	30-OCT-17	9.1	10	4.4	5.5
	2,4,6-Trichlorophenol	<0.10		0.10	ug/g	30-OCT-17	2.1	2.9	2.1	2.9
	Surrogate: 2-Fluorobiphenyl	85.8		50-140	%	30-OCT-17				
	Surrogate: Nitrobenzene d5	83.6		50-140	%	30-OCT-17				
	Surrogate: Phenol d5	78.6		30-130	%	30-OCT-17				
	Surrogate: p-Terphenyl d14	83.6		50-140	%	30-OCT-17				
	Surrogate: 2,4,6-Tribromophenol	57.3		50-140	%	30-OCT-17				
L2010780-11	TRIP BLANK D2									
Sampled By:	M.SHIRY on 20-OCT-17									
Matrix:	SOIL						#1	#2	#3	#4
Physical Tests										
	% Moisture	<0.10		0.10	%	21-OCT-17				
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	25-OCT-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	25-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	25-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	25-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	25-OCT-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	25-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	25-OCT-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	25-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	25-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	25-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	25-OCT-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	25-OCT-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	25-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	25-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	25-OCT-17	0.47	0.6	0.47	0.6

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2010780-11	TRIP BLANK D2									
Sampled By:	M.SHIRY on 20-OCT-17									
Matrix:	SOIL									
Volatile Organic Compounds										
	1,2-Dichloroethane	<0.050		0.050	ug/g	25-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	25-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	25-OCT-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	25-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	25-OCT-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	25-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	25-OCT-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	25-OCT-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	25-OCT-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	25-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	25-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	25-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	25-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	25-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	25-OCT-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	25-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	25-OCT-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	25-OCT-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	25-OCT-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	25-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	25-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	25-OCT-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	25-OCT-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	25-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	25-OCT-17				
	m+p-Xylenes	<0.030		0.030	ug/g	25-OCT-17				
	Xylenes (Total)	<0.050		0.050	ug/g	25-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	105.2		50-140	%	25-OCT-17				
	Surrogate: 1,4-Difluorobenzene	104.8		50-140	%	25-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	25-OCT-17	55	65	55	65
	Surrogate: 3,4-Dichlorotoluene	112.2		60-140	%	25-OCT-17				
L2010780-12	DUP9									
Sampled By:	M.SHIRY on 16-OCT-17									
Matrix:	SOIL									
Physical Tests										
	% Moisture	5.61		0.10	%	21-OCT-17				
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	25-OCT-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	25-OCT-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	25-OCT-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	25-OCT-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	25-OCT-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	25-OCT-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	25-OCT-17	2.4	2.7	2.4	2.7

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
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ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2010780-12	DUP9									
Sampled By:	M.SHIRY on 16-OCT-17									
Matrix:	SOIL									
Volatile Organic Compounds										
	Dibromochloromethane	<0.050		0.050	ug/g	25-OCT-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	25-OCT-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	25-OCT-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	25-OCT-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	25-OCT-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	25-OCT-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	25-OCT-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	25-OCT-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	25-OCT-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	25-OCT-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	25-OCT-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	25-OCT-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	25-OCT-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	25-OCT-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	25-OCT-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	25-OCT-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	25-OCT-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	25-OCT-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	25-OCT-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	25-OCT-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	25-OCT-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	25-OCT-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	25-OCT-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	25-OCT-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	25-OCT-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	25-OCT-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	25-OCT-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	25-OCT-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	25-OCT-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	25-OCT-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	25-OCT-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	25-OCT-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	25-OCT-17				
	m+p-Xylenes	<0.030		0.030	ug/g	25-OCT-17				
	Xylenes (Total)	<0.050		0.050	ug/g	25-OCT-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	99.8		50-140	%	25-OCT-17				
	Surrogate: 1,4-Difluorobenzene	101.1		50-140	%	25-OCT-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	25-OCT-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	25-OCT-17	55	65	55	65
	F2 (C10-C16)	27		10	ug/g	24-OCT-17	230	250	98	150
	F3 (C16-C34)	195		50	ug/g	24-OCT-17	1700	2500	300	1300
	F4 (C34-C50)	84		50	ug/g	24-OCT-17	3300	6600	2800	5600
	F4G-SG (GHH-Silica)	260		250	ug/g	23-OCT-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	306		72	ug/g	25-OCT-17				
	Chrom. to baseline at nC50	NO			No Unit	24-OCT-17				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2010780-12 DUP9										
Sampled By: M.SHIRY on 16-OCT-17										
Matrix: SOIL										
Hydrocarbons										
	Surrogate: 2-Bromobenzotrifluoride	91.3		60-140	%	24-OCT-17				
	Surrogate: 3,4-Dichlorotoluene	109.6		60-140	%	25-OCT-17				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T6-SOIL-RPIICC-C/F

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)

#2: T6-Soil-Ind/Com/Commu Property Use (Fine)

#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)

#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

Reference Information

Sample Parameter Qualifier key listed:

Qualifier	Description
R	The ion abundance ratio(s) did not meet the acceptance criteria. Value is an estimated maximum.
SAR:M	Reported SAR represents a maximum value. Actual SAR may be lower if both Ca and Mg were detectable.
SAR:DL	SAR is incalculable due to undetectable Na. Detection Limit represents maximum possible SAR value.
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference***
625-511-WT	Soil	ABN-O.Reg 153/04 (July 2011)	SW846 8270 (511)

Soil and sediment samples are dried by mixing with a desiccant prior to extraction. The extracts are dried, concentrated and exchanged into a solvent and analyzed by GC/MS. Depending on the analytical GC/MS column used benzo(j)fluoranthene may chromatographically co-elute with benzo(b)fluoranthene or benzo(k)fluoranthene.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B

A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD

The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

DINITROTOL-CALC-WT	Soil	ABN-Calculated Parameters	SW846 8270
EC-WT	Soil	Conductivity (EC)	MOEE E3138

A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

Reference Information

F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Soil	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Soil	F2-F4-O.Reg 153/04 (July 2011)	CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from soil with 1:1 hexane:acetone using a rotary extractor. Extracts are treated with silica gel to remove polar organic interferences. F2, F3, & F4 are analyzed by GC-FID. F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where both F4 (C34-C50) and F4G-sg are reported for a sample, the larger of the two values is used for comparison against the relevant CCME guideline for F4.
7. F4G-sg cannot be added to the C6 to C50 hydrocarbon results to obtain an estimate of total extractable hydrocarbons.
8. This method is validated for use.
9. Data from analysis of validation and quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram, unless otherwise indicated.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F4G-ADD-511-WT	Soil	F4G SG-O.Reg 153/04 (July 2011)	MOE DECPH-E3398/CCME TIER 1

F4G, gravimetric analysis, is determined if the chromatogram does not return to baseline at or before C50. A soil sample is extracted with a solvent mix, the solvent is evaporated and the weight of the residue is determined.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

HG-200.2-CVAA-WT	Soil	Mercury in Soil by CVAAS	EPA 200.2/1631E (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

Reference Information

MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)

This method uses a heated strong acid digestion with HNO3 and HCl and is intended to liberate metals that may be environmentally available. Silicate minerals are not solubilized. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. Analysis is by Collision/Reaction Cell ICPMS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT	Soil	ABN-Calculated Parameters	SW846 8270
MOISTURE-WT	Soil	% Moisture	Gravimetric: Oven Dried
PAH-511-WT	Soil	PAH-O.Reg 153/04 (July 2011)	SW846 3510/8270

A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking techniqueis used to extract the sample with a mixture of methanol and toluene. The extracts are concentrated and analyzed by GC/MS. Depending on the analytical GC/MS column used benzo(j)fluoranthene may chromatographically co-elute with benzo(b)fluoranthene or benzo(k)fluoranthene.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PCB-511-WT	Soil	PCB-O.Reg 153/04 (July 2011)	SW846 3510/8082

An aliquot of a solid sample is extracted with a solvent, extract is cleaned up and analyzed on the GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

PH-WT	Soil	pH	MOEE E3137A

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C

A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

TOC-R511-WT	Soil	TOC & FOC-O.Reg 153/04 (July 2011)	CARTER 21.3.2

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

VOC-1,3-DCP-CALC-WT	Soil	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Soil	VOC-O.Reg 153/04 (July 2011)	SW846 8260 (511)

Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

*** ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody numbers:

17-616672

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Reference Information

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA		

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.

Quality Control Report

Workorder: L2010780 Report Date: 10-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Soil**							
Batch R3867108								
WG2648238-4 DUP		**WG2648238-3**						
1-Methylnaphthalene		<6.0	<6.0	RPD-NA	ug/g	N/A	40	26-OCT-17
1,2,4-Trichlorobenzene		<0.10	<0.10	RPD-NA	ug/g	N/A	40	26-OCT-17
2-Chlorophenol		<0.20	<0.20	RPD-NA	ug/g	N/A	40	26-OCT-17
2-Methylnaphthalene		<6.0	<6.0	RPD-NA	ug/g	N/A	40	26-OCT-17
2,4-Dichlorophenol		<0.19	<0.19	RPD-NA	ug/g	N/A	40	26-OCT-17
2,4-Dimethylphenol		<0.20	<0.20	RPD-NA	ug/g	N/A	40	26-OCT-17
2,4-Dinitrophenol		<2.0	<2.0	RPD-NA	ug/g	N/A	40	26-OCT-17
2,4-Dinitrotoluene		<0.20	<0.20	RPD-NA	ug/g	N/A	40	26-OCT-17
2,4,5-Trichlorophenol		<0.20	<0.20	RPD-NA	ug/g	N/A	40	26-OCT-17
2,4,6-Trichlorophenol		<0.20	<0.20	RPD-NA	ug/g	N/A	40	26-OCT-17
2,6-Dinitrotoluene		<0.20	<0.20	RPD-NA	ug/g	N/A	40	26-OCT-17
3,3'-Dichlorobenzidine		<0.20	<0.20	RPD-NA	ug/g	N/A	40	26-OCT-17
4-Chloroaniline		<0.20	<0.20	RPD-NA	ug/g	N/A	40	26-OCT-17
Acenaphthene		<5.0	<5.0	RPD-NA	ug/g	N/A	40	26-OCT-17
Acenaphthylene		<0.10	<0.10	RPD-NA	ug/g	N/A	40	26-OCT-17
Anthracene		<0.30	<0.30	RPD-NA	ug/g	N/A	40	26-OCT-17
Benzo(a)anthracene		<0.50	<0.50	RPD-NA	ug/g	N/A	40	26-OCT-17
Benzo(a)pyrene		<0.20	0.27	RPD-NA	ug/g	N/A	40	26-OCT-17
Benzo(b)fluoranthene		<0.50	<0.50	RPD-NA	ug/g	N/A	40	26-OCT-17
Benzo(ghi)perylene		<5.0	<5.0	RPD-NA	ug/g	N/A	40	26-OCT-17
Benzo(k)fluoranthene		<0.50	<0.50	RPD-NA	ug/g	N/A	40	26-OCT-17
Biphenyl		<0.10	<0.10	RPD-NA	ug/g	N/A	40	26-OCT-17
Bis(2-chloroethyl)ether		<0.20	<0.20	RPD-NA	ug/g	N/A	40	26-OCT-17
Bis(2-chloroisopropyl)ether		<0.20	<0.20	RPD-NA	ug/g	N/A	40	26-OCT-17
Bis(2-ethylhexyl)phthalate		<10	<10	RPD-NA	ug/g	N/A	40	26-OCT-17
Chrysene		<5.0	<5.0	RPD-NA	ug/g	N/A	40	26-OCT-17
Dibenzo(a,h)anthracene		<0.10	<0.10	RPD-NA	ug/g	N/A	40	26-OCT-17
Diethylphthalate		<0.20	<0.20	RPD-NA	ug/g	N/A	40	26-OCT-17
Dimethylphthalate		<0.20	<0.20	RPD-NA	ug/g	N/A	40	26-OCT-17
Fluoranthene		<5.0	<5.0	RPD-NA	ug/g	N/A	40	26-OCT-17
Fluorene		<10	<10	RPD-NA	ug/g	N/A	40	26-OCT-17
Indeno(1,2,3-cd)pyrene		<0.25	<0.25	RPD-NA	ug/g	N/A	40	26-OCT-17
Naphthalene		<2.5	<2.5		ug/g			26-OCT-17

Quality Control Report

Workorder: L2010780 Report Date: 10-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Soil**							
Batch R3867108								
WG2648238-4 DUP		**WG2648238-3**						
Naphthalene		<2.5	<2.5	RPD-NA	ug/g	N/A	40	26-OCT-17
Pentachlorophenol		<0.80	<0.80	RPD-NA	ug/g	N/A	40	26-OCT-17
Phenanthrene		<5.0	<5.0	RPD-NA	ug/g	N/A	40	26-OCT-17
Phenol		<5.0	<5.0	RPD-NA	ug/g	N/A	40	26-OCT-17
Pyrene		<5.0	<5.0	RPD-NA	ug/g	N/A	40	26-OCT-17
WG2648238-2 LCS								
1-Methylnaphthalene			76.3		%		50-140	26-OCT-17
1,2,4-Trichlorobenzene			85.8		%		50-140	26-OCT-17
2-Chlorophenol			89.2		%		50-140	26-OCT-17
2-Methylnaphthalene			67.5		%		50-140	26-OCT-17
2,4-Dichlorophenol			91.0		%		50-140	26-OCT-17
2,4-Dimethylphenol			94.0		%		30-130	26-OCT-17
2,4-Dinitrophenol			75.9		%		30-130	26-OCT-17
2,4-Dinitrotoluene			80.4		%		50-140	26-OCT-17
2,4,5-Trichlorophenol			75.6		%		50-140	26-OCT-17
2,4,6-Trichlorophenol			75.0		%		50-140	26-OCT-17
2,6-Dinitrotoluene			74.5		%		50-140	26-OCT-17
3,3'-Dichlorobenzidine			68.4		%		30-130	26-OCT-17
4-Chloroaniline			89.0		%		30-130	26-OCT-17
Acenaphthene			71.4		%		50-140	26-OCT-17
Acenaphthylene			74.0		%		50-140	26-OCT-17
Anthracene			87.3		%		50-140	26-OCT-17
Benzo(a)anthracene			91.1		%		50-140	26-OCT-17
Benzo(a)pyrene			89.2		%		50-140	26-OCT-17
Benzo(b)fluoranthene			83.8		%		50-140	26-OCT-17
Benzo(ghi)perylene			82.8		%		50-140	26-OCT-17
Benzo(k)fluoranthene			93.1		%		50-140	26-OCT-17
Biphenyl			71.5		%		50-140	26-OCT-17
Bis(2-chloroethyl)ether			91.1		%		50-140	26-OCT-17
Bis(2-chloroisopropyl)ether			81.7		%		50-140	26-OCT-17
Bis(2-ethylhexyl)phthalate			80.0		%		50-140	26-OCT-17
Chrysene			91.7		%		50-140	26-OCT-17
Dibenzo(a,h)anthracene			80.4		%		50-140	26-OCT-17

Quality Control Report

Workorder: L2010780 Report Date: 10-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Soil**							
Batch R3867108								
WG2648238-2 LCS								
Diethylphthalate			77.2		%		50-140	26-OCT-17
Dimethylphthalate			70.2		%		50-140	26-OCT-17
Fluoranthene			86.2		%		50-140	26-OCT-17
Fluorene			82.9		%		50-140	26-OCT-17
Indeno(1,2,3-cd)pyrene			84.4		%		50-140	26-OCT-17
Naphthalene			86.1		%		50-140	26-OCT-17
Pentachlorophenol			82.9		%		50-140	26-OCT-17
Phenanthrene			88.2		%		50-140	26-OCT-17
Phenol			91.9		%		30-130	26-OCT-17
Pyrene			87.6		%		50-140	26-OCT-17
WG2648238-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	26-OCT-17
1,2,4-Trichlorobenzene			<0.050		ug/g		0.05	26-OCT-17
2-Chlorophenol			<0.10		ug/g		0.1	26-OCT-17
2-Methylnaphthalene			<0.030		ug/g		0.03	26-OCT-17
2,4-Dichlorophenol			<0.10		ug/g		0.1	26-OCT-17
2,4-Dimethylphenol			<0.10		ug/g		0.1	26-OCT-17
2,4-Dinitrophenol			<1.0		ug/g		1	26-OCT-17
2,4-Dinitrotoluene			<0.10		ug/g		0.1	26-OCT-17
2,4,5-Trichlorophenol			<0.10		ug/g		0.1	26-OCT-17
2,4,6-Trichlorophenol			<0.10		ug/g		0.1	26-OCT-17
2,6-Dinitrotoluene			<0.10		ug/g		0.1	26-OCT-17
3,3'-Dichlorobenzidine			<0.10		ug/g		0.1	26-OCT-17
4-Chloroaniline			<0.10		ug/g		0.1	26-OCT-17
Acenaphthene			<0.050		ug/g		0.05	26-OCT-17
Acenaphthylene			<0.050		ug/g		0.05	26-OCT-17
Anthracene			<0.050		ug/g		0.05	26-OCT-17
Benzo(a)anthracene			<0.050		ug/g		0.05	26-OCT-17
Benzo(a)pyrene			<0.050		ug/g		0.05	26-OCT-17
Benzo(b)fluoranthene			<0.050		ug/g		0.05	26-OCT-17
Benzo(ghi)perylene			<0.050		ug/g		0.05	26-OCT-17
Benzo(k)fluoranthene			<0.050		ug/g		0.05	26-OCT-17
Biphenyl			<0.050		ug/g		0.05	26-OCT-17
Bis(2-chloroethyl)ether			<0.10		ug/g		0.1	26-OCT-17

Quality Control Report

Workorder: L2010780 Report Date: 10-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Soil**							
Batch	**R3867108**							
WG2648238-1	**MB**							
Bis(2-chloroisopropyl)ether			<0.10		ug/g		0.1	26-OCT-17
Bis(2-ethylhexyl)phthalate			<0.10		ug/g		0.1	26-OCT-17
Chrysene			<0.050		ug/g		0.05	26-OCT-17
Dibenzo(a,h)anthracene			<0.050		ug/g		0.05	26-OCT-17
Diethylphthalate			<0.10		ug/g		0.1	26-OCT-17
Dimethylphthalate			<0.10		ug/g		0.1	26-OCT-17
Fluoranthene			<0.050		ug/g		0.05	26-OCT-17
Fluorene			<0.050		ug/g		0.05	26-OCT-17
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	26-OCT-17
Naphthalene			<0.050		ug/g		0.05	26-OCT-17
Pentachlorophenol			<0.10		ug/g		0.1	26-OCT-17
Phenanthrene			<0.050		ug/g		0.05	26-OCT-17
Phenol			<0.10		ug/g		0.1	26-OCT-17
Pyrene			<0.050		ug/g		0.05	26-OCT-17
Surrogate: 2-Fluorobiphenyl			58.9		%		50-140	26-OCT-17
Surrogate: 2,4,6-Tribromophenol			65.1		%		50-140	26-OCT-17
Surrogate: Nitrobenzene d5			88.4		%		50-140	26-OCT-17
Surrogate: p-Terphenyl d14			86.9		%		50-140	26-OCT-17
Surrogate: Phenol d5			85.0		%		30-130	26-OCT-17
WG2648238-5	**MS**	**WG2648238-3**						
1-Methylnaphthalene			99.99		%		50-140	26-OCT-17
1,2,4-Trichlorobenzene			85.9		%		50-140	26-OCT-17
2-Chlorophenol			93.9		%		50-140	26-OCT-17
2-Methylnaphthalene			87.8		%		50-140	26-OCT-17
2,4-Dichlorophenol			93.7		%		50-140	26-OCT-17
2,4-Dimethylphenol			96.2		%		30-150	26-OCT-17
2,4-Dinitrophenol			83.0		%		30-150	26-OCT-17
2,4-Dinitrotoluene			97.4		%		50-140	26-OCT-17
2,4,5-Trichlorophenol			92.2		%		50-140	26-OCT-17
2,4,6-Trichlorophenol			95.2		%		50-140	26-OCT-17
2,6-Dinitrotoluene			91.3		%		50-140	26-OCT-17
3,3'-Dichlorobenzidine			78.0		%		30-130	26-OCT-17
4-Chloroaniline			79.6		%		30-130	26-OCT-17
Acenaphthene			83.6		%		50-140	26-OCT-17

Quality Control Report

Workorder: L2010780 Report Date: 10-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Soil**							
Batch R3867108								
WG2648238-5 MS		**WG2648238-3**						
Acenaphthylene			89.5		%		50-140	26-OCT-17
Anthracene			92.5		%		50-140	26-OCT-17
Benzo(a)anthracene			101.8		%		50-140	26-OCT-17
Benzo(a)pyrene			106.3		%		50-140	26-OCT-17
Benzo(b)fluoranthene			92.7		%		50-140	26-OCT-17
Benzo(ghi)perylene			108.0		%		50-140	26-OCT-17
Benzo(k)fluoranthene			105.1		%		50-140	26-OCT-17
Biphenyl			90.4		%		50-140	26-OCT-17
Bis(2-chloroethyl)ether			91.4		%		50-140	26-OCT-17
Bis(2-chloroisopropyl)ether			89.5		%		50-140	26-OCT-17
Bis(2-ethylhexyl)phthalate			105.0		%		50-140	26-OCT-17
Chrysene			98.8		%		50-140	26-OCT-17
Dibenzo(a,h)anthracene			101.0		%		50-140	26-OCT-17
Diethylphthalate			90.7		%		50-140	26-OCT-17
Dimethylphthalate			81.7		%		50-140	26-OCT-17
Fluoranthene			96.4		%		50-140	26-OCT-17
Fluorene			93.4		%		50-140	26-OCT-17
Indeno(1,2,3-cd)pyrene			110.9		%		50-140	26-OCT-17
Naphthalene			89.7		%		50-140	26-OCT-17
Pentachlorophenol			93.3		%		50-140	26-OCT-17
Phenanthrene			93.3		%		50-140	26-OCT-17
Phenol			93.9		%		30-130	26-OCT-17
Pyrene			99.97		%		50-140	26-OCT-17
B-HWS-R511-WT	**Soil**							
Batch R3866986								
WG2648912-4 DUP		**L2011221-1**						
Boron (B), Hot Water Ext.		0.46	0.44		ug/g	2.6	30	26-OCT-17
WG2648912-2 IRM		**HOTB-SAL_SOIL5**						
Boron (B), Hot Water Ext.			81.3		%		70-130	26-OCT-17
WG2648912-3 LCS								
Boron (B), Hot Water Ext.			101.2		%		70-130	26-OCT-17
WG2648912-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	26-OCT-17

Quality Control Report

Workorder: L2010780 Report Date: 10-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT	**Soil**							
Batch R3866989								
WG2648915-4 DUP		**L2011593-6**						
Boron (B), Hot Water Ext.		<0.10	<0.10	RPD-NA	ug/g	N/A	30	26-OCT-17
WG2648915-2 IRM		**HOTB-SAL_SOIL5**						
Boron (B), Hot Water Ext.			95.7		%		70-130	26-OCT-17
WG2648915-3 LCS								
Boron (B), Hot Water Ext.			98.5		%		70-130	26-OCT-17
WG2648915-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	26-OCT-17
CN-WAD-R511-WT	**Soil**							
Batch R3865857								
WG2646123-3 DUP		**L2010780-3**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	24-OCT-17
WG2646123-2 LCS								
Cyanide, Weak Acid Diss			87.9		%		80-120	24-OCT-17
WG2646123-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	24-OCT-17
WG2646123-4 MS		**L2010780-3**						
Cyanide, Weak Acid Diss			91.4		%		70-130	24-OCT-17
Batch R3866706								
WG2646274-3 DUP		**L2010996-1**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	25-OCT-17
WG2646274-2 LCS								
Cyanide, Weak Acid Diss			89.1		%		80-120	25-OCT-17
WG2646274-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	25-OCT-17
WG2646274-4 MS		**L2010996-1**						
Cyanide, Weak Acid Diss			104.2		%		70-130	25-OCT-17
CR-CR6-IC-WT	**Soil**							
Batch R3865017								
WG2645870-4 CRM		**WT-SQC012**						
Chromium, Hexavalent			87.5		%		70-130	24-OCT-17
WG2645870-3 DUP		**L2010780-3**						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	24-OCT-17
WG2645870-2 LCS								
Chromium, Hexavalent			89.0		%		80-120	24-OCT-17
WG2645870-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	24-OCT-17

Quality Control Report

Workorder: L2010780 Report Date: 10-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CR-CR6-IC-WT	**Soil**							
Batch R3865851								
WG2646260-3 CRM		**WT-SQC012**						
Chromium, Hexavalent			79.1		%		70-130	25-OCT-17
WG2646260-4 DUP		**L2010996-1**						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	25-OCT-17
WG2646260-2 LCS								
Chromium, Hexavalent			90.9		%		80-120	25-OCT-17
WG2646260-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	25-OCT-17
EC-WT	**Soil**							
Batch R3867330								
WG2648918-4 DUP		**WG2648918-3**						
Conductivity		0.379	0.369		mS/cm	2.7	20	26-OCT-17
WG2649199-1 LCS								
Conductivity			100.3		%		90-110	26-OCT-17
WG2648918-1 MB								
Conductivity			<0.0040		mS/cm		0.004	26-OCT-17
F1-HS-511-WT	**Soil**							
Batch R3865522								
WG2645854-4 DUP		**WG2645854-3**						
F1 (C6-C10)		8.0	8.3		ug/g	4.0	30	24-OCT-17
WG2645854-2 LCS								
F1 (C6-C10)			91.4		%		80-120	24-OCT-17
WG2645854-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	24-OCT-17
Surrogate: 3,4-Dichlorotoluene			95.0		%		60-140	24-OCT-17
WG2645854-7 MS		**WG2645854-6**						
F1 (C6-C10)			97.6		%		60-140	24-OCT-17
F2-F4-511-WT	**Soil**							
Batch R3864167								
WG2645864-4 CRM		**ALS PHC2 IRM**						
F2 (C10-C16)			107.9		%		70-130	24-OCT-17
F3 (C16-C34)			110.1		%		70-130	24-OCT-17
F4 (C34-C50)			115.0		%		70-130	24-OCT-17
WG2645864-3 DUP		**WG2645864-5**						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	24-OCT-17
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	24-OCT-17
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	24-OCT-17

Quality Control Report

Workorder: L2010780 Report Date: 10-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-511-WT	**Soil**							
Batch R3864167								
WG2645864-2 LCS								
F2 (C10-C16)			104.8		%		80-120	24-OCT-17
F3 (C16-C34)			104.9		%		80-120	24-OCT-17
F4 (C34-C50)			106.0		%		80-120	24-OCT-17
WG2645864-1 MB								
F2 (C10-C16)			<10		ug/g		10	24-OCT-17
F3 (C16-C34)			<50		ug/g		50	24-OCT-17
F4 (C34-C50)			<50		ug/g		50	24-OCT-17
Surrogate: 2-Bromobenzotrifluoride			95.0		%		60-140	24-OCT-17
Batch R3865557								
WG2645858-3 CRM		**ALS PHC2 IRM**						
F2 (C10-C16)			98.8		%		70-130	24-OCT-17
F3 (C16-C34)			102.7		%		70-130	24-OCT-17
F4 (C34-C50)			103.4		%		70-130	24-OCT-17
WG2645858-5 DUP		**WG2645858-4**						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	24-OCT-17
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	24-OCT-17
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	24-OCT-17
WG2645858-2 LCS								
F2 (C10-C16)			101.4		%		80-120	24-OCT-17
F3 (C16-C34)			97.5		%		80-120	24-OCT-17
F4 (C34-C50)			102.3		%		80-120	24-OCT-17
WG2645858-1 MB								
F2 (C10-C16)			<10		ug/g		10	24-OCT-17
F3 (C16-C34)			<50		ug/g		50	24-OCT-17
F4 (C34-C50)			<50		ug/g		50	24-OCT-17
Surrogate: 2-Bromobenzotrifluoride			88.8		%		60-140	24-OCT-17
F4G-ADD-511-WT	**Soil**							
Batch R3865087								
WG2647469-2 LCS								
F4G-SG (GHH-Silica)			93.3		%		60-140	23-OCT-17
WG2647469-1 MB								
F4G-SG (GHH-Silica)			<250		ug/g		250	23-OCT-17

Quality Control Report

Workorder: L2010780 Report Date: 10-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F4G-ADD-511-WT	**Soil**							
Batch R3866093								
WG2648555-2 LCS								
F4G-SG (GHH-Silica)			75.6		%		60-140	24-OCT-17
WG2648555-1 MB								
F4G-SG (GHH-Silica)			<250		ug/g		250	24-OCT-17
HG-200.2-CVAA-WT	**Soil**							
Batch R3866724								
WG2648893-2 CRM		**WT-CANMET-TILL1**						
Mercury (Hg)			103.1		%		70-130	26-OCT-17
WG2648893-6 DUP		**WG2648893-5**						
Mercury (Hg)		0.0153	0.0154		ug/g	0.6	40	26-OCT-17
WG2648893-3 LCS								
Mercury (Hg)			108.0		%		80-120	26-OCT-17
WG2648893-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	26-OCT-17
Batch R3866728								
WG2648880-2 CRM		**WT-CANMET-TILL1**						
Mercury (Hg)			102.1		%		70-130	26-OCT-17
WG2648880-6 DUP		**WG2648880-5**						
Mercury (Hg)		0.0200	0.0181		ug/g	10	40	26-OCT-17
WG2648880-3 LCS								
Mercury (Hg)			108.0		%		80-120	26-OCT-17
WG2648880-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	26-OCT-17
MET-200.2-CCMS-WT	**Soil**							
Batch R3866866								
WG2648893-2 CRM		**WT-CANMET-TILL1**						
Antimony (Sb)			92.5		%		70-130	26-OCT-17
Arsenic (As)			96.9		%		70-130	26-OCT-17
Barium (Ba)			101.4		%		70-130	26-OCT-17
Beryllium (Be)			99.3		%		70-130	26-OCT-17
Boron (B)			3.6		mg/kg		0-8.2	26-OCT-17
Cadmium (Cd)			99.3		%		70-130	26-OCT-17
Chromium (Cr)			99.4		%		70-130	26-OCT-17
Cobalt (Co)			96.3		%		70-130	26-OCT-17
Copper (Cu)			100.7		%		70-130	26-OCT-17
Lead (Pb)			93.0		%		70-130	26-OCT-17

Quality Control Report

Workorder: L2010780 Report Date: 10-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3866866								
WG2648893-2 CRM		**WT-CANMET-TILL1**						
Molybdenum (Mo)			92.9		%		70-130	26-OCT-17
Nickel (Ni)			98.3		%		70-130	26-OCT-17
Selenium (Se)			0.29		mg/kg		0.11-0.51	26-OCT-17
Silver (Ag)			0.22		mg/kg		0.13-0.33	26-OCT-17
Thallium (Tl)			0.116		mg/kg		0.077-0.18	26-OCT-17
Uranium (U)			87.5		%		70-130	26-OCT-17
Vanadium (V)			99.6		%		70-130	26-OCT-17
Zinc (Zn)			95.3		%		70-130	26-OCT-17
WG2648893-6 DUP		**WG2648893-5**						
Antimony (Sb)		0.12	0.12		ug/g	1.3	30	26-OCT-17
Arsenic (As)		5.81	5.76		ug/g	0.8	30	26-OCT-17
Barium (Ba)		33.0	32.5		ug/g	1.6	40	26-OCT-17
Beryllium (Be)		0.65	0.68		ug/g	3.7	30	26-OCT-17
Boron (B)		12.3	12.2		ug/g	0.9	30	26-OCT-17
Cadmium (Cd)		0.068	0.056		ug/g	19	30	26-OCT-17
Chromium (Cr)		20.6	20.3		ug/g	1.6	30	26-OCT-17
Cobalt (Co)		11.8	11.3		ug/g	3.7	30	26-OCT-17
Copper (Cu)		28.6	28.1		ug/g	1.8	30	26-OCT-17
Lead (Pb)		8.11	6.15		ug/g	28	40	26-OCT-17
Molybdenum (Mo)		0.32	0.29		ug/g	10	40	26-OCT-17
Nickel (Ni)		25.1	24.6		ug/g	2.1	30	26-OCT-17
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	26-OCT-17
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	26-OCT-17
Thallium (Tl)		0.086	0.095		ug/g	10	30	26-OCT-17
Uranium (U)		0.430	0.444		ug/g	3.3	30	26-OCT-17
Vanadium (V)		26.6	27.3		ug/g	2.4	30	26-OCT-17
Zinc (Zn)		52.2	50.5		ug/g	3.4	30	26-OCT-17
WG2648893-4 LCS								
Antimony (Sb)			92.5		%		80-120	26-OCT-17
Arsenic (As)			90.1		%		80-120	26-OCT-17
Barium (Ba)			91.2		%		80-120	26-OCT-17
Beryllium (Be)			91.2		%		80-120	26-OCT-17
Boron (B)			88.8		%		80-120	26-OCT-17

Quality Control Report

Workorder: L2010780 Report Date: 10-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3866866								
WG2648893-4 LCS								
Cadmium (Cd)			88.0		%		80-120	26-OCT-17
Chromium (Cr)			94.0		%		80-120	26-OCT-17
Cobalt (Co)			88.6		%		80-120	26-OCT-17
Copper (Cu)			91.6		%		80-120	26-OCT-17
Lead (Pb)			89.9		%		80-120	26-OCT-17
Molybdenum (Mo)			86.8		%		80-120	26-OCT-17
Nickel (Ni)			92.5		%		80-120	26-OCT-17
Selenium (Se)			91.1		%		80-120	26-OCT-17
Silver (Ag)			86.0		%		80-120	26-OCT-17
Thallium (Tl)			87.6		%		80-120	26-OCT-17
Uranium (U)			84.0		%		80-120	26-OCT-17
Vanadium (V)			96.9		%		80-120	26-OCT-17
Zinc (Zn)			82.5		%		80-120	26-OCT-17
WG2648893-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	26-OCT-17
Arsenic (As)			<0.10		mg/kg		0.1	26-OCT-17
Barium (Ba)			<0.50		mg/kg		0.5	26-OCT-17
Beryllium (Be)			<0.10		mg/kg		0.1	26-OCT-17
Boron (B)			<5.0		mg/kg		5	26-OCT-17
Cadmium (Cd)			<0.020		mg/kg		0.02	26-OCT-17
Chromium (Cr)			<0.50		mg/kg		0.5	26-OCT-17
Cobalt (Co)			<0.10		mg/kg		0.1	26-OCT-17
Copper (Cu)			<0.50		mg/kg		0.5	26-OCT-17
Lead (Pb)			<0.50		mg/kg		0.5	26-OCT-17
Molybdenum (Mo)			<0.10		mg/kg		0.1	26-OCT-17
Nickel (Ni)			<0.50		mg/kg		0.5	26-OCT-17
Selenium (Se)			<0.20		mg/kg		0.2	26-OCT-17
Silver (Ag)			<0.10		mg/kg		0.1	26-OCT-17
Thallium (Tl)			<0.050		mg/kg		0.05	26-OCT-17
Uranium (U)			<0.050		mg/kg		0.05	26-OCT-17
Vanadium (V)			<0.20		mg/kg		0.2	26-OCT-17
Zinc (Zn)			<2.0		mg/kg		2	26-OCT-17

Quality Control Report

Workorder: L2010780 Report Date: 10-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3867737								
WG2648880-2 CRM		**WT-CANMET-TILL1**						
Antimony (Sb)			89.6		%		70-130	26-OCT-17
Arsenic (As)			93.1		%		70-130	26-OCT-17
Barium (Ba)			94.8		%		70-130	26-OCT-17
Beryllium (Be)			96.1		%		70-130	26-OCT-17
Boron (B)			3.1		mg/kg		0-8.2	26-OCT-17
Cadmium (Cd)			92.5		%		70-130	26-OCT-17
Chromium (Cr)			90.2		%		70-130	26-OCT-17
Cobalt (Co)			88.7		%		70-130	26-OCT-17
Copper (Cu)			95.4		%		70-130	26-OCT-17
Lead (Pb)			87.5		%		70-130	26-OCT-17
Molybdenum (Mo)			84.9		%		70-130	26-OCT-17
Nickel (Ni)			93.6		%		70-130	26-OCT-17
Selenium (Se)			0.25		mg/kg		0.11-0.51	26-OCT-17
Silver (Ag)			0.20		mg/kg		0.13-0.33	26-OCT-17
Thallium (Tl)			0.105		mg/kg		0.077-0.18	26-OCT-17
Uranium (U)			83.8		%		70-130	26-OCT-17
Vanadium (V)			90.5		%		70-130	26-OCT-17
Zinc (Zn)			86.6		%		70-130	26-OCT-17
WG2648880-6 DUP		**WG2648880-5**						
Antimony (Sb)		<0.10	<0.10	RPD-NA	ug/g	N/A	30	28-OCT-17
Arsenic (As)		2.34	2.44		ug/g	4.2	30	28-OCT-17
Barium (Ba)		15.8	15.9		ug/g	0.5	40	28-OCT-17
Beryllium (Be)		0.17	0.17		ug/g	1.7	30	28-OCT-17
Boron (B)		7.3	5.2	J	ug/g	2.1	10	28-OCT-17
Cadmium (Cd)		0.139	0.135		ug/g	2.7	30	28-OCT-17
Chromium (Cr)		7.44	7.35		ug/g	1.3	30	28-OCT-17
Cobalt (Co)		2.34	2.35		ug/g	0.2	30	28-OCT-17
Copper (Cu)		9.15	9.80		ug/g	6.9	30	28-OCT-17
Lead (Pb)		12.3	12.4		ug/g	1.2	40	28-OCT-17
Molybdenum (Mo)		0.35	0.39		ug/g	11	40	28-OCT-17
Nickel (Ni)		5.28	5.48		ug/g	3.7	30	28-OCT-17
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	28-OCT-17
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	28-OCT-17

Quality Control Report

Workorder: L2010780 Report Date: 10-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3867737								
WG2648880-6 DUP		**WG2648880-5**						
Thallium (Tl)		<0.050	<0.050	RPD-NA	ug/g	N/A	30	28-OCT-17
Uranium (U)		0.306	0.310		ug/g	1.4	30	28-OCT-17
Vanadium (V)		14.6	14.5		ug/g	0.4	30	28-OCT-17
Zinc (Zn)		48.8	48.1		ug/g	1.4	30	28-OCT-17
WG2648880-4 LCS								
Antimony (Sb)			97.0		%		80-120	26-OCT-17
Arsenic (As)			91.4		%		80-120	26-OCT-17
Barium (Ba)			94.6		%		80-120	26-OCT-17
Beryllium (Be)			94.2		%		80-120	26-OCT-17
Boron (B)			93.6		%		80-120	26-OCT-17
Cadmium (Cd)			91.7		%		80-120	26-OCT-17
Chromium (Cr)			90.9		%		80-120	26-OCT-17
Cobalt (Co)			87.3		%		80-120	26-OCT-17
Copper (Cu)			90.0		%		80-120	26-OCT-17
Lead (Pb)			90.7		%		80-120	26-OCT-17
Molybdenum (Mo)			87.8		%		80-120	26-OCT-17
Nickel (Ni)			92.1		%		80-120	26-OCT-17
Selenium (Se)			91.6		%		80-120	26-OCT-17
Silver (Ag)			86.9		%		80-120	26-OCT-17
Thallium (Tl)			92.0		%		80-120	26-OCT-17
Uranium (U)			84.6		%		80-120	26-OCT-17
Vanadium (V)			94.7		%		80-120	26-OCT-17
Zinc (Zn)			86.1		%		80-120	26-OCT-17
WG2648880-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	26-OCT-17
Arsenic (As)			<0.10		mg/kg		0.1	26-OCT-17
Barium (Ba)			<0.50		mg/kg		0.5	26-OCT-17
Beryllium (Be)			<0.10		mg/kg		0.1	26-OCT-17
Boron (B)			<5.0		mg/kg		5	26-OCT-17
Cadmium (Cd)			<0.020		mg/kg		0.02	26-OCT-17
Chromium (Cr)			<0.50		mg/kg		0.5	26-OCT-17
Cobalt (Co)			<0.10		mg/kg		0.1	26-OCT-17
Copper (Cu)			<0.50		mg/kg		0.5	26-OCT-17
Lead (Pb)			<0.50		mg/kg		0.5	26-OCT-17

Quality Control Report

Workorder: L2010780 Report Date: 10-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3867737								
WG2648880-1 MB								
Molybdenum (Mo)			<0.10		mg/kg		0.1	26-OCT-17
Nickel (Ni)			<0.50		mg/kg		0.5	26-OCT-17
Selenium (Se)			<0.20		mg/kg		0.2	26-OCT-17
Silver (Ag)			<0.10		mg/kg		0.1	26-OCT-17
Thallium (Tl)			<0.050		mg/kg		0.05	26-OCT-17
Uranium (U)			<0.050		mg/kg		0.05	26-OCT-17
Vanadium (V)			<0.20		mg/kg		0.2	26-OCT-17
Zinc (Zn)			<2.0		mg/kg		2	26-OCT-17
MOISTURE-WT	**Soil**							
Batch R3862813								
WG2645310-3 DUP		**L2010921-1**						
% Moisture		5.14	4.67		%	9.5	20	21-OCT-17
WG2645310-2 LCS								
% Moisture			99.6		%		90-110	21-OCT-17
WG2645310-1 MB								
% Moisture			<0.10		%		0.1	21-OCT-17
Batch R3862816								
WG2645275-3 DUP		**L2010577-1**						
% Moisture		3.38	3.04		%	11	20	21-OCT-17
WG2645275-2 LCS								
% Moisture			99.5		%		90-110	21-OCT-17
WG2645275-1 MB								
% Moisture			<0.10		%		0.1	21-OCT-17
Batch R3862818								
WG2645273-3 DUP		**L2010780-7**						
% Moisture		14.4	14.6		%	1.4	20	21-OCT-17
WG2645273-2 LCS								
% Moisture			99.8		%		90-110	21-OCT-17
WG2645273-1 MB								
% Moisture			<0.10		%		0.1	21-OCT-17
Batch R3863757								
WG2646379-3 DUP		**L2011240-1**						
% Moisture		17.7	17.1		%	3.3	20	24-OCT-17
WG2646379-2 LCS								
% Moisture			99.6		%		90-110	24-OCT-17
WG2646379-1 MB								

Quality Control Report

Workorder: L2010780 Report Date: 10-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MOISTURE-WT	**Soil**							
Batch R3863757								
WG2646379-1 MB								
% Moisture			<0.10		%		0.1	24-OCT-17
PAH-511-WT	**Soil**							
Batch R3865946								
WG2645866-3 DUP		**WG2645866-5**						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	25-OCT-17
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	25-OCT-17
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-OCT-17
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-OCT-17
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-OCT-17
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-OCT-17
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-OCT-17
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-OCT-17
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-OCT-17
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-OCT-17
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-OCT-17
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-OCT-17
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-OCT-17
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-OCT-17
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-OCT-17
Naphthalene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-OCT-17
Phenanthrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-OCT-17
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-OCT-17
WG2645866-2 LCS								
1-Methylnaphthalene			84.3		%		50-140	25-OCT-17
2-Methylnaphthalene			83.1		%		50-140	25-OCT-17
Acenaphthene			83.4		%		50-140	25-OCT-17
Acenaphthylene			81.9		%		50-140	25-OCT-17
Anthracene			79.8		%		50-140	25-OCT-17
Benzo(a)anthracene			81.9		%		50-140	25-OCT-17
Benzo(a)pyrene			81.8		%		50-140	25-OCT-17
Benzo(b)fluoranthene			78.6		%		50-140	25-OCT-17
Benzo(g,h,i)perylene			80.0		%		50-140	25-OCT-17
Benzo(k)fluoranthene			86.3				50-140	

Quality Control Report

Workorder: L2010780 Report Date: 10-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R3865946								
WG2645866-2 LCS								
Benzo(k)fluoranthene			86.3		%		50-140	25-OCT-17
Chrysene			90.7		%		50-140	25-OCT-17
Dibenzo(ah)anthracene			83.9		%		50-140	25-OCT-17
Fluoranthene			78.0		%		50-140	25-OCT-17
Fluorene			81.6		%		50-140	25-OCT-17
Indeno(1,2,3-cd)pyrene			77.5		%		50-140	25-OCT-17
Naphthalene			86.3		%		50-140	25-OCT-17
Phenanthrene			82.3		%		50-140	25-OCT-17
Pyrene			80.6		%		50-140	25-OCT-17
WG2645866-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	25-OCT-17
2-Methylnaphthalene			<0.030		ug/g		0.03	25-OCT-17
Acenaphthene			<0.050		ug/g		0.05	25-OCT-17
Acenaphthylene			<0.050		ug/g		0.05	25-OCT-17
Anthracene			<0.050		ug/g		0.05	25-OCT-17
Benzo(a)anthracene			<0.050		ug/g		0.05	25-OCT-17
Benzo(a)pyrene			<0.050		ug/g		0.05	25-OCT-17
Benzo(b)fluoranthene			<0.050		ug/g		0.05	25-OCT-17
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	25-OCT-17
Benzo(k)fluoranthene			<0.050		ug/g		0.05	25-OCT-17
Chrysene			<0.050		ug/g		0.05	25-OCT-17
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	25-OCT-17
Fluoranthene			<0.050		ug/g		0.05	25-OCT-17
Fluorene			<0.050		ug/g		0.05	25-OCT-17
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	25-OCT-17
Naphthalene			<0.050		ug/g		0.05	25-OCT-17
Phenanthrene			<0.050		ug/g		0.05	25-OCT-17
Pyrene			<0.050		ug/g		0.05	25-OCT-17
Surrogate: 2-Fluorobiphenyl			83.5		%		50-140	25-OCT-17
Surrogate: p-Terphenyl d14			79.7		%		50-140	25-OCT-17
WG2645866-4 MS		**WG2645866-5**						
1-Methylnaphthalene			78.6		%		50-140	25-OCT-17
2-Methylnaphthalene			77.8		%		50-140	25-OCT-17
Acenaphthene			78.5		%		50-140	25-OCT-17

Quality Control Report

Workorder: L2010780 Report Date: 10-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R3865946								
WG2645866-4 MS		**WG2645866-5**						
Acenaphthylene			78.7		%		50-140	25-OCT-17
Anthracene			76.3		%		50-140	25-OCT-17
Benzo(a)anthracene			79.0		%		50-140	25-OCT-17
Benzo(a)pyrene			78.4		%		50-140	25-OCT-17
Benzo(b)fluoranthene			73.9		%		50-140	25-OCT-17
Benzo(g,h,i)perylene			73.9		%		50-140	25-OCT-17
Benzo(k)fluoranthene			82.2		%		50-140	25-OCT-17
Chrysene			83.6		%		50-140	25-OCT-17
Dibenzo(ah)anthracene			78.9		%		50-140	25-OCT-17
Fluoranthene			75.4		%		50-140	25-OCT-17
Fluorene			77.6		%		50-140	25-OCT-17
Indeno(1,2,3-cd)pyrene			73.6		%		50-140	25-OCT-17
Naphthalene			80.4		%		50-140	25-OCT-17
Phenanthrene			76.6		%		50-140	25-OCT-17
Pyrene			76.6		%		50-140	25-OCT-17
PCB-511-WT	**Soil**							
Batch R3866908								
WG2646431-4 DUP		**WG2646431-3**						
Aroclor 1242		<0.010	<0.010	RPD-NA	ug/g	N/A	40	26-OCT-17
Aroclor 1248		<0.010	<0.010	RPD-NA	ug/g	N/A	40	26-OCT-17
Aroclor 1254		<0.010	<0.010	RPD-NA	ug/g	N/A	40	26-OCT-17
Aroclor 1260		<0.010	<0.010	RPD-NA	ug/g	N/A	40	26-OCT-17
WG2646431-2 LCS								
Aroclor 1242			84.4		%		60-140	26-OCT-17
Aroclor 1248			90.2		%		60-140	26-OCT-17
Aroclor 1254			92.9		%		60-140	26-OCT-17
Aroclor 1260			111.7		%		60-140	26-OCT-17
WG2646431-1 MB								
Aroclor 1242			<0.010		ug/g		0.01	26-OCT-17
Aroclor 1248			<0.010		ug/g		0.01	26-OCT-17
Aroclor 1254			<0.010		ug/g		0.01	26-OCT-17
Aroclor 1260			<0.010		ug/g		0.01	26-OCT-17
Surrogate: d14-Terphenyl			101.6		%		60-140	26-OCT-17
WG2646431-5 MS		**WG2646431-3**						

Quality Control Report

Workorder: L2010780 Report Date: 10-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PCB-511-WT	**Soil**							
Batch R3866908								
WG2646431-5 MS		**WG2646431-3**						
Aroclor 1242			87.2		%		60-140	26-OCT-17
Aroclor 1254			91.6		%		60-140	26-OCT-17
Aroclor 1260			110.9		%		60-140	26-OCT-17
PH-WT	**Soil**							
Batch R3865113								
WG2645862-1 DUP		**L2010709-1**						
pH		7.83	7.86	J	pH units	0.03	0.3	24-OCT-17
WG2647033-1 LCS								
pH			6.97		pH units		6.9-7.1	24-OCT-17
SAR-R511-WT	**Soil**							
Batch R3867705								
WG2648918-4 DUP		**WG2648918-3**						
Calcium (Ca)		12.9	13.0		mg/L	0.6	30	26-OCT-17
Sodium (Na)		31.9	33.1		mg/L	3.9	30	26-OCT-17
Magnesium (Mg)		2.9	2.9		mg/L	2.1	30	26-OCT-17
WG2648918-2 IRM		**WT SAR1**						
Calcium (Ca)			72.4		%		70-130	26-OCT-17
Sodium (Na)			72.7		%		70-130	26-OCT-17
Magnesium (Mg)			95.9		%		70-130	26-OCT-17
WG2648918-1 MB								
Calcium (Ca)			<1.0		mg/L		1	26-OCT-17
Sodium (Na)			<1.0		mg/L		1	26-OCT-17
Magnesium (Mg)			<1.0		mg/L		1	26-OCT-17
TOC-R511-WT	**Soil**							
Batch R3866790								
WG2647938-3 CRM		**WT-TOC-CRM**						
Total Organic Carbon			100.0		%		70-130	26-OCT-17
WG2647938-4 DUP		**L2011518-1**						
Total Organic Carbon		0.74	0.73		%	0.0	35	26-OCT-17
WG2647938-2 LCS								
Total Organic Carbon			100.3		%		80-120	26-OCT-17
Total Organic Carbon			100.3		%		80-120	26-OCT-17
Total Organic Carbon			100.3		%		80-120	26-OCT-17
WG2647938-1 MB								
Total Organic Carbon			<0.10		%		0.1	26-OCT-17

Quality Control Report

Workorder: L2010780 Report Date: 10-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3865522								
WG2645854-4 DUP		**WG2645854-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-OCT-17
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-OCT-17
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-OCT-17
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-OCT-17
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-OCT-17
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-OCT-17
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-OCT-17
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-OCT-17
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-OCT-17
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-OCT-17
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-OCT-17
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-OCT-17
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	24-OCT-17
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	24-OCT-17
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-OCT-17
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-OCT-17
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-OCT-17
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-OCT-17
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-OCT-17
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-OCT-17
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-OCT-17
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	24-OCT-17
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-OCT-17
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-OCT-17
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	24-OCT-17
n-Hexane		0.164	0.171		ug/g	4.3	40	24-OCT-17
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-OCT-17
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-OCT-17
m+p-Xylenes		0.032	0.032		ug/g	0.8	40	24-OCT-17
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	24-OCT-17
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	24-OCT-17
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	24-OCT-17
Styrene		<0.050	<0.050		ug/g			24-OCT-17

Quality Control Report

Workorder: L2010780 Report Date: 10-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3865522								
WG2645854-4 DUP		**WG2645854-3**						
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-OCT-17
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-OCT-17
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	24-OCT-17
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-OCT-17
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	24-OCT-17
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	24-OCT-17
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-OCT-17
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	24-OCT-17
WG2645854-2 LCS								
1,1,1,2-Tetrachloroethane			93.8		%		60-130	24-OCT-17
1,1,2,2-Tetrachloroethane			96.3		%		60-130	24-OCT-17
1,1,1-Trichloroethane			89.8		%		60-130	24-OCT-17
1,1,2-Trichloroethane			97.9		%		60-130	24-OCT-17
1,1-Dichloroethane			89.3		%		60-130	24-OCT-17
1,1-Dichloroethylene			80.7		%		60-130	24-OCT-17
1,2-Dibromoethane			98.5		%		70-130	24-OCT-17
1,2-Dichlorobenzene			99.2		%		70-130	24-OCT-17
1,2-Dichloroethane			94.5		%		60-130	24-OCT-17
1,2-Dichloropropane			98.9		%		70-130	24-OCT-17
1,3-Dichlorobenzene			97.3		%		70-130	24-OCT-17
1,4-Dichlorobenzene			99.1		%		70-130	24-OCT-17
Acetone			102.9		%		60-140	24-OCT-17
Benzene			97.5		%		70-130	24-OCT-17
Bromodichloromethane			90.9		%		50-140	24-OCT-17
Bromoform			90.0		%		70-130	24-OCT-17
Bromomethane			89.4		%		50-140	24-OCT-17
Carbon tetrachloride			89.2		%		70-130	24-OCT-17
Chlorobenzene			97.0		%		70-130	24-OCT-17
Chloroform			95.2		%		70-130	24-OCT-17
cis-1,2-Dichloroethylene			96.4		%		70-130	24-OCT-17
cis-1,3-Dichloropropene			93.5		%		70-130	24-OCT-17
Dibromochloromethane			96.6		%		60-130	24-OCT-17
Dichlorodifluoromethane			48.4	MES	%		50-140	24-OCT-17

Quality Control Report

Workorder: L2010780 Report Date: 10-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch	**R3865522**							
WG2645854-2	**LCS**							
Ethylbenzene			92.7		%		70-130	24-OCT-17
n-Hexane			96.3		%		70-130	24-OCT-17
Methylene Chloride			100.3		%		70-130	24-OCT-17
MTBE			94.3		%		70-130	24-OCT-17
m+p-Xylenes			92.7		%		70-130	24-OCT-17
Methyl Ethyl Ketone			102.9		%		60-140	24-OCT-17
Methyl Isobutyl Ketone			92.5		%		60-140	24-OCT-17
o-Xylene			93.5		%		70-130	24-OCT-17
Styrene			93.0		%		70-130	24-OCT-17
Tetrachloroethylene			91.7		%		60-130	24-OCT-17
Toluene			93.9		%		70-130	24-OCT-17
trans-1,2-Dichloroethylene			94.2		%		60-130	24-OCT-17
trans-1,3-Dichloropropene			90.3		%		70-130	24-OCT-17
Trichloroethylene			95.5		%		60-130	24-OCT-17
Trichlorofluoromethane			87.1		%		50-140	24-OCT-17
Vinyl chloride			84.6		%		60-140	24-OCT-17
WG2645854-1	**MB**							
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	24-OCT-17
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	24-OCT-17
1,1,1-Trichloroethane			<0.050		ug/g		0.05	24-OCT-17
1,1,2-Trichloroethane			<0.050		ug/g		0.05	24-OCT-17
1,1-Dichloroethane			<0.050		ug/g		0.05	24-OCT-17
1,1-Dichloroethylene			<0.050		ug/g		0.05	24-OCT-17
1,2-Dibromoethane			<0.050		ug/g		0.05	24-OCT-17
1,2-Dichlorobenzene			<0.050		ug/g		0.05	24-OCT-17
1,2-Dichloroethane			<0.050		ug/g		0.05	24-OCT-17
1,2-Dichloropropane			<0.050		ug/g		0.05	24-OCT-17
1,3-Dichlorobenzene			<0.050		ug/g		0.05	24-OCT-17
1,4-Dichlorobenzene			<0.050		ug/g		0.05	24-OCT-17
Acetone			<0.50		ug/g		0.5	24-OCT-17
Benzene			<0.0068		ug/g		0.0068	24-OCT-17
Bromodichloromethane			<0.050		ug/g		0.05	24-OCT-17
Bromoform			<0.050		ug/g		0.05	24-OCT-17
Bromomethane			<0.050		ug/g		0.05	24-OCT-17

Quality Control Report

Workorder: L2010780 Report Date: 10-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3865522								
WG2645854-1 MB								
Carbon tetrachloride			<0.050		ug/g		0.05	24-OCT-17
Chlorobenzene			<0.050		ug/g		0.05	24-OCT-17
Chloroform			<0.050		ug/g		0.05	24-OCT-17
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	24-OCT-17
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	24-OCT-17
Dibromochloromethane			<0.050		ug/g		0.05	24-OCT-17
Dichlorodifluoromethane			<0.050		ug/g		0.05	24-OCT-17
Ethylbenzene			<0.018		ug/g		0.018	24-OCT-17
n-Hexane			<0.050		ug/g		0.05	24-OCT-17
Methylene Chloride			<0.050		ug/g		0.05	24-OCT-17
MTBE			<0.050		ug/g		0.05	24-OCT-17
m+p-Xylenes			<0.030		ug/g		0.03	24-OCT-17
Methyl Ethyl Ketone			<0.50		ug/g		0.5	24-OCT-17
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	24-OCT-17
o-Xylene			<0.020		ug/g		0.02	24-OCT-17
Styrene			<0.050		ug/g		0.05	24-OCT-17
Tetrachloroethylene			<0.050		ug/g		0.05	24-OCT-17
Toluene			<0.080		ug/g		0.08	24-OCT-17
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	24-OCT-17
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	24-OCT-17
Trichloroethylene			<0.010		ug/g		0.01	24-OCT-17
Trichlorofluoromethane			<0.050		ug/g		0.05	24-OCT-17
Vinyl chloride			<0.020		ug/g		0.02	24-OCT-17
Surrogate: 1,4-Difluorobenzene			104.0		%		50-140	24-OCT-17
Surrogate: 4-Bromofluorobenzene			101.3		%		50-140	24-OCT-17
WG2645854-5 MS		**WG2645854-3**						
1,1,1,2-Tetrachloroethane			104.2		%		50-140	24-OCT-17
1,1,2,2-Tetrachloroethane			104.6		%		50-140	24-OCT-17
1,1,1-Trichloroethane			99.7		%		50-140	24-OCT-17
1,1,2-Trichloroethane			107.7		%		50-140	24-OCT-17
1,1-Dichloroethane			98.2		%		50-140	24-OCT-17
1,1-Dichloroethylene			89.4		%		50-140	24-OCT-17
1,2-Dibromoethane			108.6		%		50-140	24-OCT-17
1,2-Dichlorobenzene			101.2		%		50-140	24-OCT-17

Quality Control Report

Workorder: L2010780 Report Date: 10-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3865522								
WG2645854-5 MS		**WG2645854-3**						
1,2-Dichloroethane			101.5		%		50-140	24-OCT-17
1,2-Dichloropropane			107.7		%		50-140	24-OCT-17
1,3-Dichlorobenzene			99.7		%		50-140	24-OCT-17
1,4-Dichlorobenzene			101.7		%		50-140	24-OCT-17
Acetone			109.1		%		50-140	24-OCT-17
Benzene			106.8		%		50-140	24-OCT-17
Bromodichloromethane			98.7		%		50-140	24-OCT-17
Bromoform			100.7		%		50-140	24-OCT-17
Bromomethane			97.4		%		50-140	24-OCT-17
Carbon tetrachloride			98.2		%		50-140	24-OCT-17
Chlorobenzene			106.9		%		50-140	24-OCT-17
Chloroform			103.8		%		50-140	24-OCT-17
cis-1,2-Dichloroethylene			105.3		%		50-140	24-OCT-17
cis-1,3-Dichloropropene			97.4		%		50-140	24-OCT-17
Dibromochloromethane			107.0		%		50-140	24-OCT-17
Dichlorodifluoromethane			57.8		%		50-140	24-OCT-17
Ethylbenzene			103.6		%		50-140	24-OCT-17
n-Hexane			104.6		%		50-140	24-OCT-17
Methylene Chloride			109.3		%		50-140	24-OCT-17
MTBE			104.7		%		50-140	24-OCT-17
m+p-Xylenes			102.5		%		50-140	24-OCT-17
Methyl Ethyl Ketone			109.8		%		50-140	24-OCT-17
Methyl Isobutyl Ketone			98.2		%		50-140	24-OCT-17
o-Xylene			103.8		%		50-140	24-OCT-17
Styrene			102.7		%		50-140	24-OCT-17
Tetrachloroethylene			101.6		%		50-140	24-OCT-17
Toluene			104.9		%		50-140	24-OCT-17
trans-1,2-Dichloroethylene			102.5		%		50-140	24-OCT-17
trans-1,3-Dichloropropene			96.1		%		50-140	24-OCT-17
Trichloroethylene			103.9		%		50-140	24-OCT-17
Trichlorofluoromethane			97.9		%		50-140	24-OCT-17
Vinyl chloride			94.8		%		50-140	24-OCT-17

Quality Control Report

Workorder: L2010780 Report Date: 10-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9
Contact: MICHAEL SHIRY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

GRAIN SIZE DETERMINATIONS

Client:	CH2M HILL CANADA LIMITED	Sample Location:	
Project Number:	11546	Sample ID:	MW17-110S-0-2
Sampler:		Sample Depth:	
Technician:	CB6	Date Sampled:	16-10-17
Lab ID Number:	L2010780-5	Date Submitted:	20-10-17
		Date Completed:	11-10-17

Total Sample Weight	156	grams	Specific Gravity:	2.650
Hydro. Sample Weight	50.000	grams	Liquid Specific Gravity:	1.000
% Past #10	0.699	* 100	Grav Factor:	1.606
Sub Factor	2.180			

Sieve Size	Weight Retained (grams)	Percent Retained	Diameter (mm)	Cum. % Retained	Cum. % Passing
38.1 mm. DIA.:	0.000	0.000	38.100	0.000	100.000
25.4 mm. DIA.:	0.000	0.000	25.400	0.000	100.000
19.0 mm. DIA.:	0.000	0.000	19.000	0.000	100.000
9.5 mm. DIA.:	12.000	7.692	9.500	7.692	92.308
NO. 4 SIEVE :	16.000	10.256	4.500	17.949	82.051
NO. 10 SIEVE :	19.000	12.179	2.000	30.128	69.872
NO. 20 SIEVE :	7.000	9.782	0.850	39.910	60.090
NO. 40 SIEVE :	7.000	9.782	0.425	49.692	50.308
NO. 60 SIEVE :	7.000	9.782	0.250	59.474	40.526
NO. 100 SIEVE:	7.000	9.782	0.150	69.256	30.744
NO. 200 SIEVE:	7.000	9.782	0.075	79.038	20.962

Time (min)	Hydrometer Reading	Temperature (C)	Diameter (mm)	% Suspended (Subsample)	% Suspended (Total Sample)
1.00	9.0	20.5	0.051	19.907	13.909
2.00	8.0	20.5	0.036	16.695	11.665
4.00	7.0	20.4	0.026	13.420	9.377
8.00	7.0	20.4	0.018	13.420	9.377
15.00	6.0	20.4	0.013	10.208	7.133
30.00	6.0	20.4	0.010	10.208	7.133
60.00	5.0	20.4	0.007	6.996	4.888
120.00	5.0	20.3	0.005	6.933	4.844
240.00	5.0	20.4	0.003	6.996	4.888
480.00	5.0	19.4	0.002	6.370	4.451
1440.00	4.0	20.8	0.001	4.034	2.819

GRAIN SIZE	% BY WT.	DIA. RANGE (mm)
% GRAVEL :	17.95	> 4.5
% COARSE SAND :	12.18	2.0 - 4.5
% MEDIUM SAND :	19.56	0.425 - 2.0
% FINE SAND :	29.35	0.075 - 0.425
% SILT :	17.09	0.075 - 0.002
% CLAY :	3.88	< 0.002
% CLAY :	4.85	< 0.005

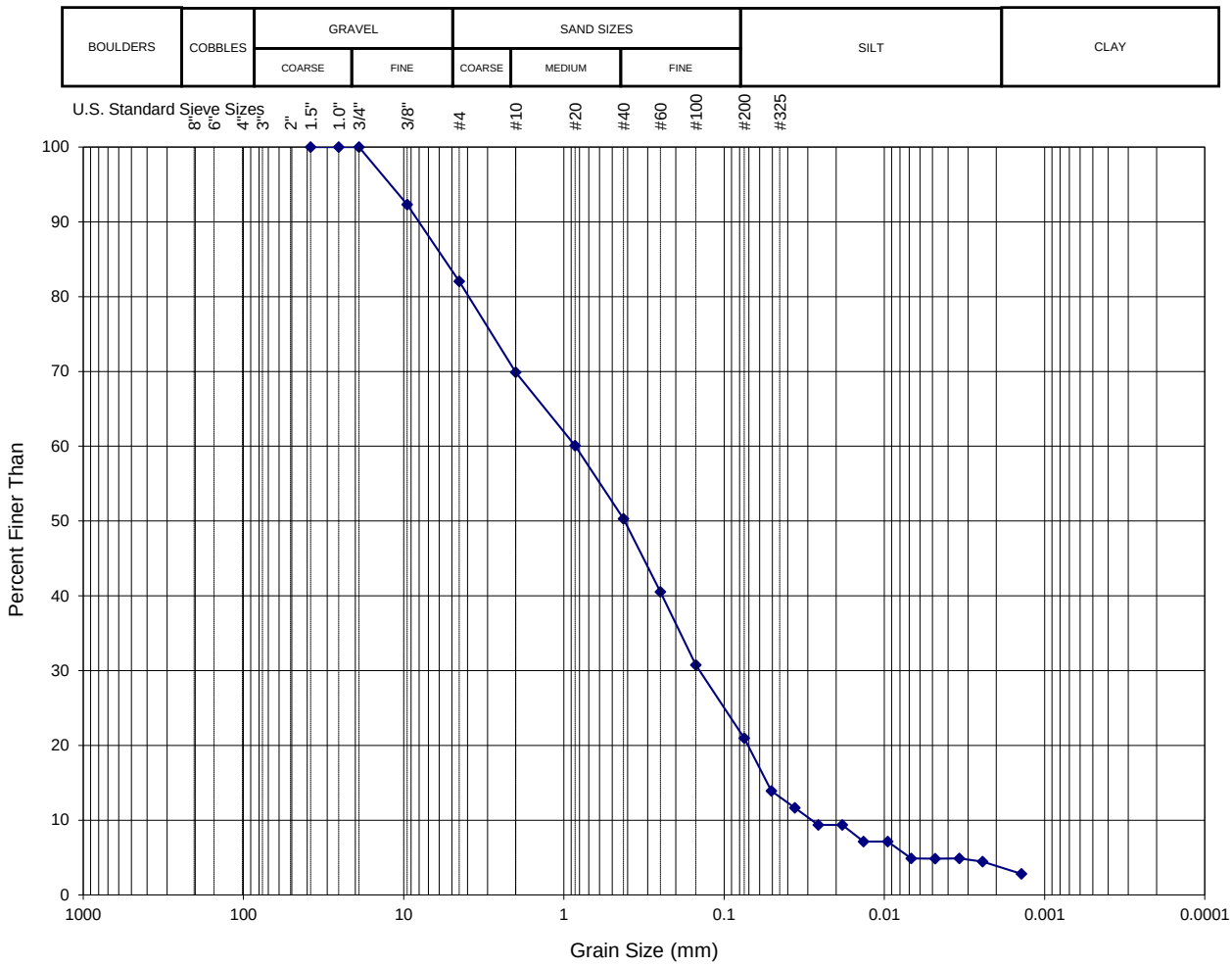
ALS Environmental

WATERLOO

PARTICLE SIZE DISTRIBUTION CURVE

ASTM METHOD D422-63

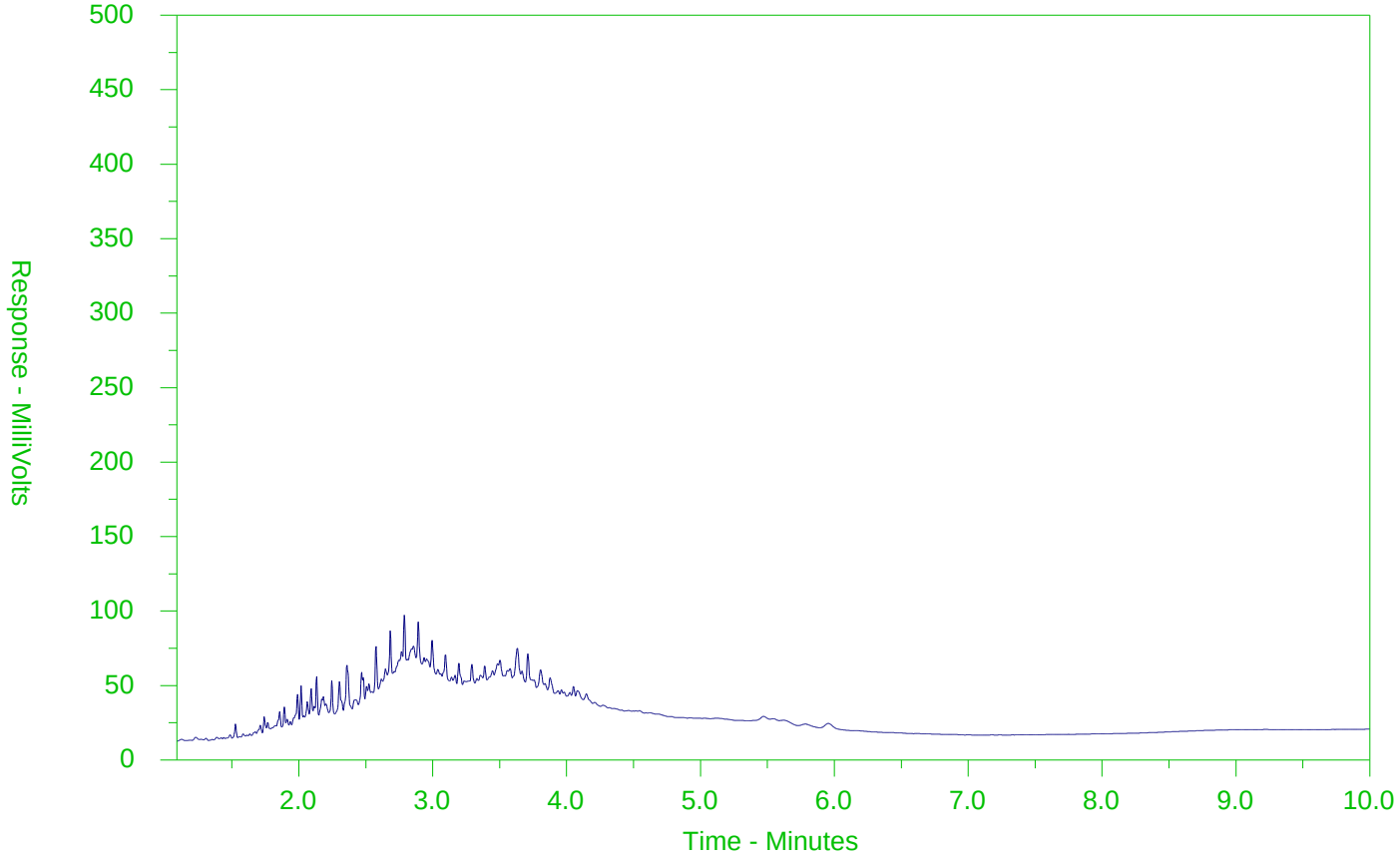
Project Name:	CH2M HILL CANADA LIMITED
Project Number:	11546
Sample Location:	
Sample Number:	MW17-110S-0-2
Sample Depth:	
Lab ID Number:	L2010780-5
Technician:	CB6
Sampler:	
Dates:	
Collected On:	16-10-17
Analyzed:	10-11-17



DESCRIPTION	SOIL CLASSIFICATION DESCRIPTIVE MODIFIERS		SUMMARY		
SAND WITH GRAVEL, WITH SILT, TRACE CLAY	AND	36 - 50 %	GRAVEL	18	%
COARSE GRAINED	ADJECTIVE (e.g. sandy)	21 - 35 %	SAND	61	%
ESTIMATED HAZEN NUMBER: 8.03E-04 cm/s	WITH	11 - 20 %	SILT + CLAY	21	%
NOTE: UNIFIED SOIL CLASSIFICATION SYSTEM	TRACE	1 - 10 %			

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2010780-4
Client Sample ID: MW17-109S-4-5



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

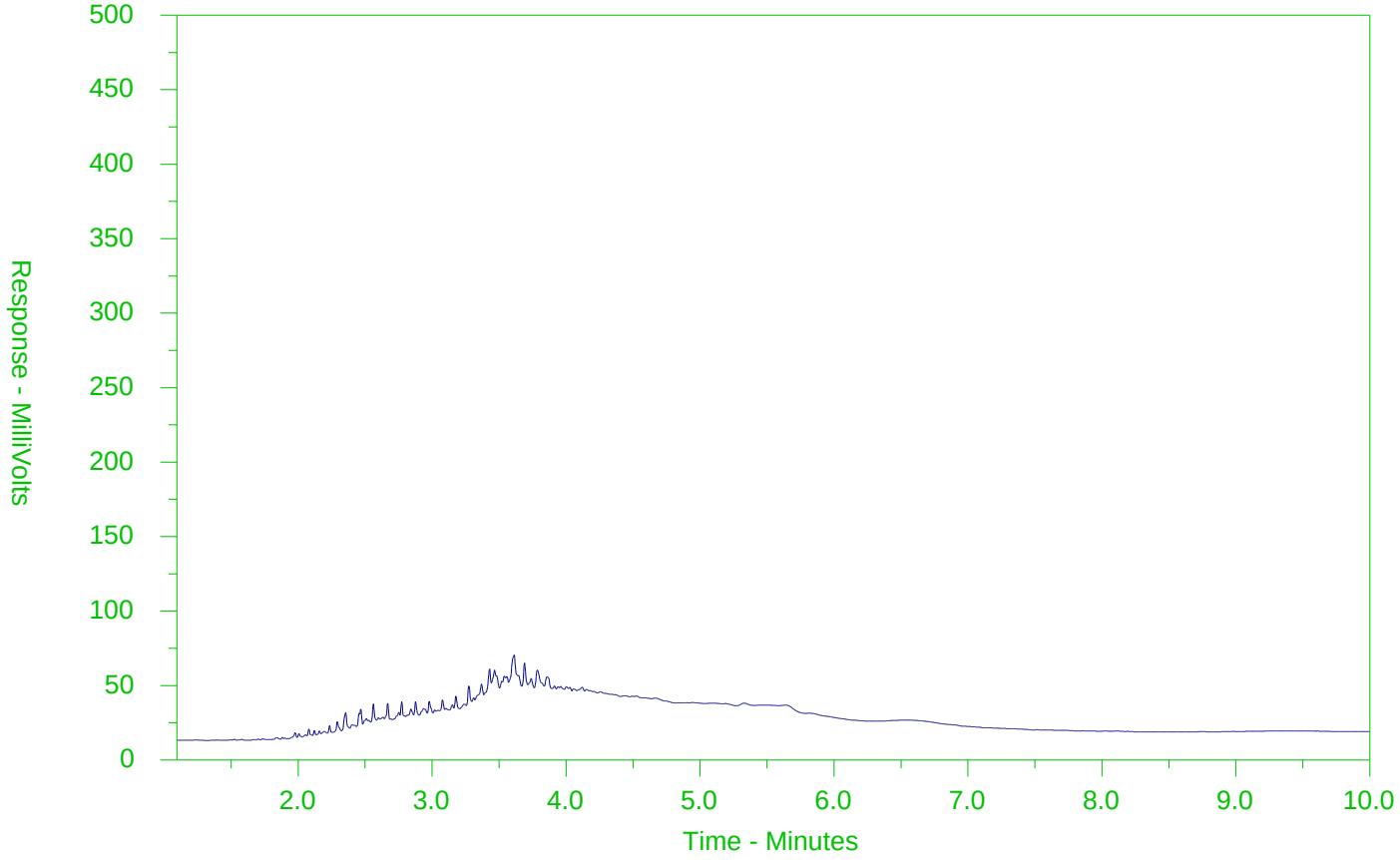
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2010780-6
Client Sample ID: MW17-110S-4-6



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

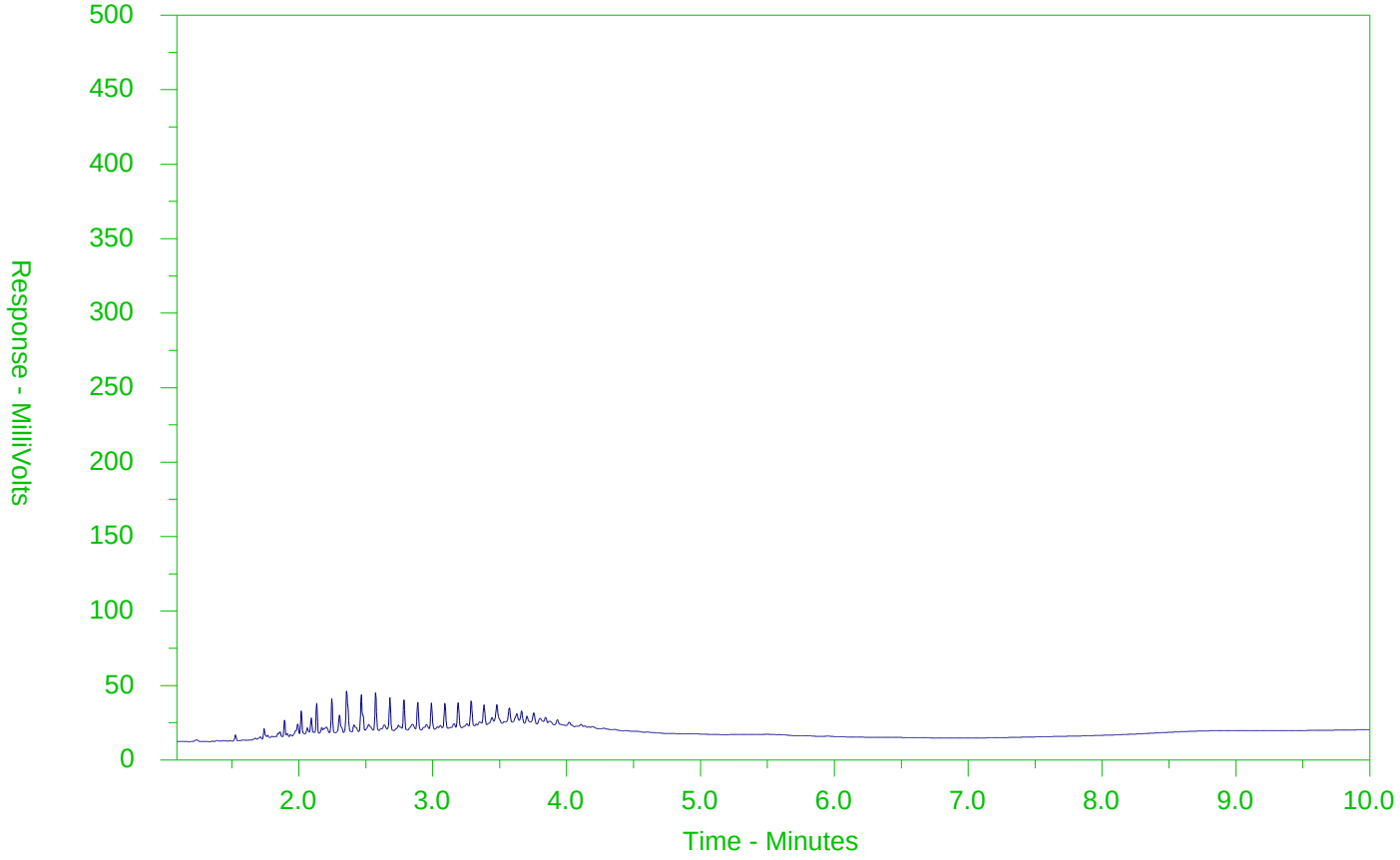
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2010780-8
Client Sample ID: MW17-104S/D-4-6



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

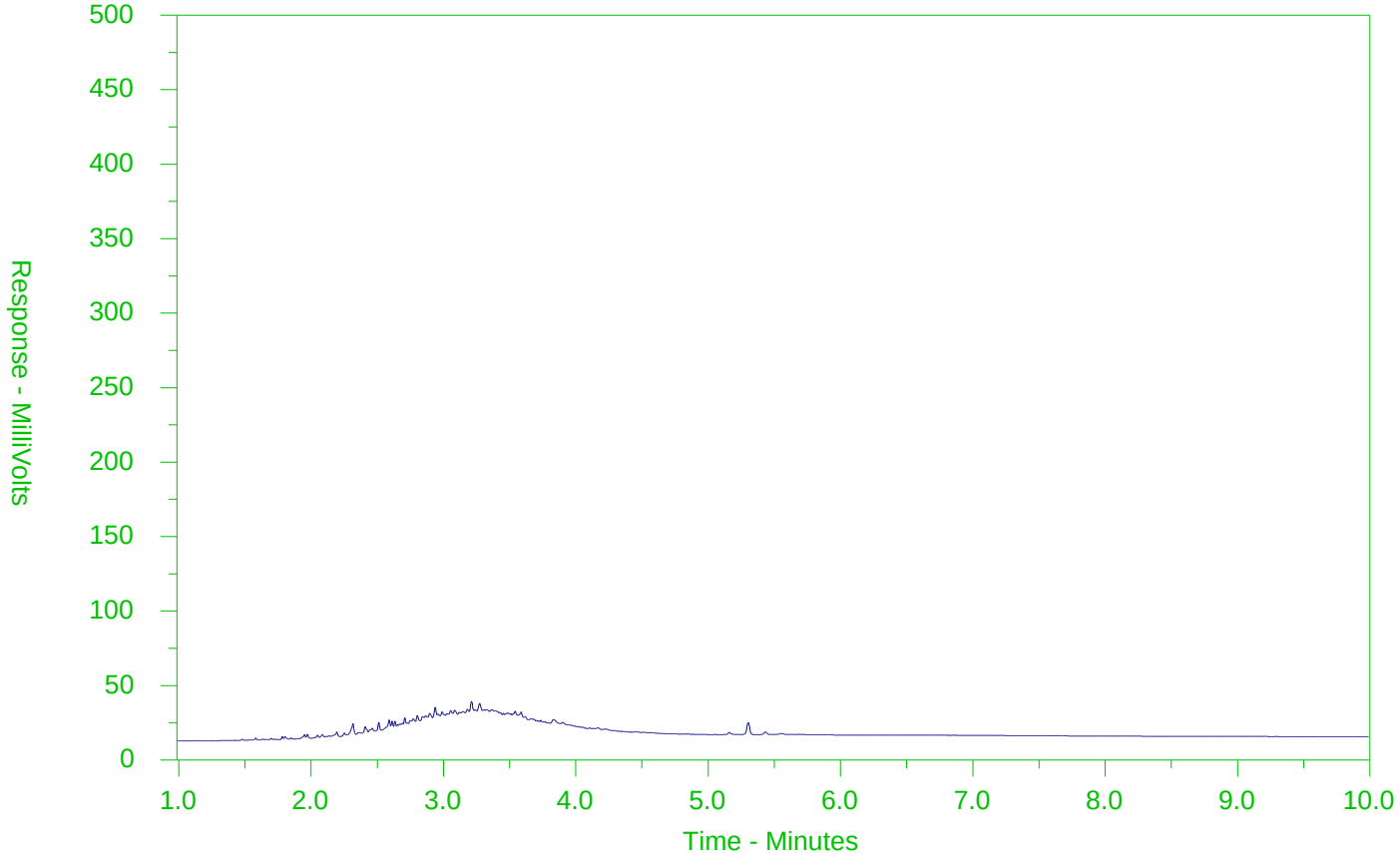
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2010780-10
Client Sample ID: BH17-204-0.5-2



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

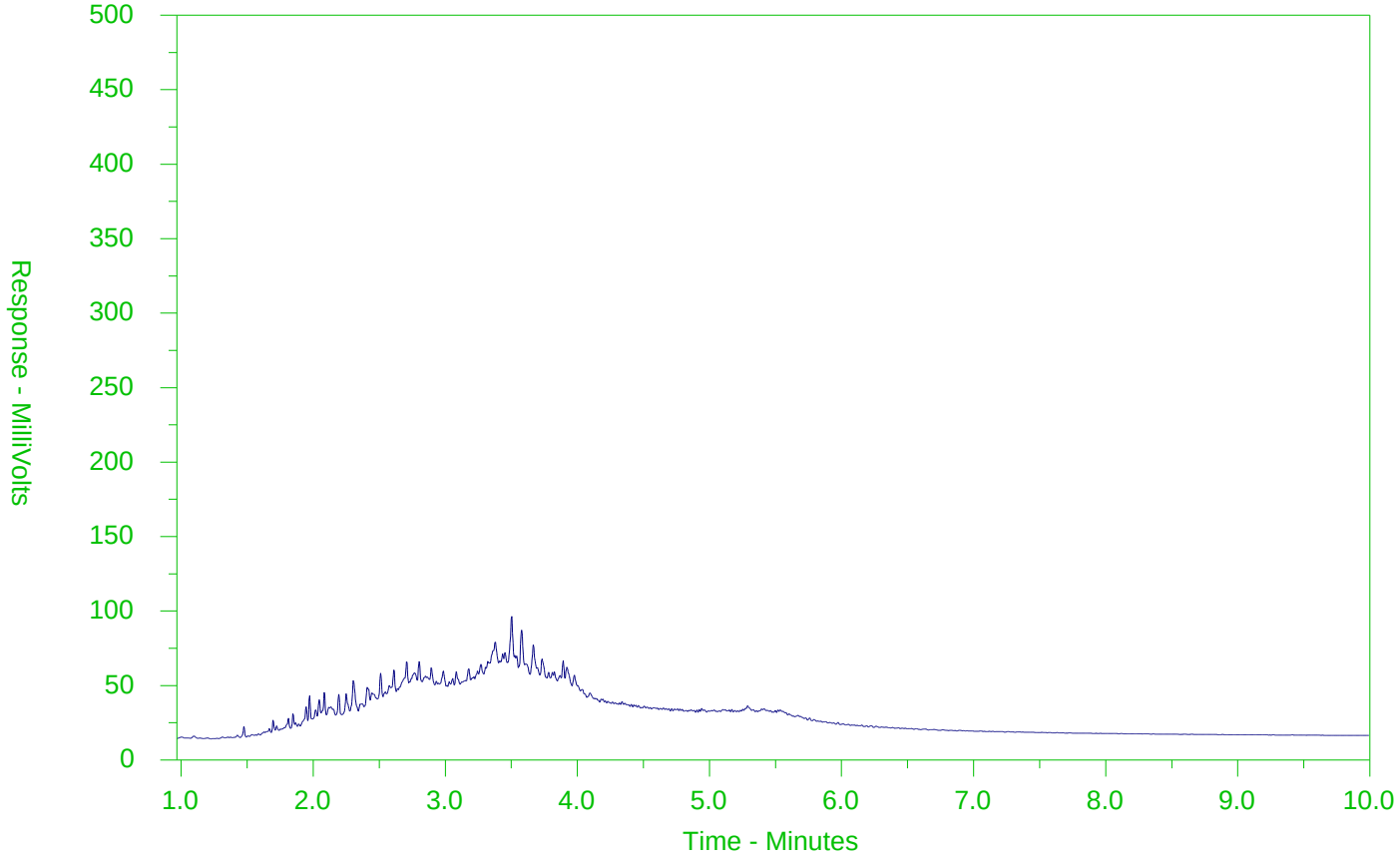
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2010780-12
Client Sample ID: DUP9



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2010780-COFC

COC Number: 17 - 616672

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	CH2M
Contact:	M. Shirey
Phone:	
Company address below will appear on the final report	
Street:	
City/Province:	
Postal Code:	
Invoice To	Same as Report To [X] YES [ ] NO
	Copy of Invoice with Report [ ] YES [X] NO
Company:	
Contact:	Acct Payable

Report Format / Distribution

Select Report Format: [X] PDF [X] EXCEL [X] EDD (DIGITAL)
Quality Control (QC) Report with Report [X] YES [ ] NO
[X] Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: [ ] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax: Michael, Dirk
Email 2: Kyrie
Email 3:

Invoice Distribution

Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax:
Email 2:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] [X] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] [ ]; 3 day [P3-25%] [ ]; 2 day [P2-50%] [ ]

EMERGENCY: 1 Business day [E-100%] [ ]; Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] [ ]

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q62156
Job #: 694757
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2010780 RW
ALS Contact: Mathy
Sampler: M. Shirey

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	O. Reg Metals + Inorganics	O. Reg PAH	O. Reg SVOCs	O. Reg PHC BTEX	O. Reg VOC	PCBs	Dioxins + Furans	TOC	Grav Size Sieve + Hydro	O. Reg VOC + F1	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
1	MW17-1095-0-1	16-Oct-17	938	Soil						X	H				X		1
2	MW17-1095-1-2	↓	938	↓						H	H				X		2
3	MW17-1095-0-2	↓	938	↓	X												1
4	MW17-1095-4-5	↓	956	↓	X			X	X								4
5	MW17-1105-0-2	↓	1538	↓	X		X					X	X				4
6	MW17-1105-4-6	↓	1554	↓	X	X		X	X			X					6
7	MW17-1045/D-2-4	17-Oct-17	1008	↓	X		X										2
8	MW17-1045/D-4-6	↓	1018	↓				X	X								3
9	MW17-1045/D-4-6H	↓	1018	↓	X		X								X		2
10	BH17-204-0.5-2	18-Oct-17	1245	↓	X		X	X	X								5
11	Trip Blank D2	20-Oct-17	—	Other									X				1
12	DUP9	16-Oct-17	—	Soil				X	X								3

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] YES [ ] NO
Are samples for human consumption/ use? [ ] YES [ ] NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Table 6 RPI

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] SIF Observations Yes [ ] No [ ]
Ice Packs [ ] Ice Cubes [X] Custody seal intact Yes [ ] No [ ]
Cooling Initiated [ ]

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				2.3			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date: 2017/10/20	Time: 11:00	Received by:	Date:	Time:	Received by:	Date: 20-OCT-17	Time: 1525

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION — WHITE - LABORATORY COPY — YELLOW - CLIENT COPY

JULY 2011 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

AR

CH2M HILL CANADA LIMITED
ATTN: MICHAEL SHIRY
72 VICTORIA ST SOUTH
SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 30-OCT-17
Report Date: 15-NOV-17 14:12 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2015398

Project P.O. #:	NOT SUBMITTED
Job Reference:	694757
C of C Numbers:	15-613140, 15-613141
Legal Site Desc:	

Mathy Mahadeva
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2015398-1	MW17-101S/D-0.5-1.5									
Sampled By:	M. SHIRY on 20-OCT-17 @ 08:47									
Matrix:	SOIL									
Physical Tests										
	% Moisture	4.64		0.10	%	01-NOV-17				
Polychlorinated Biphenyls										
	Aroclor 1242	<0.010		0.010	ug/g	09-NOV-17				
	Aroclor 1248	<0.010		0.010	ug/g	09-NOV-17				
	Aroclor 1254	<0.010		0.010	ug/g	09-NOV-17				
	Aroclor 1260	<0.010		0.010	ug/g	09-NOV-17				
	Total PCBs	<0.020		0.020	ug/g	09-NOV-17	1.1	1.1	0.35	0.35
	Surrogate: d14-Terphenyl	94.9		60-140	%	09-NOV-17				
L2015398-3	MW17-101S/D-2-3									
Sampled By:	M. SHIRY on 20-OCT-17 @ 09:08									
Matrix:	SOIL									
Physical Tests										
	Conductivity	0.215		0.0040	mS/cm	03-NOV-17	1.4	1.4	0.7	0.7
	% Moisture	5.48		0.10	%	01-NOV-17				
	pH	8.31		0.10	pH units	02-NOV-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	06-NOV-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	0.51		0.10	SAR	03-NOV-17	12	12	5	5
	Calcium (Ca)	3.1		1.0	mg/L	03-NOV-17				
	Magnesium (Mg)	3.2		1.0	mg/L	03-NOV-17				
	Sodium (Na)	5.3		1.0	mg/L	03-NOV-17				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	03-NOV-17	40	50	7.5	7.5
	Arsenic (As)	6.0		1.0	ug/g	03-NOV-17	18	18	18	18
	Barium (Ba)	36.9		1.0	ug/g	03-NOV-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	03-NOV-17	8	10	4	5
	Boron (B)	8.5		5.0	ug/g	03-NOV-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.14		0.10	ug/g	03-NOV-17	2	2	1.5	1.5
	Cadmium (Cd)	6.60		0.50	ug/g	03-NOV-17	*1.9	*1.9	*1.2	*1.2
	Chromium (Cr)	8.3		1.0	ug/g	03-NOV-17	160	160	160	160
	Cobalt (Co)	3.7		1.0	ug/g	03-NOV-17	80	100	22	22
	Copper (Cu)	29.2		1.0	ug/g	03-NOV-17	230	300	140	180
	Lead (Pb)	96.2		1.0	ug/g	03-NOV-17	120	120	120	120
	Mercury (Hg)	0.124		0.0050	ug/g	03-NOV-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	<1.0		1.0	ug/g	03-NOV-17	40	40	6.9	6.9
	Nickel (Ni)	16.7		1.0	ug/g	03-NOV-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	03-NOV-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	03-NOV-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	03-NOV-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	03-NOV-17	33	33	23	23
	Vanadium (V)	13.0		1.0	ug/g	03-NOV-17	86	86	86	86
	Zinc (Zn)	1240		5.0	ug/g	03-NOV-17	*340	*340	*340	*340
Speciated Metals										

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T6-C/F-RPI-ICC

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2015398-3	MW17-101S/D-2-3									
Sampled By:	M. SHIRY on 20-OCT-17 @ 09:08									
Matrix:	SOIL									
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	02-NOV-17	8	10	8	10
Polycyclic Aromatic Hydrocarbons										
	1+2-Methylnaphthalenes	<0.042		0.042	ug/g	06-NOV-17	30	42	0.99	3.4
Semi-Volatile Organics										
	Acenaphthene	<0.050		0.050	ug/g	06-NOV-17	21	29	7.9	29
	Acenaphthylene	<0.050		0.050	ug/g	06-NOV-17	0.15	0.17	0.15	0.17
	Anthracene	<0.050		0.050	ug/g	06-NOV-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	<0.050		0.050	ug/g	06-NOV-17	0.96	0.96	0.5	0.63
	Benzo(a)pyrene	<0.050		0.050	ug/g	06-NOV-17	0.3	0.3	0.3	0.3
	Benzo(b)fluoranthene	<0.050		0.050	ug/g	06-NOV-17	0.96	0.96	0.78	0.78
	Benzo(ghi)perylene	<0.050		0.050	ug/g	06-NOV-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	<0.050		0.050	ug/g	06-NOV-17	0.96	0.96	0.78	0.78
	Biphenyl	<0.050		0.050	ug/g	06-NOV-17	52	210	0.31	1.1
	4-Chloroaniline	<0.10		0.10	ug/g	06-NOV-17	0.5	0.53	0.5	0.53
	Bis(2-chloroethyl)ether	<0.10		0.10	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	Bis(2-chloroisopropyl)ether	<0.10		0.10	ug/g	06-NOV-17	11	13	0.67	1.8
	2-Chlorophenol	<0.10		0.10	ug/g	06-NOV-17	3.1	3.9	1.6	2
	Chrysene	<0.050		0.050	ug/g	06-NOV-17	9.6	9.6	7	7.8
	Dibenzo(a,h)anthracene	<0.050		0.050	ug/g	06-NOV-17	0.1	0.1	0.1	0.1
	3,3'-Dichlorobenzidine	<0.10		0.10	ug/g	06-NOV-17	1	1	1	1
	2,4-Dichlorophenol	<0.10		0.10	ug/g	06-NOV-17	0.19	0.27	0.19	0.27
	Diethylphthalate	<0.10		0.10	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	Dimethylphthalate	<0.10		0.10	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	2,4-Dimethylphenol	<0.10		0.10	ug/g	06-NOV-17	38	53	38	53
	2,4-Dinitrophenol	<1.0		1.0	ug/g	06-NOV-17	2	2.9	2	2.9
	2,4-Dinitrotoluene	<0.10		0.10	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	2,6-Dinitrotoluene	<0.10		0.10	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	2,4+2,6-Dinitrotoluene	<0.14		0.14	ug/g	06-NOV-17				
	Bis(2-ethylhexyl)phthalate	<0.10		0.10	ug/g	06-NOV-17	28	35	5	5
	Fluoranthene	<0.050		0.050	ug/g	06-NOV-17	9.6	9.6	0.69	0.69
	Fluorene	<0.050		0.050	ug/g	06-NOV-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	06-NOV-17	0.76	0.95	0.38	0.48
	1-Methylnaphthalene	<0.030		0.030	ug/g	06-NOV-17	30	42	0.99	3.4
	2-Methylnaphthalene	<0.030		0.030	ug/g	06-NOV-17	30	42	0.99	3.4
	Naphthalene	<0.050		0.050	ug/g	06-NOV-17	9.6	28	0.6	0.75
	Pentachlorophenol	<0.10		0.10	ug/g	06-NOV-17	2.9	3.3	0.1	0.1
	Phenanthrene	<0.050		0.050	ug/g	06-NOV-17	12	16	6.2	7.8
	Phenol	<0.10		0.10	ug/g	06-NOV-17	9.4	9.4	9.4	9.4
	Pyrene	<0.050		0.050	ug/g	06-NOV-17	96	96	78	78
	1,2,4-Trichlorobenzene	<0.050		0.050	ug/g	06-NOV-17	3.2	16	0.36	1.4
	2,4,5-Trichlorophenol	<0.10		0.10	ug/g	06-NOV-17	9.1	10	4.4	5.5
	2,4,6-Trichlorophenol	<0.10		0.10	ug/g	06-NOV-17	2.1	2.9	2.1	2.9
	Surrogate: 2-Fluorobiphenyl	121.5		50-140	%	06-NOV-17				
	Surrogate: Nitrobenzene d5	119.4		50-140	%	06-NOV-17				
	Surrogate: Phenol d5	117.1		30-130	%	06-NOV-17				
	Surrogate: p-Terphenyl d14	122.1		50-140	%	06-NOV-17				

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ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2015398-3	MW17-101S/D-2-3									
Sampled By:	M. SHIRY on 20-OCT-17 @ 09:08									
Matrix:	SOIL						#1	#2	#3	#4
Semi-Volatile Organics										
	Surrogate: 2,4,6-Tribromophenol	107.4		50-140	%	06-NOV-17				
L2015398-4	MW17-101S/D-4-5.5									
Sampled By:	M. SHIRY on 20-OCT-17 @ 10:01									
Matrix:	SOIL						#1	#2	#3	#4
Physical Tests										
	Conductivity	0.249		0.0040	mS/cm	03-NOV-17	1.4	1.4	0.7	0.7
	% Moisture	4.98		0.10	%	01-NOV-17				
	pH	8.38		0.10	pH units	02-NOV-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	06-NOV-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	1.00		0.10	SAR	03-NOV-17	12	12	5	5
	Calcium (Ca)	3.5		1.0	mg/L	03-NOV-17				
	Magnesium (Mg)	3.2		1.0	mg/L	03-NOV-17				
	Sodium (Na)	10.8		1.0	mg/L	03-NOV-17				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	03-NOV-17	40	50	7.5	7.5
	Arsenic (As)	5.7		1.0	ug/g	03-NOV-17	18	18	18	18
	Barium (Ba)	23.1		1.0	ug/g	03-NOV-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	03-NOV-17	8	10	4	5
	Boron (B)	7.3		5.0	ug/g	03-NOV-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.15		0.10	ug/g	03-NOV-17	2	2	1.5	1.5
	Cadmium (Cd)	0.85		0.50	ug/g	03-NOV-17	1.9	1.9	1.2	1.2
	Chromium (Cr)	10.3		1.0	ug/g	03-NOV-17	160	160	160	160
	Cobalt (Co)	3.9		1.0	ug/g	03-NOV-17	80	100	22	22
	Copper (Cu)	29.6		1.0	ug/g	03-NOV-17	230	300	140	180
	Lead (Pb)	58.4		1.0	ug/g	03-NOV-17	120	120	120	120
	Mercury (Hg)	0.0180		0.0050	ug/g	03-NOV-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	<1.0		1.0	ug/g	03-NOV-17	40	40	6.9	6.9
	Nickel (Ni)	9.6		1.0	ug/g	03-NOV-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	03-NOV-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	03-NOV-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	03-NOV-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	03-NOV-17	33	33	23	23
	Vanadium (V)	12.2		1.0	ug/g	03-NOV-17	86	86	86	86
	Zinc (Zn)	410		5.0	ug/g	03-NOV-17	*340	*340	*340	*340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	02-NOV-17	8	10	8	10
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	02-NOV-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	02-NOV-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	02-NOV-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	02-NOV-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	02-NOV-17	0.05	0.05	0.05	0.05

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ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2015398-4	MW17-101S/D-4-5.5									
Sampled By:	M. SHIRY on 20-OCT-17 @ 10:01									
Matrix:	SOIL									
Volatile Organic Compounds										
	Carbon tetrachloride	<0.050		0.050	ug/g	02-NOV-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	02-NOV-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	02-NOV-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	02-NOV-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	02-NOV-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	02-NOV-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	02-NOV-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	02-NOV-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	02-NOV-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	02-NOV-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	02-NOV-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	02-NOV-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	02-NOV-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	02-NOV-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	02-NOV-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	02-NOV-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	02-NOV-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	02-NOV-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	02-NOV-17	0.059	0.081	0.05	0.081
	1,4-Dioxane	<0.20		0.20	mg/kg	02-NOV-17	1.8	1.8	1.8	1.8
	Ethylbenzene	<0.018		0.018	ug/g	02-NOV-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	02-NOV-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	02-NOV-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	02-NOV-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	02-NOV-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	02-NOV-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	02-NOV-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	02-NOV-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	02-NOV-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	02-NOV-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	02-NOV-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	02-NOV-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	02-NOV-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	02-NOV-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	02-NOV-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	02-NOV-17				
	m+p-Xylenes	<0.030		0.030	ug/g	02-NOV-17				
	Xylenes (Total)	<0.050		0.050	ug/g	02-NOV-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	96.3		50-140	%	02-NOV-17				
	Surrogate: 1,4-Difluorobenzene	103.3		50-140	%	02-NOV-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	02-NOV-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	06-NOV-17	55	65	55	65
	F2 (C10-C16)	50		10	ug/g	06-NOV-17	230	250	98	150
	F2-Naphth	50		10	ug/g	06-NOV-17				
	F3 (C16-C34)	727		50	ug/g	06-NOV-17	1700	2500	*300	1300

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ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2015398-4	MW17-101S/D-4-5.5									
Sampled By:	M. SHIRY on 20-OCT-17 @ 10:01									
Matrix:	SOIL									
Hydrocarbons										
	F3-PAH	727		50	ug/g	06-NOV-17				
	F4 (C34-C50)	157		50	ug/g	06-NOV-17	3300	6600	2800	5600
	F4G-SG (GHH-Silica)	400		250	ug/g	03-NOV-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	934		72	ug/g	06-NOV-17				
	Chrom. to baseline at nC50	NO			No Unit	06-NOV-17				
	Surrogate: 2-Bromobenzotrifluoride	93.4		60-140	%	06-NOV-17				
	Surrogate: 3,4-Dichlorotoluene	83.6		60-140	%	02-NOV-17				
Polycyclic Aromatic Hydrocarbons										
	1+2-Methylnaphthalenes	<0.042		0.042	ug/g	06-NOV-17	30	42	0.99	3.4
Semi-Volatile Organics										
	Acenaphthene	<0.050		0.050	ug/g	06-NOV-17	21	29	7.9	29
	Acenaphthylene	<0.050		0.050	ug/g	06-NOV-17	0.15	0.17	0.15	0.17
	Anthracene	<0.050		0.050	ug/g	06-NOV-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	<0.06	DLQ	0.060	ug/g	06-NOV-17	0.96	0.96	0.5	0.63
	Benzo(a)pyrene	<0.050		0.050	ug/g	06-NOV-17	0.3	0.3	0.3	0.3
	Benzo(b)fluoranthene	<0.050		0.050	ug/g	06-NOV-17	0.96	0.96	0.78	0.78
	Benzo(ghi)perylene	<0.050		0.050	ug/g	06-NOV-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	<0.050		0.050	ug/g	06-NOV-17	0.96	0.96	0.78	0.78
	Biphenyl	<0.050		0.050	ug/g	06-NOV-17	52	210	0.31	1.1
	4-Chloroaniline	<0.10		0.10	ug/g	06-NOV-17	0.5	0.53	0.5	0.53
	Bis(2-chloroethyl)ether	<0.10		0.10	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	Bis(2-chloroisopropyl)ether	<0.10		0.10	ug/g	06-NOV-17	11	13	0.67	1.8
	2-Chlorophenol	<0.10		0.10	ug/g	06-NOV-17	3.1	3.9	1.6	2
	Chrysene	0.213		0.050	ug/g	06-NOV-17	9.6	9.6	7	7.8
	Dibenzo(a,h)anthracene	<0.050		0.050	ug/g	06-NOV-17	0.1	0.1	0.1	0.1
	3,3'-Dichlorobenzidine	<0.3	DLQ	0.30	ug/g	06-NOV-17	1	1	1	1
	2,4-Dichlorophenol	<0.10		0.10	ug/g	06-NOV-17	0.19	0.27	0.19	0.27
	Diethylphthalate	<0.10		0.10	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	Dimethylphthalate	<0.10		0.10	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	2,4-Dimethylphenol	<0.10		0.10	ug/g	06-NOV-17	38	53	38	53
	2,4-Dinitrophenol	<1.0		1.0	ug/g	06-NOV-17	2	2.9	2	2.9
	2,4-Dinitrotoluene	<0.10		0.10	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	2,6-Dinitrotoluene	<0.10		0.10	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	2,4+2,6-Dinitrotoluene	<0.14		0.14	ug/g	06-NOV-17				
	Bis(2-ethylhexyl)phthalate	<0.10		0.10	ug/g	06-NOV-17	28	35	5	5
	Fluoranthene	<0.050		0.050	ug/g	06-NOV-17	9.6	9.6	0.69	0.69
	Fluorene	<0.050		0.050	ug/g	06-NOV-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	06-NOV-17	0.76	0.95	0.38	0.48
	1-Methylnaphthalene	<0.030		0.030	ug/g	06-NOV-17	30	42	0.99	3.4
	2-Methylnaphthalene	<0.030		0.030	ug/g	06-NOV-17	30	42	0.99	3.4
	Naphthalene	<0.050		0.050	ug/g	06-NOV-17	9.6	28	0.6	0.75
	Pentachlorophenol	<0.10		0.10	ug/g	06-NOV-17	2.9	3.3	0.1	0.1
	Phenanthrene	<0.050		0.050	ug/g	06-NOV-17	12	16	6.2	7.8
	Phenol	<0.10		0.10	ug/g	06-NOV-17	9.4	9.4	9.4	9.4
	Pyrene	0.109		0.050	ug/g	06-NOV-17	96	96	78	78
	1,2,4-Trichlorobenzene	<0.050		0.050	ug/g	06-NOV-17	3.2	16	0.36	1.4

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T6-C/F-RPI-ICC

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#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

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Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2015398-4	MW17-101S/D-4-5.5									
Sampled By:	M. SHIRY on 20-OCT-17 @ 10:01									
Matrix:	SOIL									
Semi-Volatile Organics										
	2,4,5-Trichlorophenol	<0.10		0.10	ug/g	06-NOV-17	9.1	10	4.4	5.5
	2,4,6-Trichlorophenol	<0.10		0.10	ug/g	06-NOV-17	2.1	2.9	2.1	2.9
	Surrogate: 2-Fluorobiphenyl	123.2		50-140	%	06-NOV-17				
	Surrogate: Nitrobenzene d5	115.7		50-140	%	06-NOV-17				
	Surrogate: Phenol d5	116.1		30-130	%	06-NOV-17				
	Surrogate: p-Terphenyl d14	117.9		50-140	%	06-NOV-17				
	Surrogate: 2,4,6-Tribromophenol	112.9		50-140	%	06-NOV-17				
L2015398-5	MW17-105S/D-0-0.3									
Sampled By:	M. SHIRY on 24-OCT-17 @ 11:48									
Matrix:	SOIL									
Physical Tests										
	Conductivity	0.174		0.0040	mS/cm	03-NOV-17	1.4	1.4	0.7	0.7
	% Moisture	9.94		0.10	%	02-NOV-17				
	pH	7.66		0.10	pH units	02-NOV-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	02-NOV-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	<0.12	SAR:DL	0.12	SAR	03-NOV-17	12	12	5	5
	Calcium (Ca)	4.9		1.0	mg/L	03-NOV-17				
	Magnesium (Mg)	<1.0		1.0	mg/L	03-NOV-17				
	Sodium (Na)	<1.0		1.0	mg/L	03-NOV-17				
Metals										
	Antimony (Sb)	2.9		1.0	ug/g	03-NOV-17	40	50	7.5	7.5
	Arsenic (As)	11.3		1.0	ug/g	03-NOV-17	18	18	18	18
	Barium (Ba)	80.0		1.0	ug/g	03-NOV-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	03-NOV-17	8	10	4	5
	Boron (B)	12.6		5.0	ug/g	03-NOV-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.57		0.10	ug/g	03-NOV-17	2	2	1.5	1.5
	Cadmium (Cd)	1.34		0.50	ug/g	03-NOV-17	1.9	1.9	*1.2	*1.2
	Chromium (Cr)	16.4		1.0	ug/g	03-NOV-17	160	160	160	160
	Cobalt (Co)	5.9		1.0	ug/g	03-NOV-17	80	100	22	22
	Copper (Cu)	38.0		1.0	ug/g	03-NOV-17	230	300	140	180
	Lead (Pb)	175		1.0	ug/g	03-NOV-17	*120	*120	*120	*120
	Mercury (Hg)	0.0537		0.0050	ug/g	03-NOV-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	1.9		1.0	ug/g	03-NOV-17	40	40	6.9	6.9
	Nickel (Ni)	17.4		1.0	ug/g	03-NOV-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	03-NOV-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	03-NOV-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	03-NOV-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	03-NOV-17	33	33	23	23
	Vanadium (V)	24.8		1.0	ug/g	03-NOV-17	86	86	86	86
	Zinc (Zn)	901		5.0	ug/g	03-NOV-17	*340	*340	*340	*340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	02-NOV-17	8	10	8	10

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#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

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Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2015398-6	MW17-105S/D-0.5-1.5									
Sampled By:	M. SHIRY on 24-OCT-17 @ 11:48									
Matrix:	SOIL									
Physical Tests										
	% Moisture	8.04		0.10	%	02-NOV-17				
Polycyclic Aromatic Hydrocarbons										
	1+2-Methylnaphthalenes	1.26		0.21	ug/g	06-NOV-17	30	42	*0.99	3.4
Semi-Volatile Organics										
	Acenaphthene	0.27	DLM	0.25	ug/g	06-NOV-17	21	29	7.9	29
	Acenaphthylene	<0.25	DLM	0.25	ug/g	06-NOV-17	**0.15	**0.17	**0.15	**0.17
	Anthracene	0.63	DLM	0.25	ug/g	06-NOV-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	1.37	DLM	0.25	ug/g	06-NOV-17	*0.96	*0.96	*0.5	*0.63
	Benzo(a)pyrene	1.21	DLM	0.25	ug/g	06-NOV-17	*0.3	*0.3	*0.3	*0.3
	Benzo(b)fluoranthene	1.36	DLM	0.25	ug/g	06-NOV-17	*0.96	*0.96	*0.78	*0.78
	Benzo(ghi)perylene	0.81	DLM	0.25	ug/g	06-NOV-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	1.07	DLM	0.25	ug/g	06-NOV-17	*0.96	*0.96	*0.78	*0.78
	Biphenyl	<0.25	DLM	0.25	ug/g	06-NOV-17	52	210	0.31	1.1
	4-Chloroaniline	<0.50	DLM	0.50	ug/g	06-NOV-17	0.5	0.53	0.5	0.53
	Bis(2-chloroethyl)ether	<0.50	DLM	0.50	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	Bis(2-chloroisopropyl)ether	<0.50	DLM	0.50	ug/g	06-NOV-17	11	13	0.67	1.8
	2-Chlorophenol	<0.50	DLM	0.50	ug/g	06-NOV-17	3.1	3.9	1.6	2
	Chrysene	1.46	DLM	0.25	ug/g	06-NOV-17	9.6	9.6	7	7.8
	Dibenzo(a,h)anthracene	<0.25	DLM	0.25	ug/g	06-NOV-17	**0.1	**0.1	**0.1	**0.1
	3,3'-Dichlorobenzidine	<0.50	DLM	0.50	ug/g	06-NOV-17	1	1	1	1
	2,4-Dichlorophenol	<0.50	DLM	0.50	ug/g	06-NOV-17	**0.19	**0.27	**0.19	**0.27
	Diethylphthalate	<0.50	DLM	0.50	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	Dimethylphthalate	<0.50	DLM	0.50	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	2,4-Dimethylphenol	<0.50	DLM	0.50	ug/g	06-NOV-17	38	53	38	53
	2,4-Dinitrophenol	<5.0	DLM	5.0	ug/g	06-NOV-17	**2	**2.9	**2	**2.9
	2,4-Dinitrotoluene	<0.50	DLM	0.50	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	2,6-Dinitrotoluene	<0.50	DLM	0.50	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	2,4+2,6-Dinitrotoluene	<0.71		0.71	ug/g	06-NOV-17				
	Bis(2-ethylhexyl)phthalate	<0.50	DLM	0.50	ug/g	06-NOV-17	28	35	5	5
	Fluoranthene	2.50	DLM	0.25	ug/g	06-NOV-17	9.6	9.6	*0.69	*0.69
	Fluorene	0.27	DLM	0.25	ug/g	06-NOV-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	1.04	DLM	0.25	ug/g	06-NOV-17	*0.76	*0.95	*0.38	*0.48
	1-Methylnaphthalene	0.58	DLM	0.15	ug/g	06-NOV-17	30	42	0.99	3.4
	2-Methylnaphthalene	0.67	DLM	0.15	ug/g	06-NOV-17	30	42	0.99	3.4
	Naphthalene	0.59	DLM	0.25	ug/g	06-NOV-17	9.6	28	0.6	0.75
	Pentachlorophenol	<0.50	DLM	0.50	ug/g	06-NOV-17	2.9	3.3	**0.1	**0.1
	Phenanthrene	2.97	DLM	0.25	ug/g	06-NOV-17	12	16	6.2	7.8
	Phenol	<0.50	DLM	0.50	ug/g	06-NOV-17	9.4	9.4	9.4	9.4
	Pyrene	2.18	DLM	0.25	ug/g	06-NOV-17	96	96	78	78
	1,2,4-Trichlorobenzene	<0.25	DLM	0.25	ug/g	06-NOV-17	3.2	16	0.36	1.4
	2,4,5-Trichlorophenol	<0.50	DLM	0.50	ug/g	06-NOV-17	9.1	10	4.4	5.5
	2,4,6-Trichlorophenol	<0.50	DLM	0.50	ug/g	06-NOV-17	2.1	2.9	2.1	2.9
	Surrogate: 2-Fluorobiphenyl	134.2		50-140	%	06-NOV-17				
	Surrogate: Nitrobenzene d5	122.4		50-140	%	06-NOV-17				
	Surrogate: Phenol d5	117.1		30-130	%	06-NOV-17				
	Surrogate: p-Terphenyl d14	127.0		50-140	%	06-NOV-17				

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#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2015398-6	MW17-105S/D-0.5-1.5									
Sampled By:	M. SHIRY on 24-OCT-17 @ 11:48									
Matrix:	SOIL									
Semi-Volatile Organics										
Surrogate: 2,4,6-Tribromophenol		126.2		50-140	%	06-NOV-17				
L2015398-7	MW17-105S/D-4-6									
Sampled By:	M. SHIRY on 24-OCT-17 @ 12:12									
Matrix:	SOIL									
Physical Tests										
Conductivity		0.128		0.0040	mS/cm	03-NOV-17	1.4	1.4	0.7	0.7
% Moisture		1.11		0.10	%	02-NOV-17				
pH		8.16		0.10	pH units	02-NOV-17				
Cyanides										
Cyanide, Weak Acid Diss		<0.050		0.050	ug/g	02-NOV-17	0.051	0.051	0.051	0.051
Organic / Inorganic Carbon										
Fraction Organic Carbon		0.0067		0.0010	No Unit	02-NOV-17				
Fraction Organic Carbon		0.0067		0.0010	No Unit	02-NOV-17				
Fraction Organic Carbon		0.0068		0.0010	No Unit	02-NOV-17				
Average Fraction Organic Carbon		0.0068		0.0010	No Unit	02-NOV-17				
Total Organic Carbon		0.67		0.10	%	02-NOV-17				
Total Organic Carbon		0.67		0.10	%	02-NOV-17				
Total Organic Carbon		0.68		0.10	%	02-NOV-17				
Saturated Paste Extractables										
SAR		0.34	SAR:M	0.10	SAR	03-NOV-17	12	12	5	5
Calcium (Ca)		1.5		1.0	mg/L	03-NOV-17				
Magnesium (Mg)		<1.0		1.0	mg/L	03-NOV-17				
Sodium (Na)		1.5		1.0	mg/L	03-NOV-17				
Metals										
Antimony (Sb)		<1.0		1.0	ug/g	03-NOV-17	40	50	7.5	7.5
Arsenic (As)		4.1		1.0	ug/g	03-NOV-17	18	18	18	18
Barium (Ba)		16.1		1.0	ug/g	03-NOV-17	670	670	390	390
Beryllium (Be)		<0.50		0.50	ug/g	03-NOV-17	8	10	4	5
Boron (B)		8.2		5.0	ug/g	03-NOV-17	120	120	120	120
Boron (B), Hot Water Ext.		0.21		0.10	ug/g	03-NOV-17	2	2	1.5	1.5
Cadmium (Cd)		1.04		0.50	ug/g	03-NOV-17	1.9	1.9	1.2	1.2
Chromium (Cr)		9.8		1.0	ug/g	03-NOV-17	160	160	160	160
Cobalt (Co)		3.7		1.0	ug/g	03-NOV-17	80	100	22	22
Copper (Cu)		24.8		1.0	ug/g	03-NOV-17	230	300	140	180
Lead (Pb)		80.5		1.0	ug/g	03-NOV-17	120	120	120	120

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ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2015398-7	MW17-105S/D-4-6									
Sampled By:	M. SHIRY on 24-OCT-17 @ 12:12									
Matrix:	SOIL									
Metals										
	Mercury (Hg)	0.0352		0.0050	ug/g	03-NOV-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	<1.0		1.0	ug/g	03-NOV-17	40	40	6.9	6.9
	Nickel (Ni)	13.0		1.0	ug/g	03-NOV-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	03-NOV-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	03-NOV-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	03-NOV-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	03-NOV-17	33	33	23	23
	Vanadium (V)	15.6		1.0	ug/g	03-NOV-17	86	86	86	86
	Zinc (Zn)	590		5.0	ug/g	03-NOV-17	*340	*340	*340	*340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	02-NOV-17	8	10	8	10
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	02-NOV-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	02-NOV-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	02-NOV-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	02-NOV-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	02-NOV-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	02-NOV-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	02-NOV-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	02-NOV-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	02-NOV-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	02-NOV-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	02-NOV-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	02-NOV-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	02-NOV-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	02-NOV-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	02-NOV-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	02-NOV-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	02-NOV-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	02-NOV-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	02-NOV-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	02-NOV-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	02-NOV-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	02-NOV-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	02-NOV-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	06-NOV-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	02-NOV-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	02-NOV-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	02-NOV-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	02-NOV-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	02-NOV-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	02-NOV-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	02-NOV-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	02-NOV-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	02-NOV-17	1.9	2.5	0.28	2.3

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* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T6-C/F-RPI-ICC

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2015398-7	MW17-105S/D-4-6									
Sampled By:	M. SHIRY on 24-OCT-17 @ 12:12									
Matrix:	SOIL									
Volatile Organic Compounds										
	Toluene	<0.080		0.080	ug/g	02-NOV-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	02-NOV-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	02-NOV-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	02-NOV-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	02-NOV-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	02-NOV-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	02-NOV-17				
	m+p-Xylenes	<0.030		0.030	ug/g	02-NOV-17				
	Xylenes (Total)	<0.050		0.050	ug/g	06-NOV-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	101.2		50-140	%	02-NOV-17				
	Surrogate: 1,4-Difluorobenzene	107.3		50-140	%	02-NOV-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	02-NOV-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	07-NOV-17	55	65	55	65
	F2 (C10-C16)	23		10	ug/g	07-NOV-17	230	250	98	150
	F2-Naphth	23		10	ug/g	07-NOV-17				
	F3 (C16-C34)	120		50	ug/g	07-NOV-17	1700	2500	300	1300
	F3-PAH	120		50	ug/g	07-NOV-17				
	F4 (C34-C50)	<50		50	ug/g	07-NOV-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	143		72	ug/g	07-NOV-17				
	Chrom. to baseline at nC50	YES			No Unit	07-NOV-17				
	Surrogate: 2-Bromobenzotrifluoride	96.6		60-140	%	07-NOV-17				
	Surrogate: 3,4-Dichlorotoluene	93.7		60-140	%	02-NOV-17				
Polycyclic Aromatic Hydrocarbons										
	1+2-Methylnaphthalenes	<0.042		0.042	ug/g	06-NOV-17	30	42	0.99	3.4
Semi-Volatile Organics										
	Acenaphthene	<0.050		0.050	ug/g	06-NOV-17	21	29	7.9	29
	Acenaphthylene	<0.050		0.050	ug/g	06-NOV-17	0.15	0.17	0.15	0.17
	Anthracene	<0.050		0.050	ug/g	06-NOV-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	<0.050		0.050	ug/g	06-NOV-17	0.96	0.96	0.5	0.63
	Benzo(a)pyrene	<0.050		0.050	ug/g	06-NOV-17	0.3	0.3	0.3	0.3
	Benzo(b)fluoranthene	<0.050		0.050	ug/g	06-NOV-17	0.96	0.96	0.78	0.78
	Benzo(ghi)perylene	<0.050		0.050	ug/g	06-NOV-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	<0.050		0.050	ug/g	06-NOV-17	0.96	0.96	0.78	0.78
	Biphenyl	<0.050		0.050	ug/g	06-NOV-17	52	210	0.31	1.1
	4-Chloroaniline	<0.10		0.10	ug/g	06-NOV-17	0.5	0.53	0.5	0.53
	Bis(2-chloroethyl)ether	<0.10		0.10	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	Bis(2-chloroisopropyl)ether	<0.10		0.10	ug/g	06-NOV-17	11	13	0.67	1.8
	2-Chlorophenol	<0.10		0.10	ug/g	06-NOV-17	3.1	3.9	1.6	2
	Chrysene	0.103		0.050	ug/g	06-NOV-17	9.6	9.6	7	7.8
	Dibenzo(a,h)anthracene	<0.050		0.050	ug/g	06-NOV-17	0.1	0.1	0.1	0.1
	3,3'-Dichlorobenzidine	<0.10		0.10	ug/g	06-NOV-17	1	1	1	1
	2,4-Dichlorophenol	<0.10		0.10	ug/g	06-NOV-17	0.19	0.27	0.19	0.27
	Diethylphthalate	<0.10		0.10	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	Dimethylphthalate	<0.10		0.10	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	2,4-Dimethylphenol	<0.10		0.10	ug/g	06-NOV-17	38	53	38	53

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T6-C/F-RPI-ICC

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2015398-7	MW17-105S/D-4-6									
Sampled By:	M. SHIRY on 24-OCT-17 @ 12:12									
Matrix:	SOIL									
Semi-Volatile Organics										
	2,4-Dinitrophenol	<1.0		1.0	ug/g	06-NOV-17	2	2.9	2	2.9
	2,4-Dinitrotoluene	<0.10		0.10	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	2,6-Dinitrotoluene	<0.10		0.10	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	2,4+2,6-Dinitrotoluene	<0.14		0.14	ug/g	06-NOV-17				
	Bis(2-ethylhexyl)phthalate	<0.10		0.10	ug/g	06-NOV-17	28	35	5	5
	Fluoranthene	<0.050		0.050	ug/g	06-NOV-17	9.6	9.6	0.69	0.69
	Fluorene	<0.050		0.050	ug/g	06-NOV-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	06-NOV-17	0.76	0.95	0.38	0.48
	1-Methylnaphthalene	<0.030		0.030	ug/g	06-NOV-17	30	42	0.99	3.4
	2-Methylnaphthalene	<0.030		0.030	ug/g	06-NOV-17	30	42	0.99	3.4
	Naphthalene	<0.050		0.050	ug/g	06-NOV-17	9.6	28	0.6	0.75
	Pentachlorophenol	<0.10		0.10	ug/g	06-NOV-17	2.9	3.3	0.1	0.1
	Phenanthrene	<0.050		0.050	ug/g	06-NOV-17	12	16	6.2	7.8
	Phenol	<0.10		0.10	ug/g	06-NOV-17	9.4	9.4	9.4	9.4
	Pyrene	<0.050		0.050	ug/g	06-NOV-17	96	96	78	78
	1,2,4-Trichlorobenzene	<0.050		0.050	ug/g	06-NOV-17	3.2	16	0.36	1.4
	2,4,5-Trichlorophenol	<0.10		0.10	ug/g	06-NOV-17	9.1	10	4.4	5.5
	2,4,6-Trichlorophenol	<0.10		0.10	ug/g	06-NOV-17	2.1	2.9	2.1	2.9
	Surrogate: 2-Fluorobiphenyl	118.0		50-140	%	06-NOV-17				
	Surrogate: Nitrobenzene d5	113.9		50-140	%	06-NOV-17				
	Surrogate: Phenol d5	113.0		30-130	%	06-NOV-17				
	Surrogate: p-Terphenyl d14	118.8		50-140	%	06-NOV-17				
	Surrogate: 2,4,6-Tribromophenol	107.2		50-140	%	06-NOV-17				
L2015398-8	MW17-105S/D-6-7									
Sampled By:	M. SHIRY on 24-OCT-17 @ 12:32									
Matrix:	SOIL									
Physical Tests										
	% Moisture	1.57		0.10	%	02-NOV-17				
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	02-NOV-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	02-NOV-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	02-NOV-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	02-NOV-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	02-NOV-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	02-NOV-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	02-NOV-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	02-NOV-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	02-NOV-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	02-NOV-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	02-NOV-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	02-NOV-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	02-NOV-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	02-NOV-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	02-NOV-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	02-NOV-17	0.05	0.05	0.05	0.05

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#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2015398-8	MW17-105S/D-6-7									
Sampled By:	M. SHIRY on 24-OCT-17 @ 12:32									
Matrix:	SOIL									
Volatile Organic Compounds										
	1,1-Dichloroethylene	<0.050		0.050	ug/g	02-NOV-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	02-NOV-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	02-NOV-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	02-NOV-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	02-NOV-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	02-NOV-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	02-NOV-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	06-NOV-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	02-NOV-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	02-NOV-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	02-NOV-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	02-NOV-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	02-NOV-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	02-NOV-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	02-NOV-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	02-NOV-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	02-NOV-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	02-NOV-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	02-NOV-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	02-NOV-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	02-NOV-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	02-NOV-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	02-NOV-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	02-NOV-17				
	m+p-Xylenes	<0.030		0.030	ug/g	02-NOV-17				
	Xylenes (Total)	<0.050		0.050	ug/g	06-NOV-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	96.1		50-140	%	02-NOV-17				
	Surrogate: 1,4-Difluorobenzene	102.5		50-140	%	02-NOV-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	02-NOV-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	07-NOV-17	55	65	55	65
	F2 (C10-C16)	<10		10	ug/g	07-NOV-17	230	250	98	150
	F3 (C16-C34)	<50		50	ug/g	07-NOV-17	1700	2500	300	1300
	F4 (C34-C50)	<50		50	ug/g	07-NOV-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	<72		72	ug/g	07-NOV-17				
	Chrom. to baseline at nC50	YES			No Unit	07-NOV-17				
	Surrogate: 2-Bromobenzotrifluoride	101.5		60-140	%	07-NOV-17				
	Surrogate: 3,4-Dichlorotoluene	88.7		60-140	%	02-NOV-17				
L2015398-9	MW17-103S/D-1-1.5									
Sampled By:	M. SHIRY on 25-OCT-17 @ 15:23									
Matrix:	SOIL									
Physical Tests										
	Conductivity	0.170		0.0040	mS/cm	03-NOV-17	1.4	1.4	0.7	0.7
	% Moisture	7.71		0.10	%	02-NOV-17				
	pH	7.41		0.10	pH units	02-NOV-17				

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ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2015398-9	MW17-103S/D-1-1.5									
Sampled By:	M. SHIRY on 25-OCT-17 @ 15:23									
Matrix:	SOIL									
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	02-NOV-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	<0.13	SAR:DL	0.13	SAR	03-NOV-17	12	12	5	5
	Calcium (Ca)	4.8		1.0	mg/L	03-NOV-17				
	Magnesium (Mg)	<1.0		1.0	mg/L	03-NOV-17				
	Sodium (Na)	<1.0		1.0	mg/L	03-NOV-17				
Metals										
	Antimony (Sb)	1.8		1.0	ug/g	03-NOV-17	40	50	7.5	7.5
	Arsenic (As)	3.3		1.0	ug/g	03-NOV-17	18	18	18	18
	Barium (Ba)	35.4		1.0	ug/g	03-NOV-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	03-NOV-17	8	10	4	5
	Boron (B)	5.2		5.0	ug/g	03-NOV-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.23		0.10	ug/g	03-NOV-17	2	2	1.5	1.5
	Cadmium (Cd)	<0.50		0.50	ug/g	03-NOV-17	1.9	1.9	1.2	1.2
	Chromium (Cr)	18.9		1.0	ug/g	03-NOV-17	160	160	160	160
	Cobalt (Co)	2.8		1.0	ug/g	03-NOV-17	80	100	22	22
	Copper (Cu)	22.9		1.0	ug/g	03-NOV-17	230	300	140	180
	Lead (Pb)	51.2		1.0	ug/g	03-NOV-17	120	120	120	120
	Mercury (Hg)	0.246		0.0050	ug/g	03-NOV-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	1.3		1.0	ug/g	03-NOV-17	40	40	6.9	6.9
	Nickel (Ni)	10.1		1.0	ug/g	03-NOV-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	03-NOV-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	03-NOV-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	03-NOV-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	03-NOV-17	33	33	23	23
	Vanadium (V)	17.7		1.0	ug/g	03-NOV-17	86	86	86	86
	Zinc (Zn)	69.4		5.0	ug/g	03-NOV-17	340	340	340	340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	02-NOV-17	8	10	8	10
Polycyclic Aromatic Hydrocarbons										
	1+2-Methylnaphthalenes	0.329		0.042	ug/g	06-NOV-17	30	42	0.99	3.4
Semi-Volatile Organics										
	Acenaphthene	<0.050		0.050	ug/g	06-NOV-17	21	29	7.9	29
	Acenaphthylene	<0.050		0.050	ug/g	06-NOV-17	0.15	0.17	0.15	0.17
	Anthracene	0.071		0.050	ug/g	06-NOV-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	0.661		0.050	ug/g	06-NOV-17	0.96	0.96	*0.5	*0.63
	Benzo(a)pyrene	0.748		0.050	ug/g	06-NOV-17	*0.3	*0.3	*0.3	*0.3
	Benzo(b)fluoranthene	0.902		0.050	ug/g	06-NOV-17	0.96	0.96	*0.78	*0.78
	Benzo(ghi)perylene	0.526		0.050	ug/g	06-NOV-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	0.623		0.050	ug/g	06-NOV-17	0.96	0.96	0.78	0.78
	Biphenyl	<0.050		0.050	ug/g	06-NOV-17	52	210	0.31	1.1
	4-Chloroaniline	<0.10		0.10	ug/g	06-NOV-17	0.5	0.53	0.5	0.53
	Bis(2-chloroethyl)ether	<0.10		0.10	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	Bis(2-chloroisopropyl)ether	<0.10		0.10	ug/g	06-NOV-17	11	13	0.67	1.8
	2-Chlorophenol	<0.10		0.10	ug/g	06-NOV-17	3.1	3.9	1.6	2

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T6-C/F-RPI-ICC

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2015398-9	MW17-103S/D-1-1.5									
Sampled By:	M. SHIRY on 25-OCT-17 @ 15:23									
Matrix:	SOIL									
Semi-Volatile Organics										
	Chrysene	0.797		0.050	ug/g	06-NOV-17	9.6	9.6	7	7.8
	Dibenzo(a,h)anthracene	0.150		0.050	ug/g	06-NOV-17	*0.1	*0.1	*0.1	*0.1
	3,3'-Dichlorobenzidine	<0.10		0.10	ug/g	06-NOV-17	1	1	1	1
	2,4-Dichlorophenol	<0.10		0.10	ug/g	06-NOV-17	0.19	0.27	0.19	0.27
	Diethylphthalate	<0.10		0.10	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	Dimethylphthalate	<0.10		0.10	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	2,4-Dimethylphenol	<0.10		0.10	ug/g	06-NOV-17	38	53	38	53
	2,4-Dinitrophenol	<1.0		1.0	ug/g	06-NOV-17	2	2.9	2	2.9
	2,4-Dinitrotoluene	<0.10		0.10	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	2,6-Dinitrotoluene	<0.10		0.10	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	2,4+2,6-Dinitrotoluene	<0.14		0.14	ug/g	06-NOV-17				
	Bis(2-ethylhexyl)phthalate	<0.10		0.10	ug/g	06-NOV-17	28	35	5	5
	Fluoranthene	0.646		0.050	ug/g	06-NOV-17	9.6	9.6	0.69	0.69
	Fluorene	<0.050		0.050	ug/g	06-NOV-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	0.673		0.050	ug/g	06-NOV-17	0.76	0.95	*0.38	*0.48
	1-Methylnaphthalene	0.162		0.030	ug/g	06-NOV-17	30	42	0.99	3.4
	2-Methylnaphthalene	0.167		0.030	ug/g	06-NOV-17	30	42	0.99	3.4
	Naphthalene	0.121		0.050	ug/g	06-NOV-17	9.6	28	0.6	0.75
	Pentachlorophenol	<0.10		0.10	ug/g	06-NOV-17	2.9	3.3	0.1	0.1
	Phenanthrene	0.565		0.050	ug/g	06-NOV-17	12	16	6.2	7.8
	Phenol	<0.10		0.10	ug/g	06-NOV-17	9.4	9.4	9.4	9.4
	Pyrene	0.594		0.050	ug/g	06-NOV-17	96	96	78	78
	1,2,4-Trichlorobenzene	<0.050		0.050	ug/g	06-NOV-17	3.2	16	0.36	1.4
	2,4,5-Trichlorophenol	<0.10		0.10	ug/g	06-NOV-17	9.1	10	4.4	5.5
	2,4,6-Trichlorophenol	<0.10		0.10	ug/g	06-NOV-17	2.1	2.9	2.1	2.9
	Surrogate: 2-Fluorobiphenyl	118.8		50-140	%	06-NOV-17				
	Surrogate: Nitrobenzene d5	116.1		50-140	%	06-NOV-17				
	Surrogate: Phenol d5	112.5		30-130	%	06-NOV-17				
	Surrogate: p-Terphenyl d14	116.7		50-140	%	06-NOV-17				
	Surrogate: 2,4,6-Tribromophenol	124.8		50-140	%	06-NOV-17				
L2015398-10	MW17-103S/D-1-3									
Sampled By:	M. SHIRY on 25-OCT-17 @ 15:23									
Matrix:	SOIL									
Organic / Inorganic Carbon										
	Fraction Organic Carbon	0.0420		0.0010	No Unit	02-NOV-17				
	Fraction Organic Carbon	0.0515		0.0010	No Unit	02-NOV-17				
	Fraction Organic Carbon	0.0516		0.0010	No Unit	02-NOV-17				
	Average Fraction Organic Carbon	0.0484		0.0010	No Unit	02-NOV-17				
	Total Organic Carbon	4.20		0.10	%	02-NOV-17				

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T6-C/F-RPI-ICC

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#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

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Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2015398-10	MW17-103S/D-1-3									
Sampled By:	M. SHIRY on 25-OCT-17 @ 15:23									
Matrix:	SOIL									
Organic / Inorganic Carbon										
Total Organic Carbon		5.15		0.10	%	02-NOV-17				
Total Organic Carbon		5.16		0.10	%	02-NOV-17				
L2015398-11	MW17-103S/D-2-3									
Sampled By:	M. SHIRY on 25-OCT-17 @ 15:27									
Matrix:	SOIL									
Physical Tests										
% Moisture		6.50		0.10	%	02-NOV-17				
Volatile Organic Compounds										
Acetone		<0.50		0.50	ug/g	03-NOV-17	16	28	16	28
Benzene		0.0070		0.0068	ug/g	03-NOV-17	0.32	0.4	0.21	0.17
Bromodichloromethane		<0.050		0.050	ug/g	03-NOV-17	1.5	1.9	1.5	1.9
Bromoform		<0.050		0.050	ug/g	03-NOV-17	0.61	1.7	0.27	0.26
Bromomethane		<0.050		0.050	ug/g	03-NOV-17	0.05	0.05	0.05	0.05
Carbon tetrachloride		<0.050		0.050	ug/g	03-NOV-17	0.21	0.71	0.05	0.12
Chlorobenzene		<0.050		0.050	ug/g	03-NOV-17	2.4	2.7	2.4	2.7
Dibromochloromethane		<0.050		0.050	ug/g	03-NOV-17	2.3	2.9	2.3	2.9
Chloroform		<0.050		0.050	ug/g	03-NOV-17	0.47	0.18	0.05	0.17
1,2-Dibromoethane		<0.050		0.050	ug/g	03-NOV-17	0.05	0.05	0.05	0.05
1,2-Dichlorobenzene		<0.050		0.050	ug/g	03-NOV-17	1.2	1.7	1.2	1.7
1,3-Dichlorobenzene		<0.050		0.050	ug/g	03-NOV-17	9.6	12	4.8	6
1,4-Dichlorobenzene		<0.050		0.050	ug/g	03-NOV-17	0.2	0.57	0.083	0.097
Dichlorodifluoromethane		<0.050		0.050	ug/g	03-NOV-17	16	25	16	25
1,1-Dichloroethane		<0.050		0.050	ug/g	03-NOV-17	0.47	0.6	0.47	0.6
1,2-Dichloroethane		<0.050		0.050	ug/g	03-NOV-17	0.05	0.05	0.05	0.05
1,1-Dichloroethylene		<0.050		0.050	ug/g	03-NOV-17	0.064	0.48	0.05	0.05
cis-1,2-Dichloroethylene		<0.050		0.050	ug/g	03-NOV-17	1.9	2.5	1.9	2.5
trans-1,2-Dichloroethylene		<0.050		0.050	ug/g	03-NOV-17	1.3	2.5	0.084	0.75
Methylene Chloride		<0.050		0.050	ug/g	03-NOV-17	1.6	2	0.1	0.96
1,2-Dichloropropane		<0.050		0.050	ug/g	03-NOV-17	0.16	0.68	0.05	0.085
cis-1,3-Dichloropropene		<0.030		0.030	ug/g	03-NOV-17				
trans-1,3-Dichloropropene		<0.030		0.030	ug/g	03-NOV-17				
1,3-Dichloropropene (cis & trans)		<0.042		0.042	ug/g	04-NOV-17	0.059	0.081	0.05	0.081
Ethylbenzene		<0.018		0.018	ug/g	03-NOV-17	1.1	1.6	1.1	1.6
n-Hexane		0.083		0.050	ug/g	03-NOV-17	46	88	2.8	34
Methyl Ethyl Ketone		<0.50		0.50	ug/g	03-NOV-17	70	88	16	44
Methyl Isobutyl Ketone		<0.50		0.50	ug/g	03-NOV-17	31	210	1.7	4.3
MTBE		<0.050		0.050	ug/g	03-NOV-17	1.6	2.3	0.75	1.4
Styrene		<0.050		0.050	ug/g	03-NOV-17	34	43	0.7	2.2
1,1,1,2-Tetrachloroethane		<0.050		0.050	ug/g	03-NOV-17	0.087	0.11	0.058	0.05
1,1,2,2-Tetrachloroethane		<0.050		0.050	ug/g	03-NOV-17	0.05	0.094	0.05	0.05
Tetrachloroethylene		<0.050		0.050	ug/g	03-NOV-17	1.9	2.5	0.28	2.3
Toluene		<0.080		0.080	ug/g	03-NOV-17				

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ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2015398-11	MW17-103S/D-2-3									
Sampled By:	M. SHIRY on 25-OCT-17 @ 15:27									
Matrix:	SOIL									
Volatile Organic Compounds										
							6.4	9	2.3	6
1,1,1-Trichloroethane		<0.050		0.050	ug/g	03-NOV-17	6.1	12	0.38	3.4
1,1,2-Trichloroethane		<0.050		0.050	ug/g	03-NOV-17	0.05	0.11	0.05	0.05
Trichloroethylene		<0.010		0.010	ug/g	03-NOV-17	0.55	0.61	0.061	0.52
Trichlorofluoromethane		<0.050		0.050	ug/g	03-NOV-17	4	5.8	4	5.8
Vinyl chloride		<0.020		0.020	ug/g	03-NOV-17	0.032	0.25	0.02	0.022
o-Xylene		0.059		0.020	ug/g	03-NOV-17				
m+p-Xylenes		0.055		0.030	ug/g	03-NOV-17				
Xylenes (Total)		0.115		0.050	ug/g	04-NOV-17	26	30	3.1	25
Surrogate: 4-Bromofluorobenzene		100.7		50-140	%	03-NOV-17				
Surrogate: 1,4-Difluorobenzene		98.7		50-140	%	03-NOV-17				
Hydrocarbons										
F1 (C6-C10)		<5.0		5.0	ug/g	03-NOV-17	55	65	55	65
F1-BTEX		<5.0		5.0	ug/g	07-NOV-17	55	65	55	65
F2 (C10-C16)		11		10	ug/g	07-NOV-17	230	250	98	150
F3 (C16-C34)		295		50	ug/g	07-NOV-17	1700	2500	300	1300
F4 (C34-C50)		459		50	ug/g	07-NOV-17	3300	6600	2800	5600
F4G-SG (GHH-Silica)		2430		250	ug/g	06-NOV-17	3300	6600	2800	5600
Total Hydrocarbons (C6-C50)		766		72	ug/g	07-NOV-17				
Chrom. to baseline at nC50		NO			No Unit	07-NOV-17				
Surrogate: 2-Bromobenzotrifluoride		101.8		60-140	%	07-NOV-17				
Surrogate: 3,4-Dichlorotoluene		105.0		60-140	%	03-NOV-17				
L2015398-12	MW17-103S/D-4-6									
Sampled By:	M. SHIRY on 25-OCT-17 @ 15:37									
Matrix:	SOIL									
Physical Tests										
Conductivity		0.166		0.0040	mS/cm	06-NOV-17	1.4	1.4	0.7	0.7
% Moisture		3.62		0.10	%	02-NOV-17				
pH		8.14		0.10	pH units	02-NOV-17				
Cyanides										
Cyanide, Weak Acid Diss		<0.050		0.050	ug/g	02-NOV-17	0.051	0.051	0.051	0.051
Organic / Inorganic Carbon										
Fraction Organic Carbon		0.0055		0.0010	No Unit	02-NOV-17				
Fraction Organic Carbon		0.0055		0.0010	No Unit	02-NOV-17				
Fraction Organic Carbon		0.0056		0.0010	No Unit	02-NOV-17				
Average Fraction Organic Carbon		0.0055		0.0010	No Unit	02-NOV-17				
Total Organic Carbon		0.55		0.10	%	02-NOV-17				
Total Organic Carbon		0.55		0.10	%	02-NOV-17				

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ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2015398-12	MW17-103S/D-4-6									
Sampled By:	M. SHIRY on 25-OCT-17 @ 15:37									
Matrix:	SOIL									
Organic / Inorganic Carbon										
	Total Organic Carbon	0.56		0.10	%	02-NOV-17				
Saturated Paste Extractables										
	SAR	0.45	SAR:M	0.10	SAR	06-NOV-17	12	12	5	5
	Calcium (Ca)	3.0		1.0	mg/L	06-NOV-17				
	Magnesium (Mg)	<1.0		1.0	mg/L	06-NOV-17				
	Sodium (Na)	2.9		1.0	mg/L	06-NOV-17				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	03-NOV-17	40	50	7.5	7.5
	Arsenic (As)	2.2		1.0	ug/g	03-NOV-17	18	18	18	18
	Barium (Ba)	16.1		1.0	ug/g	03-NOV-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	03-NOV-17	8	10	4	5
	Boron (B)	9.9		5.0	ug/g	03-NOV-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.12		0.10	ug/g	03-NOV-17	2	2	1.5	1.5
	Cadmium (Cd)	0.69		0.50	ug/g	03-NOV-17	1.9	1.9	1.2	1.2
	Chromium (Cr)	8.0		1.0	ug/g	03-NOV-17	160	160	160	160
	Cobalt (Co)	2.4		1.0	ug/g	03-NOV-17	80	100	22	22
	Copper (Cu)	8.7		1.0	ug/g	03-NOV-17	230	300	140	180
	Lead (Pb)	66.8		1.0	ug/g	03-NOV-17	120	120	120	120
	Mercury (Hg)	0.0289		0.0050	ug/g	03-NOV-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	<1.0		1.0	ug/g	03-NOV-17	40	40	6.9	6.9
	Nickel (Ni)	7.9		1.0	ug/g	03-NOV-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	03-NOV-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	03-NOV-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	03-NOV-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	03-NOV-17	33	33	23	23
	Vanadium (V)	17.3		1.0	ug/g	03-NOV-17	86	86	86	86
	Zinc (Zn)	456		5.0	ug/g	03-NOV-17	*340	*340	*340	*340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	02-NOV-17	8	10	8	10
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	03-NOV-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	03-NOV-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	03-NOV-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	03-NOV-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	03-NOV-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	03-NOV-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	03-NOV-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	03-NOV-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	03-NOV-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	03-NOV-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	03-NOV-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	03-NOV-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	03-NOV-17	0.2	0.57	0.083	0.097

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ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2015398-12	MW17-103S/D-4-6									
Sampled By:	M. SHIRY on 25-OCT-17 @ 15:37									
Matrix:	SOIL									
Volatile Organic Compounds										
	Dichlorodifluoromethane	<0.050		0.050	ug/g	03-NOV-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	03-NOV-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	03-NOV-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	03-NOV-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	03-NOV-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	03-NOV-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	03-NOV-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	03-NOV-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	03-NOV-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	03-NOV-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	04-NOV-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	03-NOV-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	03-NOV-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	03-NOV-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	03-NOV-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	03-NOV-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	03-NOV-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	03-NOV-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	03-NOV-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	03-NOV-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	03-NOV-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	03-NOV-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	03-NOV-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	03-NOV-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	03-NOV-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	03-NOV-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	03-NOV-17				
	m+p-Xylenes	<0.030		0.030	ug/g	03-NOV-17				
	Xylenes (Total)	<0.050		0.050	ug/g	04-NOV-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	93.3		50-140	%	03-NOV-17				
	Surrogate: 1,4-Difluorobenzene	92.3		50-140	%	03-NOV-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	03-NOV-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	07-NOV-17	55	65	55	65
	F2 (C10-C16)	<10		10	ug/g	07-NOV-17	230	250	98	150
	F2-Naphth	<10		10	ug/g	07-NOV-17				
	F3 (C16-C34)	98		50	ug/g	07-NOV-17	1700	2500	300	1300
	F3-PAH	97		50	ug/g	07-NOV-17				
	F4 (C34-C50)	94		50	ug/g	07-NOV-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	193		72	ug/g	07-NOV-17				
	Chrom. to baseline at nC50	YES			No Unit	07-NOV-17				
	Surrogate: 2-Bromobenzotrifluoride	97.0		60-140	%	07-NOV-17				
	Surrogate: 3,4-Dichlorotoluene	92.0		60-140	%	03-NOV-17				
Polycyclic Aromatic Hydrocarbons										
	1+2-Methylnaphthalenes	<0.042		0.042	ug/g	06-NOV-17	30	42	0.99	3.4
Semi-Volatile Organics										

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T6-C/F-RPI-ICC

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2015398-12	MW17-103S/D-4-6									
Sampled By:	M. SHIRY on 25-OCT-17 @ 15:37									
Matrix:	SOIL									
Semi-Volatile Organics										
	Acenaphthene	<0.050		0.050	ug/g	06-NOV-17	21	29	7.9	29
	Acenaphthylene	<0.050		0.050	ug/g	06-NOV-17	0.15	0.17	0.15	0.17
	Anthracene	<0.050		0.050	ug/g	06-NOV-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	0.111		0.050	ug/g	06-NOV-17	0.96	0.96	0.5	0.63
	Benzo(a)pyrene	0.307		0.050	ug/g	06-NOV-17	*0.3	*0.3	*0.3	*0.3
	Benzo(b)fluoranthene	0.289		0.050	ug/g	06-NOV-17	0.96	0.96	0.78	0.78
	Benzo(ghi)perylene	0.253		0.050	ug/g	06-NOV-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	0.224		0.050	ug/g	06-NOV-17	0.96	0.96	0.78	0.78
	Biphenyl	<0.050		0.050	ug/g	06-NOV-17	52	210	0.31	1.1
	4-Chloroaniline	<0.10		0.10	ug/g	06-NOV-17	0.5	0.53	0.5	0.53
	Bis(2-chloroethyl)ether	<0.10		0.10	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	Bis(2-chloroisopropyl)ether	<0.10		0.10	ug/g	06-NOV-17	11	13	0.67	1.8
	2-Chlorophenol	<0.10		0.10	ug/g	06-NOV-17	3.1	3.9	1.6	2
	Chrysene	0.139		0.050	ug/g	06-NOV-17	9.6	9.6	7	7.8
	Dibenzo(a,h)anthracene	0.074		0.050	ug/g	06-NOV-17	0.1	0.1	0.1	0.1
	3,3'-Dichlorobenzidine	<0.10		0.10	ug/g	06-NOV-17	1	1	1	1
	2,4-Dichlorophenol	<0.10		0.10	ug/g	06-NOV-17	0.19	0.27	0.19	0.27
	Diethylphthalate	<0.10		0.10	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	Dimethylphthalate	<0.10		0.10	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	2,4-Dimethylphenol	<0.10		0.10	ug/g	06-NOV-17	38	53	38	53
	2,4-Dinitrophenol	<1.0		1.0	ug/g	06-NOV-17	2	2.9	2	2.9
	2,4-Dinitrotoluene	<0.10		0.10	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	2,6-Dinitrotoluene	<0.10		0.10	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	2,4+2,6-Dinitrotoluene	<0.14		0.14	ug/g	06-NOV-17				
	Bis(2-ethylhexyl)phthalate	<0.10		0.10	ug/g	06-NOV-17	28	35	5	5
	Fluoranthene	0.069		0.050	ug/g	06-NOV-17	9.6	9.6	0.69	0.69
	Fluorene	<0.050		0.050	ug/g	06-NOV-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	0.344		0.050	ug/g	06-NOV-17	0.76	0.95	0.38	0.48
	1-Methylnaphthalene	<0.030		0.030	ug/g	06-NOV-17	30	42	0.99	3.4
	2-Methylnaphthalene	<0.030		0.030	ug/g	06-NOV-17	30	42	0.99	3.4
	Naphthalene	<0.050		0.050	ug/g	06-NOV-17	9.6	28	0.6	0.75
	Pentachlorophenol	<0.10		0.10	ug/g	06-NOV-17	2.9	3.3	0.1	0.1
	Phenanthrene	<0.050		0.050	ug/g	06-NOV-17	12	16	6.2	7.8
	Phenol	<0.10		0.10	ug/g	06-NOV-17	9.4	9.4	9.4	9.4
	Pyrene	0.064		0.050	ug/g	06-NOV-17	96	96	78	78
	1,2,4-Trichlorobenzene	<0.050		0.050	ug/g	06-NOV-17	3.2	16	0.36	1.4
	2,4,5-Trichlorophenol	<0.10		0.10	ug/g	06-NOV-17	9.1	10	4.4	5.5
	2,4,6-Trichlorophenol	<0.10		0.10	ug/g	06-NOV-17	2.1	2.9	2.1	2.9
	Surrogate: 2-Fluorobiphenyl	121.3		50-140	%	06-NOV-17				
	Surrogate: Nitrobenzene d5	113.4		50-140	%	06-NOV-17				
	Surrogate: Phenol d5	112.2		30-130	%	06-NOV-17				
	Surrogate: p-Terphenyl d14	115.3		50-140	%	06-NOV-17				
	Surrogate: 2,4,6-Tribromophenol	112.5		50-140	%	06-NOV-17				

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T6-C/F-RPI-ICC

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2015398-13	MW17-102D-0.5-1									
Sampled By:	M. SHIRY on 26-OCT-17 @ 17:42									
Matrix:	SOIL									
Physical Tests										
	% Moisture	7.89		0.10	%	02-NOV-17				
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	03-NOV-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	03-NOV-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	03-NOV-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	03-NOV-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	03-NOV-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	03-NOV-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	03-NOV-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	03-NOV-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	03-NOV-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	03-NOV-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	03-NOV-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	03-NOV-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	03-NOV-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	03-NOV-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	03-NOV-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	03-NOV-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	03-NOV-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	03-NOV-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	03-NOV-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	03-NOV-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	03-NOV-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	03-NOV-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	03-NOV-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	04-NOV-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	03-NOV-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	03-NOV-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	03-NOV-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	03-NOV-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	03-NOV-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	03-NOV-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	03-NOV-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	03-NOV-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	03-NOV-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	03-NOV-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	03-NOV-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	03-NOV-17	0.05	0.11	0.05	0.05
	Trichloroethylene	0.082		0.010	ug/g	03-NOV-17	0.55	0.61	*0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	03-NOV-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	03-NOV-17	0.032	0.25	0.02	0.022
	o-Xylene	0.036		0.020	ug/g	03-NOV-17				
	m+p-Xylenes	0.040		0.030	ug/g	03-NOV-17				
	Xylenes (Total)	0.076		0.050	ug/g	04-NOV-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	99.7		50-140	%	03-NOV-17				
	Surrogate: 1,4-Difluorobenzene	98.4		50-140	%	03-NOV-17				

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T6-C/F-RPI-ICC

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2015398-13	MW17-102D-0.5-1									
Sampled By:	M. SHIRY on 26-OCT-17 @ 17:42									
Matrix:	SOIL						#1	#2	#3	#4
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	03-NOV-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	07-NOV-17	55	65	55	65
	F2 (C10-C16)	<10		10	ug/g	07-NOV-17	230	250	98	150
	F3 (C16-C34)	91		50	ug/g	07-NOV-17	1700	2500	300	1300
	F4 (C34-C50)	<50		50	ug/g	07-NOV-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	91		72	ug/g	07-NOV-17				
	Chrom. to baseline at nC50	YES			No Unit	07-NOV-17				
	Surrogate: 2-Bromobenzotrifluoride	94.4		60-140	%	07-NOV-17				
	Surrogate: 3,4-Dichlorotoluene	98.4		60-140	%	03-NOV-17				
L2015398-14	MW17-102D-0.5-4									
Sampled By:	M. SHIRY on 26-OCT-17 @ 17:42									
Matrix:	SOIL						#1	#2	#3	#4
Physical Tests										
	% Moisture	8.65		0.10	%	02-NOV-17				
Polycyclic Aromatic Hydrocarbons										
	1+2-Methylnaphthalenes	0.278		0.042	ug/g	06-NOV-17	30	42	0.99	3.4
Semi-Volatile Organics										
	Acenaphthene	0.379		0.050	ug/g	06-NOV-17	21	29	7.9	29
	Acenaphthylene	<0.050		0.050	ug/g	06-NOV-17	0.15	0.17	0.15	0.17
	Anthracene	0.690		0.050	ug/g	06-NOV-17	*0.67	0.74	*0.67	0.74
	Benzo(a)anthracene	1.90		0.050	ug/g	06-NOV-17	*0.96	*0.96	*0.5	*0.63
	Benzo(a)pyrene	1.65		0.050	ug/g	06-NOV-17	*0.3	*0.3	*0.3	*0.3
	Benzo(b)fluoranthene	1.74		0.050	ug/g	06-NOV-17	*0.96	*0.96	*0.78	*0.78
	Benzo(ghi)perylene	0.992		0.050	ug/g	06-NOV-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	1.39		0.050	ug/g	06-NOV-17	*0.96	*0.96	*0.78	*0.78
	Biphenyl	<0.050		0.050	ug/g	06-NOV-17	52	210	0.31	1.1
	4-Chloroaniline	<0.10		0.10	ug/g	06-NOV-17	0.5	0.53	0.5	0.53
	Bis(2-chloroethyl)ether	<0.10		0.10	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	Bis(2-chloroisopropyl)ether	<0.10		0.10	ug/g	06-NOV-17	11	13	0.67	1.8
	2-Chlorophenol	<0.10		0.10	ug/g	06-NOV-17	3.1	3.9	1.6	2
	Chrysene	1.93		0.050	ug/g	06-NOV-17	9.6	9.6	7	7.8
	Dibenzo(a,h)anthracene	0.250		0.050	ug/g	06-NOV-17	*0.1	*0.1	*0.1	*0.1
	3,3'-Dichlorobenzidine	<0.10		0.10	ug/g	06-NOV-17	1	1	1	1
	2,4-Dichlorophenol	<0.10		0.10	ug/g	06-NOV-17	0.19	0.27	0.19	0.27
	Diethylphthalate	<0.10		0.10	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	Dimethylphthalate	<0.10		0.10	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	2,4-Dimethylphenol	<0.10		0.10	ug/g	06-NOV-17	38	53	38	53
	2,4-Dinitrophenol	<1.0		1.0	ug/g	06-NOV-17	2	2.9	2	2.9
	2,4-Dinitrotoluene	<0.10		0.10	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	2,6-Dinitrotoluene	<0.10		0.10	ug/g	06-NOV-17	0.5	0.5	0.5	0.5
	2,4+2,6-Dinitrotoluene	<0.14		0.14	ug/g	06-NOV-17				
	Bis(2-ethylhexyl)phthalate	<0.10		0.10	ug/g	06-NOV-17	28	35	5	5
	Fluoranthene	4.27	DLHC	0.10	ug/g	06-NOV-17	9.6	9.6	*0.69	*0.69
	Fluorene	0.357		0.050	ug/g	06-NOV-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	1.36		0.050	ug/g	06-NOV-17				

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T6-C/F-RPI-ICC

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2015398-14	MW17-102D-0.5-4									
Sampled By:	M. SHIRY on 26-OCT-17 @ 17:42									
Matrix:	SOIL									
Semi-Volatile Organics										
							*0.76	*0.95	*0.38	*0.48
1-Methylnaphthalene		0.132		0.030	ug/g	06-NOV-17	30	42	0.99	3.4
2-Methylnaphthalene		0.146		0.030	ug/g	06-NOV-17	30	42	0.99	3.4
Naphthalene		0.180		0.050	ug/g	06-NOV-17	9.6	28	0.6	0.75
Pentachlorophenol		<0.10		0.10	ug/g	06-NOV-17	2.9	3.3	0.1	0.1
Phenanthrene		3.92	DLHC	0.10	ug/g	06-NOV-17	12	16	6.2	7.8
Phenol		<0.10		0.10	ug/g	06-NOV-17	9.4	9.4	9.4	9.4
Pyrene		3.68		0.050	ug/g	06-NOV-17	96	96	78	78
1,2,4-Trichlorobenzene		<0.050		0.050	ug/g	06-NOV-17	3.2	16	0.36	1.4
2,4,5-Trichlorophenol		<0.10		0.10	ug/g	06-NOV-17	9.1	10	4.4	5.5
2,4,6-Trichlorophenol		<0.10		0.10	ug/g	06-NOV-17	2.1	2.9	2.1	2.9
Surrogate: 2-Fluorobiphenyl		120.3		50-140	%	06-NOV-17				
Surrogate: Nitrobenzene d5		118.8		50-140	%	06-NOV-17				
Surrogate: Phenol d5		113.1		30-130	%	06-NOV-17				
Surrogate: p-Terphenyl d14		125.6		50-140	%	06-NOV-17				
Surrogate: 2,4,6-Tribromophenol		108.9		50-140	%	06-NOV-17				
L2015398-15	MW17-102D-4-5.5									
Sampled By:	M. SHIRY on 26-OCT-17 @ 18:02									
Matrix:	SOIL									
Physical Tests										
Conductivity		0.136		0.0040	mS/cm	06-NOV-17	1.4	1.4	0.7	0.7
% Moisture		13.6		0.10	%	02-NOV-17				
pH		7.57		0.10	pH units	02-NOV-17				
Cyanides										
Cyanide, Weak Acid Diss		<0.050		0.050	ug/g	02-NOV-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
SAR		0.24	SAR:M	0.10	SAR	06-NOV-17	12	12	5	5
Calcium (Ca)		2.6		1.0	mg/L	06-NOV-17				
Magnesium (Mg)		<1.0		1.0	mg/L	06-NOV-17				
Sodium (Na)		1.4		1.0	mg/L	06-NOV-17				
Metals										
Antimony (Sb)		<1.0		1.0	ug/g	03-NOV-17	40	50	7.5	7.5
Arsenic (As)		9.3		1.0	ug/g	03-NOV-17	18	18	18	18
Barium (Ba)		115		1.0	ug/g	03-NOV-17	670	670	390	390
Beryllium (Be)		<0.50		0.50	ug/g	03-NOV-17	8	10	4	5
Boron (B)		5.8		5.0	ug/g	03-NOV-17	120	120	120	120
Boron (B), Hot Water Ext.		0.33		0.10	ug/g	03-NOV-17	2	2	1.5	1.5
Cadmium (Cd)		1.54		0.50	ug/g	03-NOV-17	1.9	1.9	*1.2	*1.2
Chromium (Cr)		16.6		1.0	ug/g	03-NOV-17	160	160	160	160
Cobalt (Co)		9.8		1.0	ug/g	03-NOV-17	80	100	22	22
Copper (Cu)		59.9		1.0	ug/g	03-NOV-17	230	300	140	180
Lead (Pb)		424		1.0	ug/g	03-NOV-17	*120	*120	*120	*120
Mercury (Hg)		0.0432		0.0050	ug/g	03-NOV-17	3.9	20	0.27	1.8
Molybdenum (Mo)		1.0		1.0	ug/g	03-NOV-17	40	40	6.9	6.9
Nickel (Ni)		22.6		1.0	ug/g	03-NOV-17	270	340	100	130

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T6-C/F-RPI-ICC

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#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2015398-15	MW17-102D-4-5.5									
Sampled By:	M. SHIRY on 26-OCT-17 @ 18:02									
Matrix:	SOIL									
Metals										
	Selenium (Se)	<1.0		1.0	ug/g	03-NOV-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	03-NOV-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	03-NOV-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	03-NOV-17	33	33	23	23
	Vanadium (V)	35.6		1.0	ug/g	03-NOV-17	86	86	86	86
	Zinc (Zn)	784		5.0	ug/g	03-NOV-17	*340	*340	*340	*340
Speciated Metals										
	Chromium, Hexavalent	0.31		0.20	ug/g	02-NOV-17	8	10	8	10
L2015398-16	MW17-102D-6-7									
Sampled By:	M. SHIRY on 26-OCT-17 @ 18:12									
Matrix:	SOIL									
Physical Tests										
	Conductivity	0.178		0.0040	mS/cm	06-NOV-17	1.4	1.4	0.7	0.7
	% Moisture	5.65		0.10	%	02-NOV-17				
	pH	8.60		0.10	pH units	02-NOV-17				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	02-NOV-17	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	0.65	SAR:M	0.10	SAR	06-NOV-17	12	12	5	5
	Calcium (Ca)	3.5		1.0	mg/L	06-NOV-17				
	Magnesium (Mg)	<1.0		1.0	mg/L	06-NOV-17				
	Sodium (Na)	4.5		1.0	mg/L	06-NOV-17				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	03-NOV-17	40	50	7.5	7.5
	Arsenic (As)	3.0		1.0	ug/g	03-NOV-17	18	18	18	18
	Barium (Ba)	60.5		1.0	ug/g	03-NOV-17	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	03-NOV-17	8	10	4	5
	Boron (B)	<5.0		5.0	ug/g	03-NOV-17	120	120	120	120
	Boron (B), Hot Water Ext.	0.21		0.10	ug/g	03-NOV-17	2	2	1.5	1.5
	Cadmium (Cd)	<0.50		0.50	ug/g	03-NOV-17	1.9	1.9	1.2	1.2
	Chromium (Cr)	21.5		1.0	ug/g	03-NOV-17	160	160	160	160
	Cobalt (Co)	5.1		1.0	ug/g	03-NOV-17	80	100	22	22
	Copper (Cu)	25.1		1.0	ug/g	03-NOV-17	230	300	140	180
	Lead (Pb)	45.0		1.0	ug/g	03-NOV-17	120	120	120	120
	Mercury (Hg)	0.0095		0.0050	ug/g	03-NOV-17	3.9	20	0.27	1.8
	Molybdenum (Mo)	<1.0		1.0	ug/g	03-NOV-17	40	40	6.9	6.9
	Nickel (Ni)	10.4		1.0	ug/g	03-NOV-17	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	03-NOV-17	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	03-NOV-17	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	03-NOV-17	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	03-NOV-17	33	33	23	23
	Vanadium (V)	31.0		1.0	ug/g	03-NOV-17	86	86	86	86
	Zinc (Zn)	393		5.0	ug/g	03-NOV-17	*340	*340	*340	*340
Speciated Metals										

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#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2015398-16	MW17-102D-6-7									
Sampled By:	M. SHIRY on 26-OCT-17 @ 18:12									
Matrix:	SOIL									
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	02-NOV-17	8	10	8	10
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	04-NOV-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	04-NOV-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	04-NOV-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	04-NOV-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	04-NOV-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	04-NOV-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	04-NOV-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	04-NOV-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	04-NOV-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	04-NOV-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	04-NOV-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	04-NOV-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	04-NOV-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	04-NOV-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	04-NOV-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	04-NOV-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	04-NOV-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	04-NOV-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	04-NOV-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	04-NOV-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	04-NOV-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	04-NOV-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	04-NOV-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	04-NOV-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	04-NOV-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	04-NOV-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	04-NOV-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	04-NOV-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	04-NOV-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	04-NOV-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	04-NOV-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	04-NOV-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	04-NOV-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	04-NOV-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	04-NOV-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	04-NOV-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	04-NOV-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	04-NOV-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	04-NOV-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	04-NOV-17				
	m+p-Xylenes	<0.030		0.030	ug/g	04-NOV-17				
	Xylenes (Total)	<0.050		0.050	ug/g	04-NOV-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	106.7		50-140	%	04-NOV-17				
	Surrogate: 1,4-Difluorobenzene	104.5		50-140	%	04-NOV-17				

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ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2015398-16	MW17-102D-6-7									
Sampled By:	M. SHIRY on 26-OCT-17 @ 18:12									
Matrix:	SOIL									
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	04-NOV-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	07-NOV-17	55	65	55	65
	F2 (C10-C16)	<10		10	ug/g	07-NOV-17	230	250	98	150
	F2-Naphth	<10		10	ug/g	07-NOV-17				
	F3 (C16-C34)	<50		50	ug/g	07-NOV-17	1700	2500	300	1300
	F3-PAH	<50		50	ug/g	07-NOV-17				
	F4 (C34-C50)	<50		50	ug/g	07-NOV-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	<72		72	ug/g	07-NOV-17				
	Chrom. to baseline at nC50	YES			No Unit	07-NOV-17				
	Surrogate: 2-Bromobenzotrifluoride	96.6		60-140	%	07-NOV-17				
	Surrogate: 3,4-Dichlorotoluene	129.5		60-140	%	04-NOV-17				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	0.119		0.050	ug/g	03-NOV-17	21	29	7.9	29
	Acenaphthylene	<0.050		0.050	ug/g	03-NOV-17	0.15	0.17	0.15	0.17
	Anthracene	0.210		0.050	ug/g	03-NOV-17	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	0.441		0.050	ug/g	03-NOV-17	0.96	0.96	0.5	0.63
	Benzo(a)pyrene	0.356		0.050	ug/g	03-NOV-17	*0.3	*0.3	*0.3	*0.3
	Benzo(b)fluoranthene	0.495		0.050	ug/g	03-NOV-17	0.96	0.96	0.78	0.78
	Benzo(g,h,i)perylene	0.221		0.050	ug/g	03-NOV-17	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	0.165		0.050	ug/g	03-NOV-17	0.96	0.96	0.78	0.78
	Chrysene	0.490		0.050	ug/g	03-NOV-17	9.6	9.6	7	7.8
	Dibenzo(ah)anthracene	0.061		0.050	ug/g	03-NOV-17	0.1	0.1	0.1	0.1
	Fluoranthene	1.06		0.050	ug/g	03-NOV-17	9.6	9.6	*0.69	*0.69
	Fluorene	0.128		0.050	ug/g	03-NOV-17	62	69	62	69
	Indeno(1,2,3-cd)pyrene	0.225		0.050	ug/g	03-NOV-17	0.76	0.95	0.38	0.48
	1+2-Methylnaphthalenes	0.072		0.042	ug/g	03-NOV-17	30	42	0.99	3.4
	1-Methylnaphthalene	0.031		0.030	ug/g	03-NOV-17	30	42	0.99	3.4
	2-Methylnaphthalene	0.040		0.030	ug/g	03-NOV-17	30	42	0.99	3.4
	Naphthalene	0.056		0.050	ug/g	03-NOV-17	9.6	28	0.6	0.75
	Phenanthrene	1.10		0.050	ug/g	03-NOV-17	12	16	6.2	7.8
	Pyrene	0.806		0.050	ug/g	03-NOV-17	96	96	78	78
	Surrogate: 2-Fluorobiphenyl	92.2		50-140	%	03-NOV-17				
	Surrogate: p-Terphenyl d14	92.4		50-140	%	03-NOV-17				
L2015398-17	DUP 10									
Sampled By:	M. SHIRY on 20-OCT-17									
Matrix:	SOIL						#1	#2	#3	#4
Physical Tests										
	% Moisture	5.44		0.10	%	01-NOV-17				
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	04-NOV-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	04-NOV-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	04-NOV-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	04-NOV-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	04-NOV-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	04-NOV-17	0.21	0.71	0.05	0.12

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#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2015398-17	DUP 10									
Sampled By:	M. SHIRY on 20-OCT-17									
Matrix:	SOIL									
Volatile Organic Compounds										
	Chlorobenzene	<0.050		0.050	ug/g	04-NOV-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	04-NOV-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	04-NOV-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	04-NOV-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	04-NOV-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	04-NOV-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	04-NOV-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	04-NOV-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	04-NOV-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	04-NOV-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	04-NOV-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	04-NOV-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	04-NOV-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	04-NOV-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	04-NOV-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	04-NOV-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	04-NOV-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	04-NOV-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	04-NOV-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	04-NOV-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	04-NOV-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	04-NOV-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	04-NOV-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	04-NOV-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	04-NOV-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	04-NOV-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	04-NOV-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	04-NOV-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	04-NOV-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	04-NOV-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	04-NOV-17	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	04-NOV-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	04-NOV-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	04-NOV-17				
	m+p-Xylenes	<0.030		0.030	ug/g	04-NOV-17				
	Xylenes (Total)	<0.050		0.050	ug/g	04-NOV-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	105.3		50-140	%	04-NOV-17				
	Surrogate: 1,4-Difluorobenzene	102.5		50-140	%	04-NOV-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	04-NOV-17	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	06-NOV-17	55	65	55	65
	F2 (C10-C16)	<10		10	ug/g	06-NOV-17	230	250	98	150
	F3 (C16-C34)	90		50	ug/g	06-NOV-17	1700	2500	300	1300
	F4 (C34-C50)	<50		50	ug/g	06-NOV-17	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	90		72	ug/g	06-NOV-17				
	Chrom. to baseline at nC50	YES			No Unit	06-NOV-17				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T6-C/F-RPI-ICC

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2015398-17	DUP 10									
Sampled By:	M. SHIRY on 20-OCT-17									
Matrix:	SOIL						#1	#2	#3	#4
Hydrocarbons										
	Surrogate: 2-Bromobenzotrifluoride	92.5		60-140	%	06-NOV-17				
	Surrogate: 3,4-Dichlorotoluene	116.9		60-140	%	04-NOV-17				
L2015398-18	TRIP BLANK D3									
Sampled By:	M. SHIRY on 27-OCT-17									
Matrix:	SOIL						#1	#2	#3	#4
Physical Tests										
	% Moisture	<0.10		0.10	%	02-NOV-17				
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	04-NOV-17	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	04-NOV-17	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	04-NOV-17	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	04-NOV-17	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	04-NOV-17	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	04-NOV-17	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	04-NOV-17	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	04-NOV-17	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	04-NOV-17	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	04-NOV-17	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	04-NOV-17	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	04-NOV-17	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	04-NOV-17	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	04-NOV-17	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	04-NOV-17	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	04-NOV-17	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	04-NOV-17	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	04-NOV-17	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	04-NOV-17	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	04-NOV-17	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	04-NOV-17	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	04-NOV-17				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	04-NOV-17				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	04-NOV-17	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	04-NOV-17	1.1	1.6	1.1	1.6
	n-Hexane	<0.050		0.050	ug/g	04-NOV-17	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	04-NOV-17	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	04-NOV-17	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	04-NOV-17	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	04-NOV-17	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	04-NOV-17	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	04-NOV-17	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	04-NOV-17	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	04-NOV-17	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	04-NOV-17	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	04-NOV-17	0.05	0.11	0.05	0.05
	Trichloroethylene	<0.010		0.010	ug/g	04-NOV-17	0.55	0.61	0.061	0.52

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T6-C/F-RPI-ICC

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#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
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#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2015398-18	TRIP BLANK D3									
Sampled By:	M. SHIRY on 27-OCT-17									
Matrix:	SOIL									
Volatile Organic Compounds										
	Trichlorofluoromethane	<0.050		0.050	ug/g	04-NOV-17	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	04-NOV-17	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	04-NOV-17				
	m+p-Xylenes	<0.030		0.030	ug/g	04-NOV-17				
	Xylenes (Total)	<0.050		0.050	ug/g	04-NOV-17	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	97.9		50-140	%	04-NOV-17				
	Surrogate: 1,4-Difluorobenzene	94.4		50-140	%	04-NOV-17				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	04-NOV-17	55	65	55	65
	Surrogate: 3,4-Dichlorotoluene	121.6		60-140	%	04-NOV-17				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T6-C/F-RPI-ICC

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

Reference Information

Sample Parameter Qualifier key listed:

Qualifier	Description
DLQ	Detection Limit raised due to co-eluting interference. GCMS qualifier ion ratio did not meet acceptance criteria.
SAR:M	Reported SAR represents a maximum value. Actual SAR may be lower if both Ca and Mg were detectable.
SAR:DL	SAR is incalculable due to undetectable Na. Detection Limit represents maximum possible SAR value.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference***
1,4-DIOXANE-WT	Soil	1,4-Dioxane by GCMS Headspace	EPA 8260

An aliquot of soil/sediment is extract with methanol, and this extract is analyzed directly by headspace technology, followed by GC/MS using isotopic dilution. Results are reported on a dry weight basis.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

625-511-WT	Soil	ABN-O.Reg 153/04 (July 2011)	SW846 8270 (511)

Soil and sediment samples are dried by mixing with a desiccant prior to extraction. The extracts are dried, concentrated and exchanged into a solvent and analyzed by GC/MS. Depending on the analytical GC/MS column used benzo(j)fluoranthene may chromatographically co-elute with benzo(b)fluoranthene or benzo(k)fluoranthene.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B

A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD

The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

DINITROTOL-CALC-WT	Soil	ABN-Calculated Parameters	SW846 8270
EC-WT	Soil	Conductivity (EC)	MOEE E3138

A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

Reference Information

F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Soil	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Soil	F2-F4-O.Reg 153/04 (July 2011)	CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from soil with 1:1 hexane:acetone using a rotary extractor. Extracts are treated with silica gel to remove polar organic interferences. F2, F3, & F4 are analyzed by GC-FID. F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where both F4 (C34-C50) and F4G-sg are reported for a sample, the larger of the two values is used for comparison against the relevant CCME guideline for F4.
7. F4G-sg cannot be added to the C6 to C50 hydrocarbon results to obtain an estimate of total extractable hydrocarbons.
8. This method is validated for use.
9. Data from analysis of validation and quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram, unless otherwise indicated.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F4G-ADD-511-WT	Soil	F4G SG-O.Reg 153/04 (July 2011)	MOE DECPH-E3398/CCME TIER 1

F4G, gravimetric analysis, is determined if the chromatogram does not return to baseline at or before C50. A soil sample is extracted with a solvent mix, the solvent is evaporated and the weight of the residue is determined.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

HG-200.2-CVAA-WT	Soil	Mercury in Soil by CVAAS	EPA 200.2/1631E (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

Reference Information

MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)

This method uses a heated strong acid digestion with HNO3 and HCl and is intended to liberate metals that may be environmentally available. Silicate minerals are not solubilized. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. Analysis is by Collision/Reaction Cell ICPMS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT	Soil	ABN-Calculated Parameters	SW846 8270
MOISTURE-WT	Soil	% Moisture	Gravimetric: Oven Dried
PAH-511-WT	Soil	PAH-O.Reg 153/04 (July 2011)	SW846 3510/8270

A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking techniqueis used to extract the sample with a mixture of methanol and toluene. The extracts are concentrated and analyzed by GC/MS. Depending on the analytical GC/MS column used benzo(j)fluoranthene may chromatographically co-elute with benzo(b)fluoranthene or benzo(k)fluoranthene.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PCB-511-WT	Soil	PCB-O.Reg 153/04 (July 2011)	SW846 3510/8082

An aliquot of a solid sample is extracted with a solvent, extract is cleaned up and analyzed on the GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

PH-WT	Soil	pH	MOEE E3137A

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C

A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

TOC-R511-WT	Soil	TOC & FOC-O.Reg 153/04 (July 2011)	CARTER 21.3.2

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

VOC-1,3-DCP-CALC-WT	Soil	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Soil	VOC-O.Reg 153/04 (July 2011)	SW846 8260 (511)

Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

*** ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody numbers:

15-613140 15-613141

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Reference Information

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA		

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.

Quality Control Report

Workorder: L2015398 Report Date: 15-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
1,4-DIOXANE-WT	**Soil**							
Batch R3872530								
WG2653820-4 DUP		**WG2653820-3**						
1,4-Dioxane		<0.20	<0.20	RPD-NA	mg/kg	N/A	40	02-NOV-17
WG2653820-2 LCS								
1,4-Dioxane			87.9		%		60-140	02-NOV-17
WG2653820-1 MB								
1,4-Dioxane			<0.20		mg/kg		0.2	02-NOV-17
WG2653820-5 MS		**WG2653820-3**						
1,4-Dioxane			87.4		%		60-140	02-NOV-17
625-511-WT	**Soil**							
Batch R3874790								
WG2654917-3 DUP		**WG2654917-5**						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	06-NOV-17
1,2,4-Trichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-NOV-17
2-Chlorophenol		<0.10	<0.10	RPD-NA	ug/g	N/A	40	06-NOV-17
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	06-NOV-17
2,4-Dichlorophenol		<0.10	<0.10	RPD-NA	ug/g	N/A	40	06-NOV-17
2,4-Dimethylphenol		<0.10	<0.10	RPD-NA	ug/g	N/A	40	06-NOV-17
2,4-Dinitrophenol		<1.0	<1.0	RPD-NA	ug/g	N/A	40	06-NOV-17
2,4-Dinitrotoluene		<0.10	<0.10	RPD-NA	ug/g	N/A	40	06-NOV-17
2,4,5-Trichlorophenol		<0.10	<0.10	RPD-NA	ug/g	N/A	40	06-NOV-17
2,4,6-Trichlorophenol		<0.10	<0.10	RPD-NA	ug/g	N/A	40	06-NOV-17
2,6-Dinitrotoluene		<0.10	<0.10	RPD-NA	ug/g	N/A	40	06-NOV-17
3,3'-Dichlorobenzidine		<0.10	<0.10	RPD-NA	ug/g	N/A	40	06-NOV-17
4-Chloroaniline		<0.10	<0.10	RPD-NA	ug/g	N/A	40	06-NOV-17
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-NOV-17
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-NOV-17
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-NOV-17
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-NOV-17
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-NOV-17
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-NOV-17
Benzo(ghi)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-NOV-17
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-NOV-17
Biphenyl		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-NOV-17
Bis(2-chloroethyl)ether		<0.10	<0.10	RPD-NA	ug/g	N/A	40	06-NOV-17
Bis(2-chloroisopropyl)ether		<0.10	<0.10	RPD-NA	ug/g	N/A	40	06-NOV-17

Quality Control Report

Workorder: L2015398 Report Date: 15-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Soil**							
Batch R3874790								
WG2654917-3 DUP		**WG2654917-5**						
Bis(2-ethylhexyl)phthalate		<0.10	<0.10	RPD-NA	ug/g	N/A	40	06-NOV-17
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-NOV-17
Dibenzo(a,h)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-NOV-17
Diethylphthalate		<0.10	<0.10	RPD-NA	ug/g	N/A	40	06-NOV-17
Dimethylphthalate		<0.10	<0.10	RPD-NA	ug/g	N/A	40	06-NOV-17
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-NOV-17
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-NOV-17
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-NOV-17
Naphthalene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-NOV-17
Pentachlorophenol		<0.10	<0.10	RPD-NA	ug/g	N/A	40	06-NOV-17
Phenanthrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-NOV-17
Phenol		<0.10	<0.10	RPD-NA	ug/g	N/A	40	06-NOV-17
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-NOV-17
WG2654917-2 LCS								
1-Methylnaphthalene			109.6		%		50-140	06-NOV-17
1,2,4-Trichlorobenzene			97.1		%		50-140	06-NOV-17
2-Chlorophenol			103.7		%		50-140	06-NOV-17
2-Methylnaphthalene			99.2		%		50-140	06-NOV-17
2,4-Dichlorophenol			105.2		%		50-140	06-NOV-17
2,4-Dimethylphenol			101.0		%		30-130	06-NOV-17
2,4-Dinitrophenol			164.5	LCS-H	%		30-130	06-NOV-17
2,4-Dinitrotoluene			103.0		%		50-140	06-NOV-17
2,4,5-Trichlorophenol			112.6		%		50-140	06-NOV-17
2,4,6-Trichlorophenol			107.2		%		50-140	06-NOV-17
2,6-Dinitrotoluene			101.0		%		50-140	06-NOV-17
3,3'-Dichlorobenzidine			100.8		%		30-130	06-NOV-17
4-Chloroaniline			104.2		%		30-130	06-NOV-17
Acenaphthene			89.4		%		50-140	06-NOV-17
Acenaphthylene			98.5		%		50-140	06-NOV-17
Anthracene			101.2		%		50-140	06-NOV-17
Benzo(a)anthracene			109.8		%		50-140	06-NOV-17
Benzo(a)pyrene			110.3		%		50-140	06-NOV-17
Benzo(b)fluoranthene			113.7		%		50-140	06-NOV-17

Quality Control Report

Workorder: L2015398 Report Date: 15-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Soil**							
Batch R3874790								
WG2654917-2 LCS								
Benzo(ghi)perylene			96.3		%		50-140	06-NOV-17
Benzo(k)fluoranthene			107.5		%		50-140	06-NOV-17
Biphenyl			101.9		%		50-140	06-NOV-17
Bis(2-chloroethyl)ether			101.5		%		50-140	06-NOV-17
Bis(2-chloroisopropyl)ether			99.5		%		50-140	06-NOV-17
Bis(2-ethylhexyl)phthalate			94.7		%		50-140	06-NOV-17
Chrysene			109.6		%		50-140	06-NOV-17
Dibenzo(a,h)anthracene			105.5		%		50-140	06-NOV-17
Diethylphthalate			88.4		%		50-140	06-NOV-17
Dimethylphthalate			89.2		%		50-140	06-NOV-17
Fluoranthene			90.3		%		50-140	06-NOV-17
Fluorene			94.8		%		50-140	06-NOV-17
Indeno(1,2,3-cd)pyrene			113.8		%		50-140	06-NOV-17
Naphthalene			99.1		%		50-140	06-NOV-17
Pentachlorophenol			139.7		%		50-140	06-NOV-17
Phenanthrene			100.5		%		50-140	06-NOV-17
Phenol			106.8		%		30-130	06-NOV-17
Pyrene			95.1		%		50-140	06-NOV-17
WG2654917-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	06-NOV-17
1,2,4-Trichlorobenzene			<0.050		ug/g		0.05	06-NOV-17
2-Chlorophenol			<0.10		ug/g		0.1	06-NOV-17
2-Methylnaphthalene			<0.030		ug/g		0.03	06-NOV-17
2,4-Dichlorophenol			<0.10		ug/g		0.1	06-NOV-17
2,4-Dimethylphenol			<0.10		ug/g		0.1	06-NOV-17
2,4-Dinitrophenol			<1.0		ug/g		1	06-NOV-17
2,4-Dinitrotoluene			<0.10		ug/g		0.1	06-NOV-17
2,4,5-Trichlorophenol			<0.10		ug/g		0.1	06-NOV-17
2,4,6-Trichlorophenol			<0.10		ug/g		0.1	06-NOV-17
2,6-Dinitrotoluene			<0.10		ug/g		0.1	06-NOV-17
3,3'-Dichlorobenzidine			<0.10		ug/g		0.1	06-NOV-17
4-Chloroaniline			<0.10		ug/g		0.1	06-NOV-17
Acenaphthene			<0.050		ug/g		0.05	06-NOV-17
Acenaphthylene			<0.050		ug/g		0.05	06-NOV-17

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Workorder: L2015398 Report Date: 15-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Soil**							
Batch R3874790								
WG2654917-1 MB								
Anthracene			<0.050		ug/g		0.05	06-NOV-17
Benzo(a)anthracene			<0.050		ug/g		0.05	06-NOV-17
Benzo(a)pyrene			<0.050		ug/g		0.05	06-NOV-17
Benzo(b)fluoranthene			<0.050		ug/g		0.05	06-NOV-17
Benzo(ghi)perylene			<0.050		ug/g		0.05	06-NOV-17
Benzo(k)fluoranthene			<0.050		ug/g		0.05	06-NOV-17
Biphenyl			<0.050		ug/g		0.05	06-NOV-17
Bis(2-chloroethyl)ether			<0.10		ug/g		0.1	06-NOV-17
Bis(2-chloroisopropyl)ether			<0.10		ug/g		0.1	06-NOV-17
Bis(2-ethylhexyl)phthalate			<0.10		ug/g		0.1	06-NOV-17
Chrysene			<0.050		ug/g		0.05	06-NOV-17
Dibenzo(a,h)anthracene			<0.050		ug/g		0.05	06-NOV-17
Diethylphthalate			<0.10		ug/g		0.1	06-NOV-17
Dimethylphthalate			<0.10		ug/g		0.1	06-NOV-17
Fluoranthene			<0.050		ug/g		0.05	06-NOV-17
Fluorene			<0.050		ug/g		0.05	06-NOV-17
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	06-NOV-17
Naphthalene			<0.050		ug/g		0.05	06-NOV-17
Pentachlorophenol			<0.10		ug/g		0.1	06-NOV-17
Phenanthrene			<0.050		ug/g		0.05	06-NOV-17
Phenol			<0.10		ug/g		0.1	06-NOV-17
Pyrene			<0.050		ug/g		0.05	06-NOV-17
Surrogate: 2-Fluorobiphenyl			117.8		%		50-140	06-NOV-17
Surrogate: 2,4,6-Tribromophenol			121.8		%		50-140	06-NOV-17
Surrogate: Nitrobenzene d5			115.7		%		50-140	06-NOV-17
Surrogate: p-Terphenyl d14			114.9		%		50-140	06-NOV-17
Surrogate: Phenol d5			115.3		%		30-130	06-NOV-17
WG2654917-4 MS		**WG2654917-5**						
1-Methylnaphthalene			109.8		%		50-140	06-NOV-17
1,2,4-Trichlorobenzene			95.1		%		50-140	06-NOV-17
2-Chlorophenol			97.0		%		50-140	06-NOV-17
2-Methylnaphthalene			97.4		%		50-140	06-NOV-17
2,4-Dichlorophenol			101.0		%		50-140	06-NOV-17
2,4-Dimethylphenol			100.5		%		30-150	06-NOV-17

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Workorder: L2015398 Report Date: 15-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Soil**							
Batch R3874790								
WG2654917-4 MS		**WG2654917-5**						
2,4-Dinitrophenol			108.9		%		30-150	06-NOV-17
2,4-Dinitrotoluene			98.3		%		50-140	06-NOV-17
2,4,5-Trichlorophenol			107.4		%		50-140	06-NOV-17
2,4,6-Trichlorophenol			103.1		%		50-140	06-NOV-17
2,6-Dinitrotoluene			96.1		%		50-140	06-NOV-17
3,3'-Dichlorobenzidine			95.8		%		30-130	06-NOV-17
4-Chloroaniline			101.8		%		30-130	06-NOV-17
Acenaphthene			89.0		%		50-140	06-NOV-17
Acenaphthylene			95.9		%		50-140	06-NOV-17
Anthracene			98.2		%		50-140	06-NOV-17
Benzo(a)anthracene			106.0		%		50-140	06-NOV-17
Benzo(a)pyrene			108.7		%		50-140	06-NOV-17
Benzo(b)fluoranthene			109.1		%		50-140	06-NOV-17
Benzo(ghi)perylene			101.3		%		50-140	06-NOV-17
Benzo(k)fluoranthene			104.4		%		50-140	06-NOV-17
Biphenyl			98.8		%		50-140	06-NOV-17
Bis(2-chloroethyl)ether			97.8		%		50-140	06-NOV-17
Bis(2-chloroisopropyl)ether			95.0		%		50-140	06-NOV-17
Bis(2-ethylhexyl)phthalate			91.7		%		50-140	06-NOV-17
Chrysene			106.6		%		50-140	06-NOV-17
Dibenzo(a,h)anthracene			105.0		%		50-140	06-NOV-17
Diethylphthalate			85.1		%		50-140	06-NOV-17
Dimethylphthalate			87.8		%		50-140	06-NOV-17
Fluoranthene			91.1		%		50-140	06-NOV-17
Fluorene			91.5		%		50-140	06-NOV-17
Indeno(1,2,3-cd)pyrene			114.5		%		50-140	06-NOV-17
Naphthalene			95.8		%		50-140	06-NOV-17
Pentachlorophenol			114.5		%		50-140	06-NOV-17
Phenanthrene			97.0		%		50-140	06-NOV-17
Phenol			98.5		%		30-130	06-NOV-17
Pyrene			94.2		%		50-140	06-NOV-17
B-HWS-R511-WT	**Soil**							

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Workorder: L2015398 Report Date: 15-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT	**Soil**							
Batch R3873850								
WG2655807-4 DUP		**L2016517-2**						
Boron (B), Hot Water Ext.		0.22	0.24		ug/g	5.5	30	03-NOV-17
WG2655807-2 IRM		**HOTB-SAL_SOIL5**						
Boron (B), Hot Water Ext.			105.9		%		70-130	03-NOV-17
WG2655807-3 LCS								
Boron (B), Hot Water Ext.			99.4		%		70-130	03-NOV-17
WG2655807-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	03-NOV-17
CN-WAD-R511-WT	**Soil**							
Batch R3873726								
WG2654127-3 DUP		**L2014791-14**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	02-NOV-17
WG2654127-2 LCS								
Cyanide, Weak Acid Diss			96.5		%		80-120	02-NOV-17
WG2654127-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	02-NOV-17
WG2654127-4 MS		**L2014791-14**						
Cyanide, Weak Acid Diss			106.0		%		70-130	02-NOV-17
Batch R3875363								
WG2653719-3 DUP		**L2014701-1**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	06-NOV-17
WG2653719-2 LCS								
Cyanide, Weak Acid Diss			96.7		%		80-120	06-NOV-17
WG2653719-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	06-NOV-17
WG2653719-4 MS		**L2014701-1**						
Cyanide, Weak Acid Diss			107.1		%		70-130	06-NOV-17
CR-CR6-IC-WT	**Soil**							
Batch R3873343								
WG2654129-4 CRM		**WT-SQC012**						
Chromium, Hexavalent			90.5		%		70-130	02-NOV-17
WG2654129-3 DUP		**L2015419-26**						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	02-NOV-17
WG2654129-2 LCS								
Chromium, Hexavalent			97.6		%		80-120	02-NOV-17
WG2654129-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	02-NOV-17

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Workorder: L2015398 Report Date: 15-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
EC-WT	**Soil**							
Batch R3873919								
WG2655811-4 DUP		**WG2655811-3**						
Conductivity		0.286	0.290		mS/cm	1.4	20	03-NOV-17
WG2656086-1 LCS								
Conductivity			100.3		%		90-110	03-NOV-17
WG2655811-1 MB								
Conductivity			<0.0040		mS/cm		0.004	03-NOV-17
Batch R3875573								
WG2657253-4 DUP		**WG2657253-3**						
Conductivity		0.970	0.895		mS/cm	8.0	20	06-NOV-17
WG2657435-1 LCS								
Conductivity			99.7		%		90-110	06-NOV-17
WG2657253-1 MB								
Conductivity			<0.0040		mS/cm		0.004	06-NOV-17
F1-HS-511-WT	**Soil**							
Batch R3872737								
WG2652752-4 DUP		**WG2652752-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	02-NOV-17
WG2652752-2 LCS								
F1 (C6-C10)			97.0		%		80-120	02-NOV-17
WG2652752-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	02-NOV-17
Surrogate: 3,4-Dichlorotoluene			93.4		%		60-140	02-NOV-17
WG2652752-7 MS		**WG2652752-6**						
F1 (C6-C10)			92.1		%		60-140	02-NOV-17
Batch R3874287								
WG2653746-4 DUP		**WG2653746-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	03-NOV-17
WG2653746-2 LCS								
F1 (C6-C10)			105.0		%		80-120	03-NOV-17
WG2653746-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	03-NOV-17
Surrogate: 3,4-Dichlorotoluene			126.5		%		60-140	03-NOV-17
WG2653746-7 MS		**WG2653746-6**						
F1 (C6-C10)			91.5		%		60-140	03-NOV-17
F2-F4-511-WT	**Soil**							

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Workorder: L2015398 Report Date: 15-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-511-WT	**Soil**							
Batch R3875473								
WG2653153-4	**CRM**	**ALS PHC2 IRM**						
F2 (C10-C16)			110.2		%		70-130	06-NOV-17
F3 (C16-C34)			110.3		%		70-130	06-NOV-17
F4 (C34-C50)			113.3		%		70-130	06-NOV-17
WG2653153-3	**DUP**	**WG2653153-5**						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	06-NOV-17
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	06-NOV-17
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	06-NOV-17
WG2653153-2	**LCS**							
F2 (C10-C16)			113.1		%		80-120	06-NOV-17
F3 (C16-C34)			110.3		%		80-120	06-NOV-17
F4 (C34-C50)			113.0		%		80-120	06-NOV-17
WG2653153-1	**MB**							
F2 (C10-C16)			<10		ug/g		10	06-NOV-17
F3 (C16-C34)			<50		ug/g		50	06-NOV-17
F4 (C34-C50)			<50		ug/g		50	06-NOV-17
Surrogate: 2-Bromobenzotrifluoride			94.5		%		60-140	06-NOV-17
Batch R3878157								
WG2654899-4	**CRM**	**ALS PHC2 IRM**						
F2 (C10-C16)			98.7		%		70-130	07-NOV-17
F3 (C16-C34)			96.4		%		70-130	07-NOV-17
F4 (C34-C50)			95.0		%		70-130	07-NOV-17
WG2654899-3	**DUP**	**WG2654899-5**						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	07-NOV-17
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	07-NOV-17
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	07-NOV-17
WG2654899-2	**LCS**							
F2 (C10-C16)			100.6		%		80-120	07-NOV-17
F3 (C16-C34)			97.5		%		80-120	07-NOV-17
F4 (C34-C50)			97.7		%		80-120	07-NOV-17
WG2654899-1	**MB**							
F2 (C10-C16)			<10		ug/g		10	07-NOV-17
F3 (C16-C34)			<50		ug/g		50	07-NOV-17
F4 (C34-C50)			<50		ug/g		50	07-NOV-17
Surrogate: 2-Bromobenzotrifluoride			73.3		%		60-140	07-NOV-17
F4G-ADD-511-WT	**Soil**							

Quality Control Report

Workorder: L2015398 Report Date: 15-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F4G-ADD-511-WT	**Soil**							
Batch R3875673								
WG2657801-2 LCS								
F4G-SG (GHH-Silica)			91.3		%		60-140	03-NOV-17
WG2657801-1 MB								
F4G-SG (GHH-Silica)			<250		ug/g		250	03-NOV-17
Batch R3878205								
WG2658797-2 LCS								
F4G-SG (GHH-Silica)			81.6		%		60-140	06-NOV-17
WG2658797-1 MB								
F4G-SG (GHH-Silica)			<250		ug/g		250	06-NOV-17
HG-200.2-CVAA-WT	**Soil**							
Batch R3873648								
WG2655793-2 CRM		**WT-CANMET-TILL1**						
Mercury (Hg)			100.8		%		70-130	03-NOV-17
WG2655793-6 DUP		**WG2655793-5**						
Mercury (Hg)		<0.0050	<0.0050	RPD-NA	ug/g	N/A	40	03-NOV-17
WG2655793-3 LCS								
Mercury (Hg)			110.5		%		80-120	03-NOV-17
WG2655793-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	03-NOV-17
MET-200.2-CCMS-WT	**Soil**							
Batch R3875169								
WG2655793-2 CRM		**WT-CANMET-TILL1**						
Antimony (Sb)			94.5		%		70-130	03-NOV-17
Arsenic (As)			98.5		%		70-130	03-NOV-17
Barium (Ba)			106.9		%		70-130	03-NOV-17
Beryllium (Be)			101.6		%		70-130	03-NOV-17
Boron (B)			4.4		mg/kg		0-8.2	03-NOV-17
Cadmium (Cd)			88.6		%		70-130	03-NOV-17
Chromium (Cr)			97.4		%		70-130	03-NOV-17
Cobalt (Co)			96.0		%		70-130	03-NOV-17
Copper (Cu)			97.9		%		70-130	03-NOV-17
Lead (Pb)			97.4		%		70-130	03-NOV-17
Molybdenum (Mo)			102.2		%		70-130	03-NOV-17
Nickel (Ni)			96.0		%		70-130	03-NOV-17
Selenium (Se)			0.32		mg/kg		0.11-0.51	03-NOV-17
Silver (Ag)			0.22		mg/kg		0.13-0.33	03-NOV-17

Quality Control Report

Workorder: L2015398 Report Date: 15-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3875169								
WG2655793-2 CRM		**WT-CANMET-TILL1**						
Thallium (Tl)			0.123		mg/kg		0.077-0.18	03-NOV-17
Uranium (U)			96.8		%		70-130	03-NOV-17
Vanadium (V)			98.9		%		70-130	03-NOV-17
Zinc (Zn)			97.4		%		70-130	03-NOV-17
WG2655793-6 DUP		**WG2655793-5**						
Antimony (Sb)		<0.10	<0.10	RPD-NA	ug/g	N/A	30	03-NOV-17
Arsenic (As)		1.47	1.36		ug/g	7.7	30	03-NOV-17
Barium (Ba)		22.2	22.3		ug/g	0.4	40	03-NOV-17
Beryllium (Be)		0.16	0.16		ug/g	1.2	30	03-NOV-17
Boron (B)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	03-NOV-17
Cadmium (Cd)		0.041	0.051		ug/g	20	30	03-NOV-17
Chromium (Cr)		7.44	7.67		ug/g	3.0	30	03-NOV-17
Cobalt (Co)		2.59	2.59		ug/g	0.1	30	03-NOV-17
Copper (Cu)		5.21	5.60		ug/g	7.1	30	03-NOV-17
Lead (Pb)		3.27	3.16		ug/g	3.3	40	03-NOV-17
Molybdenum (Mo)		0.22	0.22		ug/g	0.1	40	03-NOV-17
Nickel (Ni)		4.49	4.49		ug/g	0.0	30	03-NOV-17
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	03-NOV-17
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	03-NOV-17
Thallium (Tl)		0.059	0.054		ug/g	8.3	30	03-NOV-17
Uranium (U)		0.473	0.465		ug/g	1.6	30	03-NOV-17
Vanadium (V)		17.6	17.8		ug/g	1.2	30	03-NOV-17
Zinc (Zn)		15.4	16.1		ug/g	4.2	30	03-NOV-17
WG2655793-4 LCS								
Antimony (Sb)			95.4		%		80-120	03-NOV-17
Arsenic (As)			96.0		%		80-120	03-NOV-17
Barium (Ba)			97.8		%		80-120	03-NOV-17
Beryllium (Be)			89.1		%		80-120	03-NOV-17
Boron (B)			83.8		%		80-120	03-NOV-17
Cadmium (Cd)			88.8		%		80-120	03-NOV-17
Chromium (Cr)			93.6		%		80-120	03-NOV-17
Cobalt (Co)			92.5		%		80-120	03-NOV-17
Copper (Cu)			90.6		%		80-120	03-NOV-17

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Workorder: L2015398 Report Date: 15-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3875169								
WG2655793-4 LCS								
Lead (Pb)			90.3		%		80-120	03-NOV-17
Molybdenum (Mo)			94.3		%		80-120	03-NOV-17
Nickel (Ni)			94.4		%		80-120	03-NOV-17
Selenium (Se)			96.8		%		80-120	03-NOV-17
Silver (Ag)			88.2		%		80-120	03-NOV-17
Thallium (Tl)			90.9		%		80-120	03-NOV-17
Uranium (U)			93.7		%		80-120	03-NOV-17
Vanadium (V)			98.4		%		80-120	03-NOV-17
Zinc (Zn)			88.3		%		80-120	03-NOV-17
WG2655793-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	03-NOV-17
Arsenic (As)			<0.10		mg/kg		0.1	03-NOV-17
Barium (Ba)			<0.50		mg/kg		0.5	03-NOV-17
Beryllium (Be)			<0.10		mg/kg		0.1	03-NOV-17
Boron (B)			<5.0		mg/kg		5	03-NOV-17
Cadmium (Cd)			<0.020		mg/kg		0.02	03-NOV-17
Chromium (Cr)			<0.50		mg/kg		0.5	03-NOV-17
Cobalt (Co)			<0.10		mg/kg		0.1	03-NOV-17
Copper (Cu)			<0.50		mg/kg		0.5	03-NOV-17
Lead (Pb)			<0.50		mg/kg		0.5	03-NOV-17
Molybdenum (Mo)			<0.10		mg/kg		0.1	03-NOV-17
Nickel (Ni)			<0.50		mg/kg		0.5	03-NOV-17
Selenium (Se)			<0.20		mg/kg		0.2	03-NOV-17
Silver (Ag)			<0.10		mg/kg		0.1	03-NOV-17
Thallium (Tl)			<0.050		mg/kg		0.05	03-NOV-17
Uranium (U)			<0.050		mg/kg		0.05	03-NOV-17
Vanadium (V)			<0.20		mg/kg		0.2	03-NOV-17
Zinc (Zn)			<2.0		mg/kg		2	03-NOV-17
MOISTURE-WT	**Soil**							
Batch R3871421								
WG2653428-6 DUP		**L2015360-1**						
% Moisture		8.99	9.11		%	1.4	20	01-NOV-17
WG2653428-5 LCS								
% Moisture			99.6		%		90-110	01-NOV-17

Quality Control Report

Workorder: L2015398 Report Date: 15-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MOISTURE-WT	**Soil**							
Batch R3871421								
WG2653428-4 MB								
% Moisture			<0.10		%		0.1	01-NOV-17
Batch R3873337								
WG2654903-3 DUP		**L2015398-6**						
% Moisture		8.04	8.53		%	5.9	20	02-NOV-17
WG2654903-2 LCS								
% Moisture			98.4		%		90-110	02-NOV-17
WG2654903-1 MB								
% Moisture			<0.10		%		0.1	02-NOV-17
Batch R3873338								
WG2654793-3 DUP		**L2016410-1**						
% Moisture		9.82	10.3		%	4.7	20	02-NOV-17
WG2654793-2 LCS								
% Moisture			100.9		%		90-110	02-NOV-17
WG2654793-1 MB								
% Moisture			<0.10		%		0.1	02-NOV-17
PAH-511-WT	**Soil**							
Batch R3872866								
WG2653730-4 DUP		**WG2653730-3**						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	02-NOV-17
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	02-NOV-17
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Benzo(a)anthracene		<0.050	0.053	RPD-NA	ug/g	N/A	40	02-NOV-17
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Benzo(b)fluoranthene		<0.050	0.057	RPD-NA	ug/g	N/A	40	02-NOV-17
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Chrysene		<0.050	0.063	RPD-NA	ug/g	N/A	40	02-NOV-17
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Fluoranthene		<0.050	0.089	RPD-NA	ug/g	N/A	40	02-NOV-17
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Naphthalene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17

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Workorder: L2015398 Report Date: 15-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R3872866								
WG2653730-4 DUP		**WG2653730-3**						
Phenanthrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Pyrene		<0.050	0.077	RPD-NA	ug/g	N/A	40	02-NOV-17
WG2653730-2 LCS								
1-Methylnaphthalene			86.6		%		50-140	02-NOV-17
2-Methylnaphthalene			84.9		%		50-140	02-NOV-17
Acenaphthene			86.6		%		50-140	02-NOV-17
Acenaphthylene			87.7		%		50-140	02-NOV-17
Anthracene			86.5		%		50-140	02-NOV-17
Benzo(a)anthracene			85.5		%		50-140	02-NOV-17
Benzo(a)pyrene			80.6		%		50-140	02-NOV-17
Benzo(b)fluoranthene			71.8		%		50-140	02-NOV-17
Benzo(g,h,i)perylene			64.6		%		50-140	02-NOV-17
Benzo(k)fluoranthene			92.9		%		50-140	02-NOV-17
Chrysene			93.4		%		50-140	02-NOV-17
Dibenzo(ah)anthracene			70.5		%		50-140	02-NOV-17
Fluoranthene			82.7		%		50-140	02-NOV-17
Fluorene			82.6		%		50-140	02-NOV-17
Indeno(1,2,3-cd)pyrene			63.7		%		50-140	02-NOV-17
Naphthalene			90.0		%		50-140	02-NOV-17
Phenanthrene			86.2		%		50-140	02-NOV-17
Pyrene			84.4		%		50-140	02-NOV-17
WG2653730-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	02-NOV-17
2-Methylnaphthalene			<0.030		ug/g		0.03	02-NOV-17
Acenaphthene			<0.050		ug/g		0.05	02-NOV-17
Acenaphthylene			<0.050		ug/g		0.05	02-NOV-17
Anthracene			<0.050		ug/g		0.05	02-NOV-17
Benzo(a)anthracene			<0.050		ug/g		0.05	02-NOV-17
Benzo(a)pyrene			<0.050		ug/g		0.05	02-NOV-17
Benzo(b)fluoranthene			<0.050		ug/g		0.05	02-NOV-17
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	02-NOV-17
Benzo(k)fluoranthene			<0.050		ug/g		0.05	02-NOV-17
Chrysene			<0.050		ug/g		0.05	02-NOV-17
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	02-NOV-17

Quality Control Report

Workorder: L2015398 Report Date: 15-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R3872866								
WG2653730-1 MB								
Fluoranthene			<0.050		ug/g		0.05	02-NOV-17
Fluorene			<0.050		ug/g		0.05	02-NOV-17
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	02-NOV-17
Naphthalene			<0.050		ug/g		0.05	02-NOV-17
Phenanthrene			<0.050		ug/g		0.05	02-NOV-17
Pyrene			<0.050		ug/g		0.05	02-NOV-17
Surrogate: 2-Fluorobiphenyl			100.2		%		50-140	02-NOV-17
Surrogate: p-Terphenyl d14			98.8		%		50-140	02-NOV-17
WG2653730-5 MS		**WG2653730-3**						
1-Methylnaphthalene			85.6		%		50-140	02-NOV-17
2-Methylnaphthalene			84.2		%		50-140	02-NOV-17
Acenaphthene			85.6		%		50-140	02-NOV-17
Acenaphthylene			87.1		%		50-140	02-NOV-17
Anthracene			87.8		%		50-140	02-NOV-17
Benzo(a)anthracene			92.3		%		50-140	02-NOV-17
Benzo(a)pyrene			81.3		%		50-140	02-NOV-17
Benzo(b)fluoranthene			75.0		%		50-140	02-NOV-17
Benzo(g,h,i)perylene			64.2		%		50-140	02-NOV-17
Benzo(k)fluoranthene			88.6		%		50-140	02-NOV-17
Chrysene			97.4		%		50-140	02-NOV-17
Dibenzo(ah)anthracene			70.3		%		50-140	02-NOV-17
Fluoranthene			90.4		%		50-140	02-NOV-17
Fluorene			82.8		%		50-140	02-NOV-17
Indeno(1,2,3-cd)pyrene			69.4		%		50-140	02-NOV-17
Naphthalene			86.6		%		50-140	02-NOV-17
Phenanthrene			87.1		%		50-140	02-NOV-17
Pyrene			90.2		%		50-140	02-NOV-17
PCB-511-WT	**Soil**							
Batch R3880007								
WG2656437-4 DUP		**WG2656437-3**						
Aroclor 1242		<0.010	<0.010	RPD-NA	ug/g	N/A	40	09-NOV-17
Aroclor 1248		<0.010	<0.010	RPD-NA	ug/g	N/A	40	09-NOV-17
Aroclor 1254		<0.010	<0.010	RPD-NA	ug/g	N/A	40	09-NOV-17
Aroclor 1260		<0.010	<0.010	RPD-NA	ug/g	N/A	40	09-NOV-17

Quality Control Report

Workorder: L2015398 Report Date: 15-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PCB-511-WT	**Soil**							
Batch R3880007								
WG2656437-2 LCS								
Aroclor 1242			90.3		%		60-140	09-NOV-17
Aroclor 1248			80.8		%		60-140	09-NOV-17
Aroclor 1254			89.1		%		60-140	09-NOV-17
Aroclor 1260			105.6		%		60-140	09-NOV-17
WG2656437-1 MB								
Aroclor 1242			<0.010		ug/g		0.01	09-NOV-17
Aroclor 1248			<0.010		ug/g		0.01	09-NOV-17
Aroclor 1254			<0.010		ug/g		0.01	09-NOV-17
Aroclor 1260			<0.010		ug/g		0.01	09-NOV-17
Surrogate: d14-Terphenyl			78.3		%		60-140	09-NOV-17
WG2656437-5 MS		**WG2656437-3**						
Aroclor 1242			97.2		%		60-140	09-NOV-17
Aroclor 1254			100.7		%		60-140	09-NOV-17
Aroclor 1260			102.4		%		60-140	09-NOV-17
PH-WT	**Soil**							
Batch R3873118								
WG2653742-1 DUP		**L2014791-20**						
pH		6.41	6.37	J	pH units	0.04	0.3	02-NOV-17
WG2655038-1 LCS								
pH			7.00		pH units		6.9-7.1	02-NOV-17
SAR-R511-WT	**Soil**							
Batch R3873881								
WG2655811-4 DUP		**WG2655811-3**						
Calcium (Ca)		1.3	1.3		mg/L	6.1	30	03-NOV-17
Sodium (Na)		35.9	34.6		mg/L	3.8	30	03-NOV-17
Magnesium (Mg)		<1.0	<1.0	RPD-NA	mg/L	N/A	30	03-NOV-17
WG2655811-2 IRM		**WT SAR1**						
Calcium (Ca)			100.0		%		70-130	03-NOV-17
Sodium (Na)			98.0		%		70-130	03-NOV-17
Magnesium (Mg)			102.1		%		70-130	03-NOV-17
WG2655811-1 MB								
Calcium (Ca)			<1.0		mg/L		1	03-NOV-17
Sodium (Na)			<1.0		mg/L		1	03-NOV-17
Magnesium (Mg)			<1.0		mg/L		1	03-NOV-17

Quality Control Report

Workorder: L2015398 Report Date: 15-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SAR-R511-WT	**Soil**							
Batch R3875356								
WG2657253-4 DUP		**WG2657253-3**						
Calcium (Ca)		44.7	54.1		mg/L	19	30	06-NOV-17
Sodium (Na)		119	126		mg/L	5.7	30	06-NOV-17
Magnesium (Mg)		2.0	2.4		mg/L	21	30	06-NOV-17
WG2657253-2 IRM		**WT SAR1**						
Calcium (Ca)			97.1		%		70-130	06-NOV-17
Sodium (Na)			97.6		%		70-130	06-NOV-17
Magnesium (Mg)			99.9		%		70-130	06-NOV-17
WG2657253-1 MB								
Calcium (Ca)			<1.0		mg/L		1	06-NOV-17
Sodium (Na)			<1.0		mg/L		1	06-NOV-17
Magnesium (Mg)			<1.0		mg/L		1	06-NOV-17
TOC-R511-WT	**Soil**							
Batch R3872949								
WG2654819-3 CRM		**WT-TOC-CRM**						
Total Organic Carbon			102.4		%		70-130	02-NOV-17
WG2654819-4 DUP		**L2013616-1**						
Total Organic Carbon		0.52	0.52		%	0.1	35	02-NOV-17
WG2654819-2 LCS								
Total Organic Carbon			101.5		%		80-120	02-NOV-17
Total Organic Carbon			101.5		%		80-120	02-NOV-17
Total Organic Carbon			101.5		%		80-120	02-NOV-17
WG2654819-1 MB								
Total Organic Carbon			<0.10		%		0.1	02-NOV-17
VOC-511-HS-WT	**Soil**							
Batch R3872737								
WG2652752-4 DUP		**WG2652752-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17

Quality Control Report

Workorder: L2015398 Report Date: 15-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3872737								
WG2652752-4 DUP		**WG2652752-3**						
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	02-NOV-17
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	02-NOV-17
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	02-NOV-17
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	02-NOV-17
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	02-NOV-17
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	02-NOV-17
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	02-NOV-17
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	02-NOV-17
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	02-NOV-17
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	02-NOV-17
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	02-NOV-17
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	02-NOV-17
WG2652752-2 LCS								

Quality Control Report

Workorder: L2015398 Report Date: 15-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch	**R3872737**							
WG2652752-2	**LCS**							
1,1,1,2-Tetrachloroethane			100.4		%		60-130	02-NOV-17
1,1,2,2-Tetrachloroethane			98.4		%		60-130	02-NOV-17
1,1,1-Trichloroethane			101.1		%		60-130	02-NOV-17
1,1,2-Trichloroethane			99.1		%		60-130	02-NOV-17
1,1-Dichloroethane			99.2		%		60-130	02-NOV-17
1,1-Dichloroethylene			87.2		%		60-130	02-NOV-17
1,2-Dibromoethane			99.9		%		70-130	02-NOV-17
1,2-Dichlorobenzene			104.0		%		70-130	02-NOV-17
1,2-Dichloroethane			97.8		%		60-130	02-NOV-17
1,2-Dichloropropane			101.3		%		70-130	02-NOV-17
1,3-Dichlorobenzene			108.8		%		70-130	02-NOV-17
1,4-Dichlorobenzene			109.8		%		70-130	02-NOV-17
Acetone			110.7		%		60-140	02-NOV-17
Benzene			102.8		%		70-130	02-NOV-17
Bromodichloromethane			98.0		%		50-140	02-NOV-17
Bromoform			111.9		%		70-130	02-NOV-17
Bromomethane			94.6		%		50-140	02-NOV-17
Carbon tetrachloride			102.2		%		70-130	02-NOV-17
Chlorobenzene			101.1		%		70-130	02-NOV-17
Chloroform			102.6		%		70-130	02-NOV-17
cis-1,2-Dichloroethylene			103.0		%		70-130	02-NOV-17
cis-1,3-Dichloropropene			109.9		%		70-130	02-NOV-17
Dibromochloromethane			103.6		%		60-130	02-NOV-17
Dichlorodifluoromethane			49.8	MES	%		50-140	02-NOV-17
Ethylbenzene			92.1		%		70-130	02-NOV-17
n-Hexane			94.8		%		70-130	02-NOV-17
Methylene Chloride			106.2		%		70-130	02-NOV-17
MTBE			99.95		%		70-130	02-NOV-17
m+p-Xylenes			94.8		%		70-130	02-NOV-17
Methyl Ethyl Ketone			114.8		%		60-140	02-NOV-17
Methyl Isobutyl Ketone			98.9		%		60-140	02-NOV-17
o-Xylene			93.1		%		70-130	02-NOV-17
Styrene			92.4		%		70-130	02-NOV-17

Quality Control Report

Workorder: L2015398 Report Date: 15-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3872737								
WG2652752-2 LCS								
Tetrachloroethylene			98.9		%		60-130	02-NOV-17
Toluene			93.3		%		70-130	02-NOV-17
trans-1,2-Dichloroethylene			99.8		%		60-130	02-NOV-17
trans-1,3-Dichloropropene			104.7		%		70-130	02-NOV-17
Trichloroethylene			105.1		%		60-130	02-NOV-17
Trichlorofluoromethane			95.2		%		50-140	02-NOV-17
Vinyl chloride			84.7		%		60-140	02-NOV-17
WG2652752-1 MB								
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	02-NOV-17
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	02-NOV-17
1,1,1-Trichloroethane			<0.050		ug/g		0.05	02-NOV-17
1,1,2-Trichloroethane			<0.050		ug/g		0.05	02-NOV-17
1,1-Dichloroethane			<0.050		ug/g		0.05	02-NOV-17
1,1-Dichloroethylene			<0.050		ug/g		0.05	02-NOV-17
1,2-Dibromoethane			<0.050		ug/g		0.05	02-NOV-17
1,2-Dichlorobenzene			<0.050		ug/g		0.05	02-NOV-17
1,2-Dichloroethane			<0.050		ug/g		0.05	02-NOV-17
1,2-Dichloropropane			<0.050		ug/g		0.05	02-NOV-17
1,3-Dichlorobenzene			<0.050		ug/g		0.05	02-NOV-17
1,4-Dichlorobenzene			<0.050		ug/g		0.05	02-NOV-17
Acetone			<0.50		ug/g		0.5	02-NOV-17
Benzene			<0.0068		ug/g		0.0068	02-NOV-17
Bromodichloromethane			<0.050		ug/g		0.05	02-NOV-17
Bromoform			<0.050		ug/g		0.05	02-NOV-17
Bromomethane			<0.050		ug/g		0.05	02-NOV-17
Carbon tetrachloride			<0.050		ug/g		0.05	02-NOV-17
Chlorobenzene			<0.050		ug/g		0.05	02-NOV-17
Chloroform			<0.050		ug/g		0.05	02-NOV-17
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	02-NOV-17
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	02-NOV-17
Dibromochloromethane			<0.050		ug/g		0.05	02-NOV-17
Dichlorodifluoromethane			<0.050		ug/g		0.05	02-NOV-17
Ethylbenzene			<0.018		ug/g		0.018	02-NOV-17
n-Hexane			<0.050		ug/g		0.05	02-NOV-17

Quality Control Report

Workorder: L2015398 Report Date: 15-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3872737								
WG2652752-1 MB								
Methylene Chloride			<0.050		ug/g		0.05	02-NOV-17
MTBE			<0.050		ug/g		0.05	02-NOV-17
m+p-Xylenes			<0.030		ug/g		0.03	02-NOV-17
Methyl Ethyl Ketone			<0.50		ug/g		0.5	02-NOV-17
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	02-NOV-17
o-Xylene			<0.020		ug/g		0.02	02-NOV-17
Styrene			<0.050		ug/g		0.05	02-NOV-17
Tetrachloroethylene			<0.050		ug/g		0.05	02-NOV-17
Toluene			<0.080		ug/g		0.08	02-NOV-17
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	02-NOV-17
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	02-NOV-17
Trichloroethylene			<0.010		ug/g		0.01	02-NOV-17
Trichlorofluoromethane			<0.050		ug/g		0.05	02-NOV-17
Vinyl chloride			<0.020		ug/g		0.02	02-NOV-17
Surrogate: 1,4-Difluorobenzene			101.3		%		50-140	02-NOV-17
Surrogate: 4-Bromofluorobenzene			103.8		%		50-140	02-NOV-17
WG2652752-5 MS		**WG2652752-3**						
1,1,1,2-Tetrachloroethane			103.4		%		50-140	02-NOV-17
1,1,2,2-Tetrachloroethane			101.1		%		50-140	02-NOV-17
1,1,1-Trichloroethane			104.4		%		50-140	02-NOV-17
1,1,2-Trichloroethane			100.4		%		50-140	02-NOV-17
1,1-Dichloroethane			101.9		%		50-140	02-NOV-17
1,1-Dichloroethylene			90.7		%		50-140	02-NOV-17
1,2-Dibromoethane			100.1		%		50-140	02-NOV-17
1,2-Dichlorobenzene			105.6		%		50-140	02-NOV-17
1,2-Dichloroethane			97.4		%		50-140	02-NOV-17
1,2-Dichloropropane			102.5		%		50-140	02-NOV-17
1,3-Dichlorobenzene			102.0		%		50-140	02-NOV-17
1,4-Dichlorobenzene			104.9		%		50-140	02-NOV-17
Acetone			111.8		%		50-140	02-NOV-17
Benzene			104.7		%		50-140	02-NOV-17
Bromodichloromethane			98.7		%		50-140	02-NOV-17
Bromoform			113.6		%		50-140	02-NOV-17
Bromomethane			95.4		%		50-140	02-NOV-17

Quality Control Report

Workorder: L2015398 Report Date: 15-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3872737								
WG2652752-5 MS		**WG2652752-3**						
Carbon tetrachloride			105.9		%		50-140	02-NOV-17
Chlorobenzene			103.1		%		50-140	02-NOV-17
Chloroform			104.3		%		50-140	02-NOV-17
cis-1,2-Dichloroethylene			104.3		%		50-140	02-NOV-17
cis-1,3-Dichloropropene			104.7		%		50-140	02-NOV-17
Dibromochloromethane			105.2		%		50-140	02-NOV-17
Dichlorodifluoromethane			55.1		%		50-140	02-NOV-17
Ethylbenzene			95.3		%		50-140	02-NOV-17
n-Hexane			100.9		%		50-140	02-NOV-17
Methylene Chloride			106.8		%		50-140	02-NOV-17
MTBE			100.7		%		50-140	02-NOV-17
m+p-Xylenes			97.1		%		50-140	02-NOV-17
Methyl Ethyl Ketone			109.5		%		50-140	02-NOV-17
Methyl Isobutyl Ketone			95.8		%		50-140	02-NOV-17
o-Xylene			95.7		%		50-140	02-NOV-17
Styrene			93.9		%		50-140	02-NOV-17
Tetrachloroethylene			102.5		%		50-140	02-NOV-17
Toluene			96.3		%		50-140	02-NOV-17
trans-1,2-Dichloroethylene			101.0		%		50-140	02-NOV-17
trans-1,3-Dichloropropene			100.6		%		50-140	02-NOV-17
Trichloroethylene			106.9		%		50-140	02-NOV-17
Trichlorofluoromethane			100.9		%		50-140	02-NOV-17
Vinyl chloride			88.5		%		50-140	02-NOV-17
Batch R3874287								
WG2653746-4 DUP		**WG2653746-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17

Quality Control Report

Workorder: L2015398 Report Date: 15-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3874287								
WG2653746-4 DUP		**WG2653746-3**						
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	03-NOV-17
Benzene		0.0070	0.0070		ug/g	0.0	40	03-NOV-17
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	03-NOV-17
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	03-NOV-17
n-Hexane		0.083	0.084		ug/g	1.2	40	03-NOV-17
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
m+p-Xylenes		0.055	0.056		ug/g	2.2	40	03-NOV-17
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	03-NOV-17
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	03-NOV-17
o-Xylene		0.059	0.061		ug/g	2.5	40	03-NOV-17
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	03-NOV-17
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	03-NOV-17
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	03-NOV-17
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	03-NOV-17
WG2653746-2 LCS								

Quality Control Report

Workorder: L2015398 Report Date: 15-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3874287								
WG2653746-2 LCS								
1,1,1,2-Tetrachloroethane			99.6		%		60-130	03-NOV-17
1,1,2,2-Tetrachloroethane			107.9		%		60-130	03-NOV-17
1,1,1-Trichloroethane			94.2		%		60-130	03-NOV-17
1,1,2-Trichloroethane			107.1		%		60-130	03-NOV-17
1,1-Dichloroethane			96.8		%		60-130	03-NOV-17
1,1-Dichloroethylene			83.2		%		60-130	03-NOV-17
1,2-Dibromoethane			108.9		%		70-130	03-NOV-17
1,2-Dichlorobenzene			100.9		%		70-130	03-NOV-17
1,2-Dichloroethane			109.0		%		60-130	03-NOV-17
1,2-Dichloropropane			105.0		%		70-130	03-NOV-17
1,3-Dichlorobenzene			96.0		%		70-130	03-NOV-17
1,4-Dichlorobenzene			99.4		%		70-130	03-NOV-17
Acetone			117.2		%		60-140	03-NOV-17
Benzene			99.2		%		70-130	03-NOV-17
Bromodichloromethane			101.4		%		50-140	03-NOV-17
Bromoform			105.7		%		70-130	03-NOV-17
Bromomethane			90.3		%		50-140	03-NOV-17
Carbon tetrachloride			92.2		%		70-130	03-NOV-17
Chlorobenzene			99.2		%		70-130	03-NOV-17
Chloroform			100.8		%		70-130	03-NOV-17
cis-1,2-Dichloroethylene			100.4		%		70-130	03-NOV-17
cis-1,3-Dichloropropene			104.1		%		70-130	03-NOV-17
Dibromochloromethane			108.4		%		60-130	03-NOV-17
Dichlorodifluoromethane			51.4		%		50-140	03-NOV-17
Ethylbenzene			91.7		%		70-130	03-NOV-17
n-Hexane			89.2		%		70-130	03-NOV-17
Methylene Chloride			103.5		%		70-130	03-NOV-17
MTBE			96.1		%		70-130	03-NOV-17
m+p-Xylenes			94.0		%		70-130	03-NOV-17
Methyl Ethyl Ketone			118.7		%		60-140	03-NOV-17
Methyl Isobutyl Ketone			114.7		%		60-140	03-NOV-17
o-Xylene			94.2		%		70-130	03-NOV-17
Styrene			96.7		%		70-130	03-NOV-17

Quality Control Report

Workorder: L2015398 Report Date: 15-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch	**R3874287**							
WG2653746-2	**LCS**							
Tetrachloroethylene			91.2		%		60-130	03-NOV-17
Toluene			93.6		%		70-130	03-NOV-17
trans-1,2-Dichloroethylene			96.1		%		60-130	03-NOV-17
trans-1,3-Dichloropropene			103.1		%		70-130	03-NOV-17
Trichloroethylene			98.5		%		60-130	03-NOV-17
Trichlorofluoromethane			88.1		%		50-140	03-NOV-17
Vinyl chloride			80.6		%		60-140	03-NOV-17
WG2653746-1	**MB**							
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	03-NOV-17
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	03-NOV-17
1,1,1-Trichloroethane			<0.050		ug/g		0.05	03-NOV-17
1,1,2-Trichloroethane			<0.050		ug/g		0.05	03-NOV-17
1,1-Dichloroethane			<0.050		ug/g		0.05	03-NOV-17
1,1-Dichloroethylene			<0.050		ug/g		0.05	03-NOV-17
1,2-Dibromoethane			<0.050		ug/g		0.05	03-NOV-17
1,2-Dichlorobenzene			<0.050		ug/g		0.05	03-NOV-17
1,2-Dichloroethane			<0.050		ug/g		0.05	03-NOV-17
1,2-Dichloropropane			<0.050		ug/g		0.05	03-NOV-17
1,3-Dichlorobenzene			<0.050		ug/g		0.05	03-NOV-17
1,4-Dichlorobenzene			<0.050		ug/g		0.05	03-NOV-17
Acetone			<0.50		ug/g		0.5	03-NOV-17
Benzene			<0.0068		ug/g		0.0068	03-NOV-17
Bromodichloromethane			<0.050		ug/g		0.05	03-NOV-17
Bromoform			<0.050		ug/g		0.05	03-NOV-17
Bromomethane			<0.050		ug/g		0.05	03-NOV-17
Carbon tetrachloride			<0.050		ug/g		0.05	03-NOV-17
Chlorobenzene			<0.050		ug/g		0.05	03-NOV-17
Chloroform			<0.050		ug/g		0.05	03-NOV-17
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	03-NOV-17
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	03-NOV-17
Dibromochloromethane			<0.050		ug/g		0.05	03-NOV-17
Dichlorodifluoromethane			<0.050		ug/g		0.05	03-NOV-17
Ethylbenzene			<0.018		ug/g		0.018	03-NOV-17
n-Hexane			<0.050		ug/g		0.05	03-NOV-17

Quality Control Report

Workorder: L2015398 Report Date: 15-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3874287								
WG2653746-1 MB								
Methylene Chloride			<0.050		ug/g		0.05	03-NOV-17
MTBE			<0.050		ug/g		0.05	03-NOV-17
m+p-Xylenes			<0.030		ug/g		0.03	03-NOV-17
Methyl Ethyl Ketone			<0.50		ug/g		0.5	03-NOV-17
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	03-NOV-17
o-Xylene			<0.020		ug/g		0.02	03-NOV-17
Styrene			<0.050		ug/g		0.05	03-NOV-17
Tetrachloroethylene			<0.050		ug/g		0.05	03-NOV-17
Toluene			<0.080		ug/g		0.08	03-NOV-17
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	03-NOV-17
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	03-NOV-17
Trichloroethylene			<0.010		ug/g		0.01	03-NOV-17
Trichlorofluoromethane			<0.050		ug/g		0.05	03-NOV-17
Vinyl chloride			<0.020		ug/g		0.02	03-NOV-17
Surrogate: 1,4-Difluorobenzene			101.1		%		50-140	03-NOV-17
Surrogate: 4-Bromofluorobenzene			104.9		%		50-140	03-NOV-17
WG2653746-5 MS		**WG2653746-3**						
1,1,1,2-Tetrachloroethane			100.3		%		50-140	03-NOV-17
1,1,2,2-Tetrachloroethane			109.1		%		50-140	03-NOV-17
1,1,1-Trichloroethane			94.8		%		50-140	03-NOV-17
1,1,2-Trichloroethane			113.0		%		50-140	03-NOV-17
1,1-Dichloroethane			98.6		%		50-140	03-NOV-17
1,1-Dichloroethylene			83.9		%		50-140	03-NOV-17
1,2-Dibromoethane			113.9		%		50-140	03-NOV-17
1,2-Dichlorobenzene			98.5		%		50-140	03-NOV-17
1,2-Dichloroethane			113.8		%		50-140	03-NOV-17
1,2-Dichloropropane			107.1		%		50-140	03-NOV-17
1,3-Dichlorobenzene			92.6		%		50-140	03-NOV-17
1,4-Dichlorobenzene			95.4		%		50-140	03-NOV-17
Acetone			115.7		%		50-140	03-NOV-17
Benzene			100.2		%		50-140	03-NOV-17
Bromodichloromethane			104.5		%		50-140	03-NOV-17
Bromoform			107.7		%		50-140	03-NOV-17
Bromomethane			92.5		%		50-140	03-NOV-17

Quality Control Report

Workorder: L2015398 Report Date: 15-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3874287								
WG2653746-5 MS		**WG2653746-3**						
Carbon tetrachloride			91.7		%		50-140	03-NOV-17
Chlorobenzene			98.1		%		50-140	03-NOV-17
Chloroform			102.1		%		50-140	03-NOV-17
cis-1,2-Dichloroethylene			101.8		%		50-140	03-NOV-17
cis-1,3-Dichloropropene			103.5		%		50-140	03-NOV-17
Dibromochloromethane			112.0		%		50-140	03-NOV-17
Dichlorodifluoromethane			58.2		%		50-140	03-NOV-17
Ethylbenzene			91.1		%		50-140	03-NOV-17
n-Hexane			95.5		%		50-140	03-NOV-17
Methylene Chloride			110.0		%		50-140	03-NOV-17
MTBE			97.0		%		50-140	03-NOV-17
m+p-Xylenes			92.2		%		50-140	03-NOV-17
Methyl Ethyl Ketone			130.3		%		50-140	03-NOV-17
Methyl Isobutyl Ketone			120.2		%		50-140	03-NOV-17
o-Xylene			93.7		%		50-140	03-NOV-17
Styrene			94.3		%		50-140	03-NOV-17
Tetrachloroethylene			88.3		%		50-140	03-NOV-17
Toluene			95.3		%		50-140	03-NOV-17
trans-1,2-Dichloroethylene			95.4		%		50-140	03-NOV-17
trans-1,3-Dichloropropene			103.9		%		50-140	03-NOV-17
Trichloroethylene			97.3		%		50-140	03-NOV-17
Trichlorofluoromethane			90.2		%		50-140	03-NOV-17
Vinyl chloride			83.4		%		50-140	03-NOV-17

Quality Control Report

Workorder: L2015398 Report Date: 15-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9
Contact: MICHAEL SHIRY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
LCS-H	Lab Control Sample recovery was above ALS DQO. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

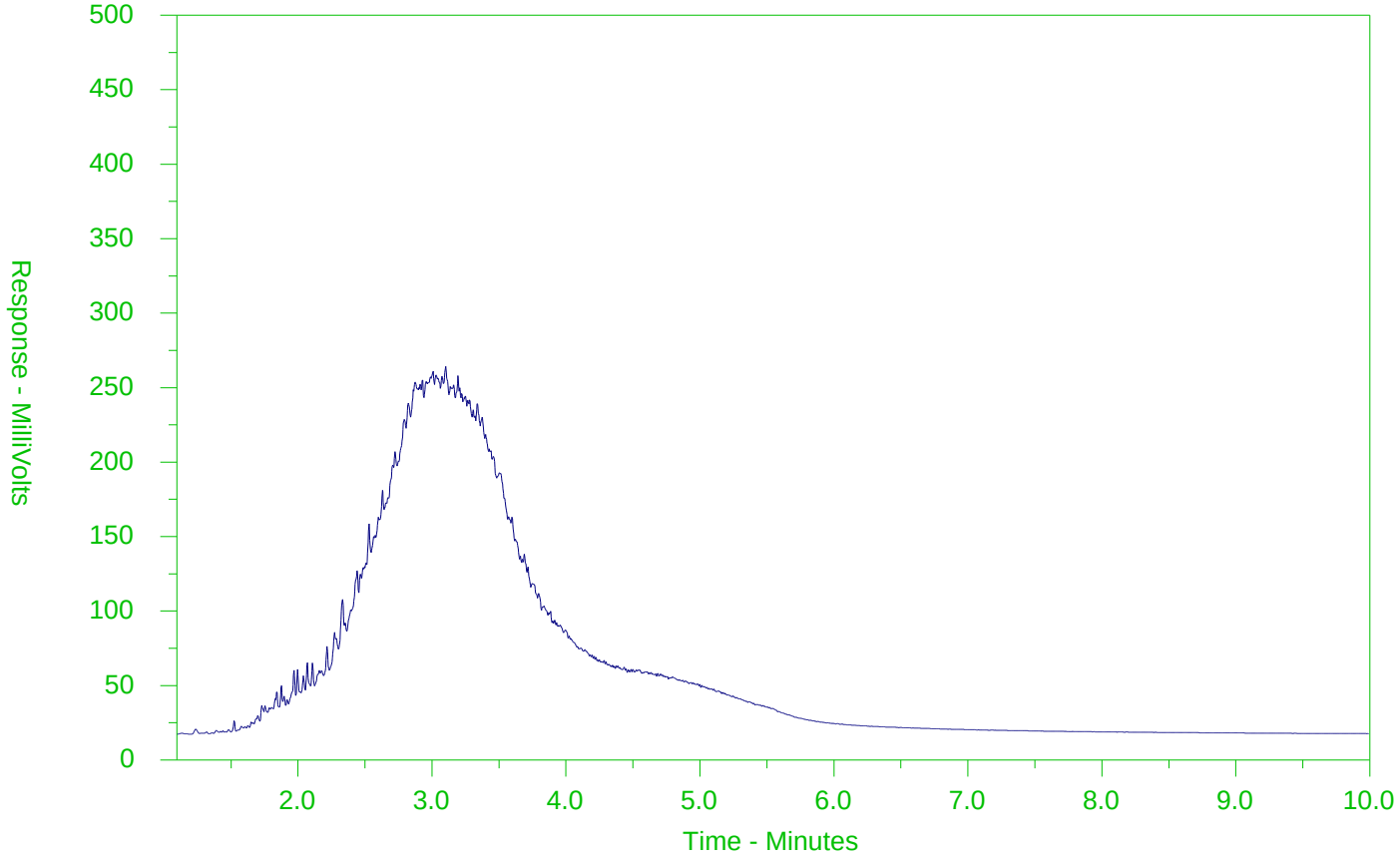
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2015398-4
Client Sample ID: MW17-101S/D-4-5.5



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

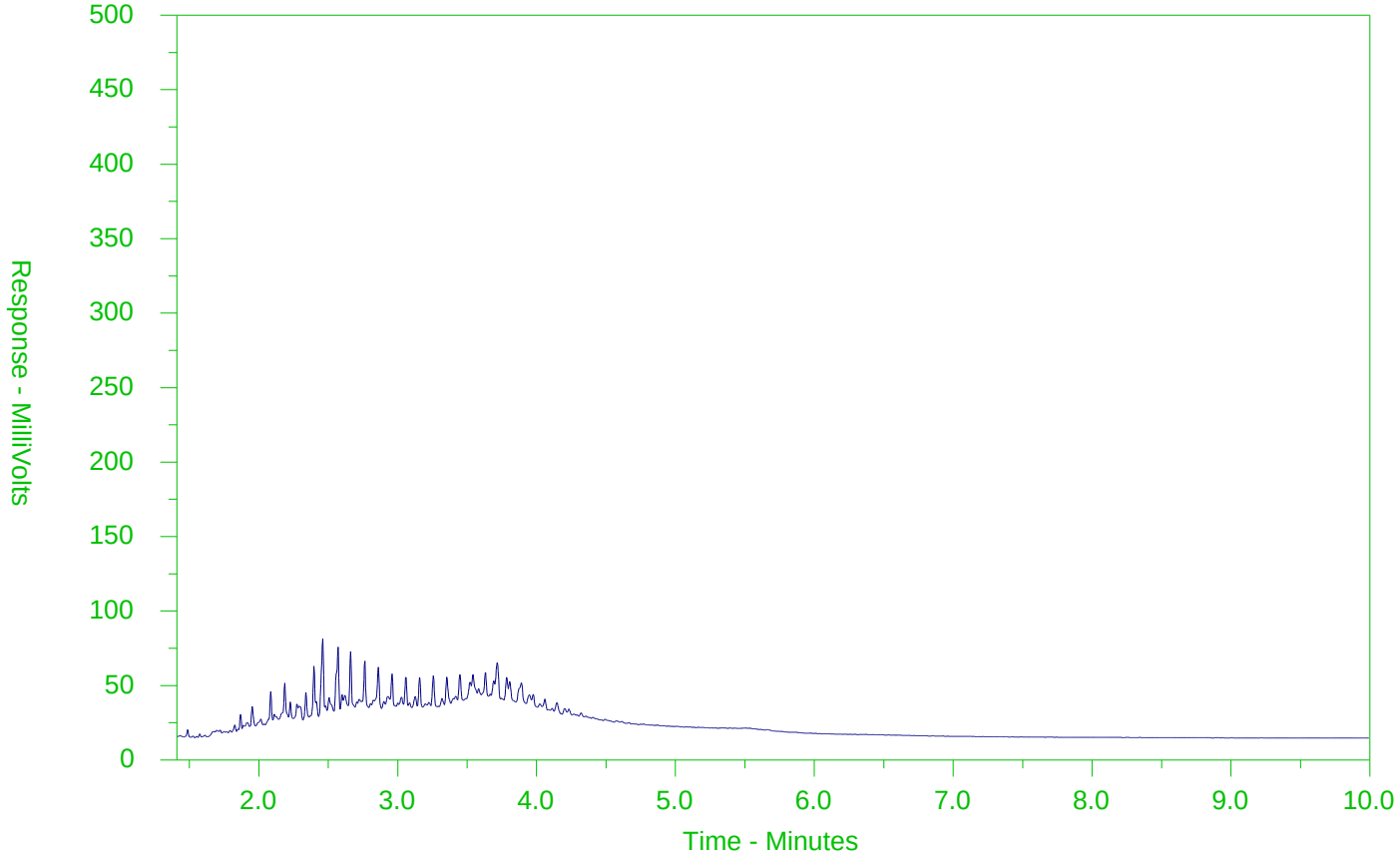
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2015398-7
Client Sample ID: MW17-105S/D-4-6



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

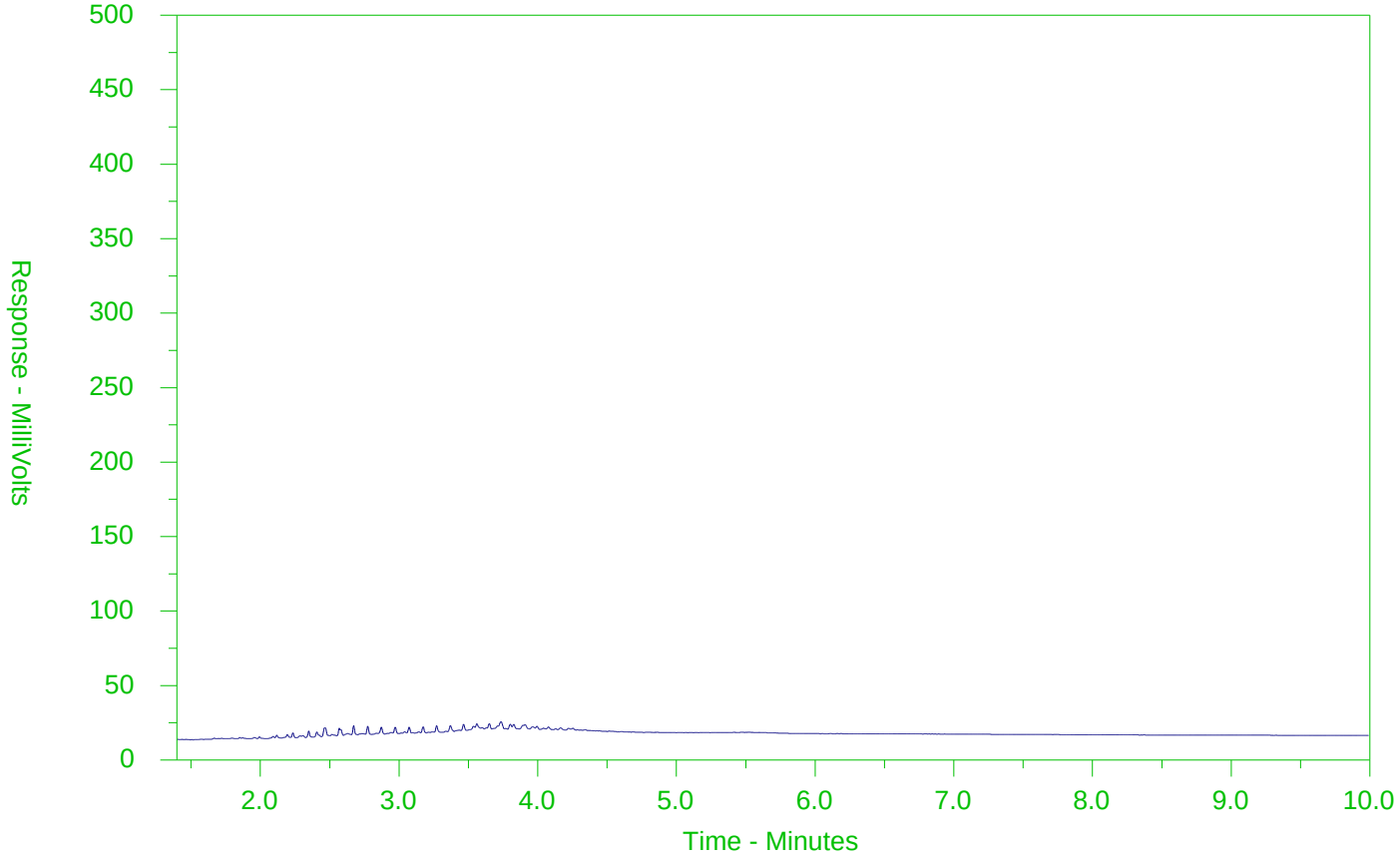
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2015398-8
Client Sample ID: MW17-105S/D-6-7



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

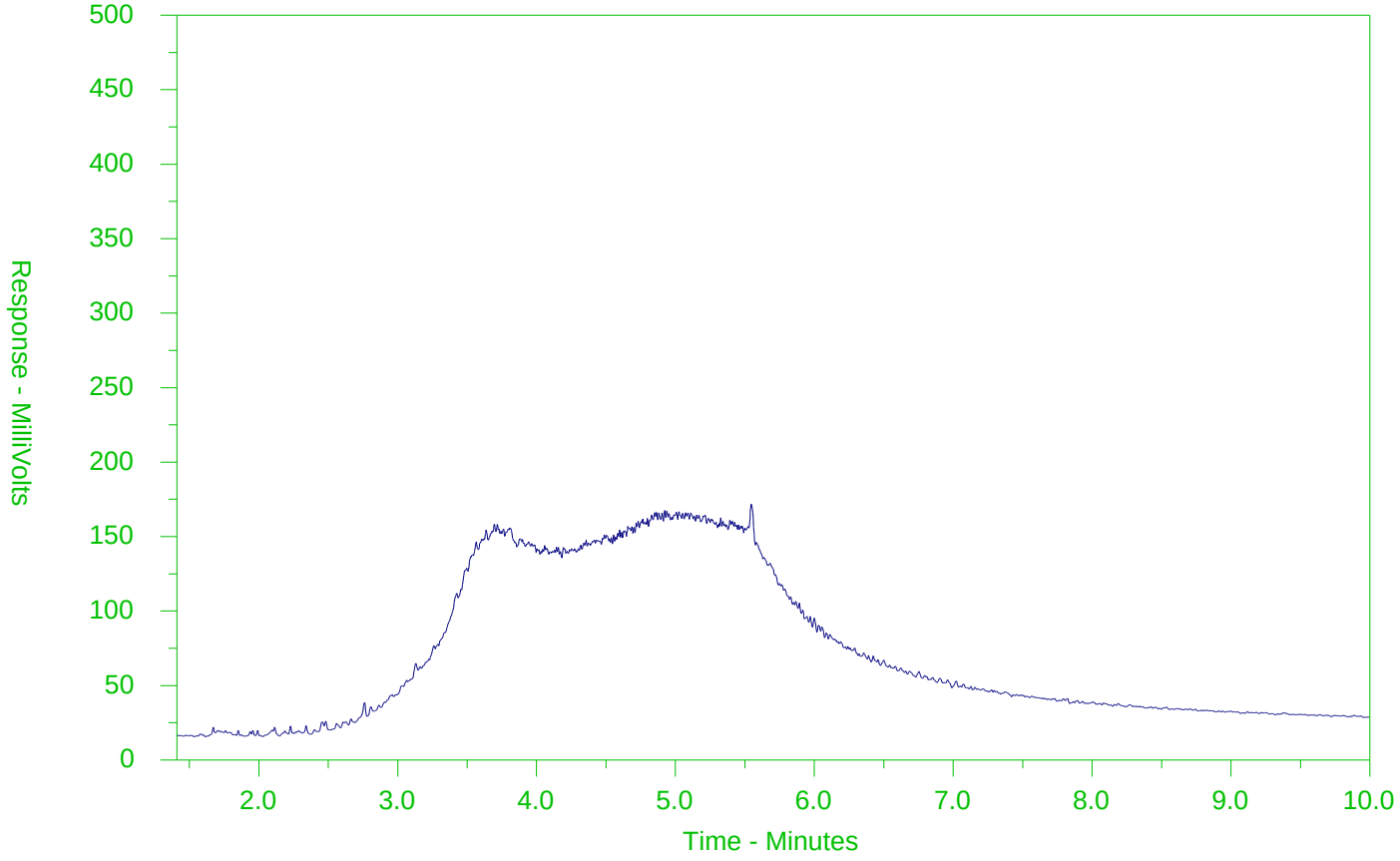
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2015398-11
Client Sample ID: MW17-103S/D-2-3



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

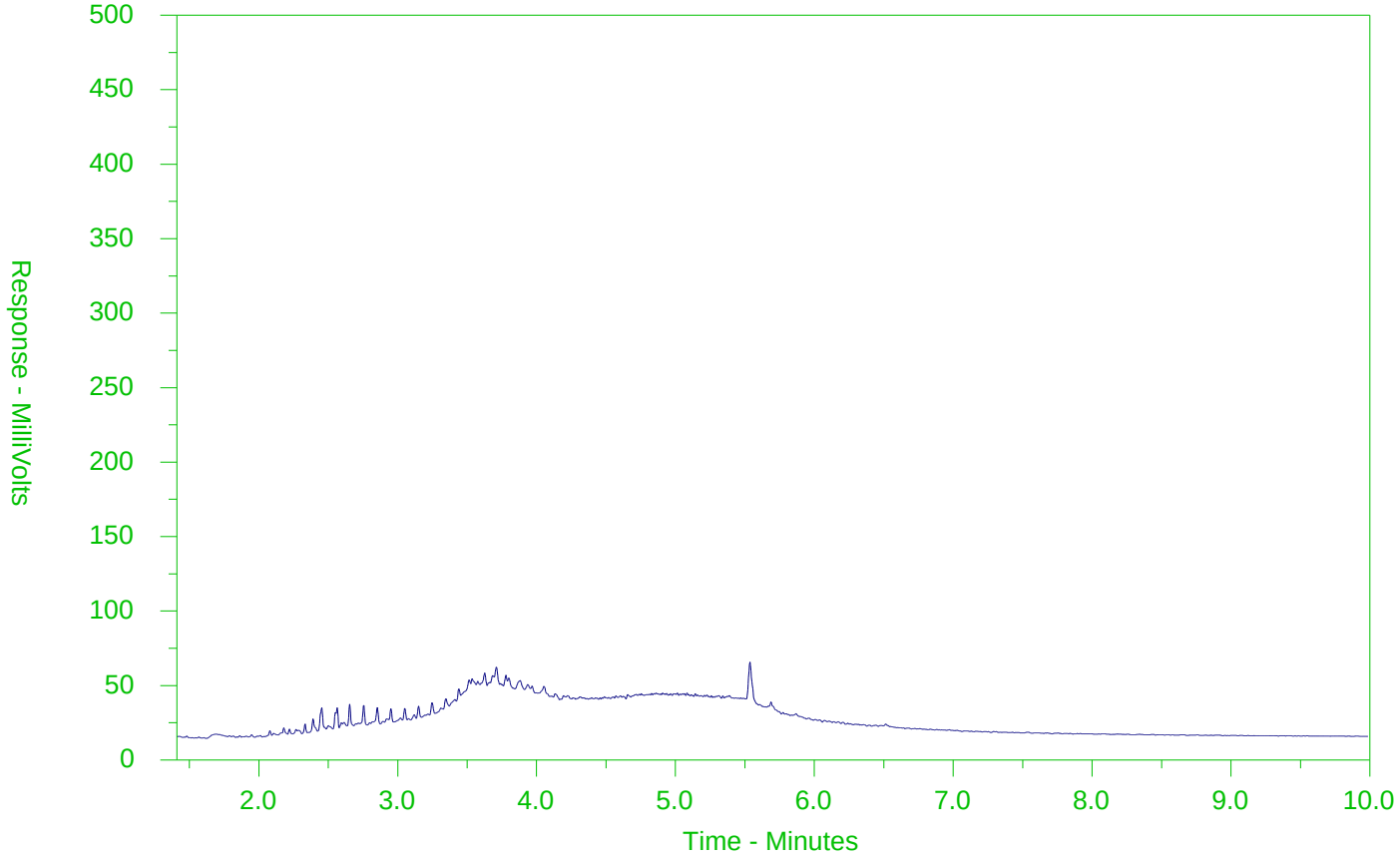
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2015398-12
Client Sample ID: MW17-103S/D-4-6



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

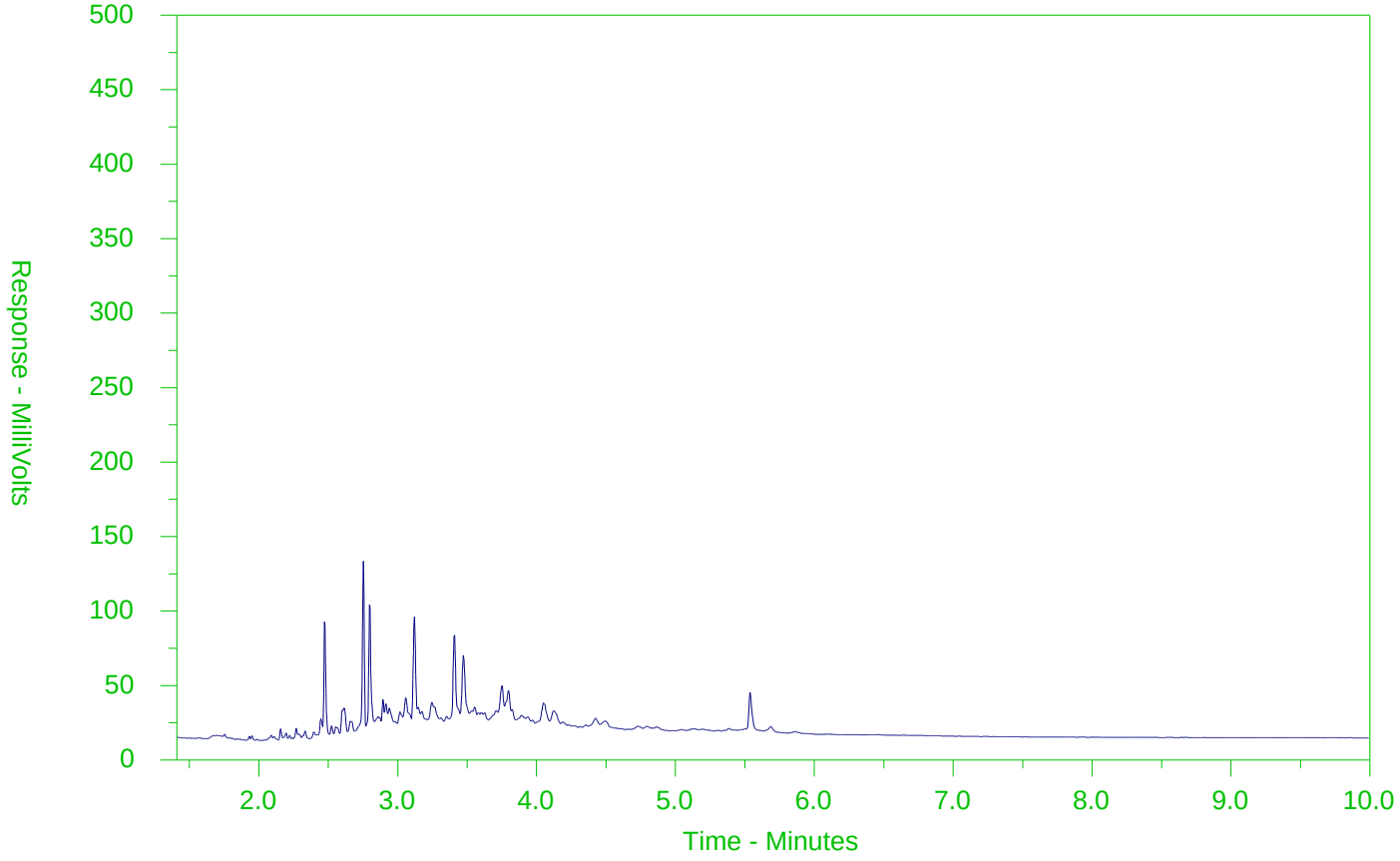
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2015398-13
Client Sample ID: MW17-102D-0.5-1



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

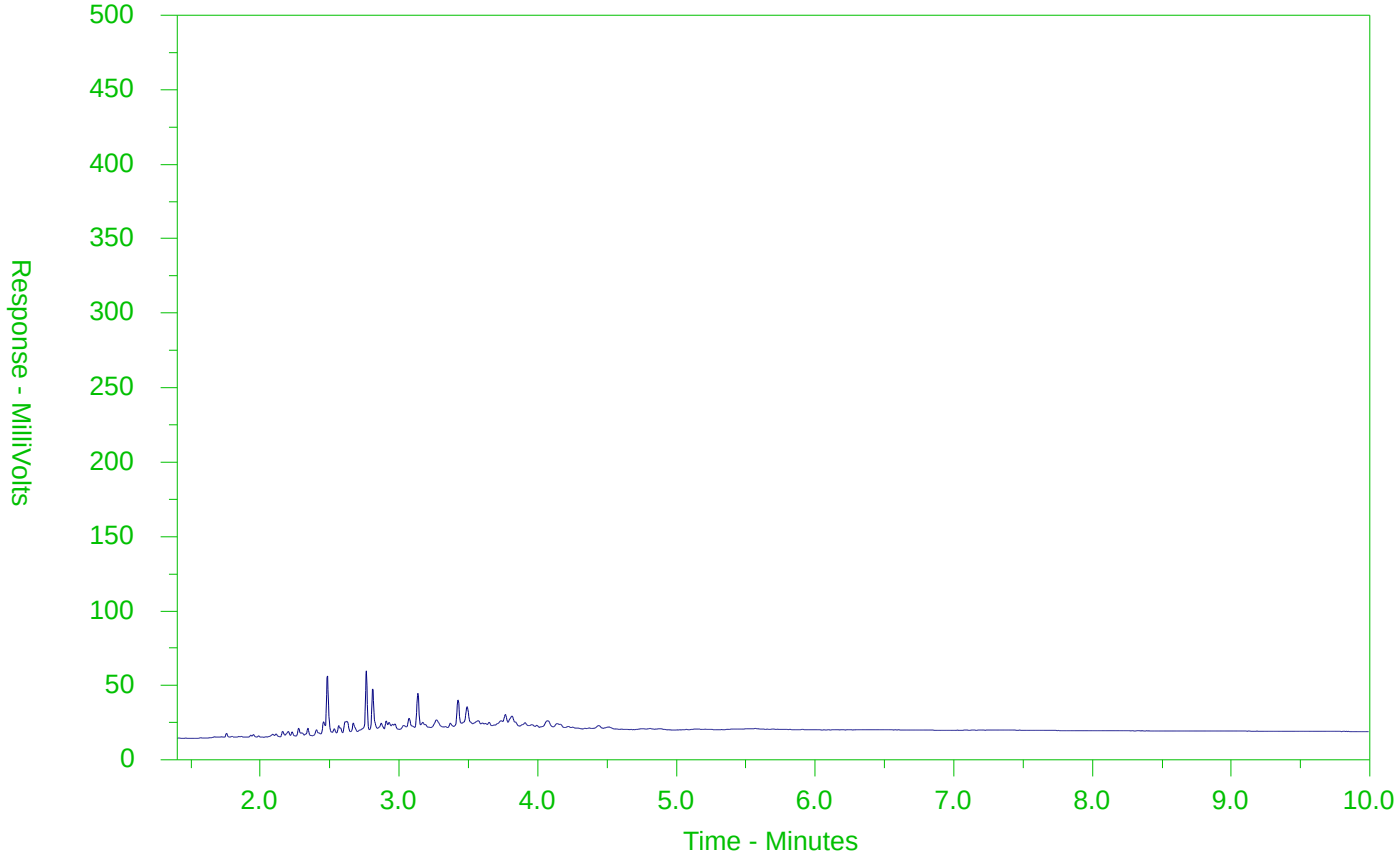
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2015398-16
Client Sample ID: MW17-102D-6-7



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

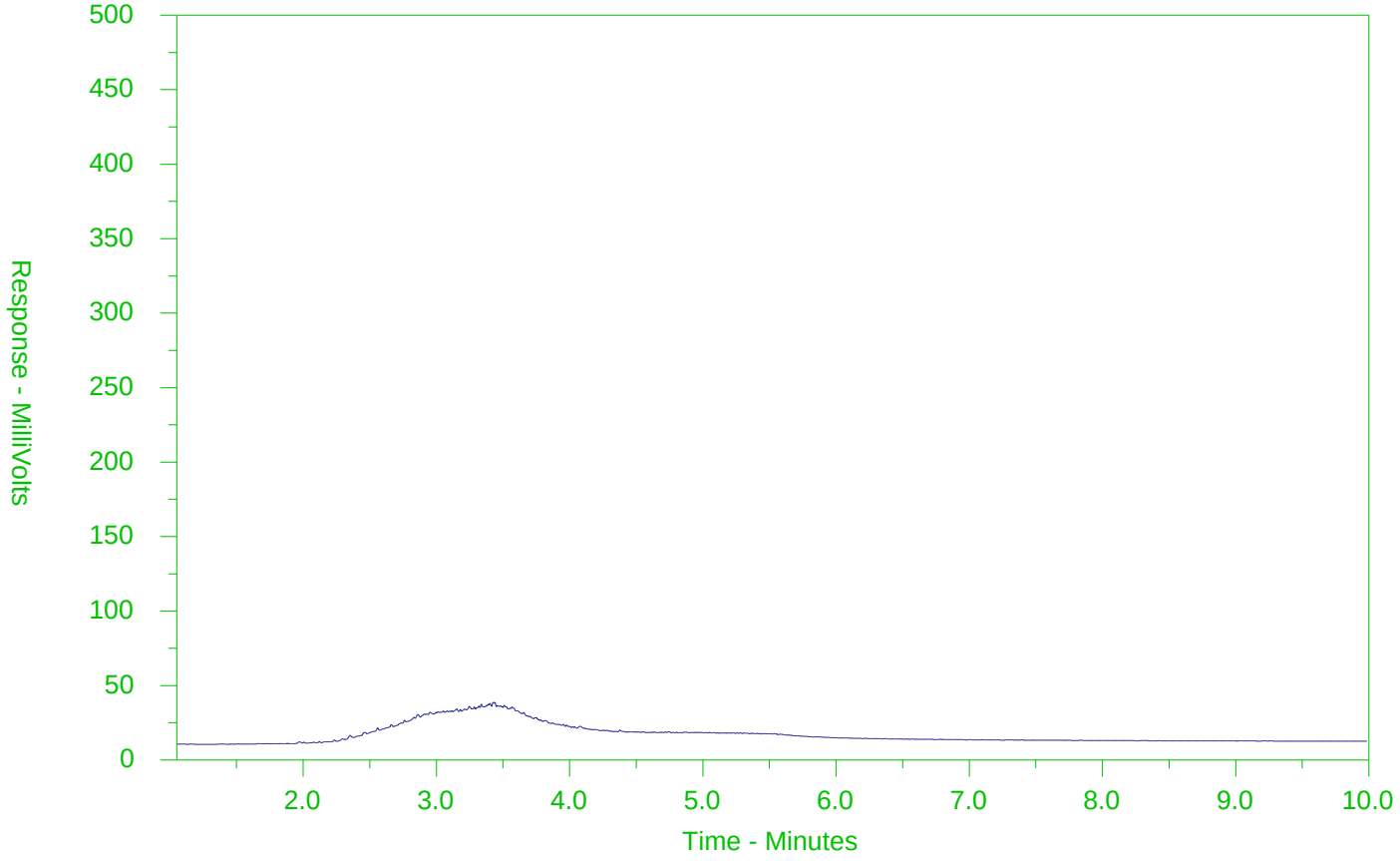
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2015398-17
Client Sample ID: DUP 10



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2015398-COFC

COC Number: 15 - 613141

Report To	Contact and company name below will appear on the final report
Company:	CHZM
Contact:	M. Shay
Phone:	
Company address below will appear on the final report	
Street:	
City/Province:	
Postal Code:	
Invoice To	Same as Report To ☐ YES ☒ NO
	Copy of Invoice with Report ☐ YES ☒ NO
Company:	
Contact:	Acct Payable

Report Format / Distribution

Select Report Format: ☒ PDF ☒ EXCEL ☒ EDD (DIGITAL)
Quality Control (QC) Report with Report ☒ YES ☐ NO
☒ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: Michael, Dirk
Email 2: Kyrie, Tanya
Email 3:

Invoice Distribution

Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax:
Email 2:

Project Information

ALS Account # / Quote #: Q62156
Job #: 694757
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#:
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only):
ALS Contact: Matthew
Sampler: M. Shay

Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply

Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
	4 day [P4] ☐		1 Business day [E1] ☐
	3 day [P3] ☐		Same Day, Weekend or Statutory holiday [E0] ☐
	2 day [P2] ☐		

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	O. Reg Metals + Hg	O. Reg SVOC	O. Reg PAH	O. Reg PHC+BTEX	O. Reg VOC	1,4-Dioxane	O. Reg VOC, F1	Number of Containers
13	MW17-102D-0.5-1	26-Oct-17	1742	Soil				X	X			3
14	MW17-102D-0.5-4	↓	1742	↓		X						1
15	MW17-102D-4-5.5		1802		X							1
16	MW17-102D-6-7		1812		X		X	X	X			5
17	DUP 10	20-Oct-17	—					X			X	3
18	Trip Blank D3	27-Oct-17	—	Other							X	1

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO
Are samples for human drinking water use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

O. Reg Table 6 RPI

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☒ Custody seal intact Yes ☒ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
-0.4			0.1		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: M. Shay	Date: 2017/10/30	Time: 1535	Received by: KK	Date: Oct 30/17	Time: 900	Received by:	Date: 30-OCT-17	Time: 1500

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

AK

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2015398-COFC

COC Number: 15 - 613140

Report To	Contact and company name below will appear on the final report
Company:	CH2M
Contact:	M. Shiny
Phone:	
Company address below will appear on the final report	
Street:	
City/Province:	
Postal Code:	

Report Format / Distribution

Select Report Format: [X] PDF [X] EXCEL [X] EDD (DIGITAL)
Quality Control (QC) Report with Report [ ] YES [ ] NO
[X] Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax
Email 2
Email 3

Select ... All E&P TATs with your AM - surcharges will apply
Regular [R] [X] Standard TAT if received by 3 pm - business days - no surcharges apply
PRIORITY (Business Days): 4 day [P4] [ ] 3 day [P3] [ ] 2 day [P2] [ ]
EMERGENCY: 1 Business day [E1] [ ] Same Day, Weekend or Statutory holiday [E0] [ ]
Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
For tests that can not be performed according to the service level selected, you will be contacted.

Invoice To	Same as Report To [ ] YES [X] NO
	Copy of Invoice with Report [ ] YES [X] NO
Company:	
Contact:	Acct Payable

Invoice Distribution

Select Invoice Distribution: [ ] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax
Email 2

Project Information

ALS Account # / Quote #: Q62156
Job #: 694757
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2015398
ALS Contact: Mathy
Sampler: M. Shiny

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	O. Reg Metals + Energy	O. Reg PAH	O. Reg SVOC	O. Reg PHC	O. Reg PCB	O. Reg VOC	Dioxin/Furans	1,4 Dioxane	TOC						Number of Containers
1	MW17-101 S/D-0.5-1.5	20-oct-17	847	Soil					X		H								2
2	MW17-101 S/D-1.5-2.5		847						H		H								2
3	MW17-101 S/D-2-3		908		X		X												2
4	MW17-101 S/D-4-5.5		1001		X		X	X		X		X							5
5	MW17-105 S/D-0-0.3	24-Oct-17	1148		X														1
6	MW17-105 S/D-0.5-1.5		1148				X												1
7	MW17-105 S/D-4-6		1212		X		X	X		X			X						6
8	MW17-105 S/D-6-7		1232					X		X									3
9	MW17-103 S/D-1-1.5	25-Oct-17	1523		X		X												2
10	MW17-103 S/D-1-3		1523										X						1
11	MW17-103 S/D-2-3		1527					X		X									3
12	MW17-103 S/D-4-6		1537		X		X	X		X			X						6

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] YES [ ] NO
Are samples for human drinking water use? [ ] YES [ ] NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

O. Reg Table 6 RPI
H = Hold sample

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] SIF Observations Yes [ ] No [ ]
Ice Packs [ ] Ice Cubes [X] Custody seal intact Yes [X] No [ ]
Cooling Initiated [ ]

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
-0.4			0.1		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: M. Shiny	Date: 2017/10/30	Time: 845	Received by:	Date: OCT 30/17	Time: 900	Received by:	Date: 30-OCT-17	Time: 1500

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION
WHITE - LABORATORY COPY YELLOW - CLIENT COPY
OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.
1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

AK

CH2M HILL CANADA LIMITED
ATTN: MICHAEL SHIRY
72 VICTORIA ST SOUTH
SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 30-OCT-17
Report Date: 09-NOV-17 08:13 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2015412

Project P.O. #:	NOT SUBMITTED
Job Reference:	694757
C of C Numbers:	15-613138
Legal Site Desc:	

Mathy Mahadeva
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2015412-1 MW17-109S-13.25 Sampled By: M. SHIRY on 27-OCT-17 @ 12:35 Matrix: ROCK							
Physical Tests							
% Moisture	1.56		0.10	%	02-NOV-17	02-NOV-17	R3873338
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	31-OCT-17	02-NOV-17	R3872812
Benzene	0.0091		0.0068	ug/g	31-OCT-17	02-NOV-17	R3872812
Bromodichloromethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Bromoform	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Bromomethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Carbon tetrachloride	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Chlorobenzene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Dibromochloromethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Chloroform	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,2-Dibromoethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,2-Dichlorobenzene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,3-Dichlorobenzene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,4-Dichlorobenzene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Dichlorodifluoromethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,1-Dichloroethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,2-Dichloroethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,1-Dichloroethylene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Methylene Chloride	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,2-Dichloropropane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	31-OCT-17	02-NOV-17	R3872812
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	31-OCT-17	02-NOV-17	R3872812
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		03-NOV-17	
Ethylbenzene	0.131		0.018	ug/g	31-OCT-17	02-NOV-17	R3872812
n-Hexane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Methyl Ethyl Ketone	<0.50		0.50	ug/g	31-OCT-17	02-NOV-17	R3872812
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	31-OCT-17	02-NOV-17	R3872812
MTBE	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Styrene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Tetrachloroethylene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Toluene	<0.080		0.080	ug/g	31-OCT-17	02-NOV-17	R3872812
1,1,1-Trichloroethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,1,2-Trichloroethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Trichloroethylene	<0.010		0.010	ug/g	31-OCT-17	02-NOV-17	R3872812
Trichlorofluoromethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Vinyl chloride	<0.020		0.020	ug/g	31-OCT-17	02-NOV-17	R3872812

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2015412-1 MW17-109S-13.25 Sampled By: M. SHIRY on 27-OCT-17 @ 12:35 Matrix: ROCK							
Volatile Organic Compounds							
o-Xylene	0.086		0.020	ug/g	31-OCT-17	02-NOV-17	R3872812
m+p-Xylenes	0.103		0.030	ug/g	31-OCT-17	02-NOV-17	R3872812
Xylenes (Total)	0.189		0.050	ug/g		03-NOV-17	
Surrogate: 4-Bromofluorobenzene	99.2		50-140	%	31-OCT-17	02-NOV-17	R3872812
Surrogate: 1,4-Difluorobenzene	102.7		50-140	%	31-OCT-17	02-NOV-17	R3872812
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	31-OCT-17	02-NOV-17	R3872812
F1-BTEX	<5.0		5.0	ug/g		08-NOV-17	
F2 (C10-C16)	16		10	ug/g	02-NOV-17	07-NOV-17	R3879004
F3 (C16-C34)	<50		50	ug/g	02-NOV-17	07-NOV-17	R3879004
F4 (C34-C50)	<50		50	ug/g	02-NOV-17	07-NOV-17	R3879004
Total Hydrocarbons (C6-C50)	<72		72	ug/g		08-NOV-17	
Chrom. to baseline at nC50	YES				02-NOV-17	07-NOV-17	R3879004
Surrogate: 2-Bromobenzotrifluoride	90.3		60-140	%	02-NOV-17	07-NOV-17	R3879004
Surrogate: 3,4-Dichlorotoluene	83.3		60-140	%	31-OCT-17	02-NOV-17	R3872812
Polychlorinated Biphenyls							
Aroclor 1242	<0.010		0.010	ug/g	06-NOV-17	06-NOV-17	R3874775
Aroclor 1248	<0.010		0.010	ug/g	06-NOV-17	06-NOV-17	R3874775
Aroclor 1254	<0.010		0.010	ug/g	06-NOV-17	06-NOV-17	R3874775
Aroclor 1260	<0.010		0.010	ug/g	06-NOV-17	06-NOV-17	R3874775
Total PCBs	<0.020		0.020	ug/g	06-NOV-17	06-NOV-17	R3874775
Surrogate: d14-Terphenyl	90.5		60-140	%	06-NOV-17	06-NOV-17	R3874775
L2015412-2 MW17-105S/D-13.25 Sampled By: M. SHIRY on 27-OCT-17 @ 12:45 Matrix: ROCK							
Physical Tests							
% Moisture	5.41		0.10	%	02-NOV-17	02-NOV-17	R3873338
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	31-OCT-17	02-NOV-17	R3872812
Benzene	0.115		0.0068	ug/g	31-OCT-17	02-NOV-17	R3872812
Bromodichloromethane	<0.50	DLVH	0.50	ug/g	31-OCT-17	02-NOV-17	R3872812
Bromoform	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Bromomethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Carbon tetrachloride	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Chlorobenzene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Dibromochloromethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Chloroform	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,2-Dibromoethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,2-Dichlorobenzene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,3-Dichlorobenzene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,4-Dichlorobenzene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Dichlorodifluoromethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2015412-2 MW17-105S/D-13.25 Sampled By: M. SHIRY on 27-OCT-17 @ 12:45 Matrix: ROCK							
Volatile Organic Compounds							
1,1-Dichloroethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,2-Dichloroethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,1-Dichloroethylene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Methylene Chloride	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,2-Dichloropropane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	31-OCT-17	02-NOV-17	R3872812
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	31-OCT-17	02-NOV-17	R3872812
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		03-NOV-17	
Ethylbenzene	1.68		0.018	ug/g	31-OCT-17	02-NOV-17	R3872812
n-Hexane	1.02		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Methyl Ethyl Ketone	<0.50		0.50	ug/g	31-OCT-17	02-NOV-17	R3872812
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	31-OCT-17	02-NOV-17	R3872812
MTBE	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Styrene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,1,2,2-Tetrachloroethane	<0.075	DLVH	0.075	ug/g	31-OCT-17	02-NOV-17	R3872812
Tetrachloroethylene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Toluene	<0.080		0.080	ug/g	31-OCT-17	02-NOV-17	R3872812
1,1,1-Trichloroethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,1,2-Trichloroethane	<0.18	DLVH	0.18	ug/g	31-OCT-17	02-NOV-17	R3872812
Trichloroethylene	<0.010		0.010	ug/g	31-OCT-17	02-NOV-17	R3872812
Trichlorofluoromethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Vinyl chloride	<0.020		0.020	ug/g	31-OCT-17	02-NOV-17	R3872812
o-Xylene	0.053		0.020	ug/g	31-OCT-17	02-NOV-17	R3872812
m+p-Xylenes	13.2		0.030	ug/g	31-OCT-17	02-NOV-17	R3872812
Xylenes (Total)	13.3		0.050	ug/g		03-NOV-17	
Surrogate: 4-Bromofluorobenzene	103.4		50-140	%	31-OCT-17	02-NOV-17	R3872812
Surrogate: 1,4-Difluorobenzene	93.4		50-140	%	31-OCT-17	02-NOV-17	R3872812
Hydrocarbons							
F1 (C6-C10)	289	DLHC	40	ug/g	31-OCT-17	03-NOV-17	R3872812
F1-BTEX	274		40	ug/g		08-NOV-17	
F2 (C10-C16)	76		10	ug/g	02-NOV-17	07-NOV-17	R3879004
F3 (C16-C34)	<50		50	ug/g	02-NOV-17	07-NOV-17	R3879004
F4 (C34-C50)	<50		50	ug/g	02-NOV-17	07-NOV-17	R3879004
Total Hydrocarbons (C6-C50)	364		82	ug/g		08-NOV-17	
Chrom. to baseline at nC50	YES				02-NOV-17	07-NOV-17	R3879004
Surrogate: 2-Bromobenzotrifluoride	97.4		60-140	%	02-NOV-17	07-NOV-17	R3879004
Surrogate: 3,4-Dichlorotoluene	131.1		60-140	%	31-OCT-17	03-NOV-17	R3872812
L2015412-3 MW17-101S/D-8.5							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2015412-3 MW17-101S/D-8.5 Sampled By: M. SHIRY on 27-OCT-17 @ 12:55 Matrix: ROCK							
Physical Tests							
% Moisture	0.48		0.10	%	02-NOV-17	02-NOV-17	R3873338
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	31-OCT-17	02-NOV-17	R3872812
Benzene	<0.0068		0.0068	ug/g	31-OCT-17	02-NOV-17	R3872812
Bromodichloromethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Bromoform	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Bromomethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Carbon tetrachloride	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Chlorobenzene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Dibromochloromethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Chloroform	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,2-Dibromoethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,2-Dichlorobenzene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,3-Dichlorobenzene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,4-Dichlorobenzene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Dichlorodifluoromethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,1-Dichloroethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,2-Dichloroethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,1-Dichloroethylene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Methylene Chloride	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,2-Dichloropropane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	31-OCT-17	02-NOV-17	R3872812
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	31-OCT-17	02-NOV-17	R3872812
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		03-NOV-17	
Ethylbenzene	<0.018		0.018	ug/g	31-OCT-17	02-NOV-17	R3872812
n-Hexane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Methyl Ethyl Ketone	<0.50		0.50	ug/g	31-OCT-17	02-NOV-17	R3872812
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	31-OCT-17	02-NOV-17	R3872812
MTBE	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Styrene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Tetrachloroethylene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Toluene	<0.080		0.080	ug/g	31-OCT-17	02-NOV-17	R3872812
1,1,1-Trichloroethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,1,2-Trichloroethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Trichloroethylene	<0.010		0.010	ug/g	31-OCT-17	02-NOV-17	R3872812
Trichlorofluoromethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Vinyl chloride	<0.020		0.020	ug/g	31-OCT-17	02-NOV-17	R3872812

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2015412-3 MW17-101S/D-8.5 Sampled By: M. SHIRY on 27-OCT-17 @ 12:55 Matrix: ROCK							
Volatile Organic Compounds							
o-Xylene	<0.020		0.020	ug/g	31-OCT-17	02-NOV-17	R3872812
m+p-Xylenes	<0.030		0.030	ug/g	31-OCT-17	02-NOV-17	R3872812
Xylenes (Total)	<0.050		0.050	ug/g		03-NOV-17	
Surrogate: 4-Bromofluorobenzene	107.1		50-140	%	31-OCT-17	02-NOV-17	R3872812
Surrogate: 1,4-Difluorobenzene	101.8		50-140	%	31-OCT-17	02-NOV-17	R3872812
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	31-OCT-17	02-NOV-17	R3872812
F1-BTEX	<5.0		5.0	ug/g		08-NOV-17	
F2 (C10-C16)	159		10	ug/g	02-NOV-17	08-NOV-17	R3879004
F3 (C16-C34)	1360		50	ug/g	02-NOV-17	08-NOV-17	R3879004
F4 (C34-C50)	106		50	ug/g	02-NOV-17	08-NOV-17	R3879004
Total Hydrocarbons (C6-C50)	1630		72	ug/g		08-NOV-17	
Chrom. to baseline at nC50	YES				02-NOV-17	08-NOV-17	R3879004
Surrogate: 2-Bromobenzotrifluoride	87.6		60-140	%	02-NOV-17	08-NOV-17	R3879004
Surrogate: 3,4-Dichlorotoluene	68.2		60-140	%	31-OCT-17	02-NOV-17	R3872812
L2015412-4 MW17-104S/D-9 Sampled By: M. SHIRY on 27-OCT-17 @ 13:05 Matrix: ROCK							
Physical Tests							
% Moisture	0.39		0.10	%	02-NOV-17	02-NOV-17	R3873338
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	31-OCT-17	02-NOV-17	R3872812
Benzene	<0.0068		0.0068	ug/g	31-OCT-17	02-NOV-17	R3872812
Bromodichloromethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Bromoform	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Bromomethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Carbon tetrachloride	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Chlorobenzene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Dibromochloromethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Chloroform	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,2-Dibromoethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,2-Dichlorobenzene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,3-Dichlorobenzene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,4-Dichlorobenzene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Dichlorodifluoromethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,1-Dichloroethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,2-Dichloroethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,1-Dichloroethylene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Methylene Chloride	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,2-Dichloropropane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2015412-4 MW17-104S/D-9 Sampled By: M. SHIRY on 27-OCT-17 @ 13:05 Matrix: ROCK							
Volatile Organic Compounds							
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	31-OCT-17	02-NOV-17	R3872812
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	31-OCT-17	02-NOV-17	R3872812
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		03-NOV-17	
Ethylbenzene	<0.018		0.018	ug/g	31-OCT-17	02-NOV-17	R3872812
n-Hexane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Methyl Ethyl Ketone	<0.50		0.50	ug/g	31-OCT-17	02-NOV-17	R3872812
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	31-OCT-17	02-NOV-17	R3872812
MTBE	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Styrene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Tetrachloroethylene	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Toluene	<0.080		0.080	ug/g	31-OCT-17	02-NOV-17	R3872812
1,1,1-Trichloroethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
1,1,2-Trichloroethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Trichloroethylene	<0.010		0.010	ug/g	31-OCT-17	02-NOV-17	R3872812
Trichlorofluoromethane	<0.050		0.050	ug/g	31-OCT-17	02-NOV-17	R3872812
Vinyl chloride	<0.020		0.020	ug/g	31-OCT-17	02-NOV-17	R3872812
o-Xylene	<0.020		0.020	ug/g	31-OCT-17	02-NOV-17	R3872812
m+p-Xylenes	<0.030		0.030	ug/g	31-OCT-17	02-NOV-17	R3872812
Xylenes (Total)	<0.050		0.050	ug/g		03-NOV-17	
Surrogate: 4-Bromofluorobenzene	131.3		50-140	%	31-OCT-17	02-NOV-17	R3872812
Surrogate: 1,4-Difluorobenzene	128.5		50-140	%	31-OCT-17	02-NOV-17	R3872812
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	31-OCT-17	02-NOV-17	R3872812
F1-BTEX	<5.0		5.0	ug/g		08-NOV-17	
F2 (C10-C16)	23		10	ug/g	02-NOV-17	07-NOV-17	R3879004
F3 (C16-C34)	69		50	ug/g	02-NOV-17	07-NOV-17	R3879004
F4 (C34-C50)	<50		50	ug/g	02-NOV-17	07-NOV-17	R3879004
Total Hydrocarbons (C6-C50)	92		72	ug/g		08-NOV-17	
Chrom. to baseline at nC50	YES				02-NOV-17	07-NOV-17	R3879004
Surrogate: 2-Bromobenzotrifluoride	97.3		60-140	%	02-NOV-17	07-NOV-17	R3879004
Surrogate: 3,4-Dichlorotoluene	91.0		60-140	%	31-OCT-17	02-NOV-17	R3872812
L2015412-5 MW17-104S/D-16.8 Sampled By: M. SHIRY on 27-OCT-17 @ 13:15 Matrix: ROCK							
Physical Tests							
% Moisture	3.29		0.10	%	02-NOV-17	02-NOV-17	R3873338
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	01-NOV-17	04-NOV-17	R3874287
Benzene	<0.0068		0.0068	ug/g	01-NOV-17	04-NOV-17	R3874287
Bromodichloromethane	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2015412-5 MW17-104S/D-16.8 Sampled By: M. SHIRY on 27-OCT-17 @ 13:15 Matrix: ROCK							
Volatile Organic Compounds							
Bromoform	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
Bromomethane	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
Carbon tetrachloride	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
Chlorobenzene	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
Dibromochloromethane	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
Chloroform	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
1,2-Dibromoethane	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
1,2-Dichlorobenzene	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
1,3-Dichlorobenzene	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
1,4-Dichlorobenzene	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
Dichlorodifluoromethane	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
1,1-Dichloroethane	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
1,2-Dichloroethane	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
1,1-Dichloroethylene	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
Methylene Chloride	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
1,2-Dichloropropane	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	01-NOV-17	04-NOV-17	R3874287
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	01-NOV-17	04-NOV-17	R3874287
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		04-NOV-17	
Ethylbenzene	<0.018		0.018	ug/g	01-NOV-17	04-NOV-17	R3874287
n-Hexane	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
Methyl Ethyl Ketone	<0.50		0.50	ug/g	01-NOV-17	04-NOV-17	R3874287
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	01-NOV-17	04-NOV-17	R3874287
MTBE	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
Styrene	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
Tetrachloroethylene	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
Toluene	<0.080		0.080	ug/g	01-NOV-17	04-NOV-17	R3874287
1,1,1-Trichloroethane	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
1,1,2-Trichloroethane	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
Trichloroethylene	<0.010		0.010	ug/g	01-NOV-17	04-NOV-17	R3874287
Trichlorofluoromethane	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
Vinyl chloride	<0.020		0.020	ug/g	01-NOV-17	04-NOV-17	R3874287
o-Xylene	<0.020		0.020	ug/g	01-NOV-17	04-NOV-17	R3874287
m+p-Xylenes	<0.030		0.030	ug/g	01-NOV-17	04-NOV-17	R3874287
Xylenes (Total)	<0.050		0.050	ug/g		04-NOV-17	
Surrogate: 4-Bromofluorobenzene	102.8		50-140	%	01-NOV-17	04-NOV-17	R3874287
Surrogate: 1,4-Difluorobenzene	99.8		50-140	%	01-NOV-17	04-NOV-17	R3874287

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2015412-5 MW17-104S/D-16.8 Sampled By: M. SHIRY on 27-OCT-17 @ 13:15 Matrix: ROCK							
Volatile Organic Compounds							
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	01-NOV-17	04-NOV-17	R3874287
F1-BTEX	<5.0		5.0	ug/g		08-NOV-17	
F2 (C10-C16)	14		10	ug/g	02-NOV-17	07-NOV-17	R3879004
F3 (C16-C34)	<50		50	ug/g	02-NOV-17	07-NOV-17	R3879004
F4 (C34-C50)	<50		50	ug/g	02-NOV-17	07-NOV-17	R3879004
Total Hydrocarbons (C6-C50)	<72		72	ug/g		08-NOV-17	
Chrom. to baseline at nC50	YES				02-NOV-17	07-NOV-17	R3879004
Surrogate: 2-Bromobenzotrifluoride	89.7		60-140	%	02-NOV-17	07-NOV-17	R3879004
Surrogate: 3,4-Dichlorotoluene	126.4		60-140	%	01-NOV-17	04-NOV-17	R3874287
L2015412-6 MW17-104S/D-22 Sampled By: M. SHIRY on 27-OCT-17 @ 13:20 Matrix: ROCK							
Physical Tests							
% Moisture	4.96		0.10	%	02-NOV-17	02-NOV-17	R3873338
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	01-NOV-17	04-NOV-17	R3874287
Benzene	<0.0068		0.0068	ug/g	01-NOV-17	04-NOV-17	R3874287
Bromodichloromethane	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
Bromoform	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
Bromomethane	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
Carbon tetrachloride	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
Chlorobenzene	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
Dibromochloromethane	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
Chloroform	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
1,2-Dibromoethane	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
1,2-Dichlorobenzene	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
1,3-Dichlorobenzene	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
1,4-Dichlorobenzene	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
Dichlorodifluoromethane	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
1,1-Dichloroethane	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
1,2-Dichloroethane	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
1,1-Dichloroethylene	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
Methylene Chloride	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
1,2-Dichloropropane	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	01-NOV-17	04-NOV-17	R3874287
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	01-NOV-17	04-NOV-17	R3874287
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		04-NOV-17	
Ethylbenzene	<0.018		0.018	ug/g	01-NOV-17	04-NOV-17	R3874287
n-Hexane	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2015412-6 MW17-104S/D-22 Sampled By: M. SHIRY on 27-OCT-17 @ 13:20 Matrix: ROCK							
Volatile Organic Compounds							
Methyl Ethyl Ketone	<0.50		0.50	ug/g	01-NOV-17	04-NOV-17	R3874287
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	01-NOV-17	04-NOV-17	R3874287
MTBE	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
Styrene	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
Tetrachloroethylene	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
Toluene	<0.080		0.080	ug/g	01-NOV-17	04-NOV-17	R3874287
1,1,1-Trichloroethane	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
1,1,2-Trichloroethane	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
Trichloroethylene	<0.010		0.010	ug/g	01-NOV-17	04-NOV-17	R3874287
Trichlorofluoromethane	<0.050		0.050	ug/g	01-NOV-17	04-NOV-17	R3874287
Vinyl chloride	<0.020		0.020	ug/g	01-NOV-17	04-NOV-17	R3874287
o-Xylene	<0.020		0.020	ug/g	01-NOV-17	04-NOV-17	R3874287
m+p-Xylenes	<0.030		0.030	ug/g	01-NOV-17	04-NOV-17	R3874287
Xylenes (Total)	<0.050		0.050	ug/g		04-NOV-17	
Surrogate: 4-Bromofluorobenzene	102.7		50-140	%	01-NOV-17	04-NOV-17	R3874287
Surrogate: 1,4-Difluorobenzene	101.2		50-140	%	01-NOV-17	04-NOV-17	R3874287
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	01-NOV-17	04-NOV-17	R3874287
F1-BTEX	<5.0		5.0	ug/g		08-NOV-17	
F2 (C10-C16)	202		10	ug/g	02-NOV-17	07-NOV-17	R3879004
F3 (C16-C34)	381		50	ug/g	02-NOV-17	07-NOV-17	R3879004
F4 (C34-C50)	<50		50	ug/g	02-NOV-17	07-NOV-17	R3879004
Total Hydrocarbons (C6-C50)	583		72	ug/g		08-NOV-17	
Chrom. to baseline at nC50	YES				02-NOV-17	07-NOV-17	R3879004
Surrogate: 2-Bromobenzotrifluoride	90.9		60-140	%	02-NOV-17	07-NOV-17	R3879004
Surrogate: 3,4-Dichlorotoluene	101.7		60-140	%	01-NOV-17	04-NOV-17	R3874287

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Laboratory Control Sample	Dichlorodifluoromethane	MES	L2015412-1, -2, -3, -4
Matrix Spike	Dichlorodifluoromethane	MES	L2015412-1, -2, -3, -4

Sample Parameter Qualifier key listed:

Qualifier	Description
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
DLVH	Detection Limit raised due to interference from Volatile Hydrocarbons on VOC method. Chromatographic elution of interfering peaks in the same region as test analytes prevents a determination of whether VOC analyte is present or absent (above/below regular detection limits).
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Soil	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Soil	F2-F4-O.Reg 153/04 (July 2011)	CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from soil with 1:1 hexane:acetone using a rotary extractor. Extracts are treated with silica gel to remove polar organic interferences. F2, F3, & F4 are analyzed by GC-FID. F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where both F4 (C34-C50) and F4G-sg are reported for a sample, the larger of the two values is used for comparison against the relevant CCME guideline for F4.
7. F4G-sg cannot be added to the C6 to C50 hydrocarbon results to obtain an estimate of total extractable hydrocarbons.
8. This method is validated for use.
9. Data from analysis of validation and quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram, unless otherwise indicated.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

MOISTURE-WT	Soil	% Moisture	Gravimetric: Oven Dried

Reference Information

PCB-511-WT	Soil	PCB-O.Reg 153/04 (July 2011)	SW846 3510/8082

An aliquot of a solid sample is extracted with a solvent, extract is cleaned up and analyzed on the GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

VOC-1,3-DCP-CALC-WT	Soil	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Soil	VOC-O.Reg 153/04 (July 2011)	SW846 8260 (511)

Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

15-613138

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2015412 Report Date: 09-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT	**Soil**							
Batch R3872812								
WG2653488-4 DUP		**WG2653488-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	02-NOV-17
WG2653488-2 LCS								
F1 (C6-C10)			98.1		%		80-120	02-NOV-17
WG2653488-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	02-NOV-17
Surrogate: 3,4-Dichlorotoluene			91.8		%		60-140	02-NOV-17
WG2653488-7 MS		**WG2653488-6**						
F1 (C6-C10)			82.5		%		60-140	02-NOV-17
Batch R3874287								
WG2653746-4 DUP		**WG2653746-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	03-NOV-17
WG2653746-2 LCS								
F1 (C6-C10)			105.0		%		80-120	03-NOV-17
WG2653746-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	03-NOV-17
Surrogate: 3,4-Dichlorotoluene			126.5		%		60-140	03-NOV-17
WG2653746-7 MS		**WG2653746-6**						
F1 (C6-C10)			91.5		%		60-140	03-NOV-17
F2-F4-511-WT	**Soil**							
Batch R3879004								
WG2654910-4 CRM		**ALS PHC2 IRM**						
F2 (C10-C16)			112.7		%		70-130	07-NOV-17
F3 (C16-C34)			108.6		%		70-130	07-NOV-17
F4 (C34-C50)			103.3		%		70-130	07-NOV-17
WG2654910-3 DUP		**WG2654910-5**						
F2 (C10-C16)		133	165		ug/g	22	30	07-NOV-17
F3 (C16-C34)		397	461		ug/g	15	30	07-NOV-17
F4 (C34-C50)		91	82		ug/g	9.7	30	07-NOV-17
WG2654910-2 LCS								
F2 (C10-C16)			108.0		%		80-120	07-NOV-17
F3 (C16-C34)			104.9		%		80-120	07-NOV-17
F4 (C34-C50)			101.8		%		80-120	07-NOV-17
WG2654910-1 MB								
F2 (C10-C16)			<10		ug/g		10	08-NOV-17
F3 (C16-C34)			<50		ug/g		50	08-NOV-17
F4 (C34-C50)			<50		ug/g		50	08-NOV-17

Quality Control Report

Workorder: L2015412 Report Date: 09-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-511-WT	**Soil**							
Batch R3879004								
WG2654910-1 MB								
Surrogate: 2-Bromobenzotrifluoride			83.9		%		60-140	08-NOV-17
MOISTURE-WT	**Soil**							
Batch R3873338								
WG2654793-3 DUP		**L2016410-1**						
% Moisture		9.82	10.3		%	4.7	20	02-NOV-17
WG2654793-2 LCS								
% Moisture			100.9		%		90-110	02-NOV-17
WG2654793-1 MB								
% Moisture			<0.10		%		0.1	02-NOV-17
PCB-511-WT	**Soil**							
Batch R3874775								
WG2653739-3 DUP		**WG2653739-5**						
Aroclor 1242		<0.010	<0.010	RPD-NA	ug/g	N/A	40	06-NOV-17
Aroclor 1248		<0.010	<0.010	RPD-NA	ug/g	N/A	40	06-NOV-17
Aroclor 1254		<0.010	<0.010	RPD-NA	ug/g	N/A	40	06-NOV-17
Aroclor 1260		<0.010	<0.010	RPD-NA	ug/g	N/A	40	06-NOV-17
WG2653739-2 LCS								
Aroclor 1242			79.1		%		60-140	06-NOV-17
Aroclor 1248			85.3		%		60-140	06-NOV-17
Aroclor 1254			86.5		%		60-140	06-NOV-17
Aroclor 1260			104.6		%		60-140	06-NOV-17
WG2653739-1 MB								
Aroclor 1242			<0.010		ug/g		0.01	06-NOV-17
Aroclor 1248			<0.010		ug/g		0.01	06-NOV-17
Aroclor 1254			<0.010		ug/g		0.01	06-NOV-17
Aroclor 1260			<0.010		ug/g		0.01	06-NOV-17
Surrogate: d14-Terphenyl			99.8		%		60-140	06-NOV-17
WG2653739-4 MS		**WG2653739-5**						
Aroclor 1242			80.8		%		60-140	06-NOV-17
Aroclor 1254			91.5		%		60-140	06-NOV-17
Aroclor 1260			109.2		%		60-140	06-NOV-17
VOC-511-HS-WT	**Soil**							

Quality Control Report

Workorder: L2015412 Report Date: 09-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3872812								
WG2653488-4 DUP		**WG2653488-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	02-NOV-17
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	02-NOV-17
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	02-NOV-17
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	02-NOV-17
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	02-NOV-17
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	02-NOV-17
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	02-NOV-17
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	02-NOV-17
Styrene		<0.050	<0.050		ug/g			02-NOV-17

Quality Control Report

Workorder: L2015412 Report Date: 09-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3872812								
WG2653488-4 DUP		**WG2653488-3**						
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	02-NOV-17
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	02-NOV-17
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	02-NOV-17
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	02-NOV-17
WG2653488-2 LCS								
1,1,1,2-Tetrachloroethane			101.2		%		60-130	02-NOV-17
1,1,2,2-Tetrachloroethane			103.9		%		60-130	02-NOV-17
1,1,1-Trichloroethane			100.5		%		60-130	02-NOV-17
1,1,2-Trichloroethane			106.0		%		60-130	02-NOV-17
1,1-Dichloroethane			102.5		%		60-130	02-NOV-17
1,1-Dichloroethylene			90.3		%		60-130	02-NOV-17
1,2-Dibromoethane			106.3		%		70-130	02-NOV-17
1,2-Dichlorobenzene			103.9		%		70-130	02-NOV-17
1,2-Dichloroethane			109.8		%		60-130	02-NOV-17
1,2-Dichloropropane			107.1		%		70-130	02-NOV-17
1,3-Dichlorobenzene			101.0		%		70-130	02-NOV-17
1,4-Dichlorobenzene			104.4		%		70-130	02-NOV-17
Acetone			121.1		%		60-140	02-NOV-17
Benzene			103.3		%		70-130	02-NOV-17
Bromodichloromethane			102.8		%		50-140	02-NOV-17
Bromoform			102.6		%		70-130	02-NOV-17
Bromomethane			96.7		%		50-140	02-NOV-17
Carbon tetrachloride			98.6		%		70-130	02-NOV-17
Chlorobenzene			102.3		%		70-130	02-NOV-17
Chloroform			105.1		%		70-130	02-NOV-17
cis-1,2-Dichloroethylene			103.0		%		70-130	02-NOV-17
cis-1,3-Dichloropropene			111.0		%		70-130	02-NOV-17
Dibromochloromethane			108.1		%		60-130	02-NOV-17
Dichlorodifluoromethane			49.1	MES	%		50-140	02-NOV-17

Quality Control Report

Workorder: L2015412 Report Date: 09-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3872812								
WG2653488-2 LCS								
Ethylbenzene			95.0		%		70-130	02-NOV-17
n-Hexane			96.5		%		70-130	02-NOV-17
Methylene Chloride			108.5		%		70-130	02-NOV-17
MTBE			99.5		%		70-130	02-NOV-17
m+p-Xylenes			98.5		%		70-130	02-NOV-17
Methyl Ethyl Ketone			115.0		%		60-140	02-NOV-17
Methyl Isobutyl Ketone			113.9		%		60-140	02-NOV-17
o-Xylene			103.7		%		70-130	02-NOV-17
Styrene			104.8		%		70-130	02-NOV-17
Tetrachloroethylene			96.7		%		60-130	02-NOV-17
Toluene			97.2		%		70-130	02-NOV-17
trans-1,2-Dichloroethylene			101.5		%		60-130	02-NOV-17
trans-1,3-Dichloropropene			108.6		%		70-130	02-NOV-17
Trichloroethylene			102.1		%		60-130	02-NOV-17
Trichlorofluoromethane			94.9		%		50-140	02-NOV-17
Vinyl chloride			86.3		%		60-140	02-NOV-17
WG2653488-1 MB								
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	02-NOV-17
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	02-NOV-17
1,1,1-Trichloroethane			<0.050		ug/g		0.05	02-NOV-17
1,1,2-Trichloroethane			<0.050		ug/g		0.05	02-NOV-17
1,1-Dichloroethane			<0.050		ug/g		0.05	02-NOV-17
1,1-Dichloroethylene			<0.050		ug/g		0.05	02-NOV-17
1,2-Dibromoethane			<0.050		ug/g		0.05	02-NOV-17
1,2-Dichlorobenzene			<0.050		ug/g		0.05	02-NOV-17
1,2-Dichloroethane			<0.050		ug/g		0.05	02-NOV-17
1,2-Dichloropropane			<0.050		ug/g		0.05	02-NOV-17
1,3-Dichlorobenzene			<0.050		ug/g		0.05	02-NOV-17
1,4-Dichlorobenzene			<0.050		ug/g		0.05	02-NOV-17
Acetone			<0.50		ug/g		0.5	02-NOV-17
Benzene			<0.0068		ug/g		0.0068	02-NOV-17
Bromodichloromethane			<0.050		ug/g		0.05	02-NOV-17
Bromoform			<0.050		ug/g		0.05	02-NOV-17
Bromomethane			<0.050		ug/g		0.05	02-NOV-17

Quality Control Report

Workorder: L2015412 Report Date: 09-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3872812								
WG2653488-1 MB								
Carbon tetrachloride			<0.050		ug/g		0.05	02-NOV-17
Chlorobenzene			<0.050		ug/g		0.05	02-NOV-17
Chloroform			<0.050		ug/g		0.05	02-NOV-17
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	02-NOV-17
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	02-NOV-17
Dibromochloromethane			<0.050		ug/g		0.05	02-NOV-17
Dichlorodifluoromethane			<0.050		ug/g		0.05	02-NOV-17
Ethylbenzene			<0.018		ug/g		0.018	02-NOV-17
n-Hexane			<0.050		ug/g		0.05	02-NOV-17
Methylene Chloride			<0.050		ug/g		0.05	02-NOV-17
MTBE			<0.050		ug/g		0.05	02-NOV-17
m+p-Xylenes			<0.030		ug/g		0.03	02-NOV-17
Methyl Ethyl Ketone			<0.50		ug/g		0.5	02-NOV-17
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	02-NOV-17
o-Xylene			<0.020		ug/g		0.02	02-NOV-17
Styrene			<0.050		ug/g		0.05	02-NOV-17
Tetrachloroethylene			<0.050		ug/g		0.05	02-NOV-17
Toluene			<0.080		ug/g		0.08	02-NOV-17
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	02-NOV-17
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	02-NOV-17
Trichloroethylene			<0.010		ug/g		0.01	02-NOV-17
Trichlorofluoromethane			<0.050		ug/g		0.05	02-NOV-17
Vinyl chloride			<0.020		ug/g		0.02	02-NOV-17
Surrogate: 1,4-Difluorobenzene			109.8		%		50-140	02-NOV-17
Surrogate: 4-Bromofluorobenzene			105.9		%		50-140	02-NOV-17
WG2653488-5 MS		**WG2653488-3**						
1,1,1,2-Tetrachloroethane			102.8		%		50-140	02-NOV-17
1,1,2,2-Tetrachloroethane			108.4		%		50-140	02-NOV-17
1,1,1-Trichloroethane			100.8		%		50-140	02-NOV-17
1,1,2-Trichloroethane			109.3		%		50-140	02-NOV-17
1,1-Dichloroethane			103.3		%		50-140	02-NOV-17
1,1-Dichloroethylene			89.9		%		50-140	02-NOV-17
1,2-Dibromoethane			110.4		%		50-140	02-NOV-17
1,2-Dichlorobenzene			105.6		%		50-140	02-NOV-17

Quality Control Report

Workorder: L2015412 Report Date: 09-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3872812								
WG2653488-5 MS		**WG2653488-3**						
1,2-Dichloroethane			112.8		%		50-140	02-NOV-17
1,2-Dichloropropane			108.6		%		50-140	02-NOV-17
1,3-Dichlorobenzene			100.7		%		50-140	02-NOV-17
1,4-Dichlorobenzene			104.1		%		50-140	02-NOV-17
Acetone			122.2		%		50-140	02-NOV-17
Benzene			104.1		%		50-140	02-NOV-17
Bromodichloromethane			104.7		%		50-140	02-NOV-17
Bromoform			105.8		%		50-140	02-NOV-17
Bromomethane			96.0		%		50-140	02-NOV-17
Carbon tetrachloride			98.6		%		50-140	02-NOV-17
Chlorobenzene			103.5		%		50-140	02-NOV-17
Chloroform			106.5		%		50-140	02-NOV-17
cis-1,2-Dichloroethylene			104.1		%		50-140	02-NOV-17
cis-1,3-Dichloropropene			111.4		%		50-140	02-NOV-17
Dibromochloromethane			111.3		%		50-140	02-NOV-17
Dichlorodifluoromethane			49.2	MES	%		50-140	02-NOV-17
Ethylbenzene			95.1		%		50-140	02-NOV-17
n-Hexane			96.5		%		50-140	02-NOV-17
Methylene Chloride			109.7		%		50-140	02-NOV-17
MTBE			98.7		%		50-140	02-NOV-17
m+p-Xylenes			98.4		%		50-140	02-NOV-17
Methyl Ethyl Ketone			120.9		%		50-140	02-NOV-17
Methyl Isobutyl Ketone			118.8		%		50-140	02-NOV-17
o-Xylene			104.3		%		50-140	02-NOV-17
Styrene			105.6		%		50-140	02-NOV-17
Tetrachloroethylene			96.4		%		50-140	02-NOV-17
Toluene			97.8		%		50-140	02-NOV-17
trans-1,2-Dichloroethylene			101.1		%		50-140	02-NOV-17
trans-1,3-Dichloropropene			109.4		%		50-140	02-NOV-17
Trichloroethylene			102.3		%		50-140	02-NOV-17
Trichlorofluoromethane			94.7		%		50-140	02-NOV-17
Vinyl chloride			85.3		%		50-140	02-NOV-17

Quality Control Report

Workorder: L2015412 Report Date: 09-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch	**R3874287**							
WG2653746-4 DUP		**WG2653746-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	03-NOV-17
Benzene		0.0070	0.0070		ug/g	0.0	40	03-NOV-17
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	03-NOV-17
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	03-NOV-17
n-Hexane		0.083	0.084		ug/g	1.2	40	03-NOV-17
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
m+p-Xylenes		0.055	0.056		ug/g	2.2	40	03-NOV-17
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	03-NOV-17
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	03-NOV-17
o-Xylene		0.059	0.061		ug/g	2.5	40	03-NOV-17
Styrene		<0.050	<0.050		ug/g			03-NOV-17

Quality Control Report

Workorder: L2015412 Report Date: 09-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3874287								
WG2653746-4 DUP		**WG2653746-3**						
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	03-NOV-17
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	03-NOV-17
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	03-NOV-17
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-NOV-17
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	03-NOV-17
WG2653746-2 LCS								
1,1,1,2-Tetrachloroethane			99.6		%		60-130	03-NOV-17
1,1,2,2-Tetrachloroethane			107.9		%		60-130	03-NOV-17
1,1,1-Trichloroethane			94.2		%		60-130	03-NOV-17
1,1,2-Trichloroethane			107.1		%		60-130	03-NOV-17
1,1-Dichloroethane			96.8		%		60-130	03-NOV-17
1,1-Dichloroethylene			83.2		%		60-130	03-NOV-17
1,2-Dibromoethane			108.9		%		70-130	03-NOV-17
1,2-Dichlorobenzene			100.9		%		70-130	03-NOV-17
1,2-Dichloroethane			109.0		%		60-130	03-NOV-17
1,2-Dichloropropane			105.0		%		70-130	03-NOV-17
1,3-Dichlorobenzene			96.0		%		70-130	03-NOV-17
1,4-Dichlorobenzene			99.4		%		70-130	03-NOV-17
Acetone			117.2		%		60-140	03-NOV-17
Benzene			99.2		%		70-130	03-NOV-17
Bromodichloromethane			101.4		%		50-140	03-NOV-17
Bromoform			105.7		%		70-130	03-NOV-17
Bromomethane			90.3		%		50-140	03-NOV-17
Carbon tetrachloride			92.2		%		70-130	03-NOV-17
Chlorobenzene			99.2		%		70-130	03-NOV-17
Chloroform			100.8		%		70-130	03-NOV-17
cis-1,2-Dichloroethylene			100.4		%		70-130	03-NOV-17
cis-1,3-Dichloropropene			104.1		%		70-130	03-NOV-17
Dibromochloromethane			108.4		%		60-130	03-NOV-17
Dichlorodifluoromethane			51.4		%		50-140	03-NOV-17

Quality Control Report

Workorder: L2015412 Report Date: 09-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3874287								
WG2653746-2 LCS								
Ethylbenzene			91.7		%		70-130	03-NOV-17
n-Hexane			89.2		%		70-130	03-NOV-17
Methylene Chloride			103.5		%		70-130	03-NOV-17
MTBE			96.1		%		70-130	03-NOV-17
m+p-Xylenes			94.0		%		70-130	03-NOV-17
Methyl Ethyl Ketone			118.7		%		60-140	03-NOV-17
Methyl Isobutyl Ketone			114.7		%		60-140	03-NOV-17
o-Xylene			94.2		%		70-130	03-NOV-17
Styrene			96.7		%		70-130	03-NOV-17
Tetrachloroethylene			91.2		%		60-130	03-NOV-17
Toluene			93.6		%		70-130	03-NOV-17
trans-1,2-Dichloroethylene			96.1		%		60-130	03-NOV-17
trans-1,3-Dichloropropene			103.1		%		70-130	03-NOV-17
Trichloroethylene			98.5		%		60-130	03-NOV-17
Trichlorofluoromethane			88.1		%		50-140	03-NOV-17
Vinyl chloride			80.6		%		60-140	03-NOV-17
WG2653746-1 MB								
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	03-NOV-17
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	03-NOV-17
1,1,1-Trichloroethane			<0.050		ug/g		0.05	03-NOV-17
1,1,2-Trichloroethane			<0.050		ug/g		0.05	03-NOV-17
1,1-Dichloroethane			<0.050		ug/g		0.05	03-NOV-17
1,1-Dichloroethylene			<0.050		ug/g		0.05	03-NOV-17
1,2-Dibromoethane			<0.050		ug/g		0.05	03-NOV-17
1,2-Dichlorobenzene			<0.050		ug/g		0.05	03-NOV-17
1,2-Dichloroethane			<0.050		ug/g		0.05	03-NOV-17
1,2-Dichloropropane			<0.050		ug/g		0.05	03-NOV-17
1,3-Dichlorobenzene			<0.050		ug/g		0.05	03-NOV-17
1,4-Dichlorobenzene			<0.050		ug/g		0.05	03-NOV-17
Acetone			<0.50		ug/g		0.5	03-NOV-17
Benzene			<0.0068		ug/g		0.0068	03-NOV-17
Bromodichloromethane			<0.050		ug/g		0.05	03-NOV-17
Bromoform			<0.050		ug/g		0.05	03-NOV-17
Bromomethane			<0.050		ug/g		0.05	03-NOV-17

Quality Control Report

Workorder: L2015412 Report Date: 09-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3874287								
WG2653746-1 MB								
Carbon tetrachloride			<0.050		ug/g		0.05	03-NOV-17
Chlorobenzene			<0.050		ug/g		0.05	03-NOV-17
Chloroform			<0.050		ug/g		0.05	03-NOV-17
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	03-NOV-17
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	03-NOV-17
Dibromochloromethane			<0.050		ug/g		0.05	03-NOV-17
Dichlorodifluoromethane			<0.050		ug/g		0.05	03-NOV-17
Ethylbenzene			<0.018		ug/g		0.018	03-NOV-17
n-Hexane			<0.050		ug/g		0.05	03-NOV-17
Methylene Chloride			<0.050		ug/g		0.05	03-NOV-17
MTBE			<0.050		ug/g		0.05	03-NOV-17
m+p-Xylenes			<0.030		ug/g		0.03	03-NOV-17
Methyl Ethyl Ketone			<0.50		ug/g		0.5	03-NOV-17
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	03-NOV-17
o-Xylene			<0.020		ug/g		0.02	03-NOV-17
Styrene			<0.050		ug/g		0.05	03-NOV-17
Tetrachloroethylene			<0.050		ug/g		0.05	03-NOV-17
Toluene			<0.080		ug/g		0.08	03-NOV-17
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	03-NOV-17
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	03-NOV-17
Trichloroethylene			<0.010		ug/g		0.01	03-NOV-17
Trichlorofluoromethane			<0.050		ug/g		0.05	03-NOV-17
Vinyl chloride			<0.020		ug/g		0.02	03-NOV-17
Surrogate: 1,4-Difluorobenzene			101.1		%		50-140	03-NOV-17
Surrogate: 4-Bromofluorobenzene			104.9		%		50-140	03-NOV-17
WG2653746-5 MS		**WG2653746-3**						
1,1,1,2-Tetrachloroethane			100.3		%		50-140	03-NOV-17
1,1,2,2-Tetrachloroethane			109.1		%		50-140	03-NOV-17
1,1,1-Trichloroethane			94.8		%		50-140	03-NOV-17
1,1,2-Trichloroethane			113.0		%		50-140	03-NOV-17
1,1-Dichloroethane			98.6		%		50-140	03-NOV-17
1,1-Dichloroethylene			83.9		%		50-140	03-NOV-17
1,2-Dibromoethane			113.9		%		50-140	03-NOV-17
1,2-Dichlorobenzene			98.5		%		50-140	03-NOV-17

Quality Control Report

Workorder: L2015412 Report Date: 09-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3874287								
WG2653746-5 MS		**WG2653746-3**						
1,2-Dichloroethane			113.8		%		50-140	03-NOV-17
1,2-Dichloropropane			107.1		%		50-140	03-NOV-17
1,3-Dichlorobenzene			92.6		%		50-140	03-NOV-17
1,4-Dichlorobenzene			95.4		%		50-140	03-NOV-17
Acetone			115.7		%		50-140	03-NOV-17
Benzene			100.2		%		50-140	03-NOV-17
Bromodichloromethane			104.5		%		50-140	03-NOV-17
Bromoform			107.7		%		50-140	03-NOV-17
Bromomethane			92.5		%		50-140	03-NOV-17
Carbon tetrachloride			91.7		%		50-140	03-NOV-17
Chlorobenzene			98.1		%		50-140	03-NOV-17
Chloroform			102.1		%		50-140	03-NOV-17
cis-1,2-Dichloroethylene			101.8		%		50-140	03-NOV-17
cis-1,3-Dichloropropene			103.5		%		50-140	03-NOV-17
Dibromochloromethane			112.0		%		50-140	03-NOV-17
Dichlorodifluoromethane			58.2		%		50-140	03-NOV-17
Ethylbenzene			91.1		%		50-140	03-NOV-17
n-Hexane			95.5		%		50-140	03-NOV-17
Methylene Chloride			110.0		%		50-140	03-NOV-17
MTBE			97.0		%		50-140	03-NOV-17
m+p-Xylenes			92.2		%		50-140	03-NOV-17
Methyl Ethyl Ketone			130.3		%		50-140	03-NOV-17
Methyl Isobutyl Ketone			120.2		%		50-140	03-NOV-17
o-Xylene			93.7		%		50-140	03-NOV-17
Styrene			94.3		%		50-140	03-NOV-17
Tetrachloroethylene			88.3		%		50-140	03-NOV-17
Toluene			95.3		%		50-140	03-NOV-17
trans-1,2-Dichloroethylene			95.4		%		50-140	03-NOV-17
trans-1,3-Dichloropropene			103.9		%		50-140	03-NOV-17
Trichloroethylene			97.3		%		50-140	03-NOV-17
Trichlorofluoromethane			90.2		%		50-140	03-NOV-17
Vinyl chloride			83.4		%		50-140	03-NOV-17

Quality Control Report

Workorder: L2015412 Report Date: 09-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9
Contact: MICHAEL SHIRY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

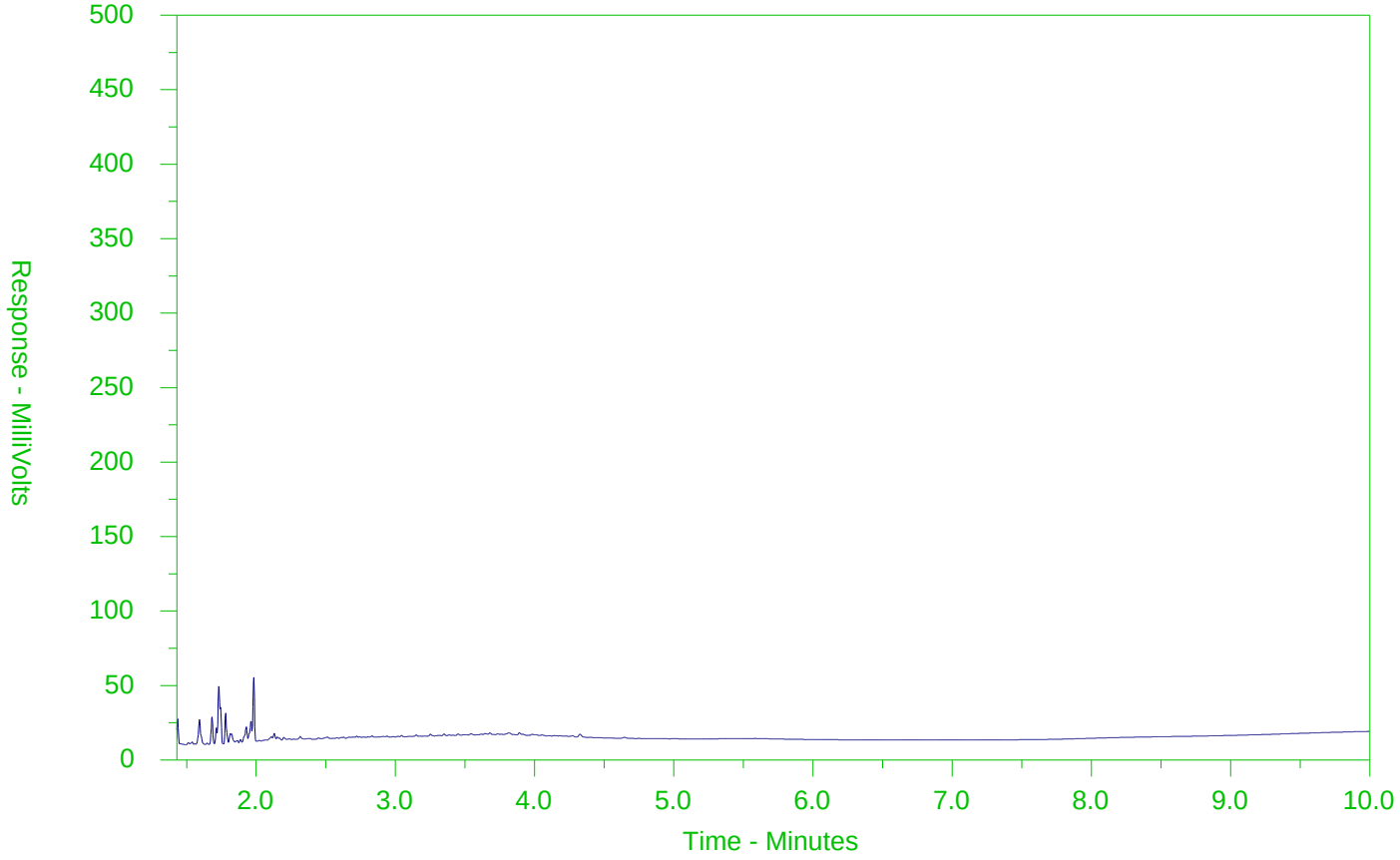
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2015412-1
Client Sample ID: MW17-109S-13.25



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

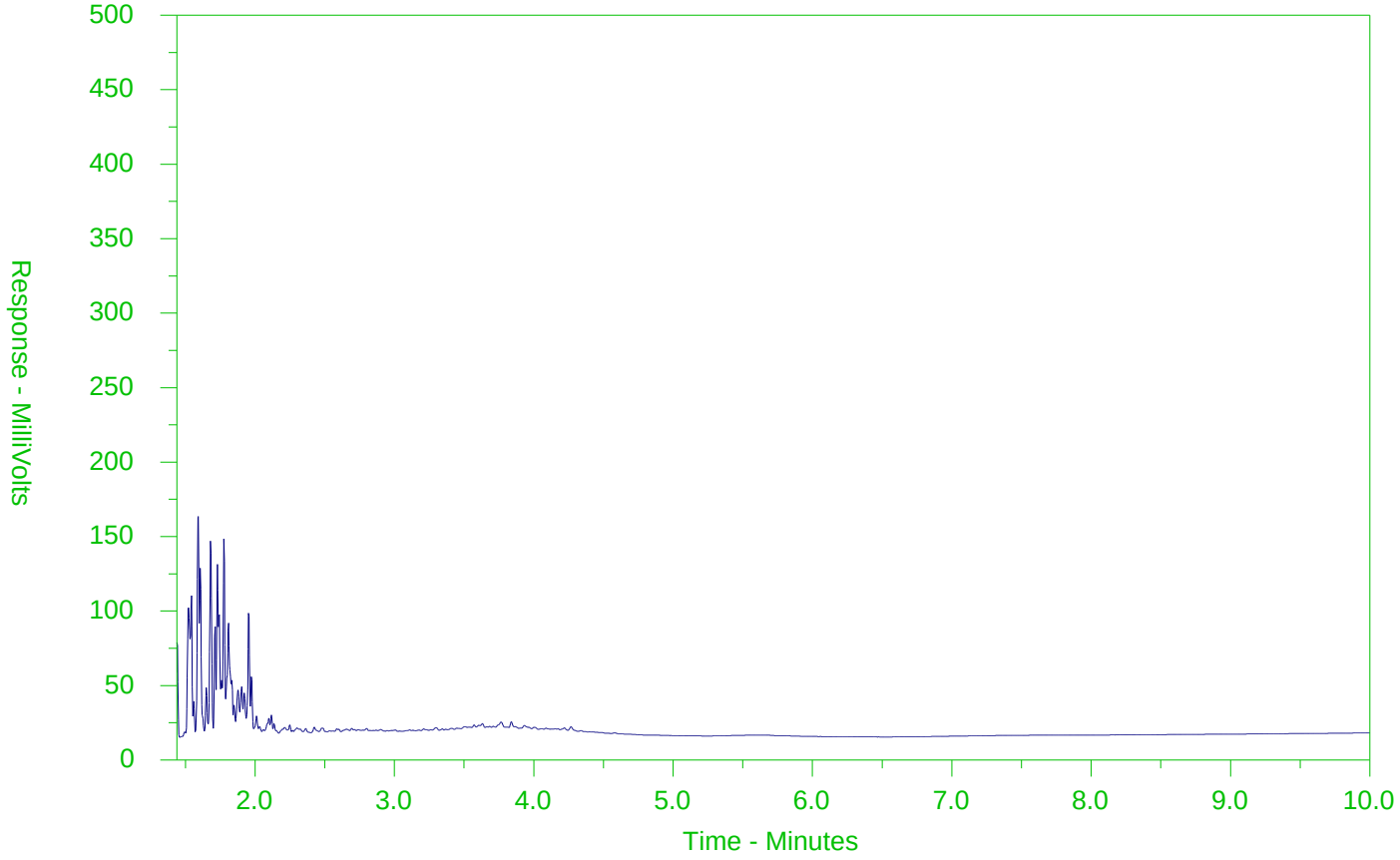
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2015412-2
Client Sample ID: MW17-105S/D-13.25



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

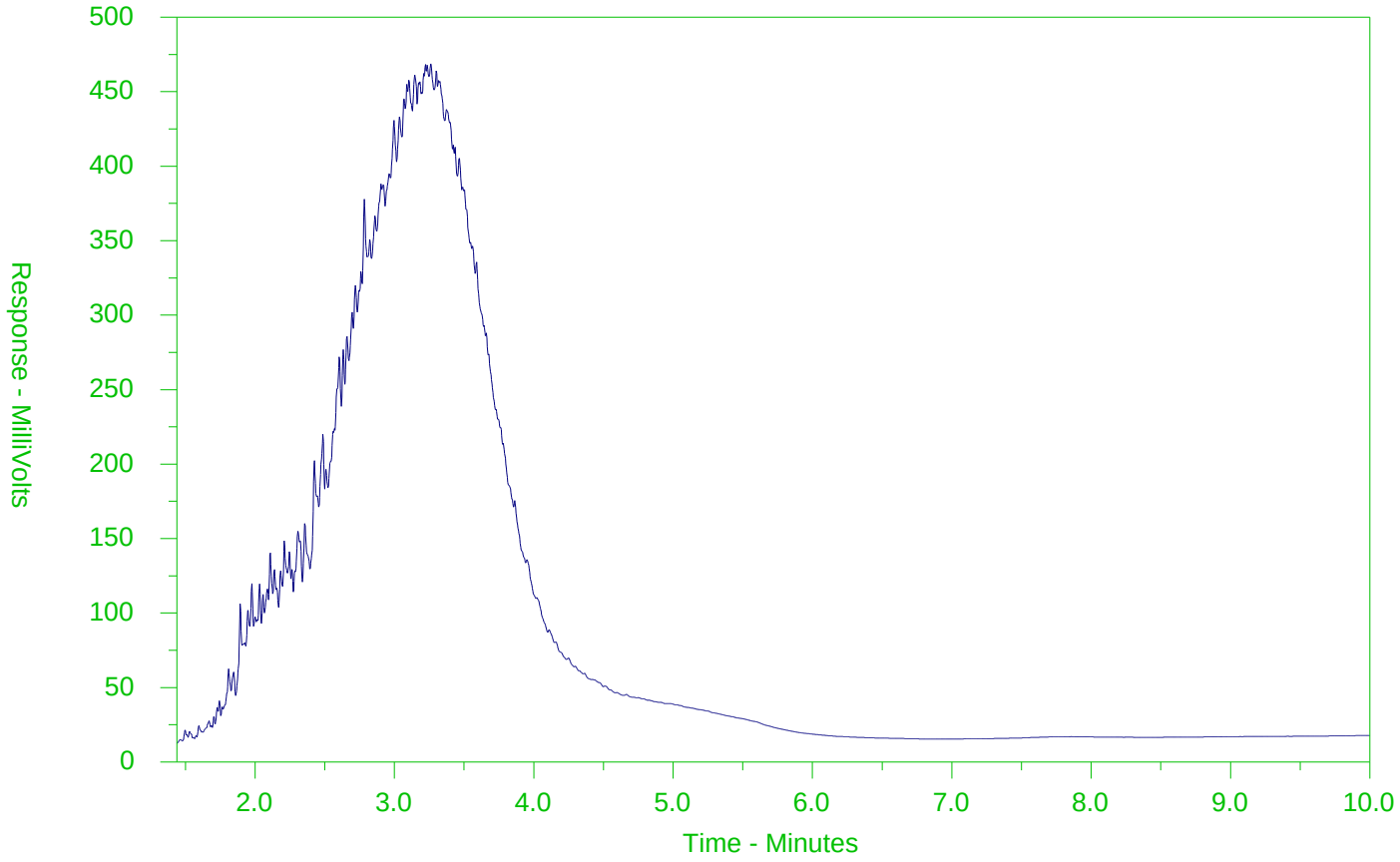
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2015412-3
Client Sample ID: MW17-101S/D-8.5



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

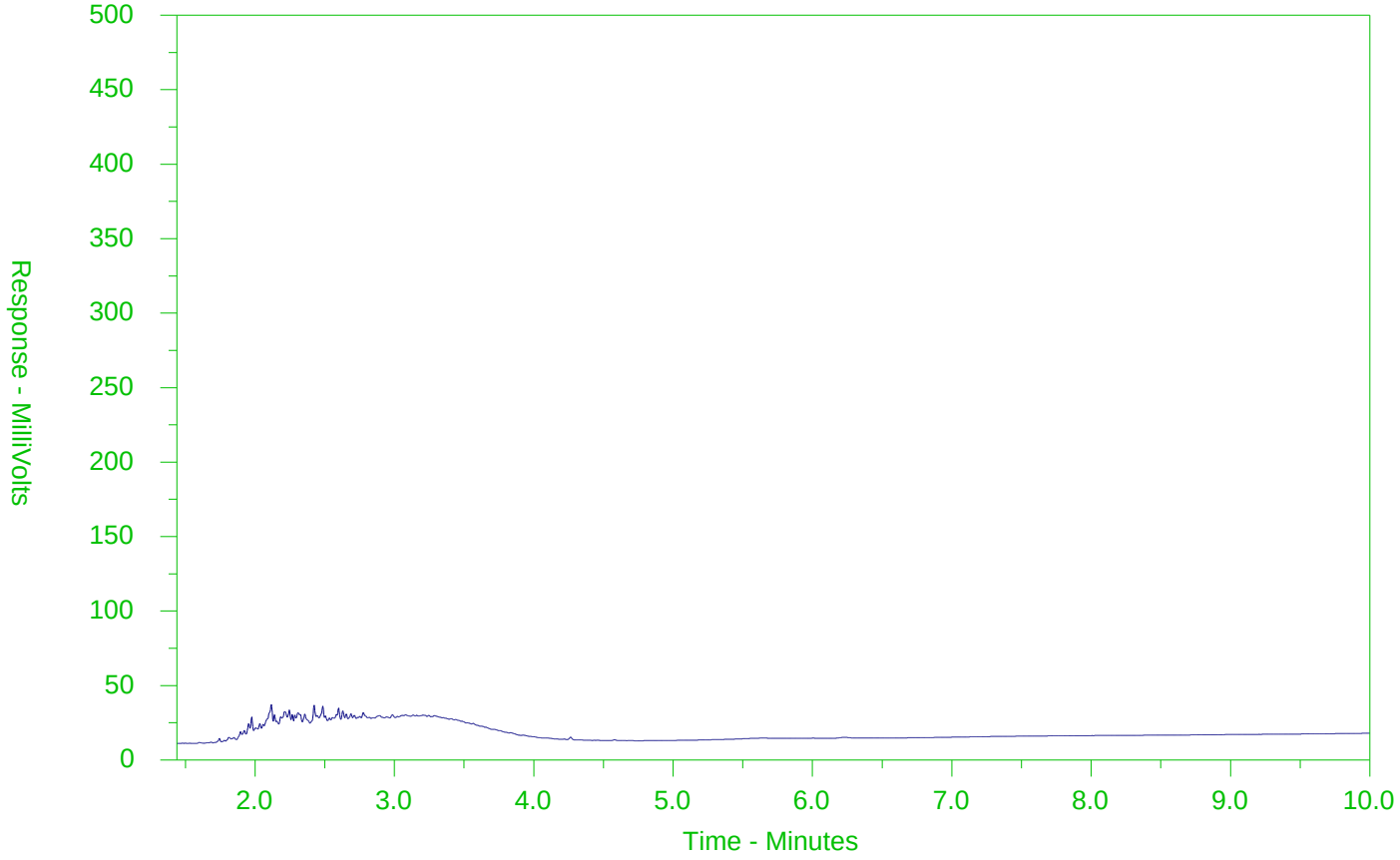
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2015412-4
Client Sample ID: MW17-104S/D-9



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

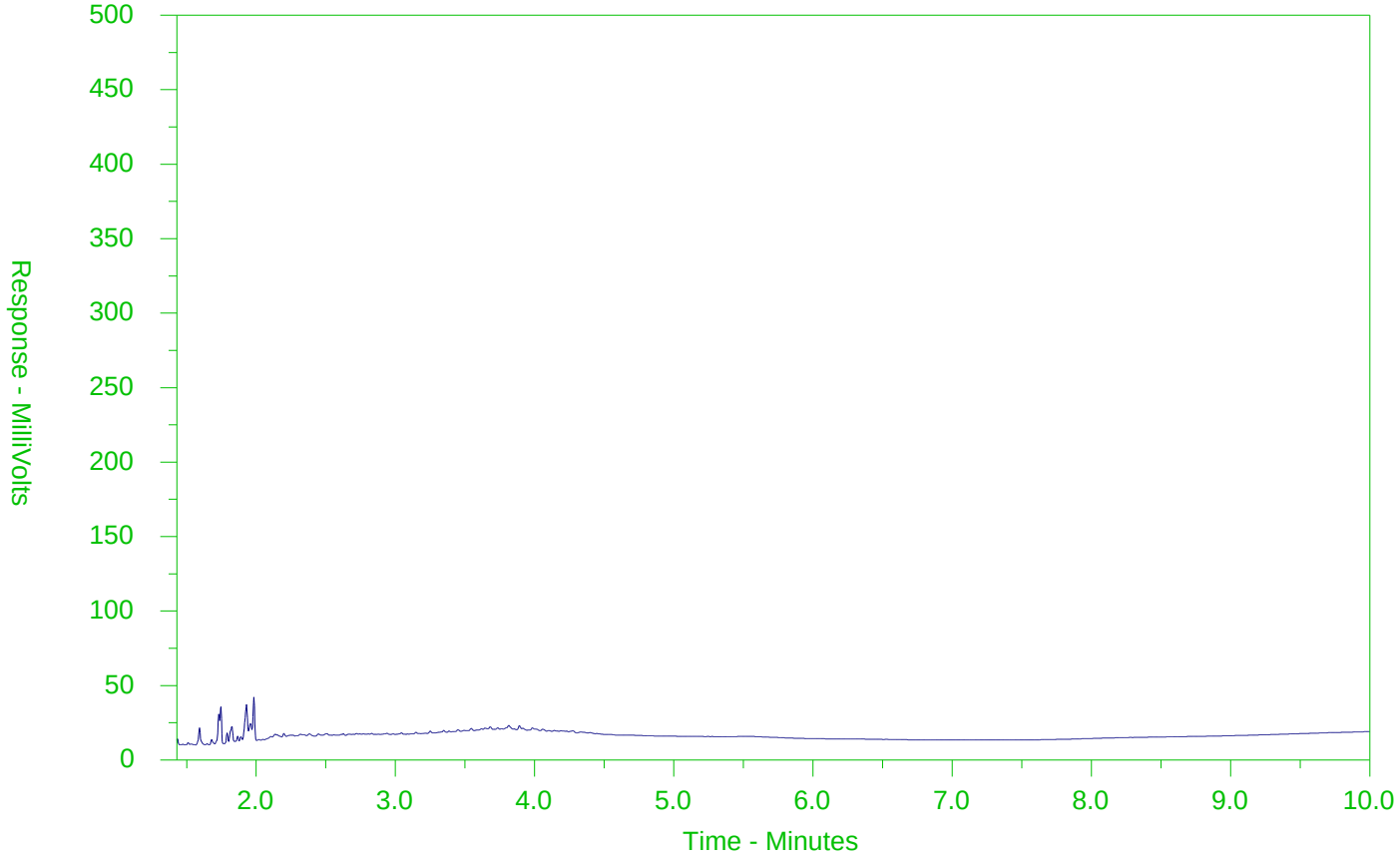
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2015412-5
Client Sample ID: MW17-104S/D-16.8



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

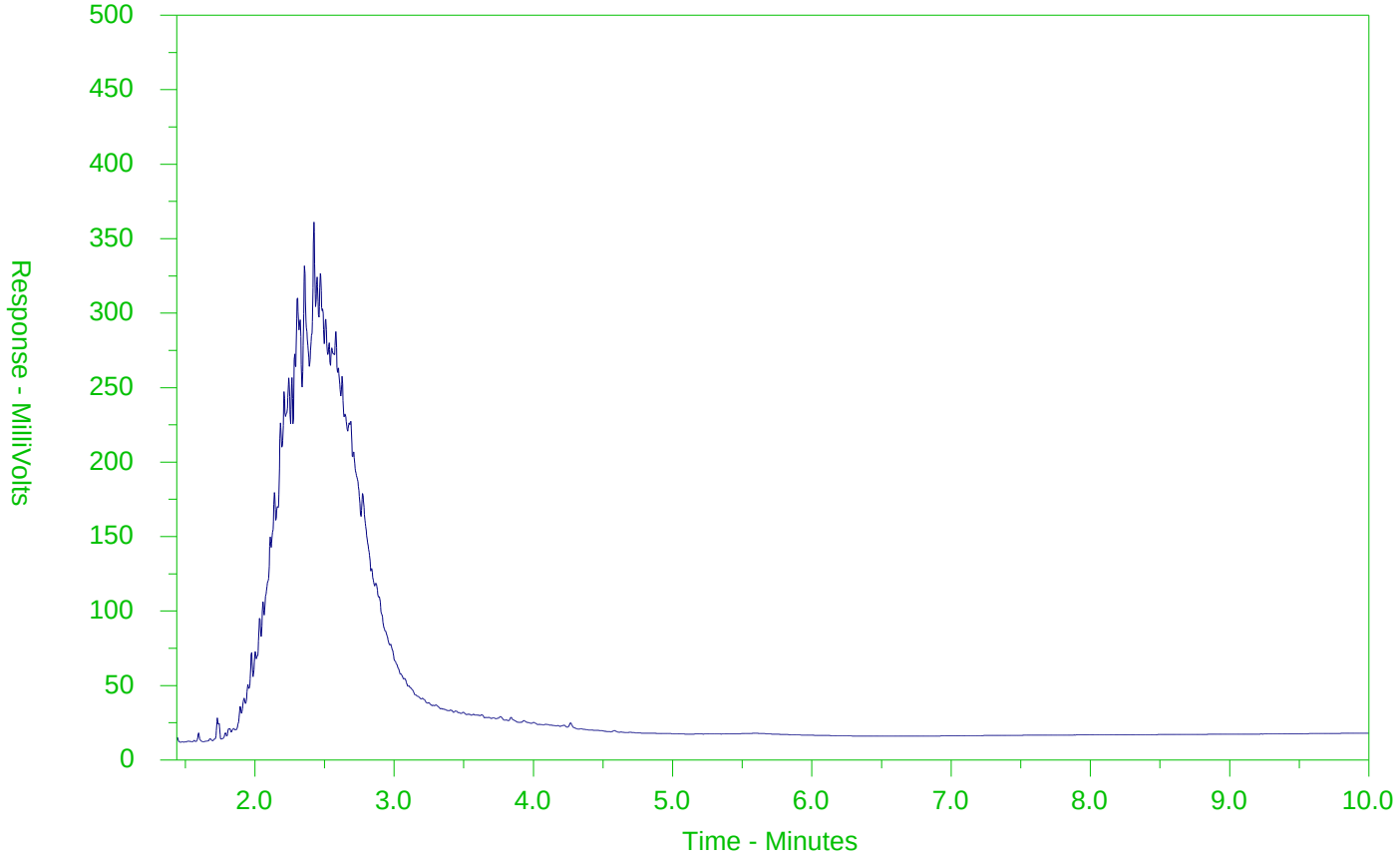
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2015412-6
Client Sample ID: MW17-104S/D-22



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2015412-COFC

COC Number: 15 - 613138

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	CH2M
Contact:	M. Shim
Phone:	
Company address below will appear on the final report	
Street:	
City/Province:	
Postal Code:	
Invoice To	Same as Report To ☐ YES ☒ NO
	Copy of Invoice with Report ☐ YES ☒ NO
Company:	
Contact:	Acct Payable

Project Information

ALS Account # / Quote #:	Q62156
Job #:	694757
PO / AFE:	
LSD:	
ALS Lab Work Order # (lab use only)	L2015412

Report Format / Distribution

Select Report Format: ☒ PDF ☒ EXCEL ☒ EDD (DIGITAL)

Quality Control (QC) Report with Report ☒ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: Dirk, Michael

Email 2: Kyle, Tanya

Email 3:

Invoice Distribution

Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax:

Email 2:

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Contact: Matthy

Sampler: M. Shim

Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply

Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
4 day [P4]	☐	1 Business day [E1]	☐
3 day [P3]	☐	Same Day, Weekend or Statutory holiday [E0]	☐
2 day [P2]	☐		

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	O.Reg PHC + VOC	O.Reg PCB	Number of Containers
	MW17-109S-13.25	27-Oct-17	1235	Rock	X	X	3
	MW17-105S/D-13.25	↓	1245	↓	X		3
	MW17-101S/D-8.5		1255		X		3
	MW17-104S/D-9		1305		X		3
	MW17-104S/D-16.8		1315		X		3
	MW17-104S/D-22		1320		X		3

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human drinking water use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☒ Custody seal intact Yes ☒ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
-0.4°			0.1		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: M. Shim	Date: 2017/10/30	Time: 545	Received by:	Date: Oct 30/17	Time: 9:00	Received by:	Date: 30 OCT 17	Time: 1500

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

AIC

CH2M HILL CANADA LIMITED
ATTN: MICHAEL SHIRY
72 VICTORIA ST SOUTH
SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 03-NOV-17
Report Date: 13-NOV-17 12:19 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2017929

Project P.O. #: NOT SUBMITTED
Job Reference: 694757
C of C Numbers: 17-617075, 17-617076, 17-617082
Legal Site Desc:

Mathy Mahadeva
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-1	MW17-108S									
Sampled By:	CLIENT on 31-OCT-17 @ 11:05									
Matrix:	WATER						#1			
Physical Tests										
	Conductivity	1.08		0.0030	mS/cm	07-NOV-17				
	pH	7.32		0.10	pH units	04-NOV-17				
Anions and Nutrients										
	Chloride (Cl)	9.00		0.50	mg/L	07-NOV-17	790			
Cyanides										
	Cyanide, Weak Acid Diss	<20	DLM	20	ug/L	06-NOV-17	52			
Dissolved Metals										
	Dissolved Mercury Filtration Location	FIELD			No Unit	06-NOV-17				
	Dissolved Metals Filtration Location	FIELD			No Unit	06-NOV-17				
	Antimony (Sb)-Dissolved	0.10		0.10	ug/L	07-NOV-17	6			
	Arsenic (As)-Dissolved	1.13		0.10	ug/L	07-NOV-17	25			
	Barium (Ba)-Dissolved	184		0.10	ug/L	07-NOV-17	1000			
	Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	07-NOV-17	4			
	Boron (B)-Dissolved	113		10	ug/L	07-NOV-17	5000			
	Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	07-NOV-17	2.1			
	Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	50			
	Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	07-NOV-17	3.8			
	Copper (Cu)-Dissolved	<0.20		0.20	ug/L	07-NOV-17	69			
	Lead (Pb)-Dissolved	<0.050		0.050	ug/L	07-NOV-17	10			
	Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	06-NOV-17	0.1			
	Molybdenum (Mo)-Dissolved	0.610		0.050	ug/L	07-NOV-17	70			
	Nickel (Ni)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	100			
	Selenium (Se)-Dissolved	0.201		0.050	ug/L	07-NOV-17	10			
	Silver (Ag)-Dissolved	<0.050		0.050	ug/L	07-NOV-17	1.2			
	Sodium (Na)-Dissolved	9670		500	ug/L	07-NOV-17	490000			
	Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	07-NOV-17	2			
	Uranium (U)-Dissolved	0.569		0.010	ug/L	07-NOV-17	20			
	Vanadium (V)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	6.2			
	Zinc (Zn)-Dissolved	1.3		1.0	ug/L	07-NOV-17	890			
Speciated Metals										
	Chromium, Hexavalent	<1.0		1.0	ug/L	09-NOV-17	25			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	07-NOV-17	2700			
	Benzene	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	07-NOV-17	16			
	Bromoform	<5.0		5.0	ug/L	07-NOV-17	5			
	Bromomethane	<0.50		0.50	ug/L	07-NOV-17	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	07-NOV-17	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	07-NOV-17	30			
	Dibromochloromethane	<2.0		2.0	ug/L	07-NOV-17	25			
	Chloroform	<1.0		1.0	ug/L	07-NOV-17	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	07-NOV-17	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	07-NOV-17	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	07-NOV-17	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	07-NOV-17	0.5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-1	MW17-108S									
Sampled By:	CLIENT on 31-OCT-17 @ 11:05									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Dichlorodifluoromethane	<2.0		2.0	ug/L	07-NOV-17	590			
	1,1-Dichloroethane	0.74		0.50	ug/L	07-NOV-17	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	07-NOV-17	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	07-NOV-17	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	07-NOV-17	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	07-NOV-17	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	07-NOV-17	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	07-NOV-17	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	07-NOV-17				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	07-NOV-17				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	07-NOV-17	2.4			
	n-Hexane	<0.50		0.50	ug/L	07-NOV-17	5			
	Methyl Ethyl Ketone	<20		20	ug/L	07-NOV-17	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	07-NOV-17	640			
	MTBE	<2.0		2.0	ug/L	07-NOV-17	15			
	Styrene	<0.50		0.50	ug/L	07-NOV-17	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	07-NOV-17	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Toluene	<0.50		0.50	ug/L	07-NOV-17	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	07-NOV-17	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	07-NOV-17	150			
	Vinyl chloride	<0.50		0.50	ug/L	07-NOV-17	0.5			
	o-Xylene	<0.30		0.30	ug/L	07-NOV-17				
	m+p-Xylenes	<0.40		0.40	ug/L	07-NOV-17				
	Xylenes (Total)	<0.50		0.50	ug/L	07-NOV-17	72			
	Surrogate: 4-Bromofluorobenzene	96.4		70-130	%	07-NOV-17				
	Surrogate: 1,4-Difluorobenzene	97.7		70-130	%	07-NOV-17				
Hydrocarbons										
	F1 (C6-C10)	<25		25	ug/L	07-NOV-17	420			
	F1-BTEX	<25		25	ug/L	10-NOV-17	420			
	F2 (C10-C16)	<100		100	ug/L	08-NOV-17	150			
	F2-Naphth	<100		100	ug/L	10-NOV-17				
	F3 (C16-C34)	470		250	ug/L	08-NOV-17	500			
	F3-PAH	470		250	ug/L	10-NOV-17				
	F4 (C34-C50)	<250		250	ug/L	08-NOV-17	500			
	Total Hydrocarbons (C6-C50)	470		370	ug/L	10-NOV-17				
	Chrom. to baseline at nC50	YES			No Unit	08-NOV-17				
	Surrogate: 2-Bromobenzotrifluoride	78.2		60-140	%	08-NOV-17				
	Surrogate: 3,4-Dichlorotoluene	96.0		60-140	%	07-NOV-17				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.035	DLQ	0.035	ug/L	10-NOV-17	4.1			
	Acenaphthylene	<0.020		0.020	ug/L	10-NOV-17	1			

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T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-1	MW17-108S									
Sampled By:	CLIENT on 31-OCT-17 @ 11:05									
Matrix:	WATER						#1			
Polycyclic Aromatic Hydrocarbons										
	Anthracene	<0.020		0.020	ug/L	10-NOV-17	1			
	Benzo(a)anthracene	<0.020		0.020	ug/L	10-NOV-17	1			
	Benzo(a)pyrene	<0.010		0.010	ug/L	10-NOV-17	0.01			
	Benzo(b)fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Benzo(g,h,i)perylene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	Benzo(k)fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Chrysene	0.022		0.020	ug/L	10-NOV-17	0.1			
	Dibenzo(ah)anthracene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	Fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.41			
	Fluorene	0.136		0.020	ug/L	10-NOV-17	120			
	Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	1+2-Methylnaphthalenes	<0.028		0.028	ug/L	10-NOV-17	3.2			
	1-Methylnaphthalene	0.022		0.020	ug/L	10-NOV-17	3.2			
	2-Methylnaphthalene	<0.020		0.020	ug/L	10-NOV-17	3.2			
	Naphthalene	<0.050		0.050	ug/L	10-NOV-17	7			
	Phenanthrene	0.025		0.020	ug/L	10-NOV-17	1			
	Pyrene	0.047		0.020	ug/L	10-NOV-17	4.1			
	Surrogate: d10-Acenaphthene	72.4		60-140	%	10-NOV-17				
	Surrogate: d12-Chrysene	62.6		60-140	%	10-NOV-17				
	Surrogate: d8-Naphthalene	69.5		60-140	%	10-NOV-17				
	Surrogate: d10-Phenanthrene	83.3		60-140	%	10-NOV-17				
L2017929-2	DUP 1									
Sampled By:	CLIENT on 31-OCT-17									
Matrix:	WATER						#1			
Physical Tests										
	Conductivity	1.09		0.0030	mS/cm	07-NOV-17				
	pH	7.35		0.10	pH units	04-NOV-17				
Anions and Nutrients										
	Chloride (Cl)	8.92		0.50	mg/L	07-NOV-17	790			
Cyanides										
	Cyanide, Weak Acid Diss	<2.0		2.0	ug/L	06-NOV-17	52			
Dissolved Metals										
	Dissolved Mercury Filtration Location	FIELD			No Unit	06-NOV-17				
	Dissolved Metals Filtration Location	FIELD			No Unit	06-NOV-17				
	Antimony (Sb)-Dissolved	0.10		0.10	ug/L	07-NOV-17	6			
	Arsenic (As)-Dissolved	1.10		0.10	ug/L	07-NOV-17	25			
	Barium (Ba)-Dissolved	180		0.10	ug/L	07-NOV-17	1000			
	Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	07-NOV-17	4			
	Boron (B)-Dissolved	113		10	ug/L	07-NOV-17	5000			
	Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	07-NOV-17	2.1			
	Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	50			
	Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	07-NOV-17	3.8			
	Copper (Cu)-Dissolved	<0.20		0.20	ug/L	07-NOV-17	69			
	Lead (Pb)-Dissolved	<0.050		0.050	ug/L	07-NOV-17	10			
	Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	06-NOV-17				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-2	DUP 1									
Sampled By:	CLIENT on 31-OCT-17									
Matrix:	WATER						#1			
Dissolved Metals										
							0.1			
	Molybdenum (Mo)-Dissolved	0.594		0.050	ug/L	07-NOV-17	70			
	Nickel (Ni)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	100			
	Selenium (Se)-Dissolved	0.165		0.050	ug/L	07-NOV-17	10			
	Silver (Ag)-Dissolved	<0.050		0.050	ug/L	07-NOV-17	1.2			
	Sodium (Na)-Dissolved	9360		500	ug/L	07-NOV-17	490000			
	Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	07-NOV-17	2			
	Uranium (U)-Dissolved	0.557		0.010	ug/L	07-NOV-17	20			
	Vanadium (V)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	6.2			
	Zinc (Zn)-Dissolved	1.1		1.0	ug/L	07-NOV-17	890			
Speciated Metals										
	Chromium, Hexavalent	<1.0		1.0	ug/L	09-NOV-17	25			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	07-NOV-17	2700			
	Benzene	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	07-NOV-17	16			
	Bromoform	<5.0		5.0	ug/L	07-NOV-17	5			
	Bromomethane	<0.50		0.50	ug/L	07-NOV-17	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	07-NOV-17	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	07-NOV-17	30			
	Dibromochloromethane	<2.0		2.0	ug/L	07-NOV-17	25			
	Chloroform	<1.0		1.0	ug/L	07-NOV-17	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	07-NOV-17	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	07-NOV-17	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	07-NOV-17	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	07-NOV-17	590			
	1,1-Dichloroethane	0.72		0.50	ug/L	07-NOV-17	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	07-NOV-17	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	07-NOV-17	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	07-NOV-17	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	07-NOV-17	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	07-NOV-17	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	07-NOV-17	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	07-NOV-17				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	07-NOV-17				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	07-NOV-17	2.4			
	n-Hexane	<0.50		0.50	ug/L	07-NOV-17	5			
	Methyl Ethyl Ketone	<20		20	ug/L	07-NOV-17	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	07-NOV-17	640			
	MTBE	<2.0		2.0	ug/L	07-NOV-17	15			
	Styrene	<0.50		0.50	ug/L	07-NOV-17	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	07-NOV-17	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	07-NOV-17	0.5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
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T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-2	DUP 1									
Sampled By:	CLIENT on 31-OCT-17									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Tetrachloroethylene	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Toluene	<0.50		0.50	ug/L	07-NOV-17	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	07-NOV-17	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	07-NOV-17	150			
	Vinyl chloride	<0.50		0.50	ug/L	07-NOV-17	0.5			
	o-Xylene	<0.30		0.30	ug/L	07-NOV-17				
	m+p-Xylenes	<0.40		0.40	ug/L	07-NOV-17				
	Xylenes (Total)	<0.50		0.50	ug/L	07-NOV-17	72			
	Surrogate: 4-Bromofluorobenzene	96.8		70-130	%	07-NOV-17				
	Surrogate: 1,4-Difluorobenzene	98.1		70-130	%	07-NOV-17				
Hydrocarbons										
	F1 (C6-C10)	<25		25	ug/L	07-NOV-17	420			
	F1-BTEX	<25		25	ug/L	10-NOV-17	420			
	F2 (C10-C16)	<100		100	ug/L	08-NOV-17	150			
	F2-Naphth	<100		100	ug/L	10-NOV-17				
	F3 (C16-C34)	450		250	ug/L	08-NOV-17	500			
	F3-PAH	450		250	ug/L	10-NOV-17				
	F4 (C34-C50)	<250		250	ug/L	08-NOV-17	500			
	Total Hydrocarbons (C6-C50)	450		370	ug/L	10-NOV-17				
	Chrom. to baseline at nC50	YES			No Unit	08-NOV-17				
	Surrogate: 2-Bromobenzotrifluoride	83.3		60-140	%	08-NOV-17				
	Surrogate: 3,4-Dichlorotoluene	99.0		60-140	%	07-NOV-17				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.040	DLQ	0.040	ug/L	10-NOV-17	4.1			
	Acenaphthylene	<0.020		0.020	ug/L	10-NOV-17	1			
	Anthracene	0.023		0.020	ug/L	10-NOV-17	1			
	Benzo(a)anthracene	<0.020		0.020	ug/L	10-NOV-17	1			
	Benzo(a)pyrene	<0.010		0.010	ug/L	10-NOV-17	0.01			
	Benzo(b)fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Benzo(g,h,i)perylene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	Benzo(k)fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Chrysene	0.023		0.020	ug/L	10-NOV-17	0.1			
	Dibenzo(ah)anthracene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	Fluoranthene	0.022		0.020	ug/L	10-NOV-17	0.41			
	Fluorene	0.162		0.020	ug/L	10-NOV-17	120			
	Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	1+2-Methylnaphthalenes	0.048		0.028	ug/L	10-NOV-17	3.2			
	1-Methylnaphthalene	0.026		0.020	ug/L	10-NOV-17	3.2			
	2-Methylnaphthalene	0.023		0.020	ug/L	10-NOV-17	3.2			
	Naphthalene	<0.050		0.050	ug/L	10-NOV-17	7			
	Phenanthrene	0.030		0.020	ug/L	10-NOV-17	1			
	Pyrene	0.050		0.020	ug/L	10-NOV-17	4.1			
	Surrogate: d10-Acenaphthene	88.9		60-140	%	10-NOV-17				
	Surrogate: d12-Chrysene	72.4		60-140	%	10-NOV-17				

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T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-2	DUP 1									
Sampled By:	CLIENT on 31-OCT-17									
Matrix:	WATER						#1			
Polycyclic Aromatic Hydrocarbons										
	Surrogate: d8-Naphthalene	79.7		60-140	%	10-NOV-17				
	Surrogate: d10-Phenanthrene	101.9		60-140	%	10-NOV-17				
L2017929-3	MW17-105D									
Sampled By:	CLIENT on 31-OCT-17 @ 13:47									
Matrix:	WATER						#1			
Physical Tests										
	Conductivity	1.08		0.0030	mS/cm	07-NOV-17				
	pH	7.50		0.10	pH units	04-NOV-17				
Anions and Nutrients										
	Chloride (Cl)	60.3		0.50	mg/L	07-NOV-17	790			
Cyanides										
	Cyanide, Weak Acid Diss	<2.0		2.0	ug/L	06-NOV-17	52			
Dissolved Metals										
	Dissolved Mercury Filtration Location	FIELD			No Unit	06-NOV-17				
	Dissolved Metals Filtration Location	FIELD			No Unit	06-NOV-17				
	Antimony (Sb)-Dissolved	0.11		0.10	ug/L	07-NOV-17	6			
	Arsenic (As)-Dissolved	20.5		0.10	ug/L	07-NOV-17	25			
	Barium (Ba)-Dissolved	251		0.10	ug/L	07-NOV-17	1000			
	Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	07-NOV-17	4			
	Boron (B)-Dissolved	87		10	ug/L	07-NOV-17	5000			
	Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	07-NOV-17	2.1			
	Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	50			
	Cobalt (Co)-Dissolved	0.22		0.10	ug/L	07-NOV-17	3.8			
	Copper (Cu)-Dissolved	<0.20		0.20	ug/L	07-NOV-17	69			
	Lead (Pb)-Dissolved	0.342		0.050	ug/L	07-NOV-17	10			
	Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	06-NOV-17	0.1			
	Molybdenum (Mo)-Dissolved	3.54		0.050	ug/L	07-NOV-17	70			
	Nickel (Ni)-Dissolved	2.02		0.50	ug/L	07-NOV-17	100			
	Selenium (Se)-Dissolved	<0.050		0.050	ug/L	07-NOV-17	10			
	Silver (Ag)-Dissolved	<0.050		0.050	ug/L	07-NOV-17	1.2			
	Sodium (Na)-Dissolved	34800		500	ug/L	07-NOV-17	490000			
	Thallium (Tl)-Dissolved	0.021		0.010	ug/L	07-NOV-17	2			
	Uranium (U)-Dissolved	3.52		0.010	ug/L	07-NOV-17	20			
	Vanadium (V)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	6.2			
	Zinc (Zn)-Dissolved	28.6		1.0	ug/L	07-NOV-17	890			
Speciated Metals										
	Chromium, Hexavalent	<1.0		1.0	ug/L	09-NOV-17	25			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	07-NOV-17	2700			
	Benzene	3.05		0.50	ug/L	07-NOV-17	*0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	07-NOV-17	16			
	Bromoform	<5.0		5.0	ug/L	07-NOV-17	5			
	Bromomethane	<0.50		0.50	ug/L	07-NOV-17	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	07-NOV-17	0.2			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-3	MW17-105D									
Sampled By:	CLIENT on 31-OCT-17 @ 13:47									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Chlorobenzene	<0.50		0.50	ug/L	07-NOV-17	30			
	Dibromochloromethane	<2.0		2.0	ug/L	07-NOV-17	25			
	Chloroform	<1.0		1.0	ug/L	07-NOV-17	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	07-NOV-17	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	07-NOV-17	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	07-NOV-17	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	07-NOV-17	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	07-NOV-17	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	07-NOV-17	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	07-NOV-17	0.5			
	cis-1,2-Dichloroethylene	5.57		0.50	ug/L	07-NOV-17	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	07-NOV-17	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	07-NOV-17	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	07-NOV-17	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	07-NOV-17				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	07-NOV-17				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	07-NOV-17	2.4			
	n-Hexane	<0.50		0.50	ug/L	07-NOV-17	5			
	Methyl Ethyl Ketone	<20		20	ug/L	07-NOV-17	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	07-NOV-17	640			
	MTBE	<2.0		2.0	ug/L	07-NOV-17	15			
	Styrene	<0.50		0.50	ug/L	07-NOV-17	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	07-NOV-17	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Toluene	<0.50		0.50	ug/L	07-NOV-17	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	07-NOV-17	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	07-NOV-17	150			
	Vinyl chloride	3.88		0.50	ug/L	07-NOV-17	*0.5			
	o-Xylene	<0.30		0.30	ug/L	07-NOV-17				
	m+p-Xylenes	0.72		0.40	ug/L	07-NOV-17				
	Xylenes (Total)	0.72		0.50	ug/L	07-NOV-17	72			
	Surrogate: 4-Bromofluorobenzene	96.0		70-130	%	07-NOV-17				
	Surrogate: 1,4-Difluorobenzene	97.8		70-130	%	07-NOV-17				
Hydrocarbons										
	F1 (C6-C10)	<25		25	ug/L	07-NOV-17	420			
	F1-BTEX	<25		25	ug/L	09-NOV-17	420			
	F2 (C10-C16)	<100		100	ug/L	08-NOV-17	150			
	F3 (C16-C34)	<250		250	ug/L	08-NOV-17	500			
	F4 (C34-C50)	<250		250	ug/L	08-NOV-17	500			
	Total Hydrocarbons (C6-C50)	<370		370	ug/L	09-NOV-17				
	Chrom. to baseline at nC50	YES			No Unit	08-NOV-17				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-3	MW17-105D									
Sampled By:	CLIENT on 31-OCT-17 @ 13:47									
Matrix:	WATER						#1			
Hydrocarbons										
	Surrogate: 2-Bromobenzotrifluoride	78.8		60-140	%	08-NOV-17				
	Surrogate: 3,4-Dichlorotoluene	108.5		60-140	%	07-NOV-17				
L2017929-4	DUP2									
Sampled By:	CLIENT on 31-OCT-17									
Matrix:	WATER						#1			
Physical Tests										
	Conductivity	1.09		0.0030	mS/cm	07-NOV-17				
	pH	7.61		0.10	pH units	04-NOV-17				
Anions and Nutrients										
	Chloride (Cl)	60.4		0.50	mg/L	07-NOV-17	790			
Cyanides										
	Cyanide, Weak Acid Diss	<2.0		2.0	ug/L	06-NOV-17	52			
Dissolved Metals										
	Dissolved Mercury Filtration Location	FIELD			No Unit	06-NOV-17				
	Dissolved Metals Filtration Location	FIELD			No Unit	06-NOV-17				
	Antimony (Sb)-Dissolved	0.11		0.10	ug/L	07-NOV-17	6			
	Arsenic (As)-Dissolved	20.6		0.10	ug/L	07-NOV-17	25			
	Barium (Ba)-Dissolved	246		0.10	ug/L	07-NOV-17	1000			
	Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	07-NOV-17	4			
	Boron (B)-Dissolved	87		10	ug/L	07-NOV-17	5000			
	Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	07-NOV-17	2.1			
	Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	50			
	Cobalt (Co)-Dissolved	0.22		0.10	ug/L	07-NOV-17	3.8			
	Copper (Cu)-Dissolved	<0.20		0.20	ug/L	07-NOV-17	69			
	Lead (Pb)-Dissolved	0.336		0.050	ug/L	07-NOV-17	10			
	Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	06-NOV-17	0.1			
	Molybdenum (Mo)-Dissolved	3.56		0.050	ug/L	07-NOV-17	70			
	Nickel (Ni)-Dissolved	2.02		0.50	ug/L	07-NOV-17	100			
	Selenium (Se)-Dissolved	<0.050		0.050	ug/L	07-NOV-17	10			
	Silver (Ag)-Dissolved	<0.050		0.050	ug/L	07-NOV-17	1.2			
	Sodium (Na)-Dissolved	34800		500	ug/L	07-NOV-17	490000			
	Thallium (Tl)-Dissolved	0.018		0.010	ug/L	07-NOV-17	2			
	Uranium (U)-Dissolved	3.38		0.010	ug/L	07-NOV-17	20			
	Vanadium (V)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	6.2			
	Zinc (Zn)-Dissolved	28.8		1.0	ug/L	07-NOV-17	890			
Speciated Metals										
	Chromium, Hexavalent	<1.0		1.0	ug/L	09-NOV-17	25			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	07-NOV-17	2700			
	Benzene	3.07		0.50	ug/L	07-NOV-17	*0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	07-NOV-17	16			
	Bromoform	<5.0		5.0	ug/L	07-NOV-17	5			
	Bromomethane	<0.50		0.50	ug/L	07-NOV-17	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	07-NOV-17	0.2			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-4	DUP2									
Sampled By:	CLIENT on 31-OCT-17									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Chlorobenzene	<0.50		0.50	ug/L	07-NOV-17	30			
	Dibromochloromethane	<2.0		2.0	ug/L	07-NOV-17	25			
	Chloroform	<1.0		1.0	ug/L	07-NOV-17	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	07-NOV-17	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	07-NOV-17	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	07-NOV-17	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	07-NOV-17	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	07-NOV-17	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	07-NOV-17	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	07-NOV-17	0.5			
	cis-1,2-Dichloroethylene	5.62		0.50	ug/L	07-NOV-17	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	07-NOV-17	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	07-NOV-17	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	07-NOV-17	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	07-NOV-17				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	07-NOV-17				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	07-NOV-17	2.4			
	n-Hexane	<0.50		0.50	ug/L	07-NOV-17	5			
	Methyl Ethyl Ketone	<20		20	ug/L	07-NOV-17	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	07-NOV-17	640			
	MTBE	<2.0		2.0	ug/L	07-NOV-17	15			
	Styrene	<0.50		0.50	ug/L	07-NOV-17	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	07-NOV-17	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Toluene	<0.50		0.50	ug/L	07-NOV-17	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	07-NOV-17	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	07-NOV-17	150			
	Vinyl chloride	3.97		0.50	ug/L	07-NOV-17	*0.5			
	o-Xylene	<0.30		0.30	ug/L	07-NOV-17				
	m+p-Xylenes	0.70		0.40	ug/L	07-NOV-17				
	Xylenes (Total)	0.70		0.50	ug/L	07-NOV-17	72			
	Surrogate: 4-Bromofluorobenzene	94.8		70-130	%	07-NOV-17				
	Surrogate: 1,4-Difluorobenzene	97.7		70-130	%	07-NOV-17				
Hydrocarbons										
	F1 (C6-C10)	<25		25	ug/L	07-NOV-17	420			
	F1-BTEX	<25		25	ug/L	09-NOV-17	420			
	F2 (C10-C16)	<100		100	ug/L	08-NOV-17	150			
	F3 (C16-C34)	<250		250	ug/L	08-NOV-17	500			
	F4 (C34-C50)	<250		250	ug/L	08-NOV-17	500			
	Total Hydrocarbons (C6-C50)	<370		370	ug/L	09-NOV-17				
	Chrom. to baseline at nC50	YES			No Unit	08-NOV-17				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-4	DUP2									
Sampled By:	CLIENT on 31-OCT-17									
Matrix:	WATER						#1			
Hydrocarbons										
	Surrogate: 2-Bromobenzotrifluoride	71.5		60-140	%	08-NOV-17				
	Surrogate: 3,4-Dichlorotoluene	103.4		60-140	%	07-NOV-17				
L2017929-5	MW17-105S									
Sampled By:	CLIENT on 31-OCT-17 @ 14:43									
Matrix:	WATER						#1			
Physical Tests										
	Conductivity	1.01		0.0030	mS/cm	07-NOV-17				
	pH	7.61		0.10	pH units	04-NOV-17				
Anions and Nutrients										
	Chloride (Cl)	52.3		0.50	mg/L	07-NOV-17	790			
Cyanides										
	Cyanide, Weak Acid Diss	<2.0		2.0	ug/L	06-NOV-17	52			
Dissolved Metals										
	Dissolved Mercury Filtration Location	FIELD			No Unit	06-NOV-17				
	Dissolved Metals Filtration Location	FIELD			No Unit	06-NOV-17				
	Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	07-NOV-17	6			
	Arsenic (As)-Dissolved	12.6		0.10	ug/L	07-NOV-17	25			
	Barium (Ba)-Dissolved	142		0.10	ug/L	07-NOV-17	1000			
	Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	07-NOV-17	4			
	Boron (B)-Dissolved	76		10	ug/L	07-NOV-17	5000			
	Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	07-NOV-17	2.1			
	Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	50			
	Cobalt (Co)-Dissolved	0.17		0.10	ug/L	07-NOV-17	3.8			
	Copper (Cu)-Dissolved	0.38		0.20	ug/L	07-NOV-17	69			
	Lead (Pb)-Dissolved	0.094		0.050	ug/L	07-NOV-17	10			
	Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	06-NOV-17	0.1			
	Molybdenum (Mo)-Dissolved	3.17		0.050	ug/L	07-NOV-17	70			
	Nickel (Ni)-Dissolved	1.98		0.50	ug/L	07-NOV-17	100			
	Selenium (Se)-Dissolved	<0.050		0.050	ug/L	07-NOV-17	10			
	Silver (Ag)-Dissolved	<0.050		0.050	ug/L	07-NOV-17	1.2			
	Sodium (Na)-Dissolved	28000		500	ug/L	07-NOV-17	490000			
	Thallium (Tl)-Dissolved	0.029		0.010	ug/L	07-NOV-17	2			
	Uranium (U)-Dissolved	2.51		0.010	ug/L	07-NOV-17	20			
	Vanadium (V)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	6.2			
	Zinc (Zn)-Dissolved	46.7		1.0	ug/L	07-NOV-17	890			
Speciated Metals										
	Chromium, Hexavalent	<1.0		1.0	ug/L	09-NOV-17	25			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	07-NOV-17	2700			
	Benzene	66.8		0.50	ug/L	07-NOV-17	*0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	07-NOV-17	16			
	Bromoform	<5.0		5.0	ug/L	07-NOV-17	5			
	Bromomethane	<0.50		0.50	ug/L	07-NOV-17	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	07-NOV-17	0.2			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-5	MW17-105S									
Sampled By:	CLIENT on 31-OCT-17 @ 14:43									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Chlorobenzene	<0.50		0.50	ug/L	07-NOV-17	30			
	Dibromochloromethane	<2.0		2.0	ug/L	07-NOV-17	25			
	Chloroform	<1.0		1.0	ug/L	07-NOV-17	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	07-NOV-17	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	07-NOV-17	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	07-NOV-17	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	07-NOV-17	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	07-NOV-17	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	07-NOV-17	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	07-NOV-17	0.5			
	cis-1,2-Dichloroethylene	10.9		0.50	ug/L	07-NOV-17	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	07-NOV-17	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	07-NOV-17	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	07-NOV-17	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	07-NOV-17				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	07-NOV-17				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Ethylbenzene	8.42		0.50	ug/L	07-NOV-17	*2.4			
	n-Hexane	7.46		0.50	ug/L	07-NOV-17	*5			
	Methyl Ethyl Ketone	<20		20	ug/L	07-NOV-17	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	07-NOV-17	640			
	MTBE	<2.0		2.0	ug/L	07-NOV-17	15			
	Styrene	<0.50		0.50	ug/L	07-NOV-17	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	07-NOV-17	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Toluene	1.57		0.50	ug/L	07-NOV-17	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	07-NOV-17	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Trichloroethylene	0.50		0.50	ug/L	07-NOV-17	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	07-NOV-17	150			
	Vinyl chloride	5.63		0.50	ug/L	07-NOV-17	*0.5			
	o-Xylene	1.17		0.30	ug/L	07-NOV-17				
	m+p-Xylenes	37.4		0.40	ug/L	07-NOV-17				
	Xylenes (Total)	38.6		0.50	ug/L	07-NOV-17	72			
	Surrogate: 4-Bromofluorobenzene	95.4		70-130	%	07-NOV-17				
	Surrogate: 1,4-Difluorobenzene	97.5		70-130	%	07-NOV-17				
Hydrocarbons										
	F1 (C6-C10)	313		25	ug/L	07-NOV-17	420			
	F1-BTEX	198		47	ug/L	10-NOV-17	420			
	F2 (C10-C16)	<100		100	ug/L	08-NOV-17	150			
	F2-Naphth	<100		100	ug/L	10-NOV-17				
	F3 (C16-C34)	<250		250	ug/L	08-NOV-17	500			
	F3-PAH	<250		250	ug/L	10-NOV-17				
	F4 (C34-C50)	<250		250	ug/L	08-NOV-17	500			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-5	MW17-105S									
Sampled By:	CLIENT on 31-OCT-17 @ 14:43									
Matrix:	WATER						#1			
Hydrocarbons										
	Total Hydrocarbons (C6-C50)	<370		370	ug/L	10-NOV-17				
	Chrom. to baseline at nC50	YES			No Unit	08-NOV-17				
	Surrogate: 2-Bromobenzotrifluoride	79.5		60-140	%	08-NOV-17				
	Surrogate: 3,4-Dichlorotoluene	98.8		60-140	%	07-NOV-17				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.020		0.020	ug/L	10-NOV-17	4.1			
	Acenaphthylene	<0.020		0.020	ug/L	10-NOV-17	1			
	Anthracene	<0.020		0.020	ug/L	10-NOV-17	1			
	Benzo(a)anthracene	<0.020		0.020	ug/L	10-NOV-17	1			
	Benzo(a)pyrene	<0.010		0.010	ug/L	10-NOV-17	0.01			
	Benzo(b)fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Benzo(g,h,i)perylene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	Benzo(k)fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Chrysene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Dibenzo(ah)anthracene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	Fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.41			
	Fluorene	<0.020		0.020	ug/L	10-NOV-17	120			
	Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	1+2-Methylnaphthalenes	0.560		0.028	ug/L	10-NOV-17	3.2			
	1-Methylnaphthalene	0.231		0.020	ug/L	10-NOV-17	3.2			
	2-Methylnaphthalene	0.329		0.020	ug/L	10-NOV-17	3.2			
	Naphthalene	1.28		0.050	ug/L	10-NOV-17	7			
	Phenanthrene	<0.020		0.020	ug/L	10-NOV-17	1			
	Pyrene	<0.020		0.020	ug/L	10-NOV-17	4.1			
	Surrogate: d10-Acenaphthene	86.8		60-140	%	10-NOV-17				
	Surrogate: d12-Chrysene	85.9		60-140	%	10-NOV-17				
	Surrogate: d8-Naphthalene	84.3		60-140	%	10-NOV-17				
	Surrogate: d10-Phenanthrene	102.3		60-140	%	10-NOV-17				
L2017929-6	MW17-100S									
Sampled By:	CLIENT on 31-OCT-17 @ 16:10									
Matrix:	WATER						#1			
Physical Tests										
	Conductivity	0.817		0.0030	mS/cm	07-NOV-17				
	pH	7.25		0.10	pH units	04-NOV-17				
Anions and Nutrients										
	Chloride (Cl)	2.35		0.50	mg/L	07-NOV-17	790			
Cyanides										
	Cyanide, Weak Acid Diss	<2.0		2.0	ug/L	06-NOV-17	52			
Dissolved Metals										
	Dissolved Mercury Filtration Location	FIELD			No Unit	06-NOV-17				
	Dissolved Metals Filtration Location	FIELD			No Unit	06-NOV-17				
	Antimony (Sb)-Dissolved	0.26		0.10	ug/L	07-NOV-17	6			
	Arsenic (As)-Dissolved	5.88		0.10	ug/L	07-NOV-17	25			
	Barium (Ba)-Dissolved	67.7		0.10	ug/L	07-NOV-17	1000			
	Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	07-NOV-17	4			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-6	MW17-100S									
Sampled By:	CLIENT on 31-OCT-17 @ 16:10									
Matrix:	WATER						#1			
Dissolved Metals										
	Boron (B)-Dissolved	81		10	ug/L	07-NOV-17	5000			
	Cadmium (Cd)-Dissolved	0.121		0.010	ug/L	07-NOV-17	2.1			
	Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	50			
	Cobalt (Co)-Dissolved	1.05		0.10	ug/L	07-NOV-17	3.8			
	Copper (Cu)-Dissolved	0.95		0.20	ug/L	07-NOV-17	69			
	Lead (Pb)-Dissolved	<0.050		0.050	ug/L	07-NOV-17	10			
	Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	06-NOV-17	0.1			
	Molybdenum (Mo)-Dissolved	1.26		0.050	ug/L	07-NOV-17	70			
	Nickel (Ni)-Dissolved	6.88		0.50	ug/L	07-NOV-17	100			
	Selenium (Se)-Dissolved	0.497		0.050	ug/L	07-NOV-17	10			
	Silver (Ag)-Dissolved	<0.050		0.050	ug/L	07-NOV-17	1.2			
	Sodium (Na)-Dissolved	7480		500	ug/L	07-NOV-17	490000			
	Thallium (Tl)-Dissolved	0.046		0.010	ug/L	07-NOV-17	2			
	Uranium (U)-Dissolved	1.57		0.010	ug/L	07-NOV-17	20			
	Vanadium (V)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	6.2			
	Zinc (Zn)-Dissolved	458		1.0	ug/L	07-NOV-17	890			
Speciated Metals										
	Chromium, Hexavalent	<1.0		1.0	ug/L	12-NOV-17	25			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	07-NOV-17	2700			
	Benzene	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	07-NOV-17	16			
	Bromoform	<5.0		5.0	ug/L	07-NOV-17	5			
	Bromomethane	<0.50		0.50	ug/L	07-NOV-17	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	07-NOV-17	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	07-NOV-17	30			
	Dibromochloromethane	<2.0		2.0	ug/L	07-NOV-17	25			
	Chloroform	<1.0		1.0	ug/L	07-NOV-17	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	07-NOV-17	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	07-NOV-17	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	07-NOV-17	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	07-NOV-17	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	07-NOV-17	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	07-NOV-17	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	07-NOV-17	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	07-NOV-17	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	07-NOV-17	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	07-NOV-17	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	07-NOV-17	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	07-NOV-17				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	07-NOV-17				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	07-NOV-17	2.4			
	n-Hexane	<0.50		0.50	ug/L	07-NOV-17	5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-6	MW17-100S									
Sampled By:	CLIENT on 31-OCT-17 @ 16:10									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Methyl Ethyl Ketone	<20		20	ug/L	07-NOV-17	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	07-NOV-17	640			
	MTBE	<2.0		2.0	ug/L	07-NOV-17	15			
	Styrene	<0.50		0.50	ug/L	07-NOV-17	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	07-NOV-17	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Toluene	<0.50		0.50	ug/L	07-NOV-17	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	07-NOV-17	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	07-NOV-17	150			
	Vinyl chloride	<0.50		0.50	ug/L	07-NOV-17	0.5			
	o-Xylene	<0.30		0.30	ug/L	07-NOV-17				
	m+p-Xylenes	<0.40		0.40	ug/L	07-NOV-17				
	Xylenes (Total)	<0.50		0.50	ug/L	07-NOV-17	72			
	Surrogate: 4-Bromofluorobenzene	95.2		70-130	%	07-NOV-17				
	Surrogate: 1,4-Difluorobenzene	97.5		70-130	%	07-NOV-17				
Hydrocarbons										
	F1 (C6-C10)	<25		25	ug/L	07-NOV-17	420			
	F1-BTEX	<25		25	ug/L	10-NOV-17	420			
	F2 (C10-C16)	<100		100	ug/L	10-NOV-17	150			
	F3 (C16-C34)	<250		250	ug/L	10-NOV-17	500			
	F4 (C34-C50)	<250		250	ug/L	10-NOV-17	500			
	Total Hydrocarbons (C6-C50)	<370		370	ug/L	10-NOV-17				
	Chrom. to baseline at nC50	YES			No Unit	10-NOV-17				
	Surrogate: 2-Bromobenzotrifluoride	60.5		60-140	%	10-NOV-17				
	Surrogate: 3,4-Dichlorotoluene	103.5		60-140	%	07-NOV-17				
L2017929-7	TRIP BLANK 1									
Sampled By:	CLIENT on 31-OCT-17 @ 11:05									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	07-NOV-17	2700			
	Benzene	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	07-NOV-17	16			
	Bromoform	<5.0		5.0	ug/L	07-NOV-17	5			
	Bromomethane	<0.50		0.50	ug/L	07-NOV-17	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	07-NOV-17	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	07-NOV-17	30			
	Dibromochloromethane	<2.0		2.0	ug/L	07-NOV-17	25			
	Chloroform	<1.0		1.0	ug/L	07-NOV-17	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	07-NOV-17	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	07-NOV-17	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	07-NOV-17	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	07-NOV-17	0.5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-7	TRIP BLANK 1									
Sampled By:	CLIENT on 31-OCT-17 @ 11:05									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Dichlorodifluoromethane	<2.0		2.0	ug/L	07-NOV-17	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	07-NOV-17	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	07-NOV-17	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	07-NOV-17	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	07-NOV-17	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	07-NOV-17	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	07-NOV-17	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	07-NOV-17	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	07-NOV-17				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	07-NOV-17				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	07-NOV-17	2.4			
	n-Hexane	<0.50		0.50	ug/L	07-NOV-17	5			
	Methyl Ethyl Ketone	<20		20	ug/L	07-NOV-17	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	07-NOV-17	640			
	MTBE	<2.0		2.0	ug/L	07-NOV-17	15			
	Styrene	<0.50		0.50	ug/L	07-NOV-17	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	07-NOV-17	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Toluene	<0.50		0.50	ug/L	07-NOV-17	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	07-NOV-17	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	07-NOV-17	150			
	Vinyl chloride	<0.50		0.50	ug/L	07-NOV-17	0.5			
	o-Xylene	<0.30		0.30	ug/L	07-NOV-17				
	m+p-Xylenes	<0.40		0.40	ug/L	07-NOV-17				
	Xylenes (Total)	<0.50		0.50	ug/L	07-NOV-17	72			
	Surrogate: 4-Bromofluorobenzene	94.6		70-130	%	07-NOV-17				
	Surrogate: 1,4-Difluorobenzene	97.3		70-130	%	07-NOV-17				
L2017929-8	MW17-101S									
Sampled By:	CLIENT on 01-NOV-17 @ 09:50									
Matrix:	WATER						#1			
Physical Tests										
	Conductivity	1.04		0.0030	mS/cm	07-NOV-17				
	pH	7.44		0.10	pH units	04-NOV-17				
Anions and Nutrients										
	Chloride (Cl)	8.98		0.50	mg/L	07-NOV-17	790			
Cyanides										
	Cyanide, Weak Acid Diss	<2.0		2.0	ug/L	06-NOV-17	52			
Dissolved Metals										
	Dissolved Mercury Filtration Location	FIELD			No Unit	06-NOV-17				
	Dissolved Metals Filtration Location	FIELD			No Unit	06-NOV-17				
	Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	07-NOV-17	6			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-8	MW17-101S									
Sampled By:	CLIENT on 01-NOV-17 @ 09:50									
Matrix:	WATER						#1			
Dissolved Metals										
	Arsenic (As)-Dissolved	0.29		0.10	ug/L	08-NOV-17	25			
	Barium (Ba)-Dissolved	77.5		0.10	ug/L	07-NOV-17	1000			
	Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	07-NOV-17	4			
	Boron (B)-Dissolved	59		10	ug/L	07-NOV-17	5000			
	Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	07-NOV-17	2.1			
	Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	50			
	Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	07-NOV-17	3.8			
	Copper (Cu)-Dissolved	<0.20		0.20	ug/L	07-NOV-17	69			
	Lead (Pb)-Dissolved	<0.050		0.050	ug/L	07-NOV-17	10			
	Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	06-NOV-17	0.1			
	Molybdenum (Mo)-Dissolved	0.195		0.050	ug/L	07-NOV-17	70			
	Nickel (Ni)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	100			
	Selenium (Se)-Dissolved	6.26		0.050	ug/L	07-NOV-17	10			
	Silver (Ag)-Dissolved	<0.050		0.050	ug/L	07-NOV-17	1.2			
	Sodium (Na)-Dissolved	7710		500	ug/L	07-NOV-17	490000			
	Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	07-NOV-17	2			
	Uranium (U)-Dissolved	3.07		0.010	ug/L	07-NOV-17	20			
	Vanadium (V)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	6.2			
	Zinc (Zn)-Dissolved	<1.0		1.0	ug/L	07-NOV-17	890			
Speciated Metals										
	Chromium, Hexavalent	<1.0		1.0	ug/L	12-NOV-17	25			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	07-NOV-17	2700			
	Benzene	0.89		0.50	ug/L	07-NOV-17	*0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	07-NOV-17	16			
	Bromoform	<5.0		5.0	ug/L	07-NOV-17	5			
	Bromomethane	<0.50		0.50	ug/L	07-NOV-17	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	07-NOV-17	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	07-NOV-17	30			
	Dibromochloromethane	<2.0		2.0	ug/L	07-NOV-17	25			
	Chloroform	<1.0		1.0	ug/L	07-NOV-17	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	07-NOV-17	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	07-NOV-17	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	07-NOV-17	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	07-NOV-17	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	07-NOV-17	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	07-NOV-17	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	07-NOV-17	0.5			
	cis-1,2-Dichloroethylene	0.67		0.50	ug/L	07-NOV-17	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	07-NOV-17	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	07-NOV-17	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	07-NOV-17	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	07-NOV-17				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	07-NOV-17				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-8	MW17-101S									
Sampled By:	CLIENT on 01-NOV-17 @ 09:50									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	07-NOV-17	0.5			
	1,4-Dioxane	<20		20	ug/L	07-NOV-17	50			
	Ethylbenzene	<0.50		0.50	ug/L	07-NOV-17	2.4			
	n-Hexane	<0.50		0.50	ug/L	07-NOV-17	5			
	Methyl Ethyl Ketone	<20		20	ug/L	07-NOV-17	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	07-NOV-17	640			
	MTBE	<2.0		2.0	ug/L	07-NOV-17	15			
	Styrene	<0.50		0.50	ug/L	07-NOV-17	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	07-NOV-17	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Toluene	<0.50		0.50	ug/L	07-NOV-17	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	07-NOV-17	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	07-NOV-17	0.5			
	Trichloroethylene	0.60		0.50	ug/L	07-NOV-17	*0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	07-NOV-17	150			
	Vinyl chloride	<0.50		0.50	ug/L	07-NOV-17	0.5			
	o-Xylene	<0.30		0.30	ug/L	07-NOV-17				
	m+p-Xylenes	<0.40		0.40	ug/L	07-NOV-17				
	Xylenes (Total)	<0.50		0.50	ug/L	07-NOV-17	72			
	Surrogate: 4-Bromofluorobenzene	95.7		70-130	%	07-NOV-17				
	Surrogate: 1,4-Difluorobenzene	97.5		70-130	%	07-NOV-17				
Hydrocarbons										
	F1 (C6-C10)	<25		25	ug/L	07-NOV-17	420			
	F1-BTEX	<25		25	ug/L	10-NOV-17	420			
	F2 (C10-C16)	120		100	ug/L	08-NOV-17	150			
	F2-Naphth	120		100	ug/L	10-NOV-17				
	F3 (C16-C34)	<250		250	ug/L	08-NOV-17	500			
	F3-PAH	<250		250	ug/L	10-NOV-17				
	F4 (C34-C50)	<250		250	ug/L	08-NOV-17	500			
	Total Hydrocarbons (C6-C50)	<370		370	ug/L	10-NOV-17				
	Chrom. to baseline at nC50	YES			No Unit	08-NOV-17				
	Surrogate: 2-Bromobenzotrifluoride	81.7		60-140	%	08-NOV-17				
	Surrogate: 3,4-Dichlorotoluene	100.2		60-140	%	07-NOV-17				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	0.618		0.020	ug/L	10-NOV-17	4.1			
	Acenaphthylene	<0.100	DLQ	0.10	ug/L	10-NOV-17	1			
	Anthracene	<0.090	DLQ	0.90	ug/L	10-NOV-17	1			
	Benzo(a)anthracene	<0.020		0.020	ug/L	10-NOV-17	1			
	Benzo(a)pyrene	<0.010		0.010	ug/L	10-NOV-17	0.01			
	Benzo(b)fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Benzo(g,h,i)perylene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	Benzo(k)fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Chrysene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Dibenzo(ah)anthracene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	Fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.41			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-8	MW17-101S									
Sampled By:	CLIENT on 01-NOV-17 @ 09:50									
Matrix:	WATER						#1			
Polycyclic Aromatic Hydrocarbons										
	Fluorene	0.892		0.020	ug/L	10-NOV-17	120			
	Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	1+2-Methylnaphthalenes	0.174		0.028	ug/L	10-NOV-17	3.2			
	1-Methylnaphthalene	0.142		0.020	ug/L	10-NOV-17	3.2			
	2-Methylnaphthalene	0.032		0.020	ug/L	10-NOV-17	3.2			
	Naphthalene	<0.135	DLQ	0.14	ug/L	10-NOV-17	7			
	Phenanthrene	<0.030	DLQ	0.030	ug/L	10-NOV-17	1			
	Pyrene	0.044		0.020	ug/L	10-NOV-17	4.1			
	Surrogate: d10-Acenaphthene	92.0		60-140	%	10-NOV-17				
	Surrogate: d12-Chrysene	84.2		60-140	%	10-NOV-17				
	Surrogate: d8-Naphthalene	73.9		60-140	%	10-NOV-17				
	Surrogate: d10-Phenanthrene	102.4		60-140	%	10-NOV-17				
L2017929-9	DUP3									
Sampled By:	CLIENT on 01-NOV-17									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	1,4-Dioxane	<20		20	ug/L	08-NOV-17	50			
L2017929-10	MW17-101D									
Sampled By:	CLIENT on 01-NOV-17 @ 10:50									
Matrix:	WATER						#1			
Physical Tests										
	Conductivity	1.50		0.0030	mS/cm	07-NOV-17				
	pH	7.59		0.10	pH units	04-NOV-17				
Anions and Nutrients										
	Chloride (Cl)	142		0.50	mg/L	07-NOV-17	790			
Cyanides										
	Cyanide, Weak Acid Diss	<2.0		2.0	ug/L	06-NOV-17	52			
Dissolved Metals										
	Dissolved Mercury Filtration Location	FIELD			No Unit	06-NOV-17				
	Dissolved Metals Filtration Location	FIELD			No Unit	06-NOV-17				
	Antimony (Sb)-Dissolved	0.53		0.10	ug/L	07-NOV-17	6			
	Arsenic (As)-Dissolved	44.8		0.10	ug/L	07-NOV-17	*25			
	Barium (Ba)-Dissolved	136		0.10	ug/L	07-NOV-17	1000			
	Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	07-NOV-17	4			
	Boron (B)-Dissolved	71		10	ug/L	07-NOV-17	5000			
	Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	07-NOV-17	2.1			
	Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	50			
	Cobalt (Co)-Dissolved	0.23		0.10	ug/L	07-NOV-17	3.8			
	Copper (Cu)-Dissolved	<0.20		0.20	ug/L	07-NOV-17	69			
	Lead (Pb)-Dissolved	0.520		0.050	ug/L	07-NOV-17	10			
	Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	06-NOV-17	0.1			
	Molybdenum (Mo)-Dissolved	9.78		0.050	ug/L	07-NOV-17	70			
	Nickel (Ni)-Dissolved	6.93		0.50	ug/L	07-NOV-17	100			

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T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1			
L2017929-10	MW17-101D									
Sampled By:	CLIENT on 01-NOV-17 @ 10:50									
Matrix:	WATER									
Dissolved Metals										
	Selenium (Se)-Dissolved	0.375		0.050	ug/L	07-NOV-17	10			
	Silver (Ag)-Dissolved	<0.050		0.050	ug/L	07-NOV-17	1.2			
	Sodium (Na)-Dissolved	75800		500	ug/L	07-NOV-17	490000			
	Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	07-NOV-17	2			
	Uranium (U)-Dissolved	8.19		0.010	ug/L	07-NOV-17	20			
	Vanadium (V)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	6.2			
	Zinc (Zn)-Dissolved	46.1		1.0	ug/L	07-NOV-17	890			
Speciated Metals										
	Chromium, Hexavalent	<1.0		1.0	ug/L	13-NOV-17	25			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	08-NOV-17	2700			
	Benzene	1.17		0.50	ug/L	08-NOV-17	*0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	08-NOV-17	16			
	Bromoform	<5.0		5.0	ug/L	08-NOV-17	5			
	Bromomethane	<0.50		0.50	ug/L	08-NOV-17	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	08-NOV-17	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	08-NOV-17	30			
	Dibromochloromethane	<2.0		2.0	ug/L	08-NOV-17	25			
	Chloroform	1.1		1.0	ug/L	08-NOV-17	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	08-NOV-17	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	08-NOV-17	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	08-NOV-17	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	cis-1,2-Dichloroethylene	1.44		0.50	ug/L	08-NOV-17	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	08-NOV-17	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	08-NOV-17	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	08-NOV-17	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	08-NOV-17				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	08-NOV-17				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	09-NOV-17	0.5			
	1,4-Dioxane	<20		20	ug/L	08-NOV-17	50			
	Ethylbenzene	<0.50		0.50	ug/L	08-NOV-17	2.4			
	n-Hexane	<0.50		0.50	ug/L	08-NOV-17	5			
	Methyl Ethyl Ketone	<20		20	ug/L	08-NOV-17	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	08-NOV-17	640			
	MTBE	<2.0		2.0	ug/L	08-NOV-17	15			
	Styrene	<0.50		0.50	ug/L	08-NOV-17	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	08-NOV-17	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Toluene	<0.50		0.50	ug/L	08-NOV-17	24			

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T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-10	MW17-101D									
Sampled By:	CLIENT on 01-NOV-17 @ 10:50									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	08-NOV-17	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	08-NOV-17	150			
	Vinyl chloride	0.91		0.50	ug/L	08-NOV-17	*0.5			
	o-Xylene	<0.30		0.30	ug/L	08-NOV-17				
	m+p-Xylenes	<0.40		0.40	ug/L	08-NOV-17				
	Xylenes (Total)	<0.50		0.50	ug/L	09-NOV-17	72			
	Surrogate: 4-Bromofluorobenzene	93.3		70-130	%	08-NOV-17				
	Surrogate: 1,4-Difluorobenzene	97.9		70-130	%	08-NOV-17				
Hydrocarbons										
	F1 (C6-C10)	<25		25	ug/L	08-NOV-17	420			
	F1-BTEX	<25		25	ug/L	10-NOV-17	420			
	F2 (C10-C16)	<100		100	ug/L	08-NOV-17	150			
	F2-Naphth	<100		100	ug/L	10-NOV-17				
	F3 (C16-C34)	<250		250	ug/L	08-NOV-17	500			
	F3-PAH	<250		250	ug/L	10-NOV-17				
	F4 (C34-C50)	<250		250	ug/L	08-NOV-17	500			
	Total Hydrocarbons (C6-C50)	<370		370	ug/L	10-NOV-17				
	Chrom. to baseline at nC50	YES			No Unit	08-NOV-17				
	Surrogate: 2-Bromobenzotrifluoride	68.9		60-140	%	08-NOV-17				
	Surrogate: 3,4-Dichlorotoluene	86.0		60-140	%	08-NOV-17				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.020		0.020	ug/L	10-NOV-17	4.1			
	Acenaphthylene	<0.020		0.020	ug/L	10-NOV-17	1			
	Anthracene	<0.020		0.020	ug/L	10-NOV-17	1			
	Benzo(a)anthracene	<0.020		0.020	ug/L	10-NOV-17	1			
	Benzo(a)pyrene	<0.010		0.010	ug/L	10-NOV-17	0.01			
	Benzo(b)fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Benzo(g,h,i)perylene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	Benzo(k)fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Chrysene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Dibenzo(ah)anthracene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	Fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.41			
	Fluorene	<0.020		0.020	ug/L	10-NOV-17	120			
	Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	1+2-Methylnaphthalenes	<0.028		0.028	ug/L	10-NOV-17	3.2			
	1-Methylnaphthalene	<0.020		0.020	ug/L	10-NOV-17	3.2			
	2-Methylnaphthalene	<0.020		0.020	ug/L	10-NOV-17	3.2			
	Naphthalene	<0.050		0.050	ug/L	10-NOV-17	7			
	Phenanthrene	<0.020		0.020	ug/L	10-NOV-17	1			
	Pyrene	<0.020		0.020	ug/L	10-NOV-17	4.1			
	Surrogate: d10-Acenaphthene	71.0		60-140	%	10-NOV-17				
	Surrogate: d12-Chrysene	70.7		60-140	%	10-NOV-17				
	Surrogate: d8-Naphthalene	69.0		60-140	%	10-NOV-17				
	Surrogate: d10-Phenanthrene	83.3		60-140	%	10-NOV-17				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-11	MW17-104D									
Sampled By:	CLIENT on 01-NOV-17 @ 12:05									
Matrix:	WATER						#1			
Physical Tests										
	Conductivity	0.725		0.0030	mS/cm	07-NOV-17				
	pH	7.65		0.10	pH units	04-NOV-17				
Anions and Nutrients										
	Chloride (Cl)	7.53		0.50	mg/L	07-NOV-17	790			
Cyanides										
	Cyanide, Weak Acid Diss	<2.0		2.0	ug/L	06-NOV-17	52			
Dissolved Metals										
	Dissolved Mercury Filtration Location	FIELD			No Unit	06-NOV-17				
	Dissolved Metals Filtration Location	FIELD			No Unit	06-NOV-17				
	Antimony (Sb)-Dissolved	2.05		0.10	ug/L	07-NOV-17	6			
	Arsenic (As)-Dissolved	10.6		0.10	ug/L	07-NOV-17	25			
	Barium (Ba)-Dissolved	60.2		0.10	ug/L	07-NOV-17	1000			
	Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	07-NOV-17	4			
	Boron (B)-Dissolved	40		10	ug/L	07-NOV-17	5000			
	Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	07-NOV-17	2.1			
	Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	50			
	Cobalt (Co)-Dissolved	0.19		0.10	ug/L	07-NOV-17	3.8			
	Copper (Cu)-Dissolved	<0.20		0.20	ug/L	07-NOV-17	69			
	Lead (Pb)-Dissolved	0.093		0.050	ug/L	07-NOV-17	10			
	Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	06-NOV-17	0.1			
	Molybdenum (Mo)-Dissolved	23.4		0.050	ug/L	07-NOV-17	70			
	Nickel (Ni)-Dissolved	4.41		0.50	ug/L	07-NOV-17	100			
	Selenium (Se)-Dissolved	0.274		0.050	ug/L	07-NOV-17	10			
	Silver (Ag)-Dissolved	<0.050		0.050	ug/L	07-NOV-17	1.2			
	Sodium (Na)-Dissolved	8890		500	ug/L	07-NOV-17	490000			
	Thallium (Tl)-Dissolved	0.022		0.010	ug/L	07-NOV-17	2			
	Uranium (U)-Dissolved	17.0		0.010	ug/L	07-NOV-17	20			
	Vanadium (V)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	6.2			
	Zinc (Zn)-Dissolved	58.2		1.0	ug/L	07-NOV-17	890			
Speciated Metals										
	Chromium, Hexavalent	<1.0		1.0	ug/L	12-NOV-17	25			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	08-NOV-17	2700			
	Benzene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	08-NOV-17	16			
	Bromoform	<5.0		5.0	ug/L	08-NOV-17	5			
	Bromomethane	<0.50		0.50	ug/L	08-NOV-17	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	08-NOV-17	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	08-NOV-17	30			
	Dibromochloromethane	<2.0		2.0	ug/L	08-NOV-17	25			
	Chloroform	<1.0		1.0	ug/L	08-NOV-17	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	08-NOV-17	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	0.5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-11	MW17-104D									
Sampled By:	CLIENT on 01-NOV-17 @ 12:05									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Dichlorodifluoromethane	<2.0		2.0	ug/L	08-NOV-17	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	08-NOV-17	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	08-NOV-17	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	08-NOV-17	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	08-NOV-17	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	08-NOV-17	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	08-NOV-17				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	08-NOV-17				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	08-NOV-17	2.4			
	n-Hexane	<0.50		0.50	ug/L	08-NOV-17	5			
	Methyl Ethyl Ketone	<20		20	ug/L	08-NOV-17	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	08-NOV-17	640			
	MTBE	<2.0		2.0	ug/L	08-NOV-17	15			
	Styrene	<0.50		0.50	ug/L	08-NOV-17	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	08-NOV-17	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Toluene	<0.50		0.50	ug/L	08-NOV-17	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	08-NOV-17	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	08-NOV-17	150			
	Vinyl chloride	<0.50		0.50	ug/L	08-NOV-17	0.5			
	o-Xylene	<0.30		0.30	ug/L	08-NOV-17				
	m+p-Xylenes	<0.40		0.40	ug/L	08-NOV-17				
	Xylenes (Total)	<0.50		0.50	ug/L	08-NOV-17	72			
	Surrogate: 4-Bromofluorobenzene	95.4		70-130	%	08-NOV-17				
	Surrogate: 1,4-Difluorobenzene	99.2		70-130	%	08-NOV-17				
Hydrocarbons										
	F1 (C6-C10)	<25		25	ug/L	08-NOV-17	420			
	F1-BTEX	<25		25	ug/L	13-NOV-17	420			
	F2 (C10-C16)	<100		100	ug/L	13-NOV-17	150			
	F2-Naphth	<100		100	ug/L	13-NOV-17				
	F3 (C16-C34)	<250		250	ug/L	13-NOV-17	500			
	F3-PAH	<250		250	ug/L	13-NOV-17				
	F4 (C34-C50)	<250		250	ug/L	13-NOV-17	500			
	Total Hydrocarbons (C6-C50)	<370		370	ug/L	13-NOV-17				
	Chrom. to baseline at nC50	YES			No Unit	13-NOV-17				
	Surrogate: 2-Bromobenzotrifluoride	99.3		60-140	%	13-NOV-17				
	Surrogate: 3,4-Dichlorotoluene	94.5		60-140	%	08-NOV-17				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	0.072		0.020	ug/L	10-NOV-17	4.1			
	Acenaphthylene	0.020		0.020	ug/L	10-NOV-17	1			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-11	MW17-104D									
Sampled By:	CLIENT on 01-NOV-17 @ 12:05									
Matrix:	WATER						#1			
Polycyclic Aromatic Hydrocarbons										
	Anthracene	<0.045	DLQ	0.045	ug/L	10-NOV-17	1			
	Benzo(a)anthracene	<0.020		0.020	ug/L	10-NOV-17	1			
	Benzo(a)pyrene	0.015		0.010	ug/L	10-NOV-17	*0.01			
	Benzo(b)fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Benzo(g,h,i)perylene	0.021		0.020	ug/L	10-NOV-17	0.2			
	Benzo(k)fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Chrysene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Dibenzo(ah)anthracene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	Fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.41			
	Fluorene	0.073		0.020	ug/L	10-NOV-17	120			
	Indeno(1,2,3-cd)pyrene	0.024		0.020	ug/L	10-NOV-17	0.2			
	1+2-Methylnaphthalenes	0.075		0.028	ug/L	10-NOV-17	3.2			
	1-Methylnaphthalene	0.050		0.020	ug/L	10-NOV-17	3.2			
	2-Methylnaphthalene	0.026		0.020	ug/L	10-NOV-17	3.2			
	Naphthalene	<0.050		0.050	ug/L	10-NOV-17	7			
	Phenanthrene	<0.020		0.020	ug/L	10-NOV-17	1			
	Pyrene	0.026		0.020	ug/L	10-NOV-17	4.1			
	Surrogate: d10-Acenaphthene	88.2		60-140	%	10-NOV-17				
	Surrogate: d12-Chrysene	97.2		60-140	%	10-NOV-17				
	Surrogate: d8-Naphthalene	78.1		60-140	%	10-NOV-17				
	Surrogate: d10-Phenanthrene	108.6		60-140	%	10-NOV-17				
L2017929-12	MW17-104S									
Sampled By:	CLIENT on 01-NOV-17 @ 13:00									
Matrix:	WATER						#1			
Physical Tests										
	Conductivity	0.758		0.0030	mS/cm	07-NOV-17				
	pH	7.69		0.10	pH units	04-NOV-17				
Anions and Nutrients										
	Chloride (Cl)	2.35		0.50	mg/L	07-NOV-17	790			
Cyanides										
	Cyanide, Weak Acid Diss	<2.0		2.0	ug/L	06-NOV-17	52			
Dissolved Metals										
	Dissolved Mercury Filtration Location	FIELD			No Unit	06-NOV-17				
	Dissolved Metals Filtration Location	FIELD			No Unit	06-NOV-17				
	Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	07-NOV-17	6			
	Arsenic (As)-Dissolved	1.06		0.10	ug/L	08-NOV-17	25			
	Barium (Ba)-Dissolved	60.7		0.10	ug/L	07-NOV-17	1000			
	Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	07-NOV-17	4			
	Boron (B)-Dissolved	24		10	ug/L	07-NOV-17	5000			
	Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	07-NOV-17	2.1			
	Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	50			
	Cobalt (Co)-Dissolved	0.11		0.10	ug/L	07-NOV-17	3.8			
	Copper (Cu)-Dissolved	<0.20		0.20	ug/L	07-NOV-17	69			
	Lead (Pb)-Dissolved	<0.050		0.050	ug/L	07-NOV-17	10			
	Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	06-NOV-17				

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T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-12	MW17-104S									
Sampled By:	CLIENT on 01-NOV-17 @ 13:00									
Matrix:	WATER						#1			
Dissolved Metals										
							0.1			
	Molybdenum (Mo)-Dissolved	0.234		0.050	ug/L	07-NOV-17	70			
	Nickel (Ni)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	100			
	Selenium (Se)-Dissolved	0.216		0.050	ug/L	07-NOV-17	10			
	Silver (Ag)-Dissolved	<0.050		0.050	ug/L	07-NOV-17	1.2			
	Sodium (Na)-Dissolved	2220		500	ug/L	07-NOV-17	490000			
	Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	07-NOV-17	2			
	Uranium (U)-Dissolved	0.361		0.010	ug/L	07-NOV-17	20			
	Vanadium (V)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	6.2			
	Zinc (Zn)-Dissolved	<1.0		1.0	ug/L	07-NOV-17	890			
Speciated Metals										
	Chromium, Hexavalent	<1.0		1.0	ug/L	12-NOV-17	25			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	08-NOV-17	2700			
	Benzene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	08-NOV-17	16			
	Bromoform	<5.0		5.0	ug/L	08-NOV-17	5			
	Bromomethane	<0.50		0.50	ug/L	08-NOV-17	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	08-NOV-17	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	08-NOV-17	30			
	Dibromochloromethane	<2.0		2.0	ug/L	08-NOV-17	25			
	Chloroform	<1.0		1.0	ug/L	08-NOV-17	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	08-NOV-17	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	08-NOV-17	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	08-NOV-17	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	08-NOV-17	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	08-NOV-17	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	08-NOV-17	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	08-NOV-17	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	08-NOV-17				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	08-NOV-17				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Ethylbenzene	0.65		0.50	ug/L	08-NOV-17	2.4			
	n-Hexane	<0.50		0.50	ug/L	08-NOV-17	5			
	Methyl Ethyl Ketone	<20		20	ug/L	08-NOV-17	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	08-NOV-17	640			
	MTBE	<2.0		2.0	ug/L	08-NOV-17	15			
	Styrene	<0.50		0.50	ug/L	08-NOV-17	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	08-NOV-17	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
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T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-12	MW17-104S									
Sampled By:	CLIENT on 01-NOV-17 @ 13:00									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Tetrachloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Toluene	<0.50		0.50	ug/L	08-NOV-17	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	08-NOV-17	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	08-NOV-17	150			
	Vinyl chloride	<0.50		0.50	ug/L	08-NOV-17	0.5			
	o-Xylene	2.47		0.30	ug/L	08-NOV-17				
	m+p-Xylenes	0.63		0.40	ug/L	08-NOV-17				
	Xylenes (Total)	3.10		0.50	ug/L	08-NOV-17	72			
	Surrogate: 4-Bromofluorobenzene	98.0		70-130	%	08-NOV-17				
	Surrogate: 1,4-Difluorobenzene	98.6		70-130	%	08-NOV-17				
Hydrocarbons										
	F1 (C6-C10)	61		25	ug/L	08-NOV-17	420			
	F1-BTEX	58		25	ug/L	10-NOV-17	420			
	F2 (C10-C16)	760		100	ug/L	08-NOV-17	*150			
	F2-Naphth	760		100	ug/L	10-NOV-17				
	F3 (C16-C34)	<250		250	ug/L	08-NOV-17	500			
	F3-PAH	<250		250	ug/L	10-NOV-17				
	F4 (C34-C50)	<250		250	ug/L	08-NOV-17	500			
	Total Hydrocarbons (C6-C50)	830		370	ug/L	10-NOV-17				
	Chrom. to baseline at nC50	YES			No Unit	08-NOV-17				
	Surrogate: 2-Bromobenzotrifluoride	76.4		60-140	%	08-NOV-17				
	Surrogate: 3,4-Dichlorotoluene	91.0		60-140	%	08-NOV-17				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	3.67		0.020	ug/L	10-NOV-17	4.1			
	Acenaphthylene	0.440		0.020	ug/L	10-NOV-17	1			
	Anthracene	0.159		0.020	ug/L	10-NOV-17	1			
	Benzo(a)anthracene	<0.020		0.020	ug/L	10-NOV-17	1			
	Benzo(a)pyrene	<0.010		0.010	ug/L	10-NOV-17	0.01			
	Benzo(b)fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Benzo(g,h,i)perylene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	Benzo(k)fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Chrysene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Dibenzo(ah)anthracene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	Fluoranthene	0.026		0.020	ug/L	10-NOV-17	0.41			
	Fluorene	2.15		0.020	ug/L	10-NOV-17	120			
	Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	1+2-Methylnaphthalenes	19.8		0.057	ug/L	10-NOV-17	*3.2			
	1-Methylnaphthalene	13.9	DLHC	0.040	ug/L	10-NOV-17	*3.2			
	2-Methylnaphthalene	5.92	DLM	0.040	ug/L	10-NOV-17	*3.2			
	Naphthalene	<15.0	DLQ	15	ug/L	10-NOV-17	**7			
	Phenanthrene	1.39		0.020	ug/L	10-NOV-17	*1			
	Pyrene	0.061		0.020	ug/L	10-NOV-17	4.1			
	Surrogate: d10-Acenaphthene	93.2		60-140	%	10-NOV-17				
	Surrogate: d12-Chrysene	79.0		60-140	%	10-NOV-17				

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T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-12	MW17-104S									
Sampled By:	CLIENT on 01-NOV-17 @ 13:00									
Matrix:	WATER						#1			
Polycyclic Aromatic Hydrocarbons										
	Surrogate: d8-Naphthalene	102.8		60-140	%	10-NOV-17				
	Surrogate: d10-Phenanthrene	71.7		60-140	%	10-NOV-17				
L2017929-13	MW17-106S									
Sampled By:	CLIENT on 01-NOV-17 @ 14:35									
Matrix:	WATER						#1			
Physical Tests										
	Conductivity	0.746		0.0030	mS/cm	07-NOV-17				
	pH	7.48		0.10	pH units	04-NOV-17				
Anions and Nutrients										
	Chloride (Cl)	4.92		0.50	mg/L	07-NOV-17	790			
Cyanides										
	Cyanide, Weak Acid Diss	<2.0		2.0	ug/L	06-NOV-17	52			
Dissolved Metals										
	Dissolved Mercury Filtration Location	FIELD			No Unit	06-NOV-17				
	Dissolved Metals Filtration Location	FIELD			No Unit	06-NOV-17				
	Antimony (Sb)-Dissolved	0.26		0.10	ug/L	07-NOV-17	6			
	Arsenic (As)-Dissolved	1.30		0.10	ug/L	07-NOV-17	25			
	Barium (Ba)-Dissolved	34.9		0.10	ug/L	07-NOV-17	1000			
	Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	07-NOV-17	4			
	Boron (B)-Dissolved	68		10	ug/L	07-NOV-17	5000			
	Cadmium (Cd)-Dissolved	0.043		0.010	ug/L	07-NOV-17	2.1			
	Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	50			
	Cobalt (Co)-Dissolved	0.17		0.10	ug/L	07-NOV-17	3.8			
	Copper (Cu)-Dissolved	0.48		0.20	ug/L	07-NOV-17	69			
	Lead (Pb)-Dissolved	<0.050		0.050	ug/L	07-NOV-17	10			
	Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	06-NOV-17	0.1			
	Molybdenum (Mo)-Dissolved	1.19		0.050	ug/L	07-NOV-17	70			
	Nickel (Ni)-Dissolved	3.19		0.50	ug/L	07-NOV-17	100			
	Selenium (Se)-Dissolved	0.128		0.050	ug/L	07-NOV-17	10			
	Silver (Ag)-Dissolved	<0.050		0.050	ug/L	07-NOV-17	1.2			
	Sodium (Na)-Dissolved	6370		500	ug/L	07-NOV-17	490000			
	Thallium (Tl)-Dissolved	0.120		0.010	ug/L	07-NOV-17	2			
	Uranium (U)-Dissolved	1.92		0.010	ug/L	07-NOV-17	20			
	Vanadium (V)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	6.2			
	Zinc (Zn)-Dissolved	322		1.0	ug/L	07-NOV-17	890			
Speciated Metals										
	Chromium, Hexavalent	<1.0		1.0	ug/L	12-NOV-17	25			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	08-NOV-17	2700			
	Benzene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	08-NOV-17	16			
	Bromoform	<5.0		5.0	ug/L	08-NOV-17	5			
	Bromomethane	<0.50		0.50	ug/L	08-NOV-17	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	08-NOV-17	0.2			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-13	MW17-106S									
Sampled By:	CLIENT on 01-NOV-17 @ 14:35									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Chlorobenzene	<0.50		0.50	ug/L	08-NOV-17	30			
	Dibromochloromethane	<2.0		2.0	ug/L	08-NOV-17	25			
	Chloroform	<1.0		1.0	ug/L	08-NOV-17	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	08-NOV-17	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	08-NOV-17	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	08-NOV-17	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	08-NOV-17	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	08-NOV-17	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	08-NOV-17	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	08-NOV-17	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	08-NOV-17				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	08-NOV-17				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	08-NOV-17	2.4			
	n-Hexane	<0.50		0.50	ug/L	08-NOV-17	5			
	Methyl Ethyl Ketone	<20		20	ug/L	08-NOV-17	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	08-NOV-17	640			
	MTBE	<2.0		2.0	ug/L	08-NOV-17	15			
	Styrene	<0.50		0.50	ug/L	08-NOV-17	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	08-NOV-17	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Toluene	<0.50		0.50	ug/L	08-NOV-17	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	08-NOV-17	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	08-NOV-17	150			
	Vinyl chloride	<0.50		0.50	ug/L	08-NOV-17	0.5			
	o-Xylene	<0.30		0.30	ug/L	08-NOV-17				
	m+p-Xylenes	<0.40		0.40	ug/L	08-NOV-17				
	Xylenes (Total)	<0.50		0.50	ug/L	08-NOV-17	72			
	Surrogate: 4-Bromofluorobenzene	95.6		70-130	%	08-NOV-17				
	Surrogate: 1,4-Difluorobenzene	99.9		70-130	%	08-NOV-17				
Hydrocarbons										
	F1 (C6-C10)	<25		25	ug/L	08-NOV-17	420			
	F1-BTEX	<25		25	ug/L	10-NOV-17	420			
	F2 (C10-C16)	<100		100	ug/L	08-NOV-17	150			
	F2-Naphth	<100		100	ug/L	10-NOV-17				
	F3 (C16-C34)	<250		250	ug/L	08-NOV-17	500			
	F3-PAH	<250		250	ug/L	10-NOV-17				
	F4 (C34-C50)	<250		250	ug/L	08-NOV-17	500			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-13	MW17-106S									
Sampled By:	CLIENT on 01-NOV-17 @ 14:35									
Matrix:	WATER						#1			
Hydrocarbons										
	Total Hydrocarbons (C6-C50)	<370		370	ug/L	10-NOV-17				
	Chrom. to baseline at nC50	YES			No Unit	08-NOV-17				
	Surrogate: 2-Bromobenzotrifluoride	79.8		60-140	%	08-NOV-17				
	Surrogate: 3,4-Dichlorotoluene	88.2		60-140	%	08-NOV-17				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.020		0.020	ug/L	10-NOV-17	4.1			
	Acenaphthylene	<0.020		0.020	ug/L	10-NOV-17	1			
	Anthracene	<0.020		0.020	ug/L	10-NOV-17	1			
	Benzo(a)anthracene	<0.020		0.020	ug/L	10-NOV-17	1			
	Benzo(a)pyrene	<0.010		0.010	ug/L	10-NOV-17	0.01			
	Benzo(b)fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Benzo(g,h,i)perylene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	Benzo(k)fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Chrysene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Dibenzo(ah)anthracene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	Fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.41			
	Fluorene	<0.020		0.020	ug/L	10-NOV-17	120			
	Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	1+2-Methylnaphthalenes	<0.028		0.028	ug/L	10-NOV-17	3.2			
	1-Methylnaphthalene	<0.020		0.020	ug/L	10-NOV-17	3.2			
	2-Methylnaphthalene	<0.020		0.020	ug/L	10-NOV-17	3.2			
	Naphthalene	<0.050		0.050	ug/L	10-NOV-17	7			
	Phenanthrene	<0.020		0.020	ug/L	10-NOV-17	1			
	Pyrene	<0.020		0.020	ug/L	10-NOV-17	4.1			
	Surrogate: d10-Acenaphthene	86.7		60-140	%	10-NOV-17				
	Surrogate: d12-Chrysene	93.0		60-140	%	10-NOV-17				
	Surrogate: d8-Naphthalene	84.8		60-140	%	10-NOV-17				
	Surrogate: d10-Phenanthrene	104.1		60-140	%	10-NOV-17				
L2017929-14	MW17-106D									
Sampled By:	CLIENT on 01-NOV-17 @ 15:35									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	08-NOV-17	2700			
	Benzene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	08-NOV-17	16			
	Bromoform	<5.0		5.0	ug/L	08-NOV-17	5			
	Bromomethane	<0.50		0.50	ug/L	08-NOV-17	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	08-NOV-17	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	08-NOV-17	30			
	Dibromochloromethane	<2.0		2.0	ug/L	08-NOV-17	25			
	Chloroform	<1.0		1.0	ug/L	08-NOV-17	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	08-NOV-17	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	0.5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-14	MW17-106D									
Sampled By:	CLIENT on 01-NOV-17 @ 15:35									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Dichlorodifluoromethane	<2.0		2.0	ug/L	08-NOV-17	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	08-NOV-17	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	08-NOV-17	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	08-NOV-17	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	08-NOV-17	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	08-NOV-17	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	08-NOV-17				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	08-NOV-17				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	08-NOV-17	2.4			
	n-Hexane	<0.50		0.50	ug/L	08-NOV-17	5			
	Methyl Ethyl Ketone	<20		20	ug/L	08-NOV-17	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	08-NOV-17	640			
	MTBE	<2.0		2.0	ug/L	08-NOV-17	15			
	Styrene	<0.50		0.50	ug/L	08-NOV-17	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	08-NOV-17	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Toluene	<0.50		0.50	ug/L	08-NOV-17	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	08-NOV-17	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	08-NOV-17	150			
	Vinyl chloride	<0.50		0.50	ug/L	08-NOV-17	0.5			
	o-Xylene	<0.30		0.30	ug/L	08-NOV-17				
	m+p-Xylenes	<0.40		0.40	ug/L	08-NOV-17				
	Xylenes (Total)	<0.50		0.50	ug/L	08-NOV-17	72			
	Surrogate: 4-Bromofluorobenzene	96.9		70-130	%	08-NOV-17				
	Surrogate: 1,4-Difluorobenzene	98.7		70-130	%	08-NOV-17				
Hydrocarbons										
	F1 (C6-C10)	<25		25	ug/L	08-NOV-17	420			
	F1-BTEX	<25		25	ug/L	10-NOV-17	420			
	F2 (C10-C16)	<100		100	ug/L	10-NOV-17	150			
	F3 (C16-C34)	<250		250	ug/L	10-NOV-17	500			
	F4 (C34-C50)	<250		250	ug/L	10-NOV-17	500			
	Total Hydrocarbons (C6-C50)	<370		370	ug/L	10-NOV-17				
	Chrom. to baseline at nC50	YES			No Unit	10-NOV-17				
	Surrogate: 2-Bromobenzotrifluoride	81.1		60-140	%	10-NOV-17				
	Surrogate: 3,4-Dichlorotoluene	97.6		60-140	%	08-NOV-17				
L2017929-15	MW17-107S									
Sampled By:	CLIENT on 01-NOV-17 @ 16:25									
Matrix:	WATER						#1			
Physical Tests										

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-15	MW17-107S									
Sampled By:	CLIENT on 01-NOV-17 @ 16:25									
Matrix:	WATER						#1			
Physical Tests										
	Conductivity	0.831		0.0030	mS/cm	07-NOV-17				
	pH	7.76		0.10	pH units	04-NOV-17				
Anions and Nutrients										
	Chloride (Cl)	7.91		0.50	mg/L	07-NOV-17	790			
Cyanides										
	Cyanide, Weak Acid Diss	<2.0		2.0	ug/L	06-NOV-17	52			
Dissolved Metals										
	Dissolved Mercury Filtration Location	FIELD			No Unit	06-NOV-17				
	Dissolved Metals Filtration Location	FIELD			No Unit	06-NOV-17				
	Antimony (Sb)-Dissolved	0.28		0.10	ug/L	07-NOV-17	6			
	Arsenic (As)-Dissolved	2.02		0.10	ug/L	07-NOV-17	25			
	Barium (Ba)-Dissolved	88.7		0.10	ug/L	07-NOV-17	1000			
	Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	07-NOV-17	4			
	Boron (B)-Dissolved	85		10	ug/L	07-NOV-17	5000			
	Cadmium (Cd)-Dissolved	0.133		0.010	ug/L	07-NOV-17	2.1			
	Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	50			
	Cobalt (Co)-Dissolved	0.47		0.10	ug/L	07-NOV-17	3.8			
	Copper (Cu)-Dissolved	0.85		0.20	ug/L	07-NOV-17	69			
	Lead (Pb)-Dissolved	0.167		0.050	ug/L	07-NOV-17	10			
	Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	06-NOV-17	0.1			
	Molybdenum (Mo)-Dissolved	2.42		0.050	ug/L	07-NOV-17	70			
	Nickel (Ni)-Dissolved	2.92		0.50	ug/L	07-NOV-17	100			
	Selenium (Se)-Dissolved	0.859		0.050	ug/L	07-NOV-17	10			
	Silver (Ag)-Dissolved	<0.050		0.050	ug/L	07-NOV-17	1.2			
	Sodium (Na)-Dissolved	7800		500	ug/L	07-NOV-17	490000			
	Thallium (Tl)-Dissolved	0.086		0.010	ug/L	07-NOV-17	2			
	Uranium (U)-Dissolved	1.40		0.010	ug/L	07-NOV-17	20			
	Vanadium (V)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	6.2			
	Zinc (Zn)-Dissolved	200		1.0	ug/L	07-NOV-17	890			
Speciated Metals										
	Chromium, Hexavalent	<1.0		1.0	ug/L	12-NOV-17	25			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	08-NOV-17	2700			
	Benzene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	08-NOV-17	16			
	Bromoform	<5.0		5.0	ug/L	08-NOV-17	5			
	Bromomethane	<0.50		0.50	ug/L	08-NOV-17	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	08-NOV-17	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	08-NOV-17	30			
	Dibromochloromethane	<2.0		2.0	ug/L	08-NOV-17	25			
	Chloroform	<1.0		1.0	ug/L	08-NOV-17	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	08-NOV-17	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	0.5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-15	MW17-107S									
Sampled By:	CLIENT on 01-NOV-17 @ 16:25									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Dichlorodifluoromethane	<2.0		2.0	ug/L	08-NOV-17	590			
	1,1-Dichloroethane	21.4		0.50	ug/L	08-NOV-17	*5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	1,1-Dichloroethylene	1.01		0.50	ug/L	08-NOV-17	*0.5			
	cis-1,2-Dichloroethylene	1.47		0.50	ug/L	08-NOV-17	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	08-NOV-17	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	08-NOV-17	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	08-NOV-17	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	08-NOV-17				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	08-NOV-17				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	08-NOV-17	2.4			
	n-Hexane	<0.50		0.50	ug/L	08-NOV-17	5			
	Methyl Ethyl Ketone	<20		20	ug/L	08-NOV-17	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	08-NOV-17	640			
	MTBE	<2.0		2.0	ug/L	08-NOV-17	15			
	Styrene	<0.50		0.50	ug/L	08-NOV-17	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	08-NOV-17	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Tetrachloroethylene	0.68		0.50	ug/L	08-NOV-17	*0.5			
	Toluene	<0.50		0.50	ug/L	08-NOV-17	24			
	1,1,1-Trichloroethane	19.5		0.50	ug/L	08-NOV-17	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Trichloroethylene	1.26		0.50	ug/L	08-NOV-17	*0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	08-NOV-17	150			
	Vinyl chloride	<0.50		0.50	ug/L	08-NOV-17	0.5			
	o-Xylene	<0.30		0.30	ug/L	08-NOV-17				
	m+p-Xylenes	<0.40		0.40	ug/L	08-NOV-17				
	Xylenes (Total)	<0.50		0.50	ug/L	08-NOV-17	72			
	Surrogate: 4-Bromofluorobenzene	95.4		70-130	%	08-NOV-17				
	Surrogate: 1,4-Difluorobenzene	99.4		70-130	%	08-NOV-17				
Hydrocarbons										
	F1 (C6-C10)	<25		25	ug/L	08-NOV-17	420			
	F1-BTEX	<25		25	ug/L	13-NOV-17	420			
	F2 (C10-C16)	<100		100	ug/L	08-NOV-17	150			
	F2-Naphth	<100		100	ug/L	13-NOV-17				
	F3 (C16-C34)	<250		250	ug/L	08-NOV-17	500			
	F3-PAH	<250		250	ug/L	13-NOV-17				
	F4 (C34-C50)	<250		250	ug/L	08-NOV-17	500			
	Total Hydrocarbons (C6-C50)	<370		370	ug/L	13-NOV-17				
	Chrom. to baseline at nC50	YES			No Unit	08-NOV-17				
	Surrogate: 2-Bromobenzotrifluoride	82.1		60-140	%	08-NOV-17				
	Surrogate: 3,4-Dichlorotoluene	78.3		60-140	%	08-NOV-17				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.020		0.020	ug/L	10-NOV-17	4.1			
	Acenaphthylene	<0.020		0.020	ug/L	10-NOV-17	1			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-15	MW17-107S									
Sampled By:	CLIENT on 01-NOV-17 @ 16:25									
Matrix:	WATER						#1			
Polycyclic Aromatic Hydrocarbons										
	Anthracene	<0.020		0.020	ug/L	10-NOV-17	1			
	Benzo(a)anthracene	<0.020		0.020	ug/L	10-NOV-17	1			
	Benzo(a)pyrene	<0.010		0.010	ug/L	10-NOV-17	0.01			
	Benzo(b)fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Benzo(g,h,i)perylene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	Benzo(k)fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Chrysene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Dibenzo(ah)anthracene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	Fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.41			
	Fluorene	<0.020		0.020	ug/L	10-NOV-17	120			
	Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	1+2-Methylnaphthalenes	<0.028		0.028	ug/L	13-NOV-17	3.2			
	1-Methylnaphthalene	<0.020		0.020	ug/L	10-NOV-17	3.2			
	2-Methylnaphthalene	<0.020		0.020	ug/L	10-NOV-17	3.2			
	Naphthalene	<0.050		0.050	ug/L	10-NOV-17	7			
	Phenanthrene	<0.020		0.020	ug/L	10-NOV-17	1			
	Pyrene	<0.020		0.020	ug/L	10-NOV-17	4.1			
	Surrogate: d10-Acenaphthene	94.1		60-140	%	10-NOV-17				
	Surrogate: d12-Chrysene	92.0		60-140	%	10-NOV-17				
	Surrogate: d8-Naphthalene	87.3		60-140	%	10-NOV-17				
	Surrogate: d10-Phenanthrene	109.1		60-140	%	10-NOV-17				
Semi-Volatile Organics										
	Biphenyl	<0.40		0.40	ug/L	13-NOV-17	0.5			
	4-Chloroaniline	<0.40		0.40	ug/L	13-NOV-17	10			
	Bis(2-chloroethyl)ether	<0.40		0.40	ug/L	13-NOV-17	5			
	Bis(2-chloroisopropyl)ether	<0.40		0.40	ug/L	13-NOV-17	120			
	2-Chlorophenol	<0.30		0.30	ug/L	13-NOV-17	8.9			
	3,3'-Dichlorobenzidine	<0.40		0.40	ug/L	13-NOV-17	0.5			
	2,4-Dichlorophenol	<0.30		0.30	ug/L	13-NOV-17	20			
	Diethylphthalate	<0.20		0.20	ug/L	13-NOV-17	30			
	Dimethylphthalate	<0.20		0.20	ug/L	13-NOV-17	30			
	2,4-Dimethylphenol	<0.50		0.50	ug/L	13-NOV-17	59			
	2,4-Dinitrophenol	<1.0		1.0	ug/L	13-NOV-17	10			
	2,4-Dinitrotoluene	<0.40		0.40	ug/L	13-NOV-17	5			
	2,6-Dinitrotoluene	<0.40		0.40	ug/L	13-NOV-17	5			
	2,4+2,6-Dinitrotoluene	<0.57		0.57	ug/L	13-NOV-17				
	Bis(2-ethylhexyl)phthalate	<2.0		2.0	ug/L	13-NOV-17	10			
	Pentachlorophenol	<0.50		0.50	ug/L	13-NOV-17	30			
	Phenanthrene	<0.20		0.20	ug/L	13-NOV-17	1			
	Phenol	<0.50		0.50	ug/L	13-NOV-17	890			
	Pyrene	<0.20		0.20	ug/L	13-NOV-17	4.1			
	1,2,4-Trichlorobenzene	<0.40		0.40	ug/L	13-NOV-17	3			
	2,4,5-Trichlorophenol	<0.20		0.20	ug/L	13-NOV-17	8.9			
	2,4,6-Trichlorophenol	<0.20		0.20	ug/L	13-NOV-17	2			
	Surrogate: 2-Fluorobiphenyl	87.9		50-140	%	13-NOV-17				
	Surrogate: Nitrobenzene d5	95.5		50-140	%	13-NOV-17				

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T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-15	MW17-107S									
Sampled By:	CLIENT on 01-NOV-17 @ 16:25									
Matrix:	WATER						#1			
Semi-Volatile Organics										
	Surrogate: Phenol d5	46.6		30-130	%	13-NOV-17				
	Surrogate: p-Terphenyl d14	91.7		60-140	%	13-NOV-17				
	Surrogate: 2,4,6-Tribromophenol	98.3		50-140	%	13-NOV-17				
L2017929-16	DUP4									
Sampled By:	CLIENT on 01-NOV-17									
Matrix:	WATER						#1			
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.020		0.020	ug/L	10-NOV-17	4.1			
	Acenaphthylene	<0.020		0.020	ug/L	10-NOV-17	1			
	Anthracene	<0.020		0.020	ug/L	10-NOV-17	1			
	Benzo(a)anthracene	<0.020		0.020	ug/L	10-NOV-17	1			
	Benzo(a)pyrene	<0.010		0.010	ug/L	10-NOV-17	0.01			
	Benzo(b)fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Benzo(g,h,i)perylene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	Benzo(k)fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Chrysene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Dibenzo(ah)anthracene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	Fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.41			
	Fluorene	<0.020		0.020	ug/L	10-NOV-17	120			
	Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	1+2-Methylnaphthalenes	<0.028		0.028	ug/L	13-NOV-17	3.2			
	1-Methylnaphthalene	<0.020		0.020	ug/L	10-NOV-17	3.2			
	2-Methylnaphthalene	<0.020		0.020	ug/L	10-NOV-17	3.2			
	Naphthalene	<0.050		0.050	ug/L	10-NOV-17	7			
	Phenanthrene	<0.020		0.020	ug/L	10-NOV-17	1			
	Pyrene	<0.020		0.020	ug/L	10-NOV-17	4.1			
	Surrogate: d10-Acenaphthene	77.2		60-140	%	10-NOV-17				
	Surrogate: d12-Chrysene	63.6		60-140	%	10-NOV-17				
	Surrogate: d8-Naphthalene	74.6		60-140	%	10-NOV-17				
	Surrogate: d10-Phenanthrene	91.9		60-140	%	10-NOV-17				
Semi-Volatile Organics										
	Biphenyl	<0.40		0.40	ug/L	13-NOV-17	0.5			
	4-Chloroaniline	<0.40		0.40	ug/L	13-NOV-17	10			
	Bis(2-chloroethyl)ether	<0.40		0.40	ug/L	13-NOV-17	5			
	Bis(2-chloroisopropyl)ether	<0.40		0.40	ug/L	13-NOV-17	120			
	2-Chlorophenol	<0.30		0.30	ug/L	13-NOV-17	8.9			
	3,3'-Dichlorobenzidine	<0.40		0.40	ug/L	13-NOV-17	0.5			
	2,4-Dichlorophenol	<0.30		0.30	ug/L	13-NOV-17	20			
	Diethylphthalate	<0.20		0.20	ug/L	13-NOV-17	30			
	Dimethylphthalate	<0.20		0.20	ug/L	13-NOV-17	30			
	2,4-Dimethylphenol	<0.50		0.50	ug/L	13-NOV-17	59			
	2,4-Dinitrophenol	<1.0		1.0	ug/L	13-NOV-17	10			
	2,4-Dinitrotoluene	<0.40		0.40	ug/L	13-NOV-17	5			
	2,6-Dinitrotoluene	<0.40		0.40	ug/L	13-NOV-17	5			
	2,4+2,6-Dinitrotoluene	<0.57		0.57	ug/L	13-NOV-17				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
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T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-16	DUP4									
Sampled By:	CLIENT on 01-NOV-17									
Matrix:	WATER						#1			
Semi-Volatile Organics										
	Bis(2-ethylhexyl)phthalate	<2.0		2.0	ug/L	13-NOV-17	10			
	Pentachlorophenol	<0.50		0.50	ug/L	13-NOV-17	30			
	Phenanthrene	<0.20		0.20	ug/L	13-NOV-17	1			
	Phenol	<0.50		0.50	ug/L	13-NOV-17	890			
	Pyrene	<0.20		0.20	ug/L	13-NOV-17	4.1			
	1,2,4-Trichlorobenzene	<0.40		0.40	ug/L	13-NOV-17	3			
	2,4,5-Trichlorophenol	<0.20		0.20	ug/L	13-NOV-17	8.9			
	2,4,6-Trichlorophenol	<0.20		0.20	ug/L	13-NOV-17	2			
	Surrogate: 2-Fluorobiphenyl	78.5		50-140	%	13-NOV-17				
	Surrogate: Nitrobenzene d5	85.6		50-140	%	13-NOV-17				
	Surrogate: Phenol d5	41.5		30-130	%	13-NOV-17				
	Surrogate: p-Terphenyl d14	86.3		60-140	%	13-NOV-17				
	Surrogate: 2,4,6-Tribromophenol	97.9		50-140	%	13-NOV-17				
L2017929-17	MW17-109S									
Sampled By:	CLIENT on 02-NOV-17 @ 09:43									
Matrix:	WATER						#1			
Physical Tests										
	Conductivity	1.67		0.0030	mS/cm	07-NOV-17				
	pH	7.44		0.10	pH units	04-NOV-17				
Anions and Nutrients										
	Chloride (Cl)	8.31		0.50	mg/L	07-NOV-17	790			
Cyanides										
	Cyanide, Weak Acid Diss	<2.0		2.0	ug/L	06-NOV-17	52			
Dissolved Metals										
	Dissolved Mercury Filtration Location	FIELD			No Unit	06-NOV-17				
	Dissolved Metals Filtration Location	FIELD			No Unit	06-NOV-17				
	Antimony (Sb)-Dissolved	<1.0	DLHC	1.0	ug/L	06-NOV-17	6			
	Arsenic (As)-Dissolved	<1.0	DLHC	1.0	ug/L	06-NOV-17	25			
	Barium (Ba)-Dissolved	48.3	DLHC	1.0	ug/L	06-NOV-17	1000			
	Beryllium (Be)-Dissolved	<1.0	DLHC	1.0	ug/L	06-NOV-17	4			
	Boron (B)-Dissolved	<100	DLHC	100	ug/L	06-NOV-17	5000			
	Cadmium (Cd)-Dissolved	<0.10	DLHC	0.10	ug/L	06-NOV-17	2.1			
	Chromium (Cr)-Dissolved	<5.0	DLHC	5.0	ug/L	06-NOV-17	50			
	Cobalt (Co)-Dissolved	<1.0	DLHC	1.0	ug/L	06-NOV-17	3.8			
	Copper (Cu)-Dissolved	<2.0	DLHC	2.0	ug/L	06-NOV-17	69			
	Lead (Pb)-Dissolved	<0.50	DLHC	0.50	ug/L	06-NOV-17	10			
	Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	06-NOV-17	0.1			
	Molybdenum (Mo)-Dissolved	<0.50	DLHC	0.50	ug/L	06-NOV-17	70			
	Nickel (Ni)-Dissolved	<5.0	DLHC	5.0	ug/L	06-NOV-17	100			
	Selenium (Se)-Dissolved	1.03	DLHC	0.50	ug/L	06-NOV-17	10			
	Silver (Ag)-Dissolved	<0.50	DLHC	0.50	ug/L	06-NOV-17	1.2			
	Sodium (Na)-Dissolved	<5000	DLHC	5000	ug/L	06-NOV-17	490000			
	Thallium (Tl)-Dissolved	<0.10	DLHC	0.10	ug/L	06-NOV-17	2			
	Uranium (U)-Dissolved	4.92	DLHC	0.10	ug/L	06-NOV-17	20			
	Vanadium (V)-Dissolved	<5.0	DLHC	5.0	ug/L	06-NOV-17	6.2			

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T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-17	MW17-109S									
Sampled By:	CLIENT on 02-NOV-17 @ 09:43									
Matrix:	WATER						#1			
Dissolved Metals										
	Zinc (Zn)-Dissolved	<10	DLHC	10	ug/L	06-NOV-17	890			
Speciated Metals										
	Chromium, Hexavalent	<1.0		1.0	ug/L	12-NOV-17	25			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	08-NOV-17	2700			
	Benzene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	08-NOV-17	16			
	Bromoform	<5.0		5.0	ug/L	08-NOV-17	5			
	Bromomethane	<0.50		0.50	ug/L	08-NOV-17	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	08-NOV-17	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	08-NOV-17	30			
	Dibromochloromethane	<2.0		2.0	ug/L	08-NOV-17	25			
	Chloroform	<1.0		1.0	ug/L	08-NOV-17	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	08-NOV-17	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	08-NOV-17	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	08-NOV-17	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	08-NOV-17	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	08-NOV-17	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	08-NOV-17	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	08-NOV-17	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	08-NOV-17				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	08-NOV-17				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Ethylbenzene	3.19		0.50	ug/L	08-NOV-17	*2.4			
	n-Hexane	<0.50		0.50	ug/L	08-NOV-17	5			
	Methyl Ethyl Ketone	<20		20	ug/L	08-NOV-17	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	08-NOV-17	640			
	MTBE	<2.0		2.0	ug/L	08-NOV-17	15			
	Styrene	<0.50		0.50	ug/L	08-NOV-17	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	08-NOV-17	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Toluene	<0.50		0.50	ug/L	08-NOV-17	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	08-NOV-17	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	08-NOV-17	150			
	Vinyl chloride	<0.50		0.50	ug/L	08-NOV-17	0.5			
	o-Xylene	0.50		0.30	ug/L	08-NOV-17				
	m+p-Xylenes	1.10		0.40	ug/L	08-NOV-17				
	Xylenes (Total)	1.60		0.50	ug/L	08-NOV-17	72			

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T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-17	MW17-109S									
Sampled By:	CLIENT on 02-NOV-17 @ 09:43									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Surrogate: 4-Bromofluorobenzene	96.4		70-130	%	08-NOV-17				
	Surrogate: 1,4-Difluorobenzene	98.8		70-130	%	08-NOV-17				
Hydrocarbons										
	F1 (C6-C10)	38		25	ug/L	08-NOV-17	420			
	F1-BTEX	33		25	ug/L	10-NOV-17	420			
	F2 (C10-C16)	<100		100	ug/L	08-NOV-17	150			
	F2-Naphth	<100		100	ug/L	10-NOV-17				
	F3 (C16-C34)	<250		250	ug/L	08-NOV-17	500			
	F3-PAH	<250		250	ug/L	10-NOV-17				
	F4 (C34-C50)	<250		250	ug/L	08-NOV-17	500			
	Total Hydrocarbons (C6-C50)	<370		370	ug/L	10-NOV-17				
	Chrom. to baseline at nC50	YES			No Unit	08-NOV-17				
	Surrogate: 2-Bromobenzotrifluoride	61.4		60-140	%	08-NOV-17				
	Surrogate: 3,4-Dichlorotoluene	89.1		60-140	%	08-NOV-17				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	3.37		0.020	ug/L	10-NOV-17	4.1			
	Acenaphthylene	0.553		0.020	ug/L	10-NOV-17	1			
	Anthracene	0.314		0.020	ug/L	10-NOV-17	1			
	Benzo(a)anthracene	<0.020		0.020	ug/L	10-NOV-17	1			
	Benzo(a)pyrene	<0.010		0.010	ug/L	10-NOV-17	0.01			
	Benzo(b)fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Benzo(g,h,i)perylene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	Benzo(k)fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Chrysene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Dibenzo(ah)anthracene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	Fluoranthene	0.030		0.020	ug/L	10-NOV-17	0.41			
	Fluorene	3.06		0.020	ug/L	10-NOV-17	120			
	Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	1+2-Methylnaphthalenes	4.47		0.028	ug/L	10-NOV-17	*3.2			
	1-Methylnaphthalene	3.98		0.020	ug/L	10-NOV-17	*3.2			
	2-Methylnaphthalene	0.493		0.020	ug/L	10-NOV-17	3.2			
	Naphthalene	<0.800	DLQ	0.80	ug/L	10-NOV-17	7			
	Phenanthrene	0.953		0.020	ug/L	10-NOV-17	1			
	Pyrene	0.084		0.020	ug/L	10-NOV-17	4.1			
	Surrogate: d10-Acenaphthene	84.4		60-140	%	10-NOV-17				
	Surrogate: d12-Chrysene	79.4		60-140	%	10-NOV-17				
	Surrogate: d8-Naphthalene	118.6		60-140	%	10-NOV-17				
	Surrogate: d10-Phenanthrene	82.9		60-140	%	10-NOV-17				
Polychlorinated Biphenyls										
	Aroclor 1242	<0.10	DLM	0.10	ug/L	10-NOV-17				
	Aroclor 1248	<0.020		0.020	ug/L	10-NOV-17				
	Aroclor 1254	<0.020		0.020	ug/L	10-NOV-17				
	Aroclor 1260	<0.020		0.020	ug/L	10-NOV-17				
	Total PCBs	<0.110	DLM	0.11	ug/L	10-NOV-17	0.2			
	Surrogate: 2-fluorobiphenyl	84.8		50-150	%	10-NOV-17				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-18	DUP5									
Sampled By:	CLIENT on 02-NOV-17									
Matrix:	WATER						#1			
Polychlorinated Biphenyls										
	Aroclor 1242	<0.20	DLM	0.20	ug/L	10-NOV-17				
	Aroclor 1248	<0.020		0.020	ug/L	10-NOV-17				
	Aroclor 1254	<0.020		0.020	ug/L	10-NOV-17				
	Aroclor 1260	<0.020		0.020	ug/L	10-NOV-17				
	Total PCBs	<0.20	DLM	0.20	ug/L	10-NOV-17	0.2			
	Surrogate: 2-fluorobiphenyl	80.6		50-150	%	10-NOV-17				
L2017929-19	MW17-110S									
Sampled By:	CLIENT on 02-NOV-17 @ 10:40									
Matrix:	WATER						#1			
Physical Tests										
	Conductivity	0.890		0.0030	mS/cm	07-NOV-17				
	pH	7.53		0.10	pH units	04-NOV-17				
Anions and Nutrients										
	Chloride (Cl)	5.88		0.50	mg/L	07-NOV-17	790			
Cyanides										
	Cyanide, Weak Acid Diss	<2.0		2.0	ug/L	06-NOV-17	52			
Dissolved Metals										
	Dissolved Mercury Filtration Location	FIELD			No Unit	06-NOV-17				
	Dissolved Metals Filtration Location	FIELD			No Unit	06-NOV-17				
	Antimony (Sb)-Dissolved	0.22		0.10	ug/L	07-NOV-17	6			
	Arsenic (As)-Dissolved	2.61		0.10	ug/L	07-NOV-17	25			
	Barium (Ba)-Dissolved	42.8		0.10	ug/L	07-NOV-17	1000			
	Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	07-NOV-17	4			
	Boron (B)-Dissolved	118		10	ug/L	07-NOV-17	5000			
	Cadmium (Cd)-Dissolved	0.020		0.010	ug/L	07-NOV-17	2.1			
	Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	50			
	Cobalt (Co)-Dissolved	1.54		0.10	ug/L	07-NOV-17	3.8			
	Copper (Cu)-Dissolved	1.61		0.20	ug/L	07-NOV-17	69			
	Lead (Pb)-Dissolved	0.154		0.050	ug/L	07-NOV-17	10			
	Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	06-NOV-17	0.1			
	Molybdenum (Mo)-Dissolved	2.58		0.050	ug/L	07-NOV-17	70			
	Nickel (Ni)-Dissolved	6.48		0.50	ug/L	07-NOV-17	100			
	Selenium (Se)-Dissolved	0.231		0.050	ug/L	07-NOV-17	10			
	Silver (Ag)-Dissolved	<0.050		0.050	ug/L	07-NOV-17	1.2			
	Sodium (Na)-Dissolved	8290		500	ug/L	07-NOV-17	490000			
	Thallium (Tl)-Dissolved	0.081		0.010	ug/L	07-NOV-17	2			
	Uranium (U)-Dissolved	2.76		0.010	ug/L	07-NOV-17	20			
	Vanadium (V)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	6.2			
	Zinc (Zn)-Dissolved	459		1.0	ug/L	07-NOV-17	890			
Speciated Metals										
	Chromium, Hexavalent	<1.0		1.0	ug/L	12-NOV-17	25			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	08-NOV-17	2700			
	Benzene	<0.50		0.50	ug/L	08-NOV-17	0.5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-19	MW17-110S									
Sampled By:	CLIENT on 02-NOV-17 @ 10:40									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Bromodichloromethane	<2.0		2.0	ug/L	08-NOV-17	16			
	Bromoform	<5.0		5.0	ug/L	08-NOV-17	5			
	Bromomethane	<0.50		0.50	ug/L	08-NOV-17	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	08-NOV-17	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	08-NOV-17	30			
	Dibromochloromethane	<2.0		2.0	ug/L	08-NOV-17	25			
	Chloroform	<1.0		1.0	ug/L	08-NOV-17	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	08-NOV-17	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	08-NOV-17	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	08-NOV-17	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	08-NOV-17	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	08-NOV-17	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	08-NOV-17	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	08-NOV-17	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	08-NOV-17				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	08-NOV-17				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	08-NOV-17	2.4			
	n-Hexane	<0.50		0.50	ug/L	08-NOV-17	5			
	Methyl Ethyl Ketone	<20		20	ug/L	08-NOV-17	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	08-NOV-17	640			
	MTBE	<2.0		2.0	ug/L	08-NOV-17	15			
	Styrene	<0.50		0.50	ug/L	08-NOV-17	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	08-NOV-17	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Toluene	<0.50		0.50	ug/L	08-NOV-17	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	08-NOV-17	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	08-NOV-17	150			
	Vinyl chloride	<0.50		0.50	ug/L	08-NOV-17	0.5			
	o-Xylene	<0.30		0.30	ug/L	08-NOV-17				
	m+p-Xylenes	<0.40		0.40	ug/L	08-NOV-17				
	Xylenes (Total)	<0.50		0.50	ug/L	08-NOV-17	72			
	Surrogate: 4-Bromofluorobenzene	97.1		70-130	%	08-NOV-17				
	Surrogate: 1,4-Difluorobenzene	97.6		70-130	%	08-NOV-17				
Hydrocarbons										
	F1 (C6-C10)	<25		25	ug/L	08-NOV-17	420			
	F1-BTEX	<25		25	ug/L	10-NOV-17	420			
	F2 (C10-C16)	<100		100	ug/L	10-NOV-17	150			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-19	MW17-110S									
Sampled By:	CLIENT on 02-NOV-17 @ 10:40									
Matrix:	WATER						#1			
Hydrocarbons										
	F2-Naphth	<100		100	ug/L	10-NOV-17				
	F3 (C16-C34)	<250		250	ug/L	10-NOV-17	500			
	F3-PAH	<250		250	ug/L	10-NOV-17				
	F4 (C34-C50)	<250		250	ug/L	10-NOV-17	500			
	Total Hydrocarbons (C6-C50)	<370		370	ug/L	10-NOV-17				
	Chrom. to baseline at nC50	YES			No Unit	10-NOV-17				
	Surrogate: 2-Bromobenzotrifluoride	84.5		60-140	%	10-NOV-17				
	Surrogate: 3,4-Dichlorotoluene	92.5		60-140	%	08-NOV-17				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.020		0.020	ug/L	10-NOV-17	4.1			
	Acenaphthylene	<0.020		0.020	ug/L	10-NOV-17	1			
	Anthracene	<0.020		0.020	ug/L	10-NOV-17	1			
	Benzo(a)anthracene	<0.020		0.020	ug/L	10-NOV-17	1			
	Benzo(a)pyrene	<0.010		0.010	ug/L	10-NOV-17	0.01			
	Benzo(b)fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Benzo(g,h,i)perylene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	Benzo(k)fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Chrysene	<0.020		0.020	ug/L	10-NOV-17	0.1			
	Dibenzo(ah)anthracene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	Fluoranthene	<0.020		0.020	ug/L	10-NOV-17	0.41			
	Fluorene	<0.020		0.020	ug/L	10-NOV-17	120			
	Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	10-NOV-17	0.2			
	1+2-Methylnaphthalenes	<0.028		0.028	ug/L	10-NOV-17	3.2			
	1-Methylnaphthalene	<0.020		0.020	ug/L	10-NOV-17	3.2			
	2-Methylnaphthalene	<0.020		0.020	ug/L	10-NOV-17	3.2			
	Naphthalene	<0.050		0.050	ug/L	10-NOV-17	7			
	Phenanthrene	<0.020		0.020	ug/L	10-NOV-17	1			
	Pyrene	<0.020		0.020	ug/L	10-NOV-17	4.1			
	Surrogate: d10-Acenaphthene	89.9		60-140	%	10-NOV-17				
	Surrogate: d12-Chrysene	81.1		60-140	%	10-NOV-17				
	Surrogate: d8-Naphthalene	81.6		60-140	%	10-NOV-17				
	Surrogate: d10-Phenanthrene	99.9		60-140	%	10-NOV-17				
L2017929-20	MW17-111S									
Sampled By:	CLIENT on 02-NOV-17 @ 11:58									
Matrix:	WATER						#1			
Physical Tests										
	Conductivity	0.680		0.0030	mS/cm	07-NOV-17				
	pH	7.81		0.10	pH units	04-NOV-17				
Anions and Nutrients										
	Chloride (Cl)	12.9		0.50	mg/L	07-NOV-17	790			
Cyanides										
	Cyanide, Weak Acid Diss	<2.0		2.0	ug/L	06-NOV-17	52			
Dissolved Metals										
	Dissolved Mercury Filtration Location	FIELD			No Unit	06-NOV-17				
	Dissolved Metals Filtration Location	FIELD			No Unit	06-NOV-17				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-20	MW17-111S									
Sampled By:	CLIENT on 02-NOV-17 @ 11:58									
Matrix:	WATER						#1			
Dissolved Metals										
	Antimony (Sb)-Dissolved	0.14		0.10	ug/L	07-NOV-17	6			
	Arsenic (As)-Dissolved	3.15		0.10	ug/L	07-NOV-17	25			
	Barium (Ba)-Dissolved	82.4		0.10	ug/L	07-NOV-17	1000			
	Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	07-NOV-17	4			
	Boron (B)-Dissolved	76		10	ug/L	07-NOV-17	5000			
	Cadmium (Cd)-Dissolved	0.119		0.010	ug/L	07-NOV-17	2.1			
	Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	50			
	Cobalt (Co)-Dissolved	0.37		0.10	ug/L	07-NOV-17	3.8			
	Copper (Cu)-Dissolved	0.40		0.20	ug/L	07-NOV-17	69			
	Lead (Pb)-Dissolved	0.263		0.050	ug/L	07-NOV-17	10			
	Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	06-NOV-17	0.1			
	Molybdenum (Mo)-Dissolved	3.25		0.050	ug/L	07-NOV-17	70			
	Nickel (Ni)-Dissolved	2.00		0.50	ug/L	07-NOV-17	100			
	Selenium (Se)-Dissolved	0.126		0.050	ug/L	07-NOV-17	10			
	Silver (Ag)-Dissolved	<0.050		0.050	ug/L	07-NOV-17	1.2			
	Sodium (Na)-Dissolved	7430		500	ug/L	07-NOV-17	490000			
	Thallium (Tl)-Dissolved	0.115		0.010	ug/L	07-NOV-17	2			
	Uranium (U)-Dissolved	2.36		0.010	ug/L	07-NOV-17	20			
	Vanadium (V)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	6.2			
	Zinc (Zn)-Dissolved	304		1.0	ug/L	07-NOV-17	890			
Speciated Metals										
	Chromium, Hexavalent	<1.0		1.0	ug/L	12-NOV-17	25			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	08-NOV-17	2700			
	Benzene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	08-NOV-17	16			
	Bromoform	<5.0		5.0	ug/L	08-NOV-17	5			
	Bromomethane	<0.50		0.50	ug/L	08-NOV-17	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	08-NOV-17	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	08-NOV-17	30			
	Dibromochloromethane	<2.0		2.0	ug/L	08-NOV-17	25			
	Chloroform	<1.0		1.0	ug/L	08-NOV-17	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	08-NOV-17	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	08-NOV-17	590			
	1,1-Dichloroethane	2.64		0.50	ug/L	08-NOV-17	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	08-NOV-17	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	08-NOV-17	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	08-NOV-17	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	08-NOV-17	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	08-NOV-17				

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T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-20	MW17-111S									
Sampled By:	CLIENT on 02-NOV-17 @ 11:58									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	08-NOV-17				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	08-NOV-17	2.4			
	n-Hexane	<0.50		0.50	ug/L	08-NOV-17	5			
	Methyl Ethyl Ketone	<20		20	ug/L	08-NOV-17	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	08-NOV-17	640			
	MTBE	<2.0		2.0	ug/L	08-NOV-17	15			
	Styrene	<0.50		0.50	ug/L	08-NOV-17	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	08-NOV-17	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Toluene	<0.50		0.50	ug/L	08-NOV-17	24			
	1,1,1-Trichloroethane	4.51		0.50	ug/L	08-NOV-17	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	08-NOV-17	150			
	Vinyl chloride	<0.50		0.50	ug/L	08-NOV-17	0.5			
	o-Xylene	<0.30		0.30	ug/L	08-NOV-17				
	m+p-Xylenes	<0.40		0.40	ug/L	08-NOV-17				
	Xylenes (Total)	<0.50		0.50	ug/L	08-NOV-17	72			
	Surrogate: 4-Bromofluorobenzene	97.0		70-130	%	08-NOV-17				
	Surrogate: 1,4-Difluorobenzene	97.8		70-130	%	08-NOV-17				
Hydrocarbons										
	F1 (C6-C10)	<25		25	ug/L	08-NOV-17	420			
	F1-BTEX	<25		25	ug/L	10-NOV-17	420			
	F2 (C10-C16)	<100		100	ug/L	10-NOV-17	150			
	F3 (C16-C34)	<250		250	ug/L	10-NOV-17	500			
	F4 (C34-C50)	<250		250	ug/L	10-NOV-17	500			
	Total Hydrocarbons (C6-C50)	<370		370	ug/L	10-NOV-17				
	Chrom. to baseline at nC50	YES			No Unit	10-NOV-17				
	Surrogate: 2-Bromobenzotrifluoride	82.2		60-140	%	10-NOV-17				
	Surrogate: 3,4-Dichlorotoluene	101.3		60-140	%	08-NOV-17				
Polychlorinated Biphenyls										
	Aroclor 1242	<0.020		0.020	ug/L	10-NOV-17				
	Aroclor 1248	<0.020		0.020	ug/L	10-NOV-17				
	Aroclor 1254	<0.020		0.020	ug/L	10-NOV-17				
	Aroclor 1260	<0.020		0.020	ug/L	10-NOV-17				
	Total PCBs	<0.040		0.040	ug/L	10-NOV-17	0.2			
	Surrogate: 2-fluorobiphenyl	80.4		50-150	%	10-NOV-17				
L2017929-21	MW17-103S									
Sampled By:	CLIENT on 02-NOV-17 @ 13:32									
Matrix:	WATER						#1			
Physical Tests										
	Conductivity	0.864		0.0030	mS/cm	04-NOV-17				
	pH	7.63		0.10	pH units	04-NOV-17				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-21	MW17-103S									
Sampled By:	CLIENT on 02-NOV-17 @ 13:32									
Matrix:	WATER						#1			
Anions and Nutrients										
	Chloride (Cl)	6.86		0.50	mg/L	07-NOV-17	790			
Cyanides										
	Cyanide, Weak Acid Diss	<20	DLM	20	ug/L	07-NOV-17	52			
Dissolved Metals										
	Dissolved Mercury Filtration Location	FIELD			No Unit	06-NOV-17				
	Dissolved Metals Filtration Location	FIELD			No Unit	06-NOV-17				
	Antimony (Sb)-Dissolved	1.07		0.10	ug/L	07-NOV-17	6			
	Arsenic (As)-Dissolved	1.06		0.10	ug/L	07-NOV-17	25			
	Barium (Ba)-Dissolved	45.2		0.10	ug/L	07-NOV-17	1000			
	Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	07-NOV-17	4			
	Boron (B)-Dissolved	86		10	ug/L	07-NOV-17	5000			
	Cadmium (Cd)-Dissolved	0.083		0.010	ug/L	07-NOV-17	2.1			
	Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	50			
	Cobalt (Co)-Dissolved	0.45		0.10	ug/L	07-NOV-17	3.8			
	Copper (Cu)-Dissolved	0.45		0.20	ug/L	07-NOV-17	69			
	Lead (Pb)-Dissolved	0.102		0.050	ug/L	07-NOV-17	10			
	Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	06-NOV-17	0.1			
	Molybdenum (Mo)-Dissolved	2.46		0.050	ug/L	07-NOV-17	70			
	Nickel (Ni)-Dissolved	4.73		0.50	ug/L	07-NOV-17	100			
	Selenium (Se)-Dissolved	0.725		0.050	ug/L	07-NOV-17	10			
	Silver (Ag)-Dissolved	<0.050		0.050	ug/L	07-NOV-17	1.2			
	Sodium (Na)-Dissolved	6540		500	ug/L	07-NOV-17	490000			
	Thallium (Tl)-Dissolved	0.055		0.010	ug/L	07-NOV-17	2			
	Uranium (U)-Dissolved	2.35		0.010	ug/L	07-NOV-17	20			
	Vanadium (V)-Dissolved	<0.50		0.50	ug/L	07-NOV-17	6.2			
	Zinc (Zn)-Dissolved	315		1.0	ug/L	07-NOV-17	890			
Speciated Metals										
	Chromium, Hexavalent	<1.0		1.0	ug/L	12-NOV-17	25			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	08-NOV-17	2700			
	Benzene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	08-NOV-17	16			
	Bromoform	<5.0		5.0	ug/L	08-NOV-17	5			
	Bromomethane	<0.50		0.50	ug/L	08-NOV-17	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	08-NOV-17	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	08-NOV-17	30			
	Dibromochloromethane	<2.0		2.0	ug/L	08-NOV-17	25			
	Chloroform	<1.0		1.0	ug/L	08-NOV-17	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	08-NOV-17	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	08-NOV-17	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	08-NOV-17	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

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Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-21	MW17-103S									
Sampled By:	CLIENT on 02-NOV-17 @ 13:32									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	1,1-Dichloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	08-NOV-17	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	08-NOV-17	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	08-NOV-17	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	08-NOV-17	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	08-NOV-17				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	08-NOV-17				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	08-NOV-17	2.4			
	n-Hexane	<0.50		0.50	ug/L	08-NOV-17	5			
	Methyl Ethyl Ketone	<20		20	ug/L	08-NOV-17	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	08-NOV-17	640			
	MTBE	<2.0		2.0	ug/L	08-NOV-17	15			
	Styrene	<0.50		0.50	ug/L	08-NOV-17	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	08-NOV-17	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Toluene	<0.50		0.50	ug/L	08-NOV-17	24			
	1,1,1-Trichloroethane	4.92		0.50	ug/L	08-NOV-17	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	08-NOV-17	150			
	Vinyl chloride	<0.50		0.50	ug/L	08-NOV-17	0.5			
	o-Xylene	<0.30		0.30	ug/L	08-NOV-17				
	m+p-Xylenes	<0.40		0.40	ug/L	08-NOV-17				
	Xylenes (Total)	<0.50		0.50	ug/L	08-NOV-17	72			
	Surrogate: 4-Bromofluorobenzene	95.0		70-130	%	08-NOV-17				
	Surrogate: 1,4-Difluorobenzene	98.9		70-130	%	08-NOV-17				
Hydrocarbons										
	F1 (C6-C10)	<25		25	ug/L	08-NOV-17	420			
	F1-BTEX	<25		25	ug/L	13-NOV-17	420			
	F2 (C10-C16)	<100		100	ug/L	07-NOV-17	150			
	F2-Naphth	<100		100	ug/L	13-NOV-17				
	F3 (C16-C34)	<250		250	ug/L	07-NOV-17	500			
	F3-PAH	<250		250	ug/L	13-NOV-17				
	F4 (C34-C50)	<250		250	ug/L	07-NOV-17	500			
	Total Hydrocarbons (C6-C50)	<370		370	ug/L	13-NOV-17				
	Chrom. to baseline at nC50	YES			No Unit	07-NOV-17				
	Surrogate: 2-Bromobenzotrifluoride	104.5		60-140	%	07-NOV-17				
	Surrogate: 3,4-Dichlorotoluene	83.3		60-140	%	08-NOV-17				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.020		0.020	ug/L	08-NOV-17	4.1			
	Acenaphthylene	<0.020		0.020	ug/L	08-NOV-17	1			
	Anthracene	<0.020		0.020	ug/L	08-NOV-17	1			
	Benzo(a)anthracene	<0.020		0.020	ug/L	08-NOV-17	1			
	Benzo(a)pyrene	<0.010		0.010	ug/L	08-NOV-17	0.01			

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T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-21	MW17-103S									
Sampled By:	CLIENT on 02-NOV-17 @ 13:32									
Matrix:	WATER						#1			
Polycyclic Aromatic Hydrocarbons										
	Benzo(b)fluoranthene	<0.020		0.020	ug/L	08-NOV-17	0.1			
	Benzo(g,h,i)perylene	<0.020		0.020	ug/L	08-NOV-17	0.2			
	Benzo(k)fluoranthene	<0.020		0.020	ug/L	08-NOV-17	0.1			
	Chrysene	<0.020		0.020	ug/L	08-NOV-17	0.1			
	Dibenzo(ah)anthracene	<0.020		0.020	ug/L	08-NOV-17	0.2			
	Fluoranthene	<0.020		0.020	ug/L	08-NOV-17	0.41			
	Fluorene	<0.020		0.020	ug/L	08-NOV-17	120			
	Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	08-NOV-17	0.2			
	1+2-Methylnaphthalenes	<0.028		0.028	ug/L	13-NOV-17	3.2			
	1-Methylnaphthalene	<0.020		0.020	ug/L	08-NOV-17	3.2			
	2-Methylnaphthalene	<0.020		0.020	ug/L	08-NOV-17	3.2			
	Naphthalene	<0.050		0.050	ug/L	08-NOV-17	7			
	Phenanthrene	<0.020		0.020	ug/L	08-NOV-17	1			
	Pyrene	<0.020		0.020	ug/L	08-NOV-17	4.1			
	Surrogate: d10-Acenaphthene	88.9		60-140	%	08-NOV-17				
	Surrogate: d12-Chrysene	74.0		60-140	%	08-NOV-17				
	Surrogate: d8-Naphthalene	102.4		60-140	%	08-NOV-17				
	Surrogate: d10-Phenanthrene	108.4		60-140	%	08-NOV-17				
Semi-Volatile Organics										
	Biphenyl	<0.40		0.40	ug/L	13-NOV-17	0.5			
	4-Chloroaniline	<0.40		0.40	ug/L	13-NOV-17	10			
	Bis(2-chloroethyl)ether	<0.40		0.40	ug/L	13-NOV-17	5			
	Bis(2-chloroisopropyl)ether	<0.40		0.40	ug/L	13-NOV-17	120			
	2-Chlorophenol	<0.30		0.30	ug/L	13-NOV-17	8.9			
	3,3'-Dichlorobenzidine	<0.40		0.40	ug/L	13-NOV-17	0.5			
	2,4-Dichlorophenol	<0.30		0.30	ug/L	13-NOV-17	20			
	Diethylphthalate	<0.20		0.20	ug/L	13-NOV-17	30			
	Dimethylphthalate	<0.20		0.20	ug/L	13-NOV-17	30			
	2,4-Dimethylphenol	<0.50		0.50	ug/L	13-NOV-17	59			
	2,4-Dinitrophenol	<1.0		1.0	ug/L	13-NOV-17	10			
	2,4-Dinitrotoluene	<0.40		0.40	ug/L	13-NOV-17	5			
	2,6-Dinitrotoluene	<0.40		0.40	ug/L	13-NOV-17	5			
	2,4+2,6-Dinitrotoluene	<0.57		0.57	ug/L	13-NOV-17				
	Bis(2-ethylhexyl)phthalate	<2.0		2.0	ug/L	13-NOV-17	10			
	Pentachlorophenol	<0.50		0.50	ug/L	13-NOV-17	30			
	Phenanthrene	<0.20		0.20	ug/L	13-NOV-17	1			
	Phenol	<0.50		0.50	ug/L	13-NOV-17	890			
	Pyrene	<0.20		0.20	ug/L	13-NOV-17	4.1			
	1,2,4-Trichlorobenzene	<0.40		0.40	ug/L	13-NOV-17	3			
	2,4,5-Trichlorophenol	<0.20		0.20	ug/L	13-NOV-17	8.9			
	2,4,6-Trichlorophenol	<0.20		0.20	ug/L	13-NOV-17	2			
	Surrogate: 2-Fluorobiphenyl	87.7		50-140	%	13-NOV-17				
	Surrogate: Nitrobenzene d5	89.3		50-140	%	13-NOV-17				
	Surrogate: Phenol d5	41.7		30-130	%	13-NOV-17				
	Surrogate: p-Terphenyl d14	92.1		60-140	%	13-NOV-17				
	Surrogate: 2,4,6-Tribromophenol	93.0		50-140	%	13-NOV-17				

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T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-22	MW17-103D									
Sampled By:	CLIENT on 02-NOV-17 @ 14:54									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	08-NOV-17	2700			
	Benzene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	08-NOV-17	16			
	Bromoform	<5.0		5.0	ug/L	08-NOV-17	5			
	Bromomethane	<0.50		0.50	ug/L	08-NOV-17	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	08-NOV-17	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	08-NOV-17	30			
	Dibromochloromethane	<2.0		2.0	ug/L	08-NOV-17	25			
	Chloroform	<1.0		1.0	ug/L	08-NOV-17	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	08-NOV-17	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	08-NOV-17	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	08-NOV-17	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	08-NOV-17	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	08-NOV-17	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	08-NOV-17	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	08-NOV-17	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	08-NOV-17				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	08-NOV-17				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	09-NOV-17	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	08-NOV-17	2.4			
	n-Hexane	<0.50		0.50	ug/L	08-NOV-17	5			
	Methyl Ethyl Ketone	<20		20	ug/L	08-NOV-17	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	08-NOV-17	640			
	MTBE	<2.0		2.0	ug/L	08-NOV-17	15			
	Styrene	<0.50		0.50	ug/L	08-NOV-17	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	08-NOV-17	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Toluene	<0.50		0.50	ug/L	08-NOV-17	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	08-NOV-17	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	08-NOV-17	150			
	Vinyl chloride	<0.50		0.50	ug/L	08-NOV-17	0.5			
	o-Xylene	<0.30		0.30	ug/L	08-NOV-17				
	m+p-Xylenes	<0.40		0.40	ug/L	08-NOV-17				
	Xylenes (Total)	<0.50		0.50	ug/L	08-NOV-17	72			
	Surrogate: 4-Bromofluorobenzene	97.2		70-130	%	08-NOV-17				
	Surrogate: 1,4-Difluorobenzene	98.2		70-130	%	08-NOV-17				

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* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-23	MW17-102D									
Sampled By:	CLIENT on 02-NOV-17 @ 10:59									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	08-NOV-17	2700			
	Benzene	1.18		0.50	ug/L	08-NOV-17	*0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	08-NOV-17	16			
	Bromoform	<5.0		5.0	ug/L	08-NOV-17	5			
	Bromomethane	<0.50		0.50	ug/L	08-NOV-17	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	08-NOV-17	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	08-NOV-17	30			
	Dibromochloromethane	<2.0		2.0	ug/L	08-NOV-17	25			
	Chloroform	1.5		1.0	ug/L	08-NOV-17	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	08-NOV-17	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	08-NOV-17	590			
	1,1-Dichloroethane	1.72		0.50	ug/L	08-NOV-17	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	cis-1,2-Dichloroethylene	5.36		0.50	ug/L	08-NOV-17	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	08-NOV-17	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	08-NOV-17	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	08-NOV-17	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	08-NOV-17				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	08-NOV-17				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	08-NOV-17	2.4			
	n-Hexane	<0.50		0.50	ug/L	08-NOV-17	5			
	Methyl Ethyl Ketone	<20		20	ug/L	08-NOV-17	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	08-NOV-17	640			
	MTBE	<2.0		2.0	ug/L	08-NOV-17	15			
	Styrene	<0.50		0.50	ug/L	08-NOV-17	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	08-NOV-17	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Toluene	<0.50		0.50	ug/L	08-NOV-17	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	08-NOV-17	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	08-NOV-17	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	08-NOV-17	150			
	Vinyl chloride	<0.50		0.50	ug/L	08-NOV-17	0.5			
	o-Xylene	<0.30		0.30	ug/L	08-NOV-17				
	m+p-Xylenes	<0.40		0.40	ug/L	08-NOV-17				
	Xylenes (Total)	<0.50		0.50	ug/L	08-NOV-17	72			
	Surrogate: 4-Bromofluorobenzene	94.0		70-130	%	08-NOV-17				
	Surrogate: 1,4-Difluorobenzene	97.1		70-130	%	08-NOV-17				
Hydrocarbons										
	F1 (C6-C10)	<25		25	ug/L	08-NOV-17	420			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2017929-23	MW17-102D									
Sampled By:	CLIENT on 02-NOV-17 @ 10:59									
Matrix:	WATER						#1			
Hydrocarbons										
	F1-BTEX	<25		25	ug/L	08-NOV-17	420			
	F2 (C10-C16)	<100		100	ug/L	07-NOV-17	150			
	F3 (C16-C34)	<250		250	ug/L	07-NOV-17	500			
	F4 (C34-C50)	<250		250	ug/L	07-NOV-17	500			
	Total Hydrocarbons (C6-C50)	<370		370	ug/L	08-NOV-17				
	Chrom. to baseline at nC50	YES			No Unit	07-NOV-17				
	Surrogate: 2-Bromobenzotrifluoride	100.9		60-140	%	07-NOV-17				
	Surrogate: 3,4-Dichlorotoluene	89.7		60-140	%	08-NOV-17				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

Reference Information

Sample Parameter Qualifier key listed:

Qualifier	Description
DLQ	Detection Limit raised due to co-eluting interference. GCMS qualifier ion ratio did not meet acceptance criteria.
G	QC result did not meet ALS DQO. Refer to narrative comments for further information.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference***
1,4-DIOXANE-WT	Water	1,4-Dioxane by Headspace GC/MS	SW846 8260

An aliquot of the sample is analyzed directly by headspace technology, followed by GC/MS using isotopic dilution.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

625-511-WT	Water	ABN,CP,PAH-O.Reg 153/04	SW846 8270 (511)

Ground water sample extraction is carried out at a pH <2 (acid extractables) and pH>11 (base neutral extractables). Extracts are dried, concentrated and exchanged into a solvent compatible with the cleanup. Analysis is by GC/MS. Depending on the analytical GC/MS column used benzo(j)fluoranthene may chromatographically co-elute with benzo(b)fluoranthene or benzo(k)fluoranthene.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Water	Cyanide (WAD)-O.Reg 153/04	APHA 4500CN I-Weak acid Dist Colorimet

Weak acid dissociable cyanide (WAD) is determined by undergoing a distillation procedure. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-R511-WT	Water	Hex Chrom-O.Reg 153/04 (July 2011)	EPA 7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

DINITROTOL-CALC-WT	Water	ABN-Calculated Parameters	SW846 8270
EC-R511-WT	Water	Conductivity-O.Reg 153/04 (July 2011)	APHA 2510 B

Water samples can be measured directly by immersing the conductivity cell into the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

Reference Information

F1-F4-511-CALC-WT	Water	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-L

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Water	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Water	F2-F4-O.Reg 153/04 (July 2011)	EPA 3511/CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from water using a hexane micro-extraction technique. Instrumental analysis is by GC-FID, as per the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Tier 1 Method, CCME, 2001.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

HG-D-UG/L-CVAA-WT	Water	Diss. Mercury in Water by CVAAS (ug/L)	EPA 1631E (mod)

Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8

The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT	Water	PAH-Calculated Parameters	SW846 8270
PAH-511-WT	Water	PAH-O. Reg 153/04 (July 2011)	SW846 3510/8270

Aqueous samples, fortified with surrogates, are extracted using liquid/liquid extraction technique. The sample extracts are concentrated and then analyzed using GC/MS. Depending on the analytical GC/MS column used benzo(j)fluoranthene may chromatographically co-elute with benzo(b)fluoranthene or benzo(k)fluoranthene.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PCB-511-WT	Water	PCB-O. Reg 153/04 (July 2011)	SW846 3510/8082

Aqueous samples are extracted, then concentrated, reconstituted, and analyzed by GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

Reference Information

PH-WT	Water	pH	APHA 4500 H-Electrode

Water samples are analyzed directly by a calibrated pH meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Holdtime for samples under this regulation is 28 days

VOC-1,3-DCP-CALC-WT	Water	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Water	VOC by GCMS HS O.Reg 153/04 (July 2011)	SW846 8260

Liquid samples are analyzed by headspace GC/MSD.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

*** ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody numbers:

17-617075 17-617076 17-617082

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA		

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.

Quality Control Report

Workorder: L2017929 Report Date: 13-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
1,4-DIOXANE-WT	**Water**							
Batch R3877348								
WG2656313-4 DUP		**WG2656313-3**						
1,4-Dioxane		<20	<20	RPD-NA	ug/L	N/A	30	07-NOV-17
WG2656313-1 LCS								
1,4-Dioxane			99.5		%		60-140	07-NOV-17
WG2656313-2 MB								
1,4-Dioxane			<20		ug/L		20	07-NOV-17
WG2656313-5 MS		**WG2656313-3**						
1,4-Dioxane			93.8		%		50-140	07-NOV-17
Batch R3878599								
WG2655329-4 DUP		**WG2655329-3**						
1,4-Dioxane		<20	<20	RPD-NA	ug/L	N/A	30	08-NOV-17
WG2655329-1 LCS								
1,4-Dioxane			94.4		%		60-140	08-NOV-17
WG2655329-2 MB								
1,4-Dioxane			<20		ug/L		20	08-NOV-17
WG2655329-5 MS		**WG2655329-3**						
1,4-Dioxane			90.4		%		50-140	08-NOV-17
625-511-WT	**Water**							
Batch R3880598								
WG2659189-2 LCS								
1,2,4-Trichlorobenzene			92.5		%		50-140	10-NOV-17
2-Chlorophenol			85.4		%		50-140	10-NOV-17
2,4-Dichlorophenol			92.7		%		50-140	10-NOV-17
2,4-Dimethylphenol			63.0		%		30-130	10-NOV-17
2,4-Dinitrophenol			129.3		%		50-140	10-NOV-17
2,4-Dinitrotoluene			100.4		%		50-140	10-NOV-17
2,4,5-Trichlorophenol			98.3		%		50-140	10-NOV-17
2,4,6-Trichlorophenol			98.8		%		50-140	10-NOV-17
2,6-Dinitrotoluene			100.6		%		50-140	10-NOV-17
3,3'-Dichlorobenzidine			72.3		%		30-130	10-NOV-17
4-Chloroaniline			47.3		%		30-130	10-NOV-17
Biphenyl			93.5		%		50-140	10-NOV-17
Bis(2-chloroethyl)ether			96.8		%		50-140	10-NOV-17
Bis(2-chloroisopropyl)ether			97.7		%		50-140	10-NOV-17
Bis(2-ethylhexyl)phthalate			97.1		%		50-140	10-NOV-17
Diethylphthalate			88.7		%		50-140	10-NOV-17

Quality Control Report

Workorder: L2017929 Report Date: 13-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Water**							
Batch R3880598								
WG2659189-2 LCS								
Dimethylphthalate			89.3		%		50-140	10-NOV-17
Pentachlorophenol			135.3		%		50-140	10-NOV-17
Phenanthrene			101.6		%		50-140	10-NOV-17
Phenol			48.1		%		30-130	10-NOV-17
Pyrene			106.3		%		50-140	10-NOV-17
WG2659189-3 LCSD		**WG2659189-2**						
1,2,4-Trichlorobenzene		92.5	98.2		%	6.1	50	10-NOV-17
2-Chlorophenol		85.4	85.6		%	0.3	50	10-NOV-17
2,4-Dichlorophenol		92.7	94.9		%	2.3	50	10-NOV-17
2,4-Dimethylphenol		63.0	61.7		%	2.1	50	10-NOV-17
2,4-Dinitrophenol		129.3	110.9		%	15	50	10-NOV-17
2,4-Dinitrotoluene		100.4	106.6		%	6.0	50	10-NOV-17
2,4,5-Trichlorophenol		98.3	92.9		%	5.6	50	10-NOV-17
2,4,6-Trichlorophenol		98.8	90.7		%	8.6	50	10-NOV-17
2,6-Dinitrotoluene		100.6	96.6		%	4.0	50	10-NOV-17
3,3'-Dichlorobenzidine		72.3	73.1		%	1.2	50	10-NOV-17
4-Chloroaniline		47.3	56.8		%	18	50	10-NOV-17
Biphenyl		93.5	89.6		%	4.3	50	10-NOV-17
Bis(2-chloroethyl)ether		96.8	97.0		%	0.2	50	10-NOV-17
Bis(2-chloroisopropyl)ether		97.7	95.8		%	2.0	50	10-NOV-17
Bis(2-ethylhexyl)phthalate		97.1	96.4		%	0.6	50	10-NOV-17
Diethylphthalate		88.7	95.5		%	7.4	50	10-NOV-17
Dimethylphthalate		89.3	85.0		%	4.9	50	10-NOV-17
Pentachlorophenol		135.3	129.2		%	4.6	50	10-NOV-17
Phenanthrene		101.6	100.3		%	1.2	50	10-NOV-17
Phenol		48.1	49.4		%	2.8	50	10-NOV-17
Pyrene		106.3	99.9		%	6.3	50	10-NOV-17
WG2659189-1 MB								
1,2,4-Trichlorobenzene			<0.40		ug/L		0.4	10-NOV-17
2-Chlorophenol			<0.30		ug/L		0.3	10-NOV-17
2,4-Dichlorophenol			<0.30		ug/L		0.3	10-NOV-17
2,4-Dimethylphenol			<0.50		ug/L		0.5	10-NOV-17
2,4-Dinitrophenol			<1.0		ug/L		1	10-NOV-17

Quality Control Report

Workorder: L2017929 Report Date: 13-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Water**							
Batch R3880598								
WG2659189-1 MB								
2,4-Dinitrotoluene			<0.40		ug/L		0.4	10-NOV-17
2,4,5-Trichlorophenol			<0.20		ug/L		0.2	10-NOV-17
2,4,6-Trichlorophenol			<0.20		ug/L		0.2	10-NOV-17
2,6-Dinitrotoluene			<0.40		ug/L		0.4	10-NOV-17
3,3'-Dichlorobenzidine			<0.40		ug/L		0.4	10-NOV-17
4-Chloroaniline			<0.40		ug/L		0.4	10-NOV-17
Biphenyl			<0.40		ug/L		0.4	10-NOV-17
Bis(2-chloroethyl)ether			<0.40		ug/L		0.4	10-NOV-17
Bis(2-chloroisopropyl)ether			<0.40		ug/L		0.4	10-NOV-17
Bis(2-ethylhexyl)phthalate			<2.0		ug/L		2	10-NOV-17
Diethylphthalate			<0.20		ug/L		0.2	10-NOV-17
Dimethylphthalate			<0.20		ug/L		0.2	10-NOV-17
Pentachlorophenol			<0.50		ug/L		0.5	10-NOV-17
Phenanthrene			<0.20		ug/L		0.2	10-NOV-17
Phenol			<0.50		ug/L		0.5	10-NOV-17
Pyrene			<0.20		ug/L		0.2	10-NOV-17
Surrogate: 2-Fluorobiphenyl			99.7		%		50-140	10-NOV-17
Surrogate: 2,4,6-Tribromophenol			90.7		%		50-140	10-NOV-17
Surrogate: Nitrobenzene d5			95.0		%		50-140	10-NOV-17
Surrogate: p-Terphenyl d14			98.9		%		60-140	10-NOV-17
Surrogate: Phenol d5			40.6		%		30-130	10-NOV-17
CL-IC-N-WT	**Water**							
Batch R3879095								
WG2658468-10 DUP		**WG2658468-8**						
Chloride (Cl)		142	142		mg/L	0.0	20	07-NOV-17
WG2658468-4 DUP		**WG2658468-3**						
Chloride (Cl)		12.1	12.1		mg/L	0.1	20	07-NOV-17
WG2658468-2 LCS								
Chloride (Cl)			100.8		%		90-110	07-NOV-17
WG2658468-7 LCS								
Chloride (Cl)			101.6		%		90-110	07-NOV-17
WG2658468-1 MB								
Chloride (Cl)			<0.50		mg/L		0.5	07-NOV-17
WG2658468-6 MB								
Chloride (Cl)			<0.50		mg/L		0.5	07-NOV-17

Quality Control Report

Workorder: L2017929 Report Date: 13-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-WT	**Water**							
Batch R3879095								
WG2658468-5 MS		**WG2658468-3**						
Chloride (Cl)			102.7		%		75-125	07-NOV-17
WG2658468-9 MS		**WG2658468-8**						
Chloride (Cl)			N/A	MS-B	%		-	07-NOV-17
CN-WAD-R511-WT	**Water**							
Batch R3877813								
WG2656230-12 DUP		**L2017929-1**						
Cyanide, Weak Acid Diss		<20	<20	RPD-NA	ug/L	N/A	20	06-NOV-17
WG2656230-7 DUP		**L2015391-20**						
Cyanide, Weak Acid Diss		<20	<20	RPD-NA	ug/L	N/A	20	06-NOV-17
WG2656230-10 LCS								
Cyanide, Weak Acid Diss			95.3		%		80-120	06-NOV-17
WG2656230-6 LCS								
Cyanide, Weak Acid Diss			99.2		%		80-120	06-NOV-17
WG2656230-5 MB								
Cyanide, Weak Acid Diss			<2.0		ug/L		2	06-NOV-17
WG2656230-9 MB								
Cyanide, Weak Acid Diss			<2.0		ug/L		2	06-NOV-17
WG2656230-11 MS		**L2017929-1**						
Cyanide, Weak Acid Diss			94.3		%		70-130	06-NOV-17
WG2656230-8 MS		**L2015391-20**						
Cyanide, Weak Acid Diss			104.2		%		70-130	06-NOV-17
Batch R3878669								
WG2658598-3 DUP		**L2017929-21**						
Cyanide, Weak Acid Diss		<20	<20	RPD-NA	ug/L	N/A	20	07-NOV-17
WG2658598-2 LCS								
Cyanide, Weak Acid Diss			100.1		%		80-120	07-NOV-17
WG2658598-1 MB								
Cyanide, Weak Acid Diss			<2.0		ug/L		2	07-NOV-17
WG2658598-4 MS		**L2017929-21**						
Cyanide, Weak Acid Diss			101.5		%		70-130	07-NOV-17
CR-CR6-IC-R511-WT	**Water**							
Batch R3880520								
WG2661493-4 DUP		**WG2661493-3**						
Chromium, Hexavalent		<1.0	<1.0	RPD-NA	ug/L	N/A	20	09-NOV-17
WG2661493-1 MB								
Chromium, Hexavalent			<1.0		ug/L		1	09-NOV-17
WG2661493-5 MS		**WG2661493-3**						

Quality Control Report

Workorder: L2017929 Report Date: 13-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CR-CR6-IC-R511-WT	**Water**							
Batch R3880520								
WG2661493-5 MS		**WG2661493-3**						
Chromium, Hexavalent			100.0		%		70-130	09-NOV-17
Batch R3882653								
WG2662287-4 DUP		**WG2662287-3**						
Chromium, Hexavalent		<1.0	<1.0	RPD-NA	ug/L	N/A	20	12-NOV-17
WG2662287-2 LCS								
Chromium, Hexavalent			99.5		%		80-120	12-NOV-17
WG2662287-1 MB								
Chromium, Hexavalent			<1.0		ug/L		1	12-NOV-17
WG2662287-5 MS		**WG2662287-3**						
Chromium, Hexavalent			97.8		%		70-130	12-NOV-17
EC-R511-WT	**Water**							
Batch R3876968								
WG2656900-12 DUP		**WG2656900-11**						
Conductivity		2.44	2.46		mS/cm	0.8	10	04-NOV-17
WG2656900-4 DUP		**WG2656900-3**						
Conductivity		1.14	1.14		mS/cm	0.0	10	04-NOV-17
WG2656900-8 DUP		**WG2656900-7**						
Conductivity		1.48	1.48		mS/cm	0.3	10	04-NOV-17
WG2656900-10 LCS								
Conductivity			104.5		%		90-110	04-NOV-17
WG2656900-2 LCS								
Conductivity			107.7		%		90-110	04-NOV-17
WG2656900-1 MB								
Conductivity			<0.0030		mS/cm		0.003	04-NOV-17
WG2656900-5 MB								
Conductivity			<0.0030		mS/cm		0.003	04-NOV-17
WG2656900-9 MB								
Conductivity			<0.0030		mS/cm		0.003	04-NOV-17
Batch R3878152								
WG2658721-4 DUP		**WG2658721-3**						
Conductivity		1.08	1.08		mS/cm	0.0	10	07-NOV-17
WG2658721-2 LCS								
Conductivity			102.8		%		90-110	07-NOV-17
WG2658721-1 MB								
Conductivity			<0.0030		mS/cm		0.003	07-NOV-17
F1-HS-511-WT	**Water**							

Quality Control Report

Workorder: L2017929 Report Date: 13-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT	**Water**							
Batch R3877348								
WG2656313-4 DUP		**WG2656313-3**						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	07-NOV-17
WG2656313-1 LCS								
F1 (C6-C10)			105.4		%		80-120	07-NOV-17
WG2656313-2 MB								
F1 (C6-C10)			<25		ug/L		25	07-NOV-17
Surrogate: 3,4-Dichlorotoluene			117.4		%		60-140	07-NOV-17
WG2656313-5 MS		**WG2656313-3**						
F1 (C6-C10)			77.8		%		60-140	07-NOV-17
Batch R3878513								
WG2654802-4 DUP		**WG2654802-3**						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	08-NOV-17
WG2654802-1 LCS								
F1 (C6-C10)			99.5		%		80-120	07-NOV-17
WG2654802-2 MB								
F1 (C6-C10)			<25		ug/L		25	08-NOV-17
Surrogate: 3,4-Dichlorotoluene			102.3		%		60-140	08-NOV-17
WG2654802-5 MS		**WG2654802-3**						
F1 (C6-C10)			93.3		%		60-140	08-NOV-17
Batch R3878599								
WG2655329-1 LCS								
F1 (C6-C10)			108.7		%		80-120	08-NOV-17
WG2655329-2 MB								
F1 (C6-C10)			<25		ug/L		25	08-NOV-17
Surrogate: 3,4-Dichlorotoluene			106.5		%		60-140	08-NOV-17
WG2655329-5 MS		**WG2655329-3**						
F1 (C6-C10)			N/A	MS-B	%		-	08-NOV-17
F2-F4-511-WT	**Water**							
Batch R3878572								
WG2658302-2 LCS								
F2 (C10-C16)			110.0		%		70-130	07-NOV-17
F3 (C16-C34)			115.5		%		70-130	07-NOV-17
F4 (C34-C50)			116.6		%		70-130	07-NOV-17
WG2658302-3 LCSD		**WG2658302-2**						
F2 (C10-C16)		110.0	111.5		%	1.3	50	07-NOV-17
F3 (C16-C34)		115.5	113.9		%	1.4	50	07-NOV-17
F4 (C34-C50)		116.6	116.3		%	0.2	50	07-NOV-17

Quality Control Report

Workorder: L2017929 Report Date: 13-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-511-WT	**Water**							
Batch R3878572								
WG2658302-1 MB								
F2 (C10-C16)			<100		ug/L		100	07-NOV-17
F3 (C16-C34)			<250		ug/L		250	07-NOV-17
F4 (C34-C50)			<250		ug/L		250	07-NOV-17
Surrogate: 2-Bromobenzotrifluoride			99.5		%		60-140	07-NOV-17
Batch R3879654								
WG2659233-2 LCS								
F2 (C10-C16)			101.2		%		70-130	08-NOV-17
F3 (C16-C34)			104.2		%		70-130	08-NOV-17
F4 (C34-C50)			103.2		%		70-130	08-NOV-17
WG2659233-3 LCSD		**WG2659233-2**						
F2 (C10-C16)		101.2	102.1		%	0.9	50	08-NOV-17
F3 (C16-C34)		104.2	108.5		%	4.0	50	08-NOV-17
F4 (C34-C50)		103.2	108.2		%	4.7	50	08-NOV-17
WG2659233-1 MB								
F2 (C10-C16)			<100		ug/L		100	08-NOV-17
F3 (C16-C34)			<250		ug/L		250	08-NOV-17
F4 (C34-C50)			<250		ug/L		250	08-NOV-17
Surrogate: 2-Bromobenzotrifluoride			65.9		%		60-140	08-NOV-17
Batch R3880500								
WG2659241-2 LCS								
F2 (C10-C16)			109.5		%		70-130	10-NOV-17
F3 (C16-C34)			112.5		%		70-130	10-NOV-17
F4 (C34-C50)			116.7		%		70-130	10-NOV-17
WG2659241-3 LCSD		**WG2659241-2**						
F2 (C10-C16)		109.5	114.2		%	4.2	50	10-NOV-17
F3 (C16-C34)		112.5	121.3		%	7.5	50	10-NOV-17
F4 (C34-C50)		116.7	125.0		%	6.9	50	10-NOV-17
WG2659241-1 MB								
F2 (C10-C16)			<100		ug/L		100	10-NOV-17
F3 (C16-C34)			<250		ug/L		250	10-NOV-17
F4 (C34-C50)			<250		ug/L		250	10-NOV-17
Surrogate: 2-Bromobenzotrifluoride			79.8		%		60-140	10-NOV-17

Quality Control Report

Workorder: L2017929 Report Date: 13-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-511-WT	**Water**							
Batch R3883007								
WG2662466-2 LCS								
F2 (C10-C16)			95.5		%		70-130	13-NOV-17
F3 (C16-C34)			100.1		%		70-130	13-NOV-17
F4 (C34-C50)			101.3		%		70-130	13-NOV-17
WG2662466-3 LCSD		**WG2662466-2**						
F2 (C10-C16)		95.5	102.8		%	7.4	50	13-NOV-17
F3 (C16-C34)		100.1	105.1		%	4.9	50	13-NOV-17
F4 (C34-C50)		101.3	110.1		%	8.3	50	13-NOV-17
WG2662466-1 MB								
F2 (C10-C16)			<100		ug/L		100	13-NOV-17
F3 (C16-C34)			<250		ug/L		250	13-NOV-17
F4 (C34-C50)			<250		ug/L		250	13-NOV-17
Surrogate: 2-Bromobenzotrifluoride			97.1		%		60-140	13-NOV-17
HG-D-UG/L-CVAA-WT	**Water**							
Batch R3875259								
WG2657406-4 DUP		**WG2657406-3**						
Mercury (Hg)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	06-NOV-17
WG2657406-2 LCS								
Mercury (Hg)-Dissolved			103.0		%		80-120	06-NOV-17
WG2657406-1 MB								
Mercury (Hg)-Dissolved			<0.010		ug/L		0.01	06-NOV-17
WG2657406-6 MS		**WG2657406-5**						
Mercury (Hg)-Dissolved			91.4		%		70-130	06-NOV-17
Batch R3875260								
WG2657408-4 DUP		**WG2657408-3**						
Mercury (Hg)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	06-NOV-17
WG2657408-2 LCS								
Mercury (Hg)-Dissolved			104.0		%		80-120	06-NOV-17
WG2657408-1 MB								
Mercury (Hg)-Dissolved			<0.010		ug/L		0.01	06-NOV-17
WG2657408-6 MS		**WG2657408-5**						
Mercury (Hg)-Dissolved			86.6		%		70-130	06-NOV-17
MET-D-UG/L-MS-WT	**Water**							
Batch R3878040								
WG2657255-4 DUP		**WG2657255-3**						
Antimony (Sb)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	07-NOV-17
Arsenic (As)-Dissolved		<0.10	0.11					

Quality Control Report

Workorder: L2017929 Report Date: 13-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R3878040								
WG2657255-4 DUP		**WG2657255-3**						
Arsenic (As)-Dissolved		<0.10	0.11	RPD-NA	ug/L	N/A	20	07-NOV-17
Barium (Ba)-Dissolved		220	221		ug/L	0.7	20	07-NOV-17
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	07-NOV-17
Boron (B)-Dissolved		78	78		ug/L	0.2	20	07-NOV-17
Cadmium (Cd)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	07-NOV-17
Chromium (Cr)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	07-NOV-17
Cobalt (Co)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	07-NOV-17
Copper (Cu)-Dissolved		7.53	7.48		ug/L	0.6	20	07-NOV-17
Lead (Pb)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	07-NOV-17
Molybdenum (Mo)-Dissolved		0.140	0.125		ug/L	12	20	07-NOV-17
Nickel (Ni)-Dissolved		0.60	0.55		ug/L	8.9	20	07-NOV-17
Selenium (Se)-Dissolved		0.071	<0.050	RPD-NA	ug/L	N/A	20	07-NOV-17
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	07-NOV-17
Sodium (Na)-Dissolved		25600	25500		ug/L	0.4	20	07-NOV-17
Thallium (Tl)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	07-NOV-17
Uranium (U)-Dissolved		0.372	0.379		ug/L	1.7	20	07-NOV-17
Vanadium (V)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	07-NOV-17
Zinc (Zn)-Dissolved		3.4	3.5		ug/L	4.0	20	07-NOV-17
WG2657255-2 LCS								
Antimony (Sb)-Dissolved			99.1		%		80-120	06-NOV-17
Arsenic (As)-Dissolved			103.0		%		80-120	06-NOV-17
Barium (Ba)-Dissolved			102.5		%		80-120	06-NOV-17
Beryllium (Be)-Dissolved			91.8		%		80-120	06-NOV-17
Boron (B)-Dissolved			91.5		%		80-120	06-NOV-17
Cadmium (Cd)-Dissolved			95.3		%		80-120	06-NOV-17
Chromium (Cr)-Dissolved			101.1		%		80-120	06-NOV-17
Cobalt (Co)-Dissolved			100.6		%		80-120	06-NOV-17
Copper (Cu)-Dissolved			99.2		%		80-120	06-NOV-17
Lead (Pb)-Dissolved			104.9		%		80-120	06-NOV-17
Molybdenum (Mo)-Dissolved			97.0		%		80-120	06-NOV-17
Nickel (Ni)-Dissolved			100.3		%		80-120	06-NOV-17
Selenium (Se)-Dissolved			99.1		%		80-120	06-NOV-17
Silver (Ag)-Dissolved			97.2		%		80-120	06-NOV-17

Quality Control Report

Workorder: L2017929 Report Date: 13-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R3878040								
WG2657255-2 LCS								
Sodium (Na)-Dissolved			100.1		%		80-120	06-NOV-17
Thallium (Tl)-Dissolved			103.8		%		80-120	06-NOV-17
Uranium (U)-Dissolved			107.7		%		80-120	06-NOV-17
Vanadium (V)-Dissolved			103.3		%		80-120	06-NOV-17
Zinc (Zn)-Dissolved			94.2		%		80-120	06-NOV-17
WG2657255-1 MB								
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	06-NOV-17
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	06-NOV-17
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	06-NOV-17
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	06-NOV-17
Boron (B)-Dissolved			<10		ug/L		10	06-NOV-17
Cadmium (Cd)-Dissolved			<0.010		ug/L		0.01	06-NOV-17
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	06-NOV-17
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	06-NOV-17
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	06-NOV-17
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	06-NOV-17
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	06-NOV-17
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	06-NOV-17
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	06-NOV-17
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	06-NOV-17
Sodium (Na)-Dissolved			<500		ug/L		500	06-NOV-17
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	06-NOV-17
Uranium (U)-Dissolved			<0.010		ug/L		0.01	06-NOV-17
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	06-NOV-17
Zinc (Zn)-Dissolved			<1.0		ug/L		1	06-NOV-17
WG2657255-5 MS		**WG2657255-3**						
Antimony (Sb)-Dissolved			95.9		%		70-130	07-NOV-17
Arsenic (As)-Dissolved			103.1		%		70-130	07-NOV-17
Barium (Ba)-Dissolved			N/A	MS-B	%		-	07-NOV-17
Beryllium (Be)-Dissolved			100.4		%		70-130	07-NOV-17
Boron (B)-Dissolved			N/A	MS-B	%		-	07-NOV-17
Cadmium (Cd)-Dissolved			100.9		%		70-130	07-NOV-17
Chromium (Cr)-Dissolved			97.5		%		70-130	07-NOV-17
Cobalt (Co)-Dissolved			94.1		%		70-130	07-NOV-17

Quality Control Report

Workorder: L2017929 Report Date: 13-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R3878040								
WG2657255-5 MS		**WG2657255-3**						
Copper (Cu)-Dissolved			87.7		%		70-130	07-NOV-17
Lead (Pb)-Dissolved			96.9		%		70-130	07-NOV-17
Molybdenum (Mo)-Dissolved			101.0		%		70-130	07-NOV-17
Nickel (Ni)-Dissolved			93.7		%		70-130	07-NOV-17
Selenium (Se)-Dissolved			101.2		%		70-130	07-NOV-17
Silver (Ag)-Dissolved			95.5		%		70-130	07-NOV-17
Sodium (Na)-Dissolved			N/A	MS-B	%		-	07-NOV-17
Thallium (Tl)-Dissolved			98.2		%		70-130	07-NOV-17
Uranium (U)-Dissolved			N/A	MS-B	%		-	07-NOV-17
Vanadium (V)-Dissolved			100.2		%		70-130	07-NOV-17
Zinc (Zn)-Dissolved			97.1		%		70-130	07-NOV-17
PAH-511-WT	**Water**							
Batch R3879132								
WG2658302-2 LCS								
1-Methylnaphthalene			74.6		%		50-140	08-NOV-17
2-Methylnaphthalene			71.8		%		50-140	08-NOV-17
Acenaphthene			73.9		%		50-140	08-NOV-17
Acenaphthylene			88.2		%		50-140	08-NOV-17
Anthracene			96.2		%		50-140	08-NOV-17
Benzo(a)anthracene			92.0		%		50-140	08-NOV-17
Benzo(a)pyrene			90.2		%		50-140	08-NOV-17
Benzo(b)fluoranthene			69.4		%		50-140	08-NOV-17
Benzo(g,h,i)perylene			106.8		%		50-140	08-NOV-17
Benzo(k)fluoranthene			74.4		%		50-140	08-NOV-17
Chrysene			92.0		%		50-140	08-NOV-17
Dibenzo(ah)anthracene			96.2		%		50-140	08-NOV-17
Fluoranthene			91.0		%		50-140	08-NOV-17
Fluorene			91.4		%		50-140	08-NOV-17
Indeno(1,2,3-cd)pyrene			109.0		%		50-140	08-NOV-17
Naphthalene			83.3		%		50-140	08-NOV-17
Phenanthrene			94.6		%		50-140	08-NOV-17
Pyrene			99.4		%		50-140	08-NOV-17
WG2658302-3 LCSD		**WG2658302-2**						
1-Methylnaphthalene		74.6	83.4		%	11	50	08-NOV-17

Quality Control Report

Workorder: L2017929 Report Date: 13-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R3879132								
WG2658302-3 LCSD		**WG2658302-2**						
2-Methylnaphthalene		71.8	80.4		%	11	50	08-NOV-17
Acenaphthene		73.9	77.5		%	4.8	50	08-NOV-17
Acenaphthylene		88.2	91.0		%	3.1	50	08-NOV-17
Anthracene		96.2	98.8		%	2.6	50	08-NOV-17
Benzo(a)anthracene		92.0	88.8		%	3.5	50	08-NOV-17
Benzo(a)pyrene		90.2	95.1		%	5.3	50	08-NOV-17
Benzo(b)fluoranthene		69.4	75.4		%	8.4	50	08-NOV-17
Benzo(g,h,i)perylene		106.8	108.4		%	1.5	50	08-NOV-17
Benzo(k)fluoranthene		74.4	81.4		%	8.9	50	08-NOV-17
Chrysene		92.0	87.8		%	4.7	50	08-NOV-17
Dibenzo(ah)anthracene		96.2	93.6		%	2.7	50	08-NOV-17
Fluoranthene		91.0	92.2		%	1.2	50	08-NOV-17
Fluorene		91.4	90.0		%	1.5	50	08-NOV-17
Indeno(1,2,3-cd)pyrene		109.0	110.5		%	1.4	50	08-NOV-17
Naphthalene		83.3	89.8		%	7.5	50	08-NOV-17
Phenanthrene		94.6	95.0		%	0.3	50	08-NOV-17
Pyrene		99.4	86.5		%	14	50	08-NOV-17
WG2658302-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	08-NOV-17
2-Methylnaphthalene			<0.020		ug/L		0.02	08-NOV-17
Acenaphthene			<0.020		ug/L		0.02	08-NOV-17
Acenaphthylene			<0.020		ug/L		0.02	08-NOV-17
Anthracene			<0.020		ug/L		0.02	08-NOV-17
Benzo(a)anthracene			<0.020		ug/L		0.02	08-NOV-17
Benzo(a)pyrene			<0.010		ug/L		0.01	08-NOV-17
Benzo(b)fluoranthene			<0.020		ug/L		0.02	08-NOV-17
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	08-NOV-17
Benzo(k)fluoranthene			<0.020		ug/L		0.02	08-NOV-17
Chrysene			<0.020		ug/L		0.02	08-NOV-17
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	08-NOV-17
Fluoranthene			<0.020		ug/L		0.02	08-NOV-17
Fluorene			<0.020		ug/L		0.02	08-NOV-17
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	08-NOV-17

Quality Control Report

Workorder: L2017929 Report Date: 13-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R3879132								
WG2658302-1 MB								
Naphthalene			<0.050		ug/L		0.05	08-NOV-17
Phenanthrene			<0.020		ug/L		0.02	08-NOV-17
Pyrene			<0.020		ug/L		0.02	08-NOV-17
Surrogate: d8-Naphthalene			95.1		%		60-140	08-NOV-17
Surrogate: d10-Phenanthrene			107.6		%		60-140	08-NOV-17
Surrogate: d12-Chrysene			87.2		%		60-140	08-NOV-17
Surrogate: d10-Acenaphthene			86.8		%		60-140	08-NOV-17
Batch R3880495								
WG2659233-2 LCS								
1-Methylnaphthalene			78.1		%		50-140	10-NOV-17
2-Methylnaphthalene			83.4		%		50-140	10-NOV-17
Acenaphthene			86.5		%		50-140	10-NOV-17
Acenaphthylene			89.8		%		50-140	10-NOV-17
Anthracene			90.2		%		50-140	10-NOV-17
Benzo(a)anthracene			92.2		%		50-140	10-NOV-17
Benzo(a)pyrene			93.2		%		50-140	10-NOV-17
Benzo(b)fluoranthene			75.8		%		50-140	10-NOV-17
Benzo(g,h,i)perylene			79.6		%		50-140	10-NOV-17
Benzo(k)fluoranthene			80.8		%		50-140	10-NOV-17
Chrysene			89.9		%		50-140	10-NOV-17
Dibenzo(ah)anthracene			84.7		%		50-140	10-NOV-17
Fluoranthene			90.0		%		50-140	10-NOV-17
Fluorene			92.6		%		50-140	10-NOV-17
Indeno(1,2,3-cd)pyrene			96.9		%		50-140	10-NOV-17
Naphthalene			79.0		%		50-140	10-NOV-17
Phenanthrene			87.5		%		50-140	10-NOV-17
Pyrene			92.2		%		50-140	10-NOV-17
WG2659233-3 LCSD		**WG2659233-2**						
1-Methylnaphthalene		78.1	75.6		%	3.2	50	10-NOV-17
2-Methylnaphthalene		83.4	78.6		%	5.9	50	10-NOV-17
Acenaphthene		86.5	82.9		%	4.3	50	10-NOV-17
Acenaphthylene		89.8	84.1		%	6.5	50	10-NOV-17
Anthracene		90.2	79.1		%	13	50	10-NOV-17
Benzo(a)anthracene		92.2	88.6		%	4.0	50	10-NOV-17

Quality Control Report

Workorder: L2017929 Report Date: 13-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R3880495								
WG2659233-3 LCSD		**WG2659233-2**						
Benzo(a)pyrene		93.2	88.6		%	5.0	50	10-NOV-17
Benzo(b)fluoranthene		75.8	72.4		%	4.6	50	10-NOV-17
Benzo(g,h,i)perylene		79.6	81.9		%	2.9	50	10-NOV-17
Benzo(k)fluoranthene		80.8	83.2		%	2.9	50	10-NOV-17
Chrysene		89.9	84.6		%	6.1	50	10-NOV-17
Dibenzo(ah)anthracene		84.7	86.8		%	2.4	50	10-NOV-17
Fluoranthene		90.0	83.6		%	7.4	50	10-NOV-17
Fluorene		92.6	87.6		%	5.6	50	10-NOV-17
Indeno(1,2,3-cd)pyrene		96.9	91.2		%	6.0	50	10-NOV-17
Naphthalene		79.0	74.1		%	6.4	50	10-NOV-17
Phenanthrene		87.5	77.0		%	13	50	10-NOV-17
Pyrene		92.2	81.8		%	12	50	10-NOV-17
WG2659233-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	10-NOV-17
2-Methylnaphthalene			<0.020		ug/L		0.02	10-NOV-17
Acenaphthene			<0.020		ug/L		0.02	10-NOV-17
Acenaphthylene			<0.020		ug/L		0.02	10-NOV-17
Anthracene			<0.020		ug/L		0.02	10-NOV-17
Benzo(a)anthracene			<0.020		ug/L		0.02	10-NOV-17
Benzo(a)pyrene			<0.010		ug/L		0.01	10-NOV-17
Benzo(b)fluoranthene			<0.020		ug/L		0.02	10-NOV-17
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	10-NOV-17
Benzo(k)fluoranthene			<0.020		ug/L		0.02	10-NOV-17
Chrysene			<0.020		ug/L		0.02	10-NOV-17
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	10-NOV-17
Fluoranthene			<0.020		ug/L		0.02	10-NOV-17
Fluorene			<0.020		ug/L		0.02	10-NOV-17
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	10-NOV-17
Naphthalene			<0.050		ug/L		0.05	10-NOV-17
Phenanthrene			<0.020		ug/L		0.02	10-NOV-17
Pyrene			<0.020		ug/L		0.02	10-NOV-17
Surrogate: d8-Naphthalene			74.9		%		60-140	10-NOV-17
Surrogate: d10-Phenanthrene			92.7		%		60-140	10-NOV-17

Quality Control Report

Workorder: L2017929 Report Date: 13-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R3880495								
WG2659233-1 MB								
Surrogate: d12-Chrysene			80.7		%		60-140	10-NOV-17
Surrogate: d10-Acenaphthene			82.3		%		60-140	10-NOV-17
Batch R3880660								
WG2659241-2 LCS								
1-Methylnaphthalene			77.8		%		50-140	10-NOV-17
2-Methylnaphthalene			81.8		%		50-140	10-NOV-17
Acenaphthene			84.9		%		50-140	10-NOV-17
Acenaphthylene			88.6		%		50-140	10-NOV-17
Anthracene			91.1		%		50-140	10-NOV-17
Benzo(a)anthracene			93.0		%		50-140	10-NOV-17
Benzo(a)pyrene			89.5		%		50-140	10-NOV-17
Benzo(b)fluoranthene			72.9		%		50-140	10-NOV-17
Benzo(g,h,i)perylene			90.3		%		50-140	10-NOV-17
Benzo(k)fluoranthene			83.1		%		50-140	10-NOV-17
Chrysene			93.3		%		50-140	10-NOV-17
Dibenzo(ah)anthracene			90.5		%		50-140	10-NOV-17
Fluoranthene			89.4		%		50-140	10-NOV-17
Fluorene			91.0		%		50-140	10-NOV-17
Indeno(1,2,3-cd)pyrene			92.9		%		50-140	10-NOV-17
Naphthalene			83.4		%		50-140	10-NOV-17
Phenanthrene			87.9		%		50-140	10-NOV-17
Pyrene			88.3		%		50-140	10-NOV-17
WG2659241-3 LCSD		**WG2659241-2**						
1-Methylnaphthalene		77.8	80.3		%	3.2	50	10-NOV-17
2-Methylnaphthalene		81.8	83.8		%	2.4	50	10-NOV-17
Acenaphthene		84.9	88.6		%	4.3	50	10-NOV-17
Acenaphthylene		88.6	89.4		%	0.9	50	10-NOV-17
Anthracene		91.1	90.3		%	0.9	50	10-NOV-17
Benzo(a)anthracene		93.0	96.0		%	3.1	50	10-NOV-17
Benzo(a)pyrene		89.5	92.3		%	3.1	50	10-NOV-17
Benzo(b)fluoranthene		72.9	76.7		%	5.1	50	10-NOV-17
Benzo(g,h,i)perylene		90.3	91.0		%	0.8	50	10-NOV-17
Benzo(k)fluoranthene		83.1	86.2		%	3.7	50	10-NOV-17
Chrysene		93.3	97.7		%			10-NOV-17

Quality Control Report

Workorder: L2017929 Report Date: 13-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R3880660								
WG2659241-3 LCSD		**WG2659241-2**						
Chrysene		93.3	97.7		%	4.6	50	10-NOV-17
Dibenzo(ah)anthracene		90.5	89.1		%	1.5	50	10-NOV-17
Fluoranthene		89.4	89.8		%	0.5	50	10-NOV-17
Fluorene		91.0	93.1		%	2.3	50	10-NOV-17
Indeno(1,2,3-cd)pyrene		92.9	94.2		%	1.4	50	10-NOV-17
Naphthalene		83.4	79.0		%	5.4	50	10-NOV-17
Phenanthrene		87.9	89.0		%	1.3	50	10-NOV-17
Pyrene		88.3	88.4		%	0.1	50	10-NOV-17
WG2659241-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	10-NOV-17
2-Methylnaphthalene			<0.020		ug/L		0.02	10-NOV-17
Acenaphthene			<0.020		ug/L		0.02	10-NOV-17
Acenaphthylene			<0.020		ug/L		0.02	10-NOV-17
Anthracene			<0.020		ug/L		0.02	10-NOV-17
Benzo(a)anthracene			<0.020		ug/L		0.02	10-NOV-17
Benzo(a)pyrene			<0.010		ug/L		0.01	10-NOV-17
Benzo(b)fluoranthene			<0.020		ug/L		0.02	10-NOV-17
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	10-NOV-17
Benzo(k)fluoranthene			<0.020		ug/L		0.02	10-NOV-17
Chrysene			<0.020		ug/L		0.02	10-NOV-17
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	10-NOV-17
Fluoranthene			<0.020		ug/L		0.02	10-NOV-17
Fluorene			<0.020		ug/L		0.02	10-NOV-17
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	10-NOV-17
Naphthalene			<0.050		ug/L		0.05	10-NOV-17
Phenanthrene			<0.020		ug/L		0.02	10-NOV-17
Pyrene			<0.020		ug/L		0.02	10-NOV-17
Surrogate: d8-Naphthalene			83.1		%		60-140	10-NOV-17
Surrogate: d10-Phenanthrene			104.3		%		60-140	10-NOV-17
Surrogate: d12-Chrysene			91.3		%		60-140	10-NOV-17
Surrogate: d10-Acenaphthene			85.6		%		60-140	10-NOV-17
PCB-511-WT	**Water**							

Quality Control Report

Workorder: L2017929 Report Date: 13-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PCB-511-WT	**Water**							
Batch R3878045								
WG2657272-2 LCS								
Aroclor 1242			78.5		%		60-140	07-NOV-17
Aroclor 1248			92.5		%		60-140	07-NOV-17
Aroclor 1254			99.9		%		60-140	07-NOV-17
Aroclor 1260			111.6		%		60-140	07-NOV-17
WG2657272-3 LCSD		**WG2657272-2**						
Aroclor 1242		78.5	65.5		%	18	50	07-NOV-17
Aroclor 1248		92.5	92.5		%	0.0	50	07-NOV-17
Aroclor 1254		99.9	90.2		%	10	50	07-NOV-17
Aroclor 1260		111.6	102.3		%	8.7	50	07-NOV-17
WG2657272-1 MB								
Aroclor 1242			<0.020		ug/L		0.02	07-NOV-17
Aroclor 1248			<0.020		ug/L		0.02	07-NOV-17
Aroclor 1254			<0.020		ug/L		0.02	07-NOV-17
Aroclor 1260			<0.020		ug/L		0.02	07-NOV-17
Surrogate: 2-fluorobiphenyl			89.6		%		50-150	07-NOV-17
PH-WT	**Water**							
Batch R3876968								
WG2656900-12 DUP		**WG2656900-11**						
pH		5.19	5.19	J	pH units	0.00	0.2	04-NOV-17
WG2656900-4 DUP		**WG2656900-3**						
pH		8.13	8.14	J	pH units	0.00	0.2	04-NOV-17
WG2656900-8 DUP		**WG2656900-7**						
pH		7.81	7.85	J	pH units	0.05	0.2	04-NOV-17
WG2656900-10 LCS								
pH			6.99		pH units		6.9-7.1	04-NOV-17
WG2656900-2 LCS								
pH			6.99		pH units		6.9-7.1	04-NOV-17
WG2656900-6 LCS								
pH			6.99		pH units		6.9-7.1	04-NOV-17
VOC-511-HS-WT	**Water**							
Batch R3877348								
WG2656313-4 DUP		**WG2656313-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-NOV-17
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-NOV-17
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-NOV-17

Quality Control Report

Workorder: L2017929 Report Date: 13-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3877348								
WG2656313-4 DUP		**WG2656313-3**						
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-NOV-17
1,1-Dichloroethane		0.74	0.75		ug/L	1.3	30	07-NOV-17
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-NOV-17
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	07-NOV-17
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-NOV-17
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-NOV-17
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-NOV-17
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-NOV-17
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-NOV-17
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	07-NOV-17
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-NOV-17
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	07-NOV-17
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	07-NOV-17
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-NOV-17
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	07-NOV-17
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-NOV-17
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	07-NOV-17
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-NOV-17
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	07-NOV-17
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	07-NOV-17
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	07-NOV-17
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-NOV-17
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-NOV-17
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	07-NOV-17
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	07-NOV-17
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	07-NOV-17
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	07-NOV-17
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	07-NOV-17
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	07-NOV-17
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-NOV-17
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-NOV-17
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-NOV-17
trans-1,2-Dichloroethylene		<0.50	<0.50		ug/L			07-NOV-17

Quality Control Report

Workorder: L2017929 Report Date: 13-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3877348								
WG2656313-4 DUP		**WG2656313-3**						
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-NOV-17
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	07-NOV-17
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-NOV-17
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	07-NOV-17
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-NOV-17
WG2656313-1 LCS								
1,1,1,2-Tetrachloroethane			98.0		%		70-130	07-NOV-17
1,1,2,2-Tetrachloroethane			111.4		%		70-130	07-NOV-17
1,1,1-Trichloroethane			96.8		%		70-130	07-NOV-17
1,1,2-Trichloroethane			110.1		%		70-130	07-NOV-17
1,1-Dichloroethane			100.8		%		70-130	07-NOV-17
1,1-Dichloroethylene			88.1		%		70-130	07-NOV-17
1,2-Dibromoethane			112.2		%		70-130	07-NOV-17
1,2-Dichlorobenzene			99.9		%		70-130	07-NOV-17
1,2-Dichloroethane			115.5		%		70-130	07-NOV-17
1,2-Dichloropropane			109.0		%		70-130	07-NOV-17
1,3-Dichlorobenzene			93.4		%		70-130	07-NOV-17
1,4-Dichlorobenzene			97.5		%		70-130	07-NOV-17
Acetone			121.9		%		60-140	07-NOV-17
Benzene			102.7		%		70-130	07-NOV-17
Bromodichloromethane			105.0		%		70-130	07-NOV-17
Bromoform			105.3		%		70-130	07-NOV-17
Bromomethane			103.5		%		60-140	07-NOV-17
Carbon tetrachloride			92.0		%		70-130	07-NOV-17
Chlorobenzene			99.9		%		70-130	07-NOV-17
Chloroform			104.5		%		70-130	07-NOV-17
cis-1,2-Dichloroethylene			103.5		%		70-130	07-NOV-17
cis-1,3-Dichloropropene			110.5		%		70-130	07-NOV-17
Dibromochloromethane			108.6		%		70-130	07-NOV-17
Dichlorodifluoromethane			90.2		%		50-140	07-NOV-17
Ethylbenzene			89.0		%		70-130	07-NOV-17
n-Hexane			101.1		%		70-130	07-NOV-17
m+p-Xylenes			92.4		%		70-130	07-NOV-17

Quality Control Report

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3877348								
WG2656313-1 LCS								
Methyl Ethyl Ketone			127.3		%		60-140	07-NOV-17
Methyl Isobutyl Ketone			120.9		%		60-140	07-NOV-17
Methylene Chloride			109.7		%		70-130	07-NOV-17
MTBE			99.1		%		70-130	07-NOV-17
o-Xylene			92.2		%		70-130	07-NOV-17
Styrene			95.9		%		70-130	07-NOV-17
Tetrachloroethylene			88.5		%		70-130	07-NOV-17
Toluene			92.5		%		70-130	07-NOV-17
trans-1,2-Dichloroethylene			98.7		%		70-130	07-NOV-17
trans-1,3-Dichloropropene			107.0		%		70-130	07-NOV-17
Trichloroethylene			100.3		%		70-130	07-NOV-17
Trichlorofluoromethane			94.8		%		60-140	07-NOV-17
Vinyl chloride			94.7		%		60-140	07-NOV-17
WG2656313-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	07-NOV-17
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	07-NOV-17
1,1,1-Trichloroethane			<0.50		ug/L		0.5	07-NOV-17
1,1,2-Trichloroethane			<0.50		ug/L		0.5	07-NOV-17
1,1-Dichloroethane			<0.50		ug/L		0.5	07-NOV-17
1,1-Dichloroethylene			<0.50		ug/L		0.5	07-NOV-17
1,2-Dibromoethane			<0.20		ug/L		0.2	07-NOV-17
1,2-Dichlorobenzene			<0.50		ug/L		0.5	07-NOV-17
1,2-Dichloroethane			<0.50		ug/L		0.5	07-NOV-17
1,2-Dichloropropane			<0.50		ug/L		0.5	07-NOV-17
1,3-Dichlorobenzene			<0.50		ug/L		0.5	07-NOV-17
1,4-Dichlorobenzene			<0.50		ug/L		0.5	07-NOV-17
Acetone			<30		ug/L		30	07-NOV-17
Benzene			<0.50		ug/L		0.5	07-NOV-17
Bromodichloromethane			<2.0		ug/L		2	07-NOV-17
Bromoform			<5.0		ug/L		5	07-NOV-17
Bromomethane			<0.50		ug/L		0.5	07-NOV-17
Carbon tetrachloride			<0.20		ug/L		0.2	07-NOV-17
Chlorobenzene			<0.50		ug/L		0.5	07-NOV-17
Chloroform			<1.0		ug/L		1	07-NOV-17

Quality Control Report

Workorder: L2017929 Report Date: 13-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3877348								
WG2656313-2 MB								
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	07-NOV-17
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	07-NOV-17
Dibromochloromethane			<2.0		ug/L		2	07-NOV-17
Dichlorodifluoromethane			<2.0		ug/L		2	07-NOV-17
Ethylbenzene			<0.50		ug/L		0.5	07-NOV-17
n-Hexane			<0.50		ug/L		0.5	07-NOV-17
m+p-Xylenes			<0.40		ug/L		0.4	07-NOV-17
Methyl Ethyl Ketone			<20		ug/L		20	07-NOV-17
Methyl Isobutyl Ketone			<20		ug/L		20	07-NOV-17
Methylene Chloride			<5.0		ug/L		5	07-NOV-17
MTBE			<2.0		ug/L		2	07-NOV-17
o-Xylene			<0.30		ug/L		0.3	07-NOV-17
Styrene			<0.50		ug/L		0.5	07-NOV-17
Tetrachloroethylene			<0.50		ug/L		0.5	07-NOV-17
Toluene			<0.50		ug/L		0.5	07-NOV-17
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	07-NOV-17
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	07-NOV-17
Trichloroethylene			<0.50		ug/L		0.5	07-NOV-17
Trichlorofluoromethane			<5.0		ug/L		5	07-NOV-17
Vinyl chloride			<0.50		ug/L		0.5	07-NOV-17
Surrogate: 1,4-Difluorobenzene			98.3		%		70-130	07-NOV-17
Surrogate: 4-Bromofluorobenzene			97.4		%		70-130	07-NOV-17
WG2656313-5 MS		**WG2656313-3**						
1,1,1,2-Tetrachloroethane			98.6		%		50-140	07-NOV-17
1,1,2,2-Tetrachloroethane			111.1		%		50-140	07-NOV-17
1,1,1-Trichloroethane			98.6		%		50-140	07-NOV-17
1,1,2-Trichloroethane			110.2		%		50-140	07-NOV-17
1,1-Dichloroethane			102.8		%		50-140	07-NOV-17
1,1-Dichloroethylene			87.3		%		50-140	07-NOV-17
1,2-Dibromoethane			111.4		%		50-140	07-NOV-17
1,2-Dichlorobenzene			99.5		%		50-140	07-NOV-17
1,2-Dichloroethane			117.1		%		50-140	07-NOV-17
1,2-Dichloropropane			110.1		%		50-140	07-NOV-17
1,3-Dichlorobenzene			92.6		%		50-140	07-NOV-17

Quality Control Report

Workorder: L2017929 Report Date: 13-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3877348								
WG2656313-5 MS		**WG2656313-3**						
1,4-Dichlorobenzene			96.7		%		50-140	07-NOV-17
Acetone			123.2		%		50-140	07-NOV-17
Benzene			103.5		%		50-140	07-NOV-17
Bromodichloromethane			106.9		%		50-140	07-NOV-17
Bromoform			105.0		%		50-140	07-NOV-17
Bromomethane			98.0		%		50-140	07-NOV-17
Carbon tetrachloride			93.6		%		50-140	07-NOV-17
Chlorobenzene			99.4		%		50-140	07-NOV-17
Chloroform			106.8		%		50-140	07-NOV-17
cis-1,2-Dichloroethylene			104.7		%		50-140	07-NOV-17
cis-1,3-Dichloropropene			104.4		%		50-140	07-NOV-17
Dibromochloromethane			108.7		%		50-140	07-NOV-17
Dichlorodifluoromethane			75.4		%		50-140	07-NOV-17
Ethylbenzene			86.6		%		50-140	07-NOV-17
n-Hexane			96.8		%		50-140	07-NOV-17
m+p-Xylenes			91.2		%		50-140	07-NOV-17
Methyl Ethyl Ketone			128.6		%		50-140	07-NOV-17
Methyl Isobutyl Ketone			116.5		%		50-140	07-NOV-17
Methylene Chloride			110.1		%		50-140	07-NOV-17
MTBE			98.7		%		50-140	07-NOV-17
o-Xylene			89.7		%		50-140	07-NOV-17
Styrene			92.0		%		50-140	07-NOV-17
Tetrachloroethylene			87.6		%		50-140	07-NOV-17
Toluene			90.8		%		50-140	07-NOV-17
trans-1,2-Dichloroethylene			98.1		%		50-140	07-NOV-17
trans-1,3-Dichloropropene			97.1		%		50-140	07-NOV-17
Trichloroethylene			100.7		%		50-140	07-NOV-17
Trichlorofluoromethane			92.7		%		50-140	07-NOV-17
Vinyl chloride			87.6		%		50-140	07-NOV-17
Batch R3878513								
WG2654802-4 DUP		**WG2654802-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
1,1,1-Trichloroethane		<0.50	<0.50		ug/L			08-NOV-17

Quality Control Report

Workorder: L2017929 Report Date: 13-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3878513								
WG2654802-4 DUP		**WG2654802-3**						
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	08-NOV-17
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	08-NOV-17
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	08-NOV-17
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	08-NOV-17
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	08-NOV-17
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	08-NOV-17
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	08-NOV-17
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	08-NOV-17
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	08-NOV-17
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	08-NOV-17
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	08-NOV-17
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	08-NOV-17
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	08-NOV-17
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	08-NOV-17
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	08-NOV-17
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
Toluene		<0.50	<0.50		ug/L			08-NOV-17

Quality Control Report

Workorder: L2017929 Report Date: 13-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3878513								
WG2654802-4 DUP		**WG2654802-3**						
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	08-NOV-17
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	08-NOV-17
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
WG2654802-1 LCS								
1,1,1,2-Tetrachloroethane			97.0		%		70-130	07-NOV-17
1,1,2,2-Tetrachloroethane			85.7		%		70-130	07-NOV-17
1,1,1-Trichloroethane			106.6		%		70-130	07-NOV-17
1,1,2-Trichloroethane			91.4		%		70-130	07-NOV-17
1,1-Dichloroethane			103.3		%		70-130	07-NOV-17
1,1-Dichloroethylene			96.5		%		70-130	07-NOV-17
1,2-Dibromoethane			90.0		%		70-130	07-NOV-17
1,2-Dichlorobenzene			101.1		%		70-130	07-NOV-17
1,2-Dichloroethane			92.3		%		70-130	07-NOV-17
1,2-Dichloropropane			96.9		%		70-130	07-NOV-17
1,3-Dichlorobenzene			102.8		%		70-130	07-NOV-17
1,4-Dichlorobenzene			103.6		%		70-130	07-NOV-17
Acetone			97.4		%		60-140	07-NOV-17
Benzene			100.8		%		70-130	07-NOV-17
Bromodichloromethane			92.0		%		70-130	07-NOV-17
Bromoform			87.8		%		70-130	07-NOV-17
Bromomethane			101.8		%		60-140	07-NOV-17
Carbon tetrachloride			105.0		%		70-130	07-NOV-17
Chlorobenzene			101.6		%		70-130	07-NOV-17
Chloroform			100.3		%		70-130	07-NOV-17
cis-1,2-Dichloroethylene			89.6		%		70-130	07-NOV-17
cis-1,3-Dichloropropene			94.6		%		70-130	07-NOV-17
Dibromochloromethane			95.6		%		70-130	07-NOV-17
Dichlorodifluoromethane			94.5		%		50-140	07-NOV-17
Ethylbenzene			101.5		%		70-130	07-NOV-17
n-Hexane			119.0		%		70-130	07-NOV-17

Quality Control Report

Workorder: L2017929 Report Date: 13-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3878513								
WG2654802-1 LCS								
m+p-Xylenes			103.8		%		70-130	07-NOV-17
Methyl Ethyl Ketone			85.0		%		60-140	07-NOV-17
Methyl Isobutyl Ketone			76.2		%		60-140	07-NOV-17
Methylene Chloride			99.8		%		70-130	07-NOV-17
MTBE			100.4		%		70-130	07-NOV-17
o-Xylene			99.3		%		70-130	07-NOV-17
Styrene			97.9		%		70-130	07-NOV-17
Tetrachloroethylene			107.4		%		70-130	07-NOV-17
Toluene			100.1		%		70-130	07-NOV-17
trans-1,2-Dichloroethylene			104.2		%		70-130	07-NOV-17
trans-1,3-Dichloropropene			92.2		%		70-130	07-NOV-17
Trichloroethylene			105.0		%		70-130	07-NOV-17
Trichlorofluoromethane			107.8		%		60-140	07-NOV-17
Vinyl chloride			103.6		%		60-140	07-NOV-17
WG2654802-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	08-NOV-17
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	08-NOV-17
1,1,1-Trichloroethane			<0.50		ug/L		0.5	08-NOV-17
1,1,2-Trichloroethane			<0.50		ug/L		0.5	08-NOV-17
1,1-Dichloroethane			<0.50		ug/L		0.5	08-NOV-17
1,1-Dichloroethylene			<0.50		ug/L		0.5	08-NOV-17
1,2-Dibromoethane			<0.20		ug/L		0.2	08-NOV-17
1,2-Dichlorobenzene			<0.50		ug/L		0.5	08-NOV-17
1,2-Dichloroethane			<0.50		ug/L		0.5	08-NOV-17
1,2-Dichloropropane			<0.50		ug/L		0.5	08-NOV-17
1,3-Dichlorobenzene			<0.50		ug/L		0.5	08-NOV-17
1,4-Dichlorobenzene			<0.50		ug/L		0.5	08-NOV-17
Acetone			<30		ug/L		30	08-NOV-17
Benzene			<0.50		ug/L		0.5	08-NOV-17
Bromodichloromethane			<2.0		ug/L		2	08-NOV-17
Bromoform			<5.0		ug/L		5	08-NOV-17
Bromomethane			<0.50		ug/L		0.5	08-NOV-17
Carbon tetrachloride			<0.20		ug/L		0.2	08-NOV-17
Chlorobenzene			<0.50		ug/L		0.5	08-NOV-17

Quality Control Report

Workorder: L2017929 Report Date: 13-NOV-17

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3878513								
WG2654802-2 MB								
Chloroform			<1.0		ug/L		1	08-NOV-17
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	08-NOV-17
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	08-NOV-17
Dibromochloromethane			<2.0		ug/L		2	08-NOV-17
Dichlorodifluoromethane			<2.0		ug/L		2	08-NOV-17
Ethylbenzene			<0.50		ug/L		0.5	08-NOV-17
n-Hexane			<0.50		ug/L		0.5	08-NOV-17
m+p-Xylenes			<0.40		ug/L		0.4	08-NOV-17
Methyl Ethyl Ketone			<20		ug/L		20	08-NOV-17
Methyl Isobutyl Ketone			<20		ug/L		20	08-NOV-17
Methylene Chloride			<5.0		ug/L		5	08-NOV-17
MTBE			<2.0		ug/L		2	08-NOV-17
o-Xylene			<0.30		ug/L		0.3	08-NOV-17
Styrene			<0.50		ug/L		0.5	08-NOV-17
Tetrachloroethylene			<0.50		ug/L		0.5	08-NOV-17
Toluene			<0.50		ug/L		0.5	08-NOV-17
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	08-NOV-17
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	08-NOV-17
Trichloroethylene			<0.50		ug/L		0.5	08-NOV-17
Trichlorofluoromethane			<5.0		ug/L		5	08-NOV-17
Vinyl chloride			<0.50		ug/L		0.5	08-NOV-17
Surrogate: 1,4-Difluorobenzene			100.2		%		70-130	08-NOV-17
Surrogate: 4-Bromofluorobenzene			96.7		%		70-130	08-NOV-17
WG2654802-5 MS		**WG2654802-3**						
1,1,1,2-Tetrachloroethane			98.5		%		50-140	08-NOV-17
1,1,2,2-Tetrachloroethane			97.9		%		50-140	08-NOV-17
1,1,1-Trichloroethane			102.6		%		50-140	08-NOV-17
1,1,2-Trichloroethane			98.7		%		50-140	08-NOV-17
1,1-Dichloroethane			99.6		%		50-140	08-NOV-17
1,1-Dichloroethylene			89.4		%		50-140	08-NOV-17
1,2-Dibromoethane			97.1		%		50-140	08-NOV-17
1,2-Dichlorobenzene			100.2		%		50-140	08-NOV-17
1,2-Dichloroethane			98.2		%		50-140	08-NOV-17
1,2-Dichloropropane			101.9		%		50-140	08-NOV-17

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Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3878513								
WG2654802-5 MS		**WG2654802-3**						
1,3-Dichlorobenzene			99.0		%		50-140	08-NOV-17
1,4-Dichlorobenzene			101.2		%		50-140	08-NOV-17
Acetone			107.7		%		50-140	08-NOV-17
Benzene			101.1		%		50-140	08-NOV-17
Bromodichloromethane			96.8		%		50-140	08-NOV-17
Bromoform			94.5		%		50-140	08-NOV-17
Bromomethane			92.6		%		50-140	08-NOV-17
Carbon tetrachloride			99.7		%		50-140	08-NOV-17
Chlorobenzene			101.2		%		50-140	08-NOV-17
Chloroform			101.4		%		50-140	08-NOV-17
cis-1,2-Dichloroethylene			90.5		%		50-140	08-NOV-17
cis-1,3-Dichloropropene			96.0		%		50-140	08-NOV-17
Dibromochloromethane			100.9		%		50-140	08-NOV-17
Dichlorodifluoromethane			76.9		%		50-140	08-NOV-17
Ethylbenzene			97.1		%		50-140	08-NOV-17
n-Hexane			107.3		%		50-140	08-NOV-17
m+p-Xylenes			99.4		%		50-140	08-NOV-17
Methyl Ethyl Ketone			98.8		%		50-140	08-NOV-17
Methyl Isobutyl Ketone			93.7		%		50-140	08-NOV-17
Methylene Chloride			101.8		%		50-140	08-NOV-17
MTBE			99.4		%		50-140	08-NOV-17
o-Xylene			97.4		%		50-140	08-NOV-17
Styrene			98.7		%		50-140	08-NOV-17
Tetrachloroethylene			98.4		%		50-140	08-NOV-17
Toluene			97.5		%		50-140	08-NOV-17
trans-1,2-Dichloroethylene			99.8		%		50-140	08-NOV-17
trans-1,3-Dichloropropene			91.9		%		50-140	08-NOV-17
Trichloroethylene			101.4		%		50-140	08-NOV-17
Trichlorofluoromethane			97.1		%		50-140	08-NOV-17
Vinyl chloride			90.9		%		50-140	08-NOV-17
Batch R3878599								
WG2655329-4 DUP		**WG2655329-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17

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Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3878599								
WG2655329-4 DUP		**WG2655329-3**						
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	08-NOV-17
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	08-NOV-17
Benzene		3.02	3.01		ug/L	0.3	30	08-NOV-17
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	08-NOV-17
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	08-NOV-17
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	08-NOV-17
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	08-NOV-17
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	08-NOV-17
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	08-NOV-17
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	08-NOV-17
Ethylbenzene		105	107		ug/L	1.0	30	08-NOV-17
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
m+p-Xylenes		138	138		ug/L	0.1	30	08-NOV-17
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	08-NOV-17
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	08-NOV-17
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	08-NOV-17
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	08-NOV-17
o-Xylene		46.5	46.9		ug/L	0.8	30	08-NOV-17
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
Toluene		0.92	1.08		ug/L			08-NOV-17

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Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3878599								
WG2655329-4 DUP		**WG2655329-3**						
Toluene		0.92	1.08		ug/L	16	30	08-NOV-17
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	08-NOV-17
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	08-NOV-17
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-NOV-17
WG2655329-1 LCS								
1,1,1,2-Tetrachloroethane			101.0		%		70-130	08-NOV-17
1,1,2,2-Tetrachloroethane			100.2		%		70-130	08-NOV-17
1,1,1-Trichloroethane			97.1		%		70-130	08-NOV-17
1,1,2-Trichloroethane			108.2		%		70-130	08-NOV-17
1,1-Dichloroethane			103.1		%		70-130	08-NOV-17
1,1-Dichloroethylene			91.2		%		70-130	08-NOV-17
1,2-Dibromoethane			106.0		%		70-130	08-NOV-17
1,2-Dichlorobenzene			99.7		%		70-130	08-NOV-17
1,2-Dichloroethane			110.0		%		70-130	08-NOV-17
1,2-Dichloropropane			106.9		%		70-130	08-NOV-17
1,3-Dichlorobenzene			95.0		%		70-130	08-NOV-17
1,4-Dichlorobenzene			98.5		%		70-130	08-NOV-17
Acetone			119.5		%		60-140	08-NOV-17
Benzene			101.5		%		70-130	08-NOV-17
Bromodichloromethane			102.2		%		70-130	08-NOV-17
Bromoform			105.3		%		70-130	08-NOV-17
Bromomethane			101.0		%		60-140	08-NOV-17
Carbon tetrachloride			94.9		%		70-130	08-NOV-17
Chlorobenzene			100.4		%		70-130	08-NOV-17
Chloroform			102.7		%		70-130	08-NOV-17
cis-1,2-Dichloroethylene			93.9		%		70-130	08-NOV-17
cis-1,3-Dichloropropene			103.0		%		70-130	08-NOV-17
Dibromochloromethane			107.2		%		70-130	08-NOV-17
Dichlorodifluoromethane			90.2		%		50-140	08-NOV-17
Ethylbenzene			97.3		%		70-130	08-NOV-17
n-Hexane			105.9		%		70-130	08-NOV-17

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72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3878599								
WG2655329-1 LCS								
m+p-Xylenes			98.9		%		70-130	08-NOV-17
Methyl Ethyl Ketone			119.7		%		60-140	08-NOV-17
Methyl Isobutyl Ketone			116.1		%		60-140	08-NOV-17
Methylene Chloride			106.3		%		70-130	08-NOV-17
MTBE			97.8		%		70-130	08-NOV-17
o-Xylene			98.1		%		70-130	08-NOV-17
Styrene			98.0		%		70-130	08-NOV-17
Tetrachloroethylene			92.5		%		70-130	08-NOV-17
Toluene			94.2		%		70-130	08-NOV-17
trans-1,2-Dichloroethylene			100.9		%		70-130	08-NOV-17
trans-1,3-Dichloropropene			102.9		%		70-130	08-NOV-17
Trichloroethylene			99.98		%		70-130	08-NOV-17
Trichlorofluoromethane			97.7		%		60-140	08-NOV-17
Vinyl chloride			97.8		%		60-140	08-NOV-17
WG2655329-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	08-NOV-17
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	08-NOV-17
1,1,1-Trichloroethane			<0.50		ug/L		0.5	08-NOV-17
1,1,2-Trichloroethane			<0.50		ug/L		0.5	08-NOV-17
1,1-Dichloroethane			<0.50		ug/L		0.5	08-NOV-17
1,1-Dichloroethylene			<0.50		ug/L		0.5	08-NOV-17
1,2-Dibromoethane			<0.20		ug/L		0.2	08-NOV-17
1,2-Dichlorobenzene			<0.50		ug/L		0.5	08-NOV-17
1,2-Dichloroethane			<0.50		ug/L		0.5	08-NOV-17
1,2-Dichloropropane			<0.50		ug/L		0.5	08-NOV-17
1,3-Dichlorobenzene			<0.50		ug/L		0.5	08-NOV-17
1,4-Dichlorobenzene			<0.50		ug/L		0.5	08-NOV-17
Acetone			<30		ug/L		30	08-NOV-17
Benzene			<0.50		ug/L		0.5	08-NOV-17
Bromodichloromethane			<2.0		ug/L		2	08-NOV-17
Bromoform			<5.0		ug/L		5	08-NOV-17
Bromomethane			<0.50		ug/L		0.5	08-NOV-17
Carbon tetrachloride			<0.20		ug/L		0.2	08-NOV-17
Chlorobenzene			<0.50		ug/L		0.5	08-NOV-17

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72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3878599								
WG2655329-2 MB								
Chloroform			<1.0		ug/L		1	08-NOV-17
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	08-NOV-17
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	08-NOV-17
Dibromochloromethane			<2.0		ug/L		2	08-NOV-17
Dichlorodifluoromethane			<2.0		ug/L		2	08-NOV-17
Ethylbenzene			<0.50		ug/L		0.5	08-NOV-17
n-Hexane			<0.50		ug/L		0.5	08-NOV-17
m+p-Xylenes			<0.40		ug/L		0.4	08-NOV-17
Methyl Ethyl Ketone			<20		ug/L		20	08-NOV-17
Methyl Isobutyl Ketone			<20		ug/L		20	08-NOV-17
Methylene Chloride			<5.0		ug/L		5	08-NOV-17
MTBE			<2.0		ug/L		2	08-NOV-17
o-Xylene			<0.30		ug/L		0.3	08-NOV-17
Styrene			<0.50		ug/L		0.5	08-NOV-17
Tetrachloroethylene			<0.50		ug/L		0.5	08-NOV-17
Toluene			<0.50		ug/L		0.5	08-NOV-17
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	08-NOV-17
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	08-NOV-17
Trichloroethylene			<0.50		ug/L		0.5	08-NOV-17
Trichlorofluoromethane			<5.0		ug/L		5	08-NOV-17
Vinyl chloride			<0.50		ug/L		0.5	08-NOV-17
Surrogate: 1,4-Difluorobenzene			98.8		%		70-130	08-NOV-17
Surrogate: 4-Bromofluorobenzene			96.2		%		70-130	08-NOV-17
WG2655329-5 MS		**WG2655329-3**						
1,1,1,2-Tetrachloroethane			100.5		%		50-140	08-NOV-17
1,1,2,2-Tetrachloroethane			103.5		%		50-140	08-NOV-17
1,1,1-Trichloroethane			96.1		%		50-140	08-NOV-17
1,1,2-Trichloroethane			108.5		%		50-140	08-NOV-17
1,1-Dichloroethane			98.5		%		50-140	08-NOV-17
1,1-Dichloroethylene			87.6		%		50-140	08-NOV-17
1,2-Dibromoethane			105.7		%		50-140	08-NOV-17
1,2-Dichlorobenzene			96.8		%		50-140	08-NOV-17
1,2-Dichloroethane			109.4		%		50-140	08-NOV-17
1,2-Dichloropropane			106.8		%		50-140	08-NOV-17

Quality Control Report

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Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3878599								
WG2655329-5 MS		**WG2655329-3**						
1,3-Dichlorobenzene			92.8		%		50-140	08-NOV-17
1,4-Dichlorobenzene			94.6		%		50-140	08-NOV-17
Acetone			117.9		%		50-140	08-NOV-17
Benzene			100.5		%		50-140	08-NOV-17
Bromodichloromethane			101.1		%		50-140	08-NOV-17
Bromoform			101.9		%		50-140	08-NOV-17
Bromomethane			94.3		%		50-140	08-NOV-17
Carbon tetrachloride			92.9		%		50-140	08-NOV-17
Chlorobenzene			99.8		%		50-140	08-NOV-17
Chloroform			102.5		%		50-140	08-NOV-17
cis-1,2-Dichloroethylene			93.8		%		50-140	08-NOV-17
cis-1,3-Dichloropropene			97.6		%		50-140	08-NOV-17
Dibromochloromethane			106.7		%		50-140	08-NOV-17
Dichlorodifluoromethane			71.5		%		50-140	08-NOV-17
Ethylbenzene			N/A	MS-B	%		-	08-NOV-17
n-Hexane			97.3		%		50-140	08-NOV-17
m+p-Xylenes			95.5		%		50-140	08-NOV-17
Methyl Ethyl Ketone			116.0		%		50-140	08-NOV-17
Methyl Isobutyl Ketone			111.0		%		50-140	08-NOV-17
Methylene Chloride			105.5		%		50-140	08-NOV-17
MTBE			96.9		%		50-140	08-NOV-17
o-Xylene			98.8		%		50-140	08-NOV-17
Styrene			93.4		%		50-140	08-NOV-17
Tetrachloroethylene			90.9		%		50-140	08-NOV-17
Toluene			94.2		%		50-140	08-NOV-17
trans-1,2-Dichloroethylene			98.0		%		50-140	08-NOV-17
trans-1,3-Dichloropropene			97.8		%		50-140	08-NOV-17
Trichloroethylene			98.1		%		50-140	08-NOV-17
Trichlorofluoromethane			90.7		%		50-140	08-NOV-17
Vinyl chloride			89.5		%		50-140	08-NOV-17

Quality Control Report

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Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9
Contact: MICHAEL SHIRY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

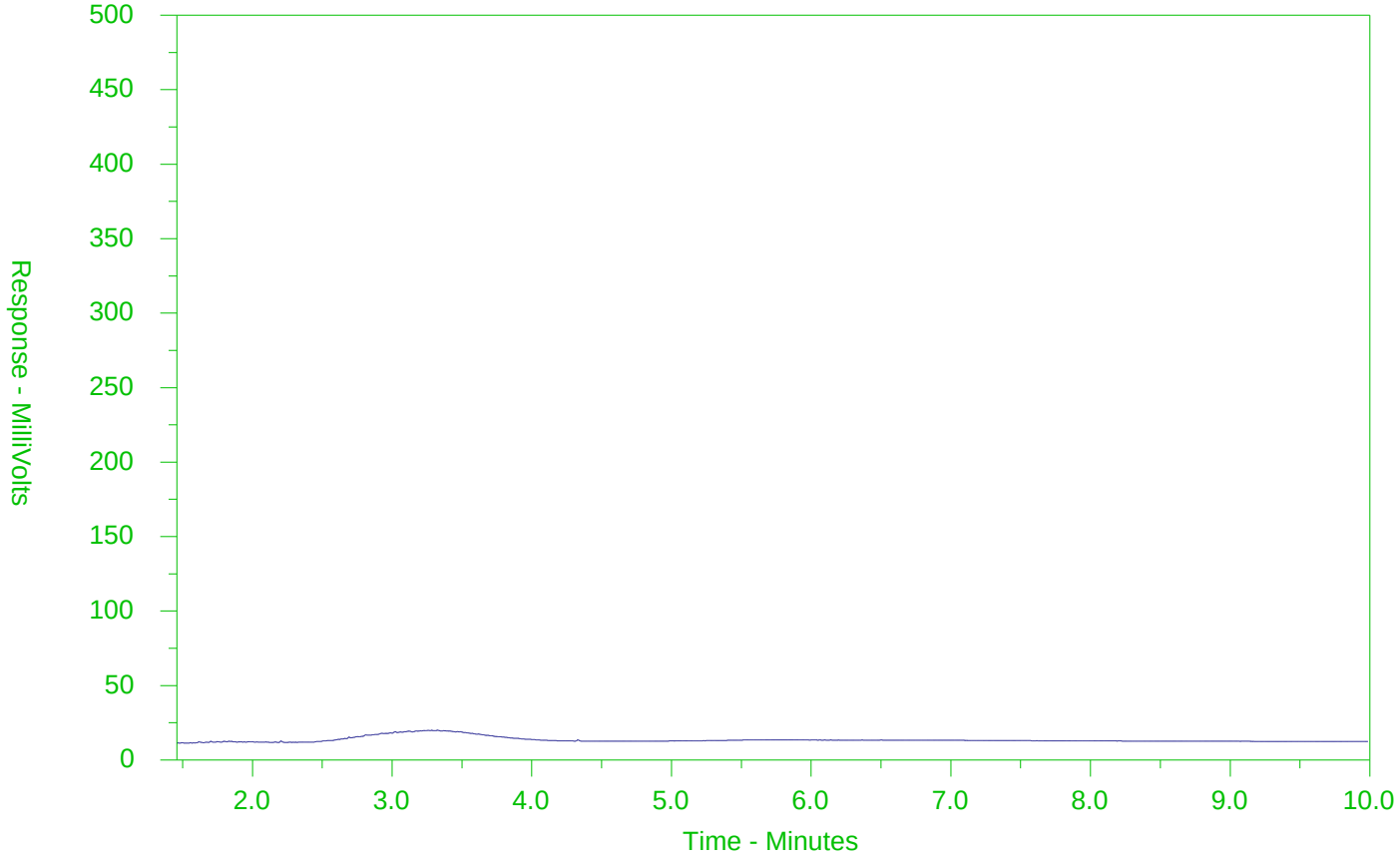
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2017929-1
Client Sample ID: MW17-108S



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

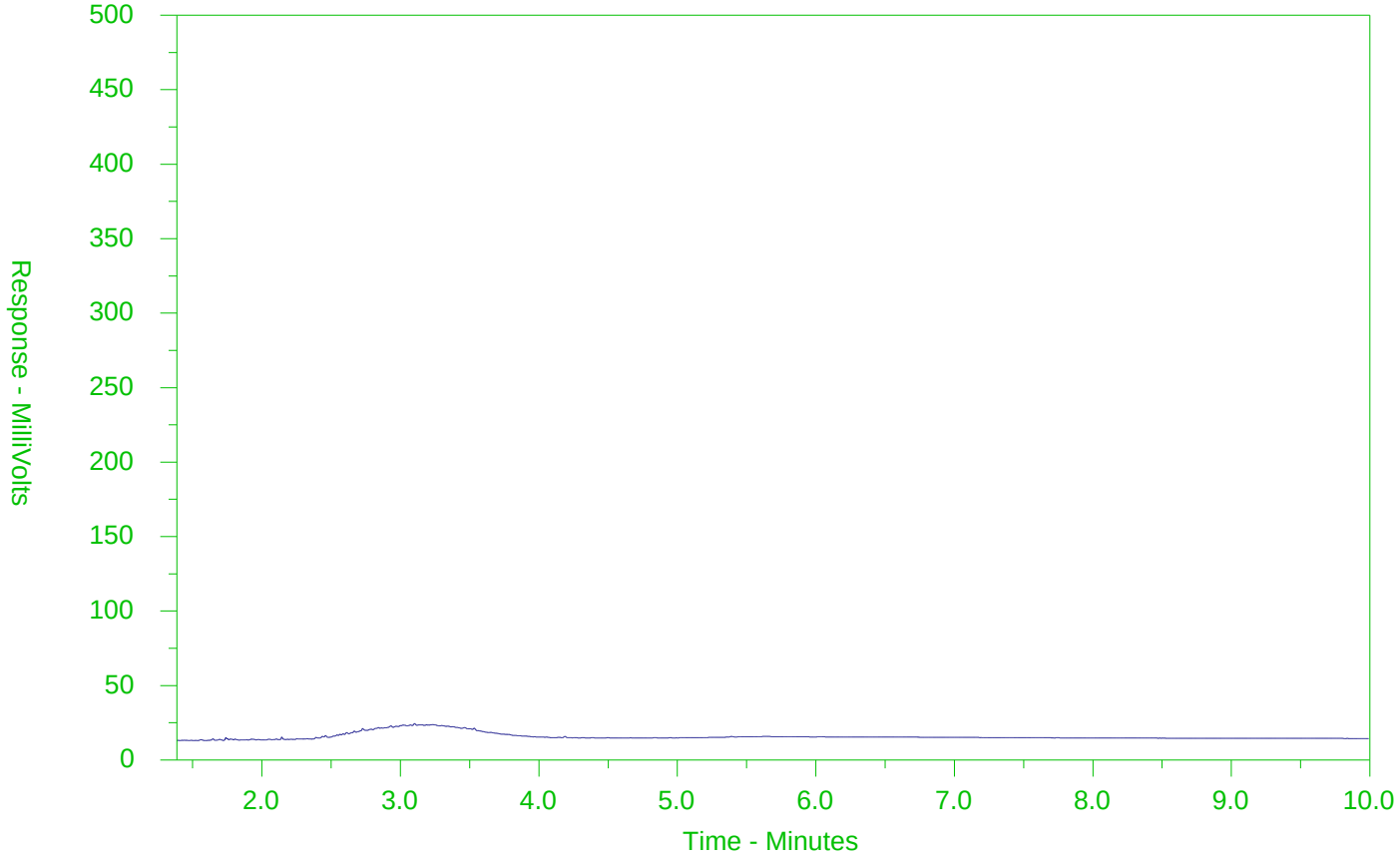
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2017929-2
Client Sample ID: DUP 1



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

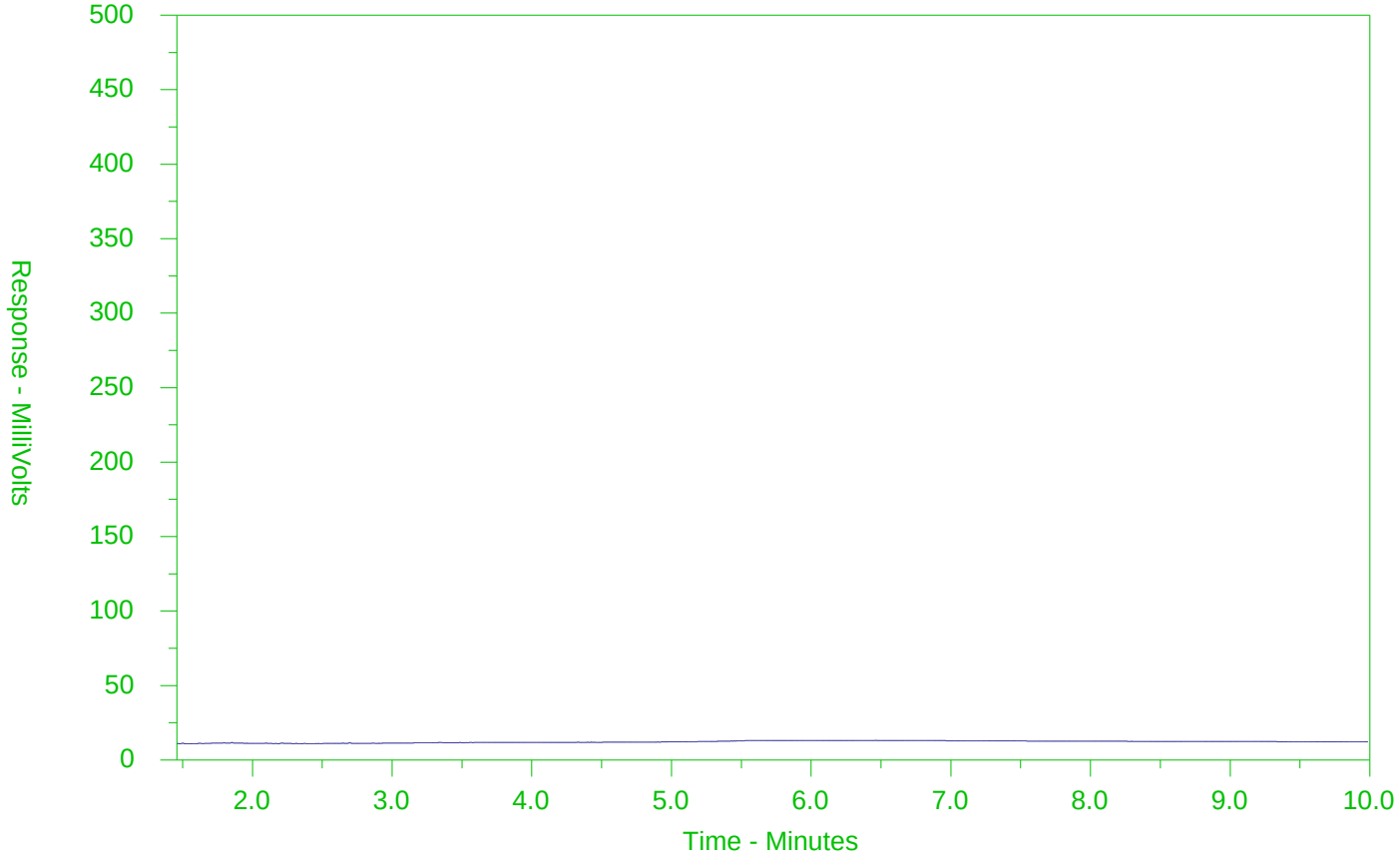
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2017929-3
Client Sample ID: MW17-105D



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

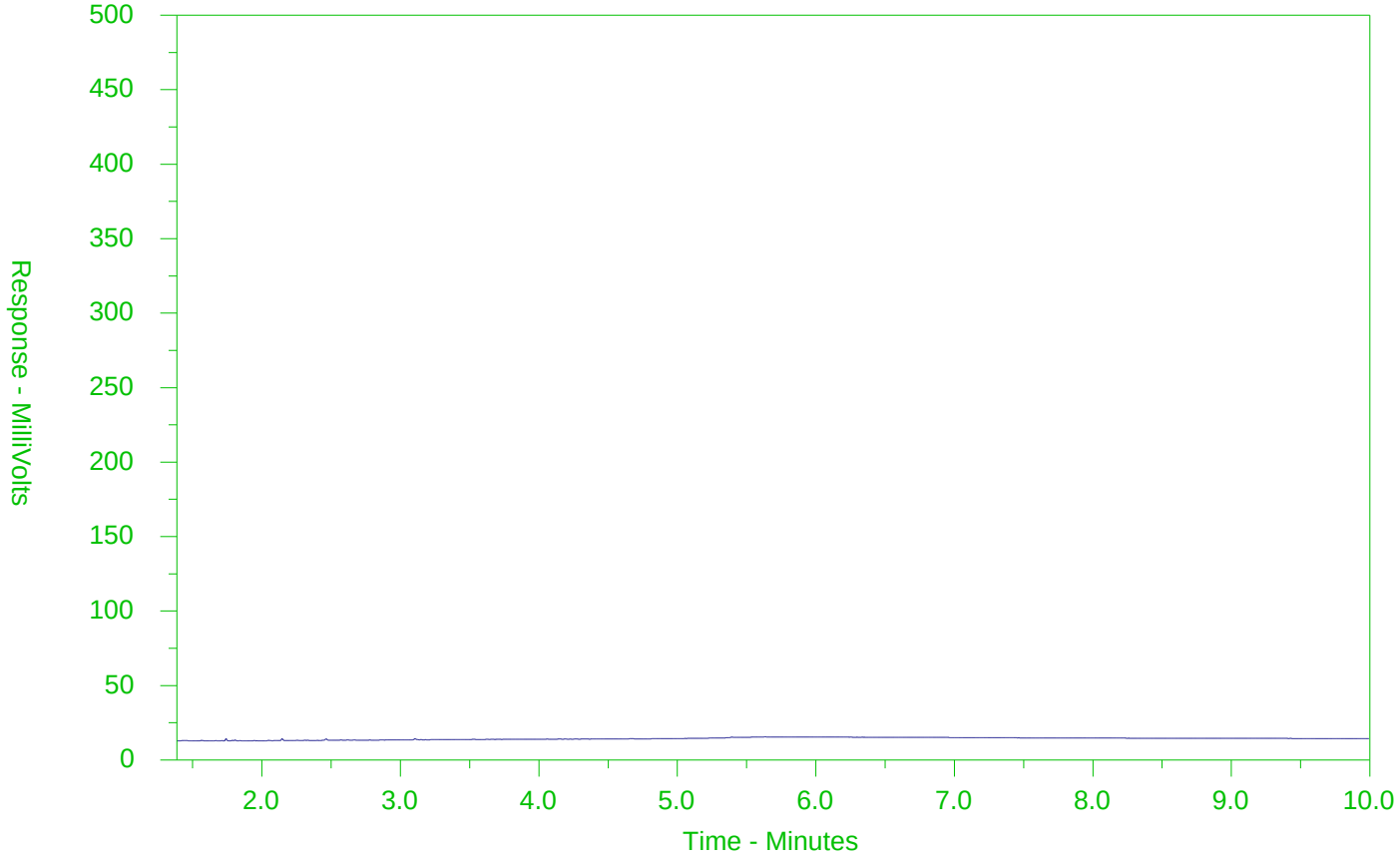
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2017929-4
Client Sample ID: DUP2



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

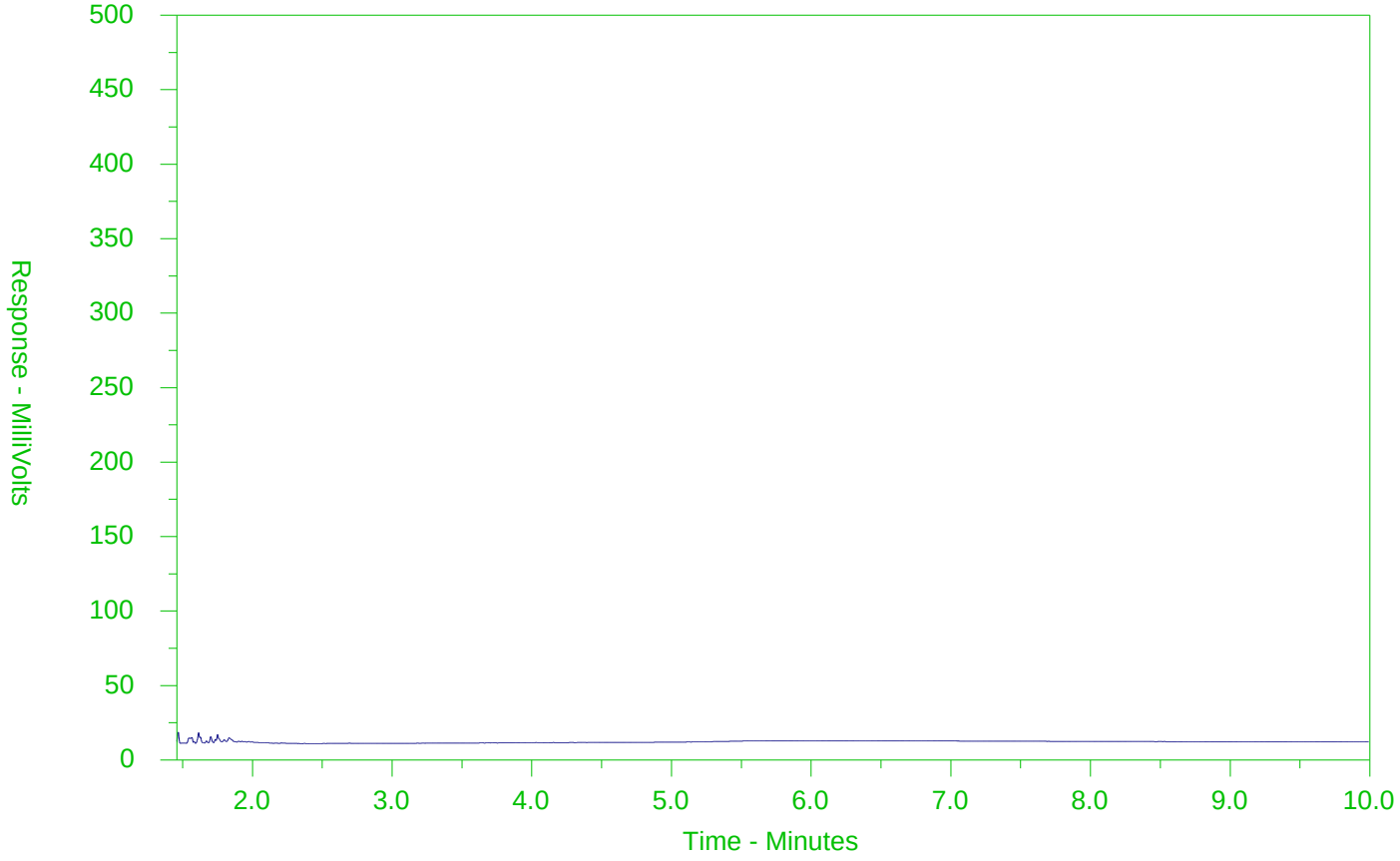
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2017929-5
Client Sample ID: MW17-105S



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

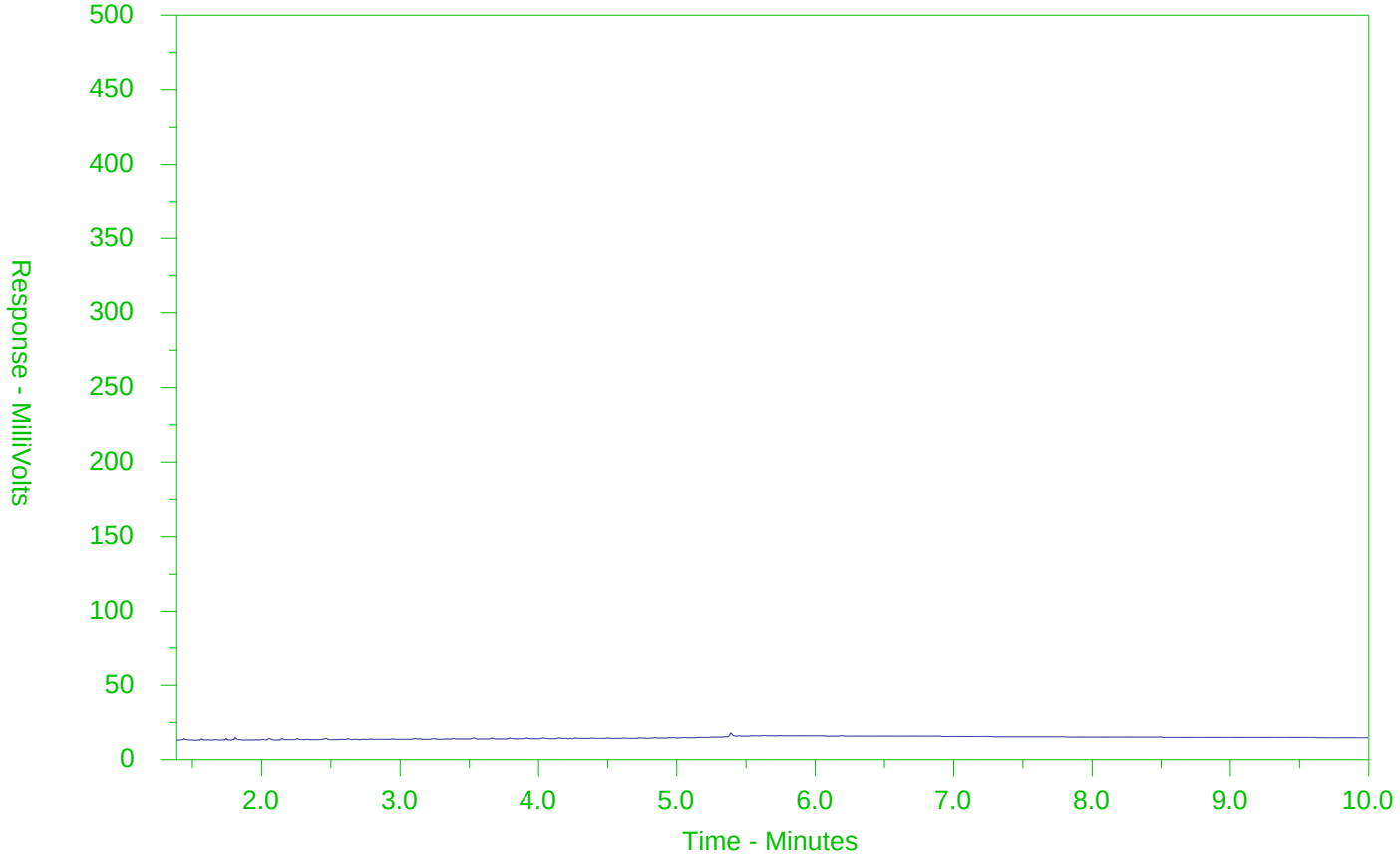
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2017929-6
Client Sample ID: MW17-100S



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

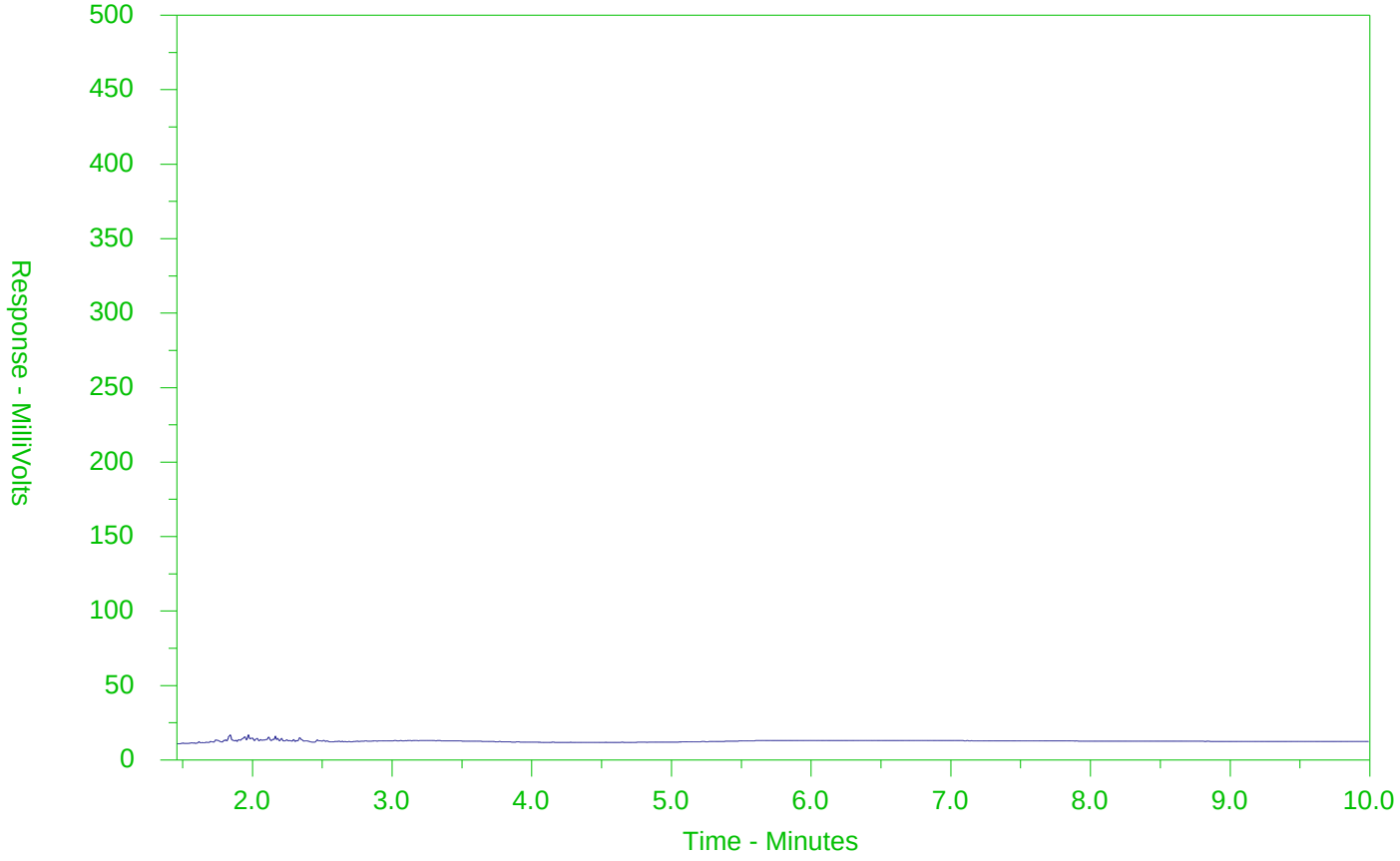
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2017929-8
Client Sample ID: MW17-101S



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

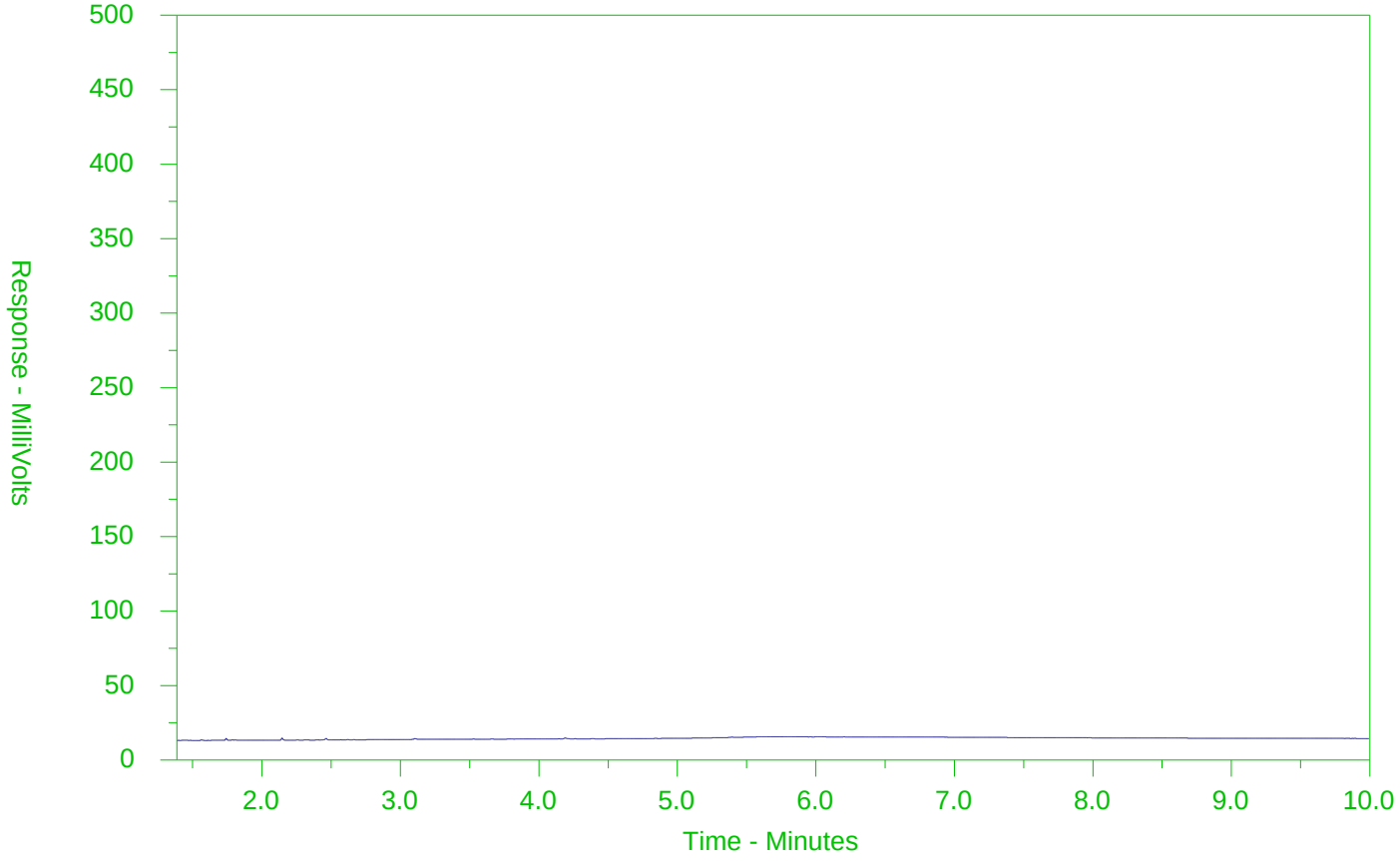
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2017929-10
Client Sample ID: MW17-101D



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

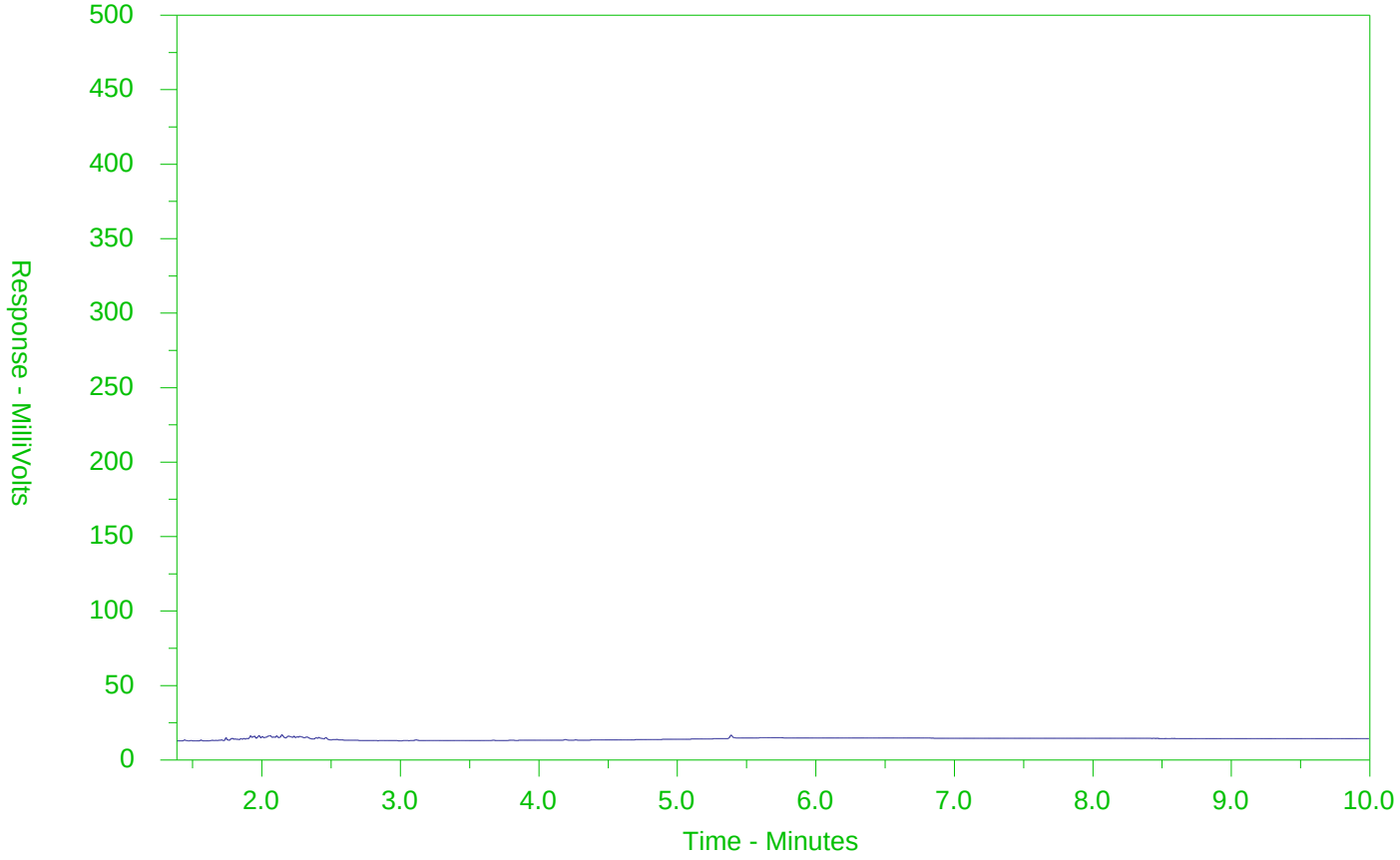
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2017929-11
Client Sample ID: MW17-104D



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

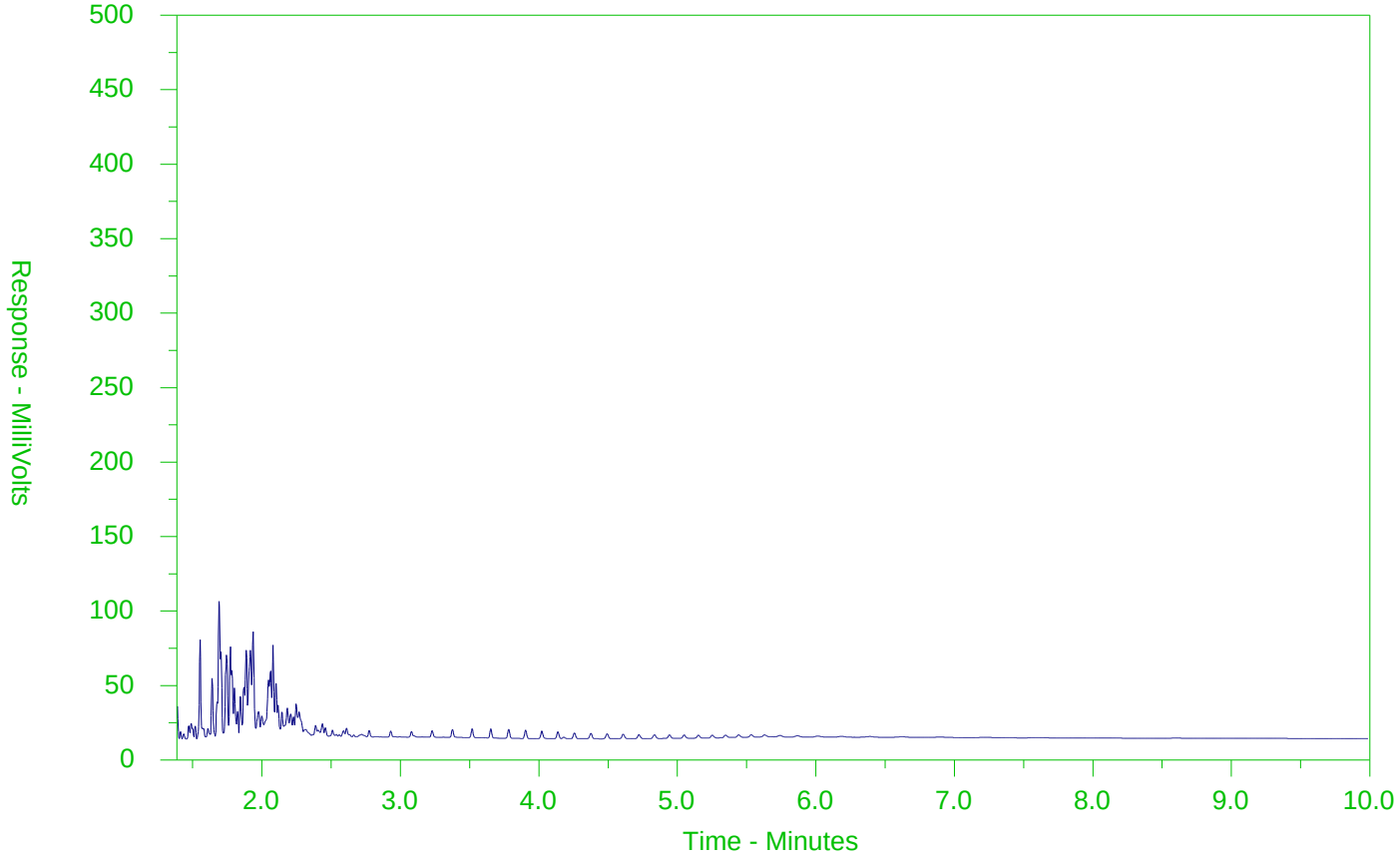
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2017929-12
Client Sample ID: MW17-104S



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

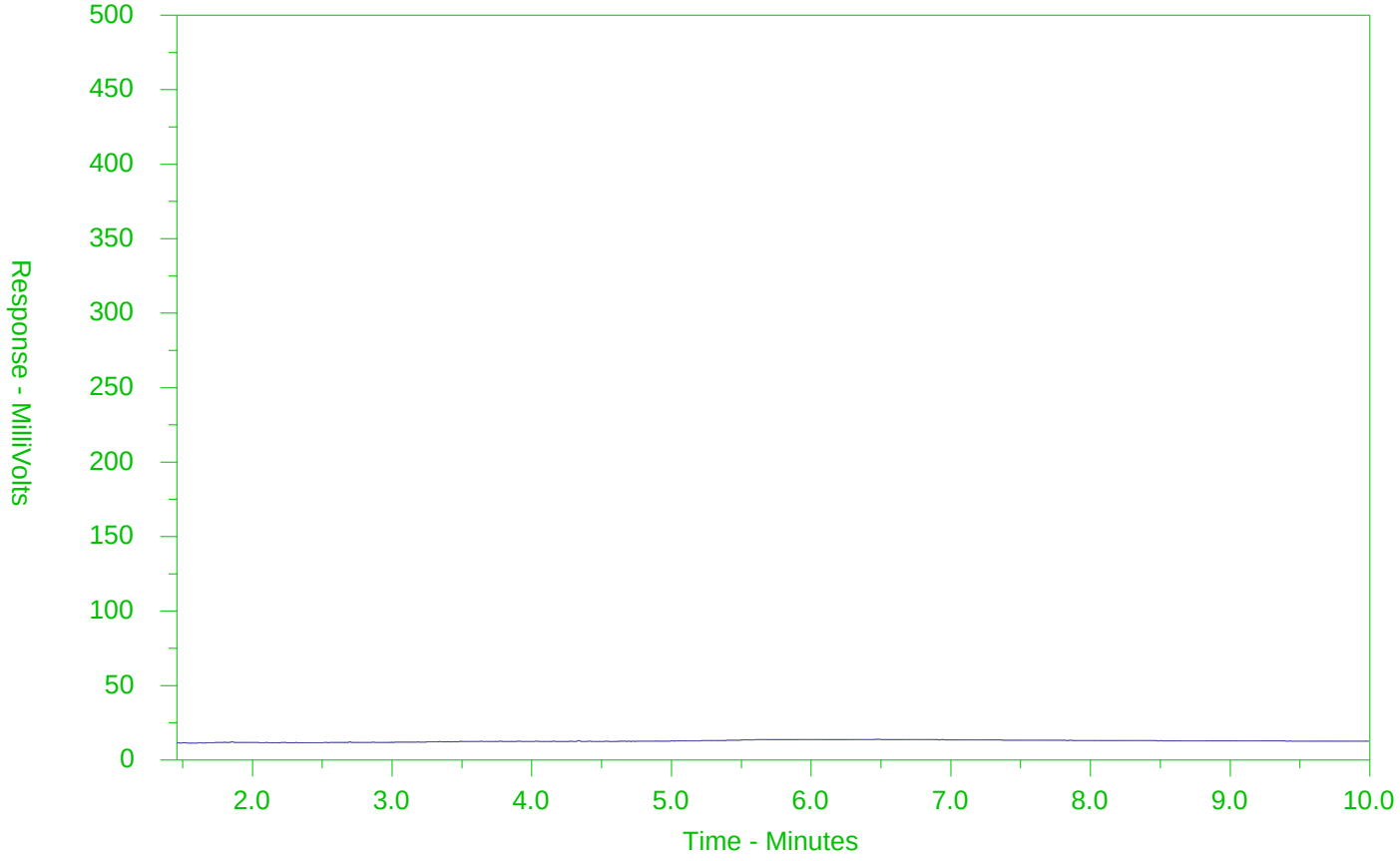
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2017929-13
Client Sample ID: MW17-106S



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

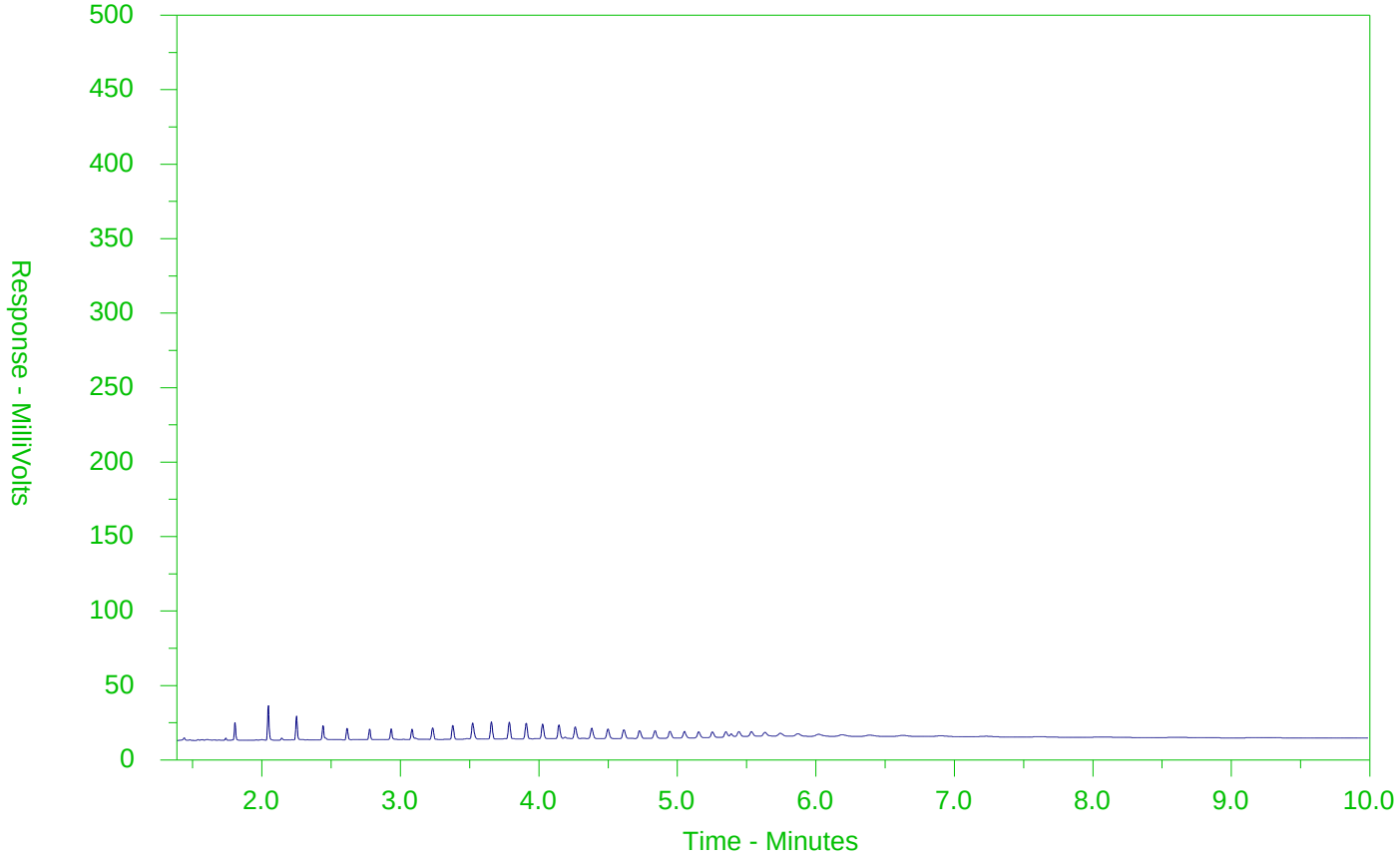
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2017929-14
Client Sample ID: MW17-106D



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

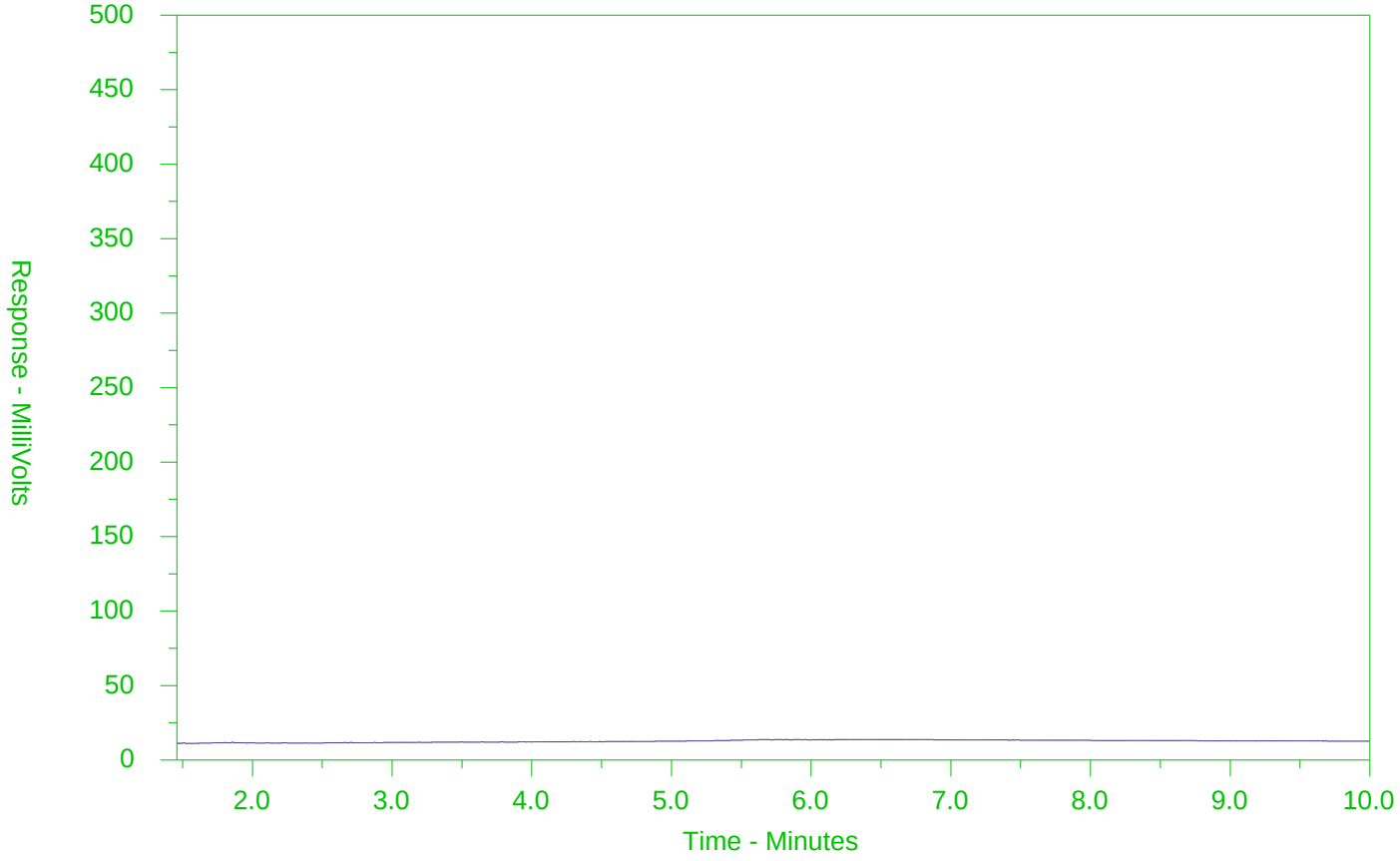
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2017929-15
Client Sample ID: MW17-107S



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

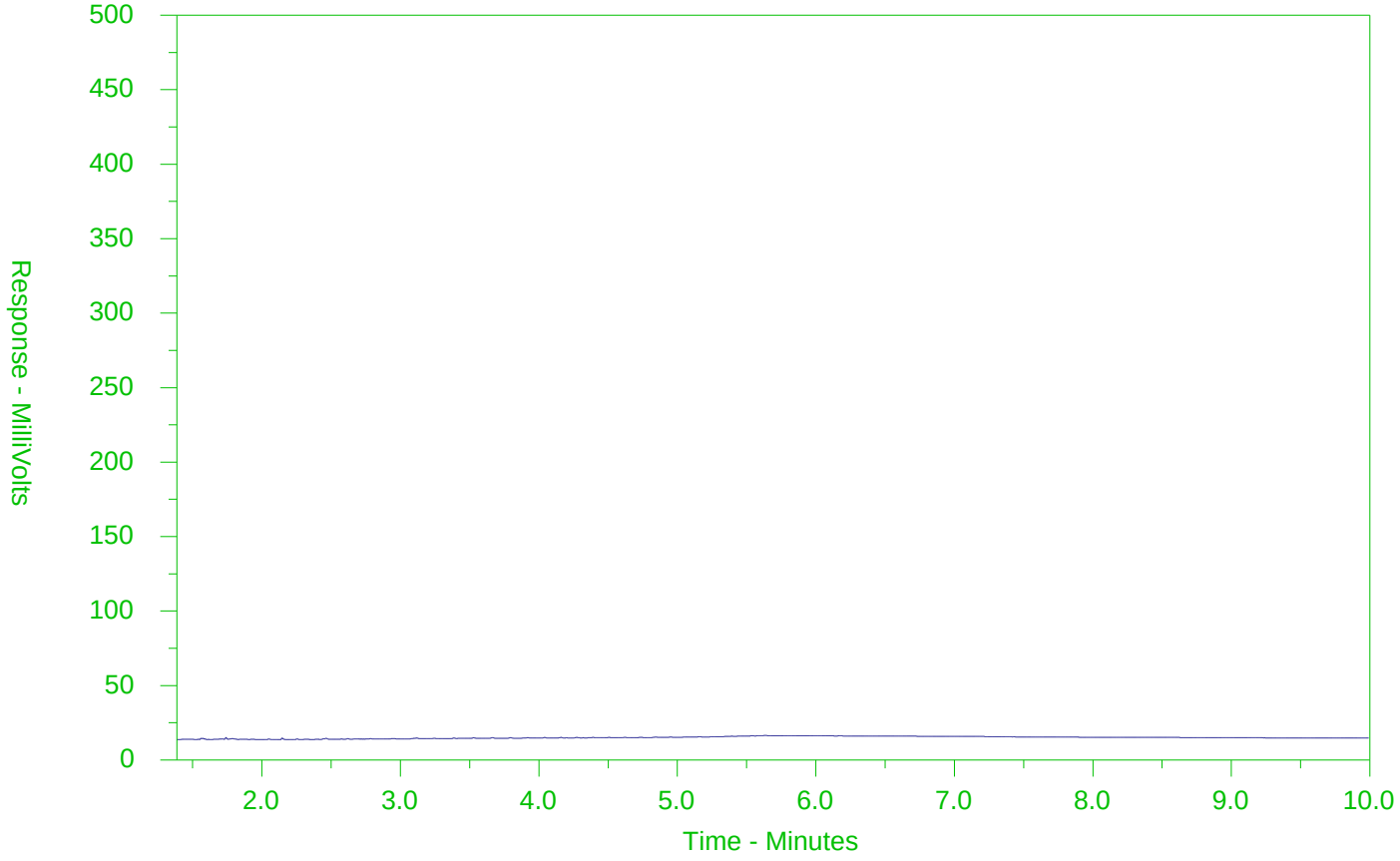
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2017929-17
Client Sample ID: MW17-109S



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

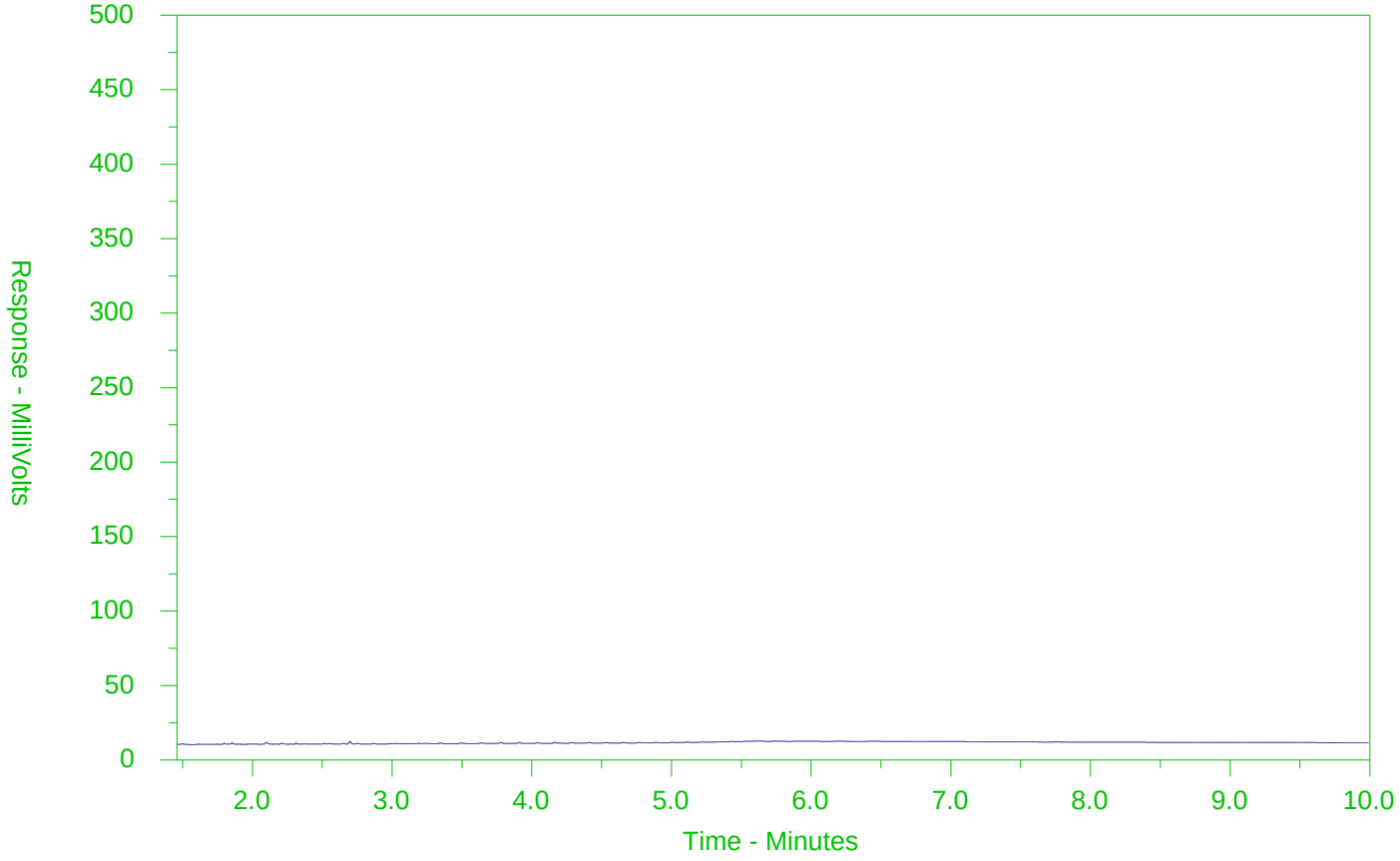
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2017929-19
Client Sample ID: MW17-110S



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

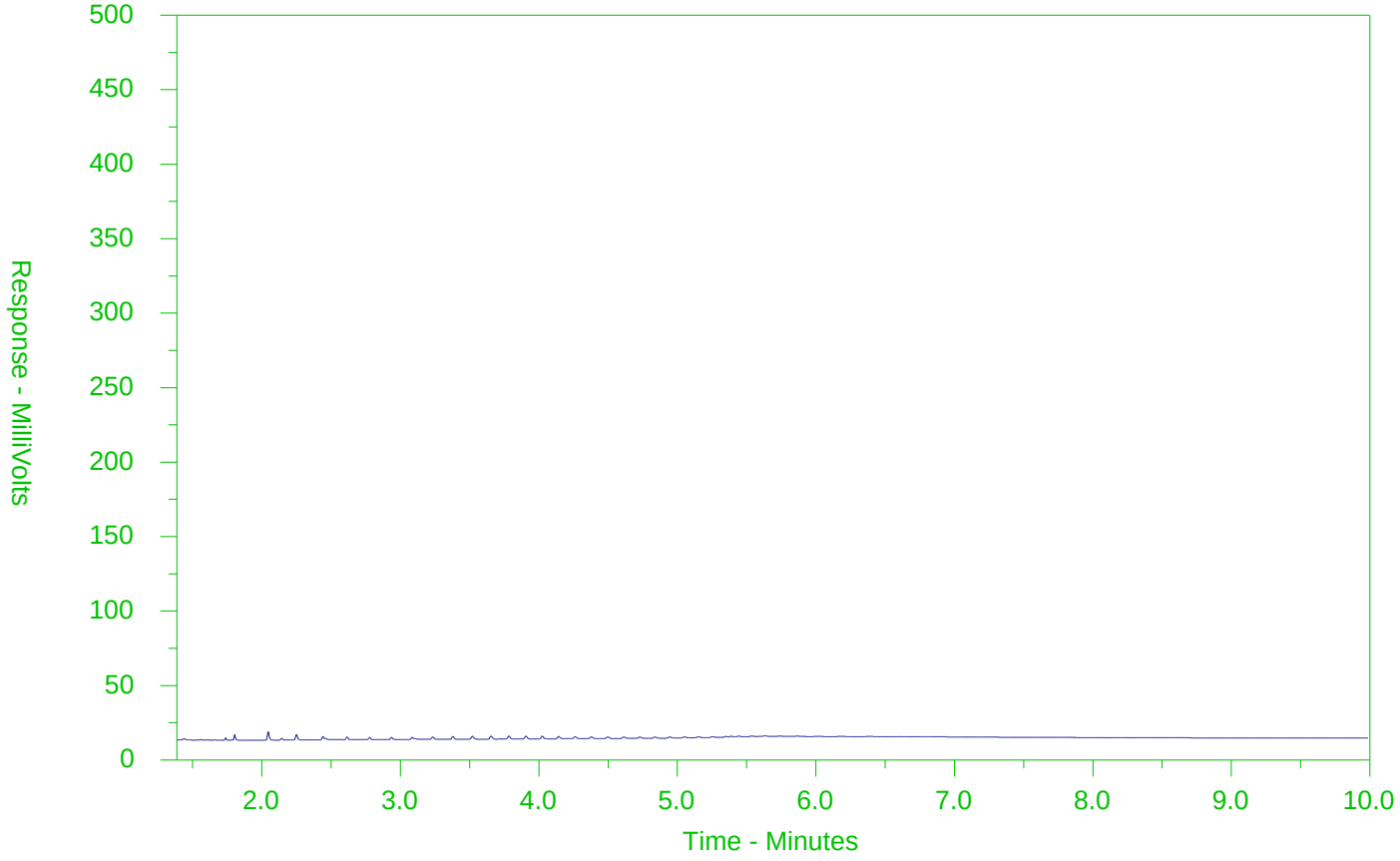
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2017929-20
Client Sample ID: MW17-111S



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

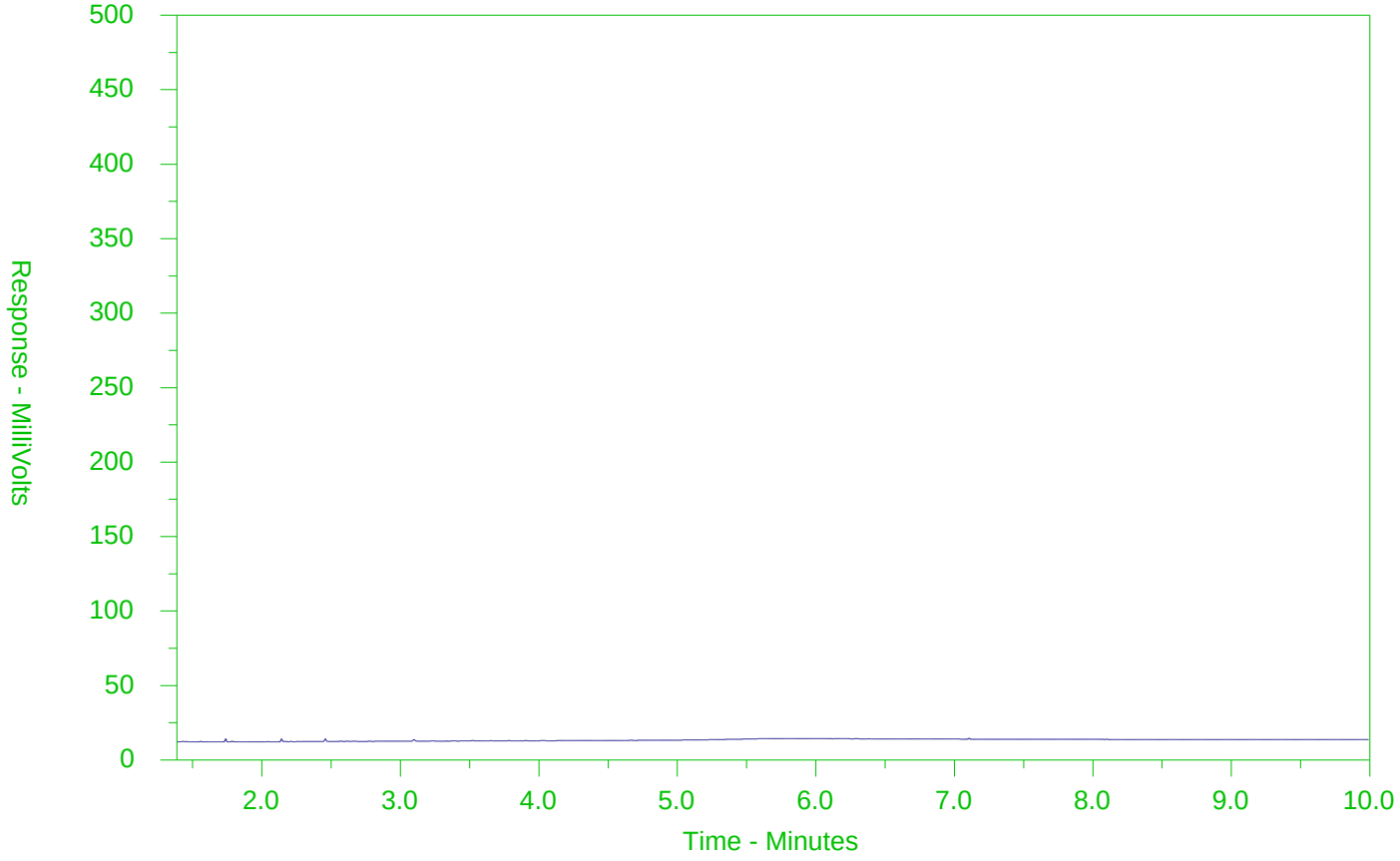
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2017929-21
Client Sample ID: MW17-103S



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

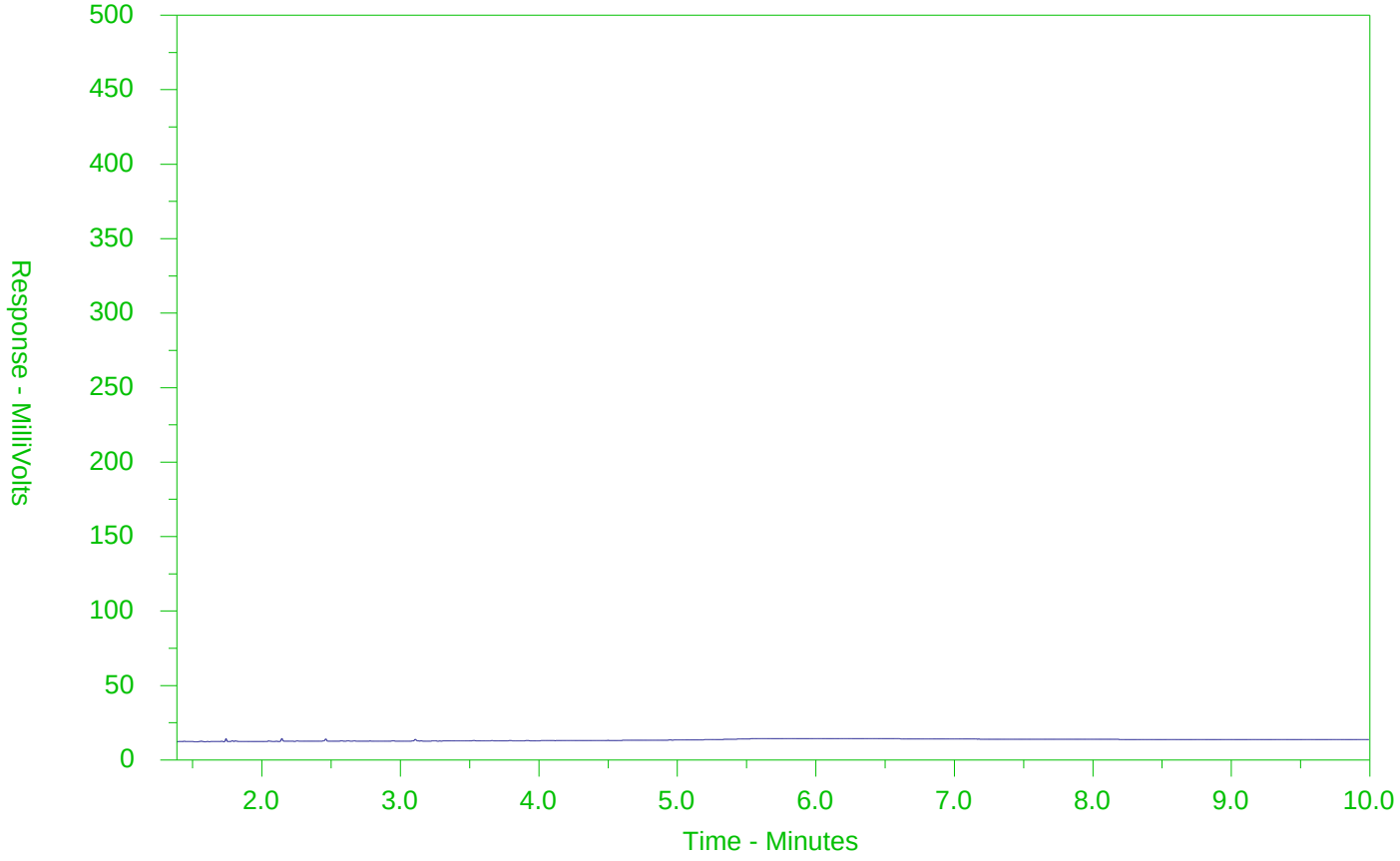
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2017929-23
Client Sample ID: MW17-102D



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2017929-COFC

COC Number: 17 - 617075

Report To	Contact and company name below will appear on the final report
Company:	CH2M
Contact:	Peter Mamo
Phone:	519-818-4239
Company address below will appear on the final report	
Street:	
City/Province:	
Postal Code:	
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	CH2M
Contact:	Accounts Payable

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: Mike
Email 2: Dirk
Email 3: Kyle / Tania

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax:
Email 2:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐; 3 day [P3-25%] ☐; 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E-100%] ☐; Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yyy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: QC2156
Job #: 694757
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#:
Major/Minor Code: Routing Code:
Requisitioner:
Location:
ALS Contact: Sampler:

ALS Lab Work Order # (lab use only): L2017929

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Metals / Inorganics	PAH	SVOC	PHC	VOC	1,4 Dioxane	PCB	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
1	MW17-108S	31/OCT/17	11:05	GW	✓	✓		✓	✓					13
2	Dup 1	—	—	↓	✓	✓		✓	✓					13
3	MW17-105D	31/OCT/17	13:47	↓	✓			✓	✓					11
4	Dup 2	—	—	↓	✓			✓	✓					11
5	MW17-105S	31/OCT/17	14:43	↓	✓	✓		✓	✓					13
6	MW17-100S	31/OCT/17	16:10	GW	✓			✓	✓					11
7	Trip Blank 1	31/OCT/17	11:05	W					✓					2

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO
Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Table 6 RPI

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				2.4	2.3	2.9	4.9

SHIPMENT RELEASE (client use)

Released by: Peter Mamo Date: 17/11/03 Time: 1335

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by: AK Date: 3/11/17 Time: 13:35

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JULY 2017 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

Ok

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2017929-COFC

COC Number: 17 - 617076

Report To — Contact and company name below will appear on the final report

Company:	CH2M
Contact:	Peter Mamo
Phone:	519-818-4239
Company address below will appear on the final report	
Street:	
City/Province:	
Postal Code:	
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	CH2M
Contact:	Accounts Payable

Project Information

ALS Account # / Quote #:	Q62156
Job #:	C94757
PO / AFE:	
LSD:	
ALS Lab Work Order # (lab use only):	L2017929

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax	Mike
Email 2	Dirk
Email 3	Kyric / Tania

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax	
Email 2	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	
ALS Contact:	Sampler:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
4 day [P4-20%]	☐	1 Business day [E-100%]	☐
3 day [P3-25%]	☐	Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)]	☐
2 day [P2-50%]	☐		

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Metals / Inorganics	PAH	SVOC	PHC	VOC	1,4 Dioxane	PCB	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
8	MW17-101S	01/Nov/17	9:50	GW	✓	✓		✓	✓	✓				16
9	Dup 3	—	—							✓				3
10	MW17-101D	01/Nov/17	10:50		✓	✓		✓	✓	✓				16
11	MW17-104D	01/Nov/17	12:05		✓	✓		✓	✓					13
12	MW17-104S	01/Nov/17	13:00		✓	✓		✓	✓					13
13	MW17-106S	01/Nov/17	14:35		✓	✓		✓	✓					13
14	MW17-106D	01/Nov/17	15:35					✓	✓					6
15	MW17-107S	01/Nov/17	16:25		✓		✓	✓	✓					14
16	Dup 4	—	—	GW			✓							3

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO
Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Table 6 RPI

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐	SIF Observations	Yes ☐	No	☐
Ice Packs ☐ Ice Cubes ☐		Custody seal intact	Yes ☐	No	☐
Cooling Initiated	☐				

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				2.4	2.3	2.9	4.9

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Peter Mamo	Date: 17/11/03	Time: 1335	Received by:	Date:	Time:	Received by: dK	Date: 3/11/17	Time: 13:35

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION — WHITE - LABORATORY COPY — YELLOW - CLIENT COPY

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1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

MT

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2017929-COFC

COC Number: 17 - 617082

Report To	Contact and company name below will appear on the final report
Company:	CH2M
Contact:	Peter Mamo
Phone:	519-818-4239
Company address below will appear on the final report	
Street:	
City/Province:	
Postal Code:	
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	CH2M
Contact:	Accounts Payable

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL | | MAIL ☐ FAX
Email 1 or Fax: Mike
Email 2: Dirk
Email 3: Kyric / Tania

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax:
Email 2:

Project Information

ALS Account # / Quote #: Q62156
Job #: 694757
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#:
Major/Minor Code: Routing Code:
Requisitioner:
Location:
ALS Contact: Sampler:

ALS Lab Work Order # (lab use only): L2017929

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐; 3 day [P3-25%] ☐; 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E-100%] ☐; Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Metals / Inorganics	PAH	SVOC	PHC	VOC	1,4 Dioxane	PCB	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
17	MW17-109S	02/Nov/17	9:43	GW	✓	✓		✓	✓		✓			15
18	Dup 5	—	—	↓							✓			2
19	MW17-110S	02/Nov/17	10:40	↓	✓	✓		✓	✓					13
20	MW17-111S	02/Nov/17	11:58	↓	✓			✓	✓		✓			13
21	MW17-103S	02/Nov/17	13:32	↓	✓		✓	✓	✓					14
22	MW17-103D	02/Nov/17	14:54	↓					✓					2
23	MW17-102D	03/Nov/17	10:59	GW				✓	✓					6

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO
Are samples for human consumption/ use? | | YES | | NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Table 6 RPI

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				2.4	2.3	2.9	4.9

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Peter Mamo	Date: 17/11/03	Time: 1335	Received by:	Date:	Time:	Received by:	Date: 3/11/17	Time: 13:35

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JULY 2017 FRONT

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1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

CH2M HILL CANADA LIMITED
ATTN: TANIA MCCARTHY
CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 21-MAR-18
Report Date: 29-MAR-18 14:44 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2070926

Project P.O. #:	NOT SUBMITTED
Job Reference:	694757
C of C Numbers:	17-622470, 17-622471
Legal Site Desc:	

Mathy Mahadeva
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2070926-1 MW17-1085 Sampled By: LR/MS on 20-MAR-18 @ 16:05 Matrix: WATER							
Volatile Organic Compounds							
Acetone	<30		30	ug/L		23-MAR-18	R3994159
Benzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Bromodichloromethane	<2.0		2.0	ug/L		23-MAR-18	R3994159
Bromoform	<5.0		5.0	ug/L		23-MAR-18	R3994159
Bromomethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
Carbon tetrachloride	<0.20		0.20	ug/L		23-MAR-18	R3994159
Chlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Dibromochloromethane	<2.0		2.0	ug/L		23-MAR-18	R3994159
Chloroform	<1.0		1.0	ug/L		23-MAR-18	R3994159
1,2-Dibromoethane	<0.20		0.20	ug/L		23-MAR-18	R3994159
1,2-Dichlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,3-Dichlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,4-Dichlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Dichlorodifluoromethane	<2.0		2.0	ug/L		23-MAR-18	R3994159
1,1-Dichloroethane	0.61		0.50	ug/L		23-MAR-18	R3994159
1,2-Dichloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1-Dichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994159
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994159
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Methylene Chloride	<5.0		5.0	ug/L		23-MAR-18	R3994159
1,2-Dichloropropane	<0.50		0.50	ug/L		23-MAR-18	R3994159
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		23-MAR-18	R3994159
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		23-MAR-18	R3994159
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		23-MAR-18	
Ethylbenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
n-Hexane	<0.50		0.50	ug/L		23-MAR-18	R3994159
Methyl Ethyl Ketone	<20		20	ug/L		23-MAR-18	R3994159
Methyl Isobutyl Ketone	<20		20	ug/L		23-MAR-18	R3994159
MTBE	<2.0		2.0	ug/L		23-MAR-18	R3994159
Styrene	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
Tetrachloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Toluene	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1,1-Trichloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1,2-Trichloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
Trichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Trichlorofluoromethane	<5.0		5.0	ug/L		23-MAR-18	R3994159
Vinyl chloride	<0.50		0.50	ug/L		23-MAR-18	R3994159
o-Xylene	<0.30		0.30	ug/L		23-MAR-18	R3994159
m+p-Xylenes	<0.40		0.40	ug/L		23-MAR-18	R3994159

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2070926-1 MW17-1085 Sampled By: LR/MS on 20-MAR-18 @ 16:05 Matrix: WATER							
Volatile Organic Compounds							
Xylenes (Total)	<0.50		0.50	ug/L		23-MAR-18	
Surrogate: 4-Bromofluorobenzene	103.5		70-130	%		23-MAR-18	R3994159
Surrogate: 1,4-Difluorobenzene	100.3		70-130	%		23-MAR-18	R3994159
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		26-MAR-18	R3995262
F1-BTEX	<25		25	ug/L		28-MAR-18	
F2 (C10-C16)	<100		100	ug/L	26-MAR-18	26-MAR-18	R3995906
F2-Naphth	<100		100	ug/L		28-MAR-18	
F3 (C16-C34)	<250		250	ug/L	26-MAR-18	26-MAR-18	R3995906
F3-PAH	<250		250	ug/L		28-MAR-18	
F4 (C34-C50)	<250		250	ug/L	26-MAR-18	26-MAR-18	R3995906
Total Hydrocarbons (C6-C50)	<370		370	ug/L		28-MAR-18	
Chrom. to baseline at nC50	YES				26-MAR-18	26-MAR-18	R3995906
Surrogate: 2-Bromobenzotrifluoride	91.0		60-140	%	26-MAR-18	26-MAR-18	R3995906
Surrogate: 3,4-Dichlorotoluene	79.8		60-140	%		26-MAR-18	R3995262
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	0.026	R	0.020	ug/L	26-MAR-18	28-MAR-18	R3997800
Acenaphthylene	<0.020		0.020	ug/L	26-MAR-18	28-MAR-18	R3997800
Anthracene	<0.020		0.020	ug/L	26-MAR-18	28-MAR-18	R3997800
Benzo(a)anthracene	<0.020		0.020	ug/L	26-MAR-18	28-MAR-18	R3997800
Benzo(a)pyrene	<0.010		0.010	ug/L	26-MAR-18	28-MAR-18	R3997800
Benzo(b)fluoranthene	<0.020		0.020	ug/L	26-MAR-18	28-MAR-18	R3997800
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	26-MAR-18	28-MAR-18	R3997800
Benzo(k)fluoranthene	<0.020		0.020	ug/L	26-MAR-18	28-MAR-18	R3997800
Chrysene	<0.020		0.020	ug/L	26-MAR-18	28-MAR-18	R3997800
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	26-MAR-18	28-MAR-18	R3997800
Fluoranthene	<0.020		0.020	ug/L	26-MAR-18	28-MAR-18	R3997800
Fluorene	0.122		0.020	ug/L	26-MAR-18	28-MAR-18	R3997800
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	26-MAR-18	28-MAR-18	R3997800
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		28-MAR-18	
1-Methylnaphthalene	<0.020		0.020	ug/L	26-MAR-18	28-MAR-18	R3997800
2-Methylnaphthalene	<0.020		0.020	ug/L	26-MAR-18	28-MAR-18	R3997800
Naphthalene	<0.050		0.050	ug/L	26-MAR-18	28-MAR-18	R3997800
Phenanthrene	<0.020		0.020	ug/L	26-MAR-18	28-MAR-18	R3997800
Pyrene	0.034		0.020	ug/L	26-MAR-18	28-MAR-18	R3997800
Surrogate: d10-Acenaphthene	97.9		60-140	%	26-MAR-18	28-MAR-18	R3997800
Surrogate: d12-Chrysene	80.0		60-140	%	26-MAR-18	28-MAR-18	R3997800
Surrogate: d8-Naphthalene	93.8		60-140	%	26-MAR-18	28-MAR-18	R3997800
Surrogate: d10-Phenanthrene	97.8		60-140	%	26-MAR-18	28-MAR-18	R3997800
L2070926-2 OW9-II Sampled By: LR/MS on 20-MAR-18 @ 17:00 Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2070926-2 OW9-II Sampled By: LR/MS on 20-MAR-18 @ 17:00 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					23-MAR-18	R3994014
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Arsenic (As)-Dissolved	17.9		0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Barium (Ba)-Dissolved	135		0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Boron (B)-Dissolved	76		10	ug/L	23-MAR-18	26-MAR-18	R3995938
Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	23-MAR-18	26-MAR-18	R3995938
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	23-MAR-18	26-MAR-18	R3995938
Cobalt (Co)-Dissolved	0.46		0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	23-MAR-18	26-MAR-18	R3995938
Lead (Pb)-Dissolved	2.38		0.050	ug/L	23-MAR-18	26-MAR-18	R3995938
Molybdenum (Mo)-Dissolved	2.00		0.050	ug/L	23-MAR-18	26-MAR-18	R3995938
Nickel (Ni)-Dissolved	4.81		0.50	ug/L	23-MAR-18	26-MAR-18	R3995938
Selenium (Se)-Dissolved	0.074		0.050	ug/L	23-MAR-18	26-MAR-18	R3995938
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	23-MAR-18	26-MAR-18	R3995938
Sodium (Na)-Dissolved	12200		500	ug/L	23-MAR-18	26-MAR-18	R3995938
Thallium (Tl)-Dissolved	0.110		0.010	ug/L	23-MAR-18	26-MAR-18	R3995938
Uranium (U)-Dissolved	1.11		0.010	ug/L	23-MAR-18	26-MAR-18	R3995938
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	23-MAR-18	26-MAR-18	R3995938
Zinc (Zn)-Dissolved	581		1.0	ug/L	23-MAR-18	26-MAR-18	R3995938
L2070926-3 OW11-II Sampled By: LR/MS on 20-MAR-18 @ 13:40 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					23-MAR-18	R3994014
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Arsenic (As)-Dissolved	2.09		0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Barium (Ba)-Dissolved	134		0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Boron (B)-Dissolved	123		10	ug/L	23-MAR-18	26-MAR-18	R3995938
Cadmium (Cd)-Dissolved	0.174		0.010	ug/L	23-MAR-18	26-MAR-18	R3995938
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	23-MAR-18	26-MAR-18	R3995938
Cobalt (Co)-Dissolved	1.36		0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Copper (Cu)-Dissolved	0.46		0.20	ug/L	23-MAR-18	26-MAR-18	R3995938
Lead (Pb)-Dissolved	4.08		0.050	ug/L	23-MAR-18	26-MAR-18	R3995938
Molybdenum (Mo)-Dissolved	1.06		0.050	ug/L	23-MAR-18	26-MAR-18	R3995938
Nickel (Ni)-Dissolved	1.54		0.50	ug/L	23-MAR-18	26-MAR-18	R3995938
Selenium (Se)-Dissolved	0.432		0.050	ug/L	23-MAR-18	26-MAR-18	R3995938
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	23-MAR-18	26-MAR-18	R3995938
Sodium (Na)-Dissolved	92700		500	ug/L	23-MAR-18	26-MAR-18	R3995938
Thallium (Tl)-Dissolved	0.225		0.010	ug/L	23-MAR-18	26-MAR-18	R3995938
Uranium (U)-Dissolved	1.15		0.010	ug/L	23-MAR-18	26-MAR-18	R3995938

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2070926-3 OW11-II Sampled By: LR/MS on 20-MAR-18 @ 13:40 Matrix: WATER							
Dissolved Metals							
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	23-MAR-18	26-MAR-18	R3995938
Zinc (Zn)-Dissolved	383		1.0	ug/L	23-MAR-18	26-MAR-18	R3995938
L2070926-4 OW12 Sampled By: LR/MS on 20-MAR-18 @ 14:50 Matrix: WATER							
Volatile Organic Compounds							
Acetone	<30		30	ug/L		23-MAR-18	R3994159
Benzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Bromodichloromethane	<2.0		2.0	ug/L		23-MAR-18	R3994159
Bromoform	<5.0		5.0	ug/L		23-MAR-18	R3994159
Bromomethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
Carbon tetrachloride	<0.20		0.20	ug/L		23-MAR-18	R3994159
Chlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Dibromochloromethane	<2.0		2.0	ug/L		23-MAR-18	R3994159
Chloroform	<1.0		1.0	ug/L		23-MAR-18	R3994159
1,2-Dibromoethane	<0.20		0.20	ug/L		23-MAR-18	R3994159
1,2-Dichlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,3-Dichlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,4-Dichlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Dichlorodifluoromethane	<2.0		2.0	ug/L		23-MAR-18	R3994159
1,1-Dichloroethane	0.83		0.50	ug/L		23-MAR-18	R3994159
1,2-Dichloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1-Dichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994159
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994159
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Methylene Chloride	<5.0		5.0	ug/L		23-MAR-18	R3994159
1,2-Dichloropropane	<0.50		0.50	ug/L		23-MAR-18	R3994159
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		23-MAR-18	R3994159
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		23-MAR-18	R3994159
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		23-MAR-18	
Ethylbenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
n-Hexane	<0.50		0.50	ug/L		23-MAR-18	R3994159
Methyl Ethyl Ketone	<20		20	ug/L		23-MAR-18	R3994159
Methyl Isobutyl Ketone	<20		20	ug/L		23-MAR-18	R3994159
MTBE	<2.0		2.0	ug/L		23-MAR-18	R3994159
Styrene	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
Tetrachloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Toluene	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1,1-Trichloroethane	6.58		0.50	ug/L		23-MAR-18	R3994159
1,1,2-Trichloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2070926-4 OW12 Sampled By: LR/MS on 20-MAR-18 @ 14:50 Matrix: WATER							
Volatile Organic Compounds							
Trichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Trichlorofluoromethane	<5.0		5.0	ug/L		23-MAR-18	R3994159
Vinyl chloride	<0.50		0.50	ug/L		23-MAR-18	R3994159
o-Xylene	<0.30		0.30	ug/L		23-MAR-18	R3994159
m+p-Xylenes	<0.40		0.40	ug/L		23-MAR-18	R3994159
Xylenes (Total)	<0.50		0.50	ug/L		23-MAR-18	
Surrogate: 4-Bromofluorobenzene	103.3		70-130	%		23-MAR-18	R3994159
Surrogate: 1,4-Difluorobenzene	100.4		70-130	%		23-MAR-18	R3994159
L2070926-5 OW13 Sampled By: LR/MS on 20-MAR-18 @ 17:45 Matrix: WATER							
Volatile Organic Compounds							
Acetone	<30		30	ug/L		23-MAR-18	R3994159
Benzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Bromodichloromethane	<2.0		2.0	ug/L		23-MAR-18	R3994159
Bromoform	<5.0		5.0	ug/L		23-MAR-18	R3994159
Bromomethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
Carbon tetrachloride	<0.20		0.20	ug/L		23-MAR-18	R3994159
Chlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Dibromochloromethane	<2.0		2.0	ug/L		23-MAR-18	R3994159
Chloroform	<1.0		1.0	ug/L		23-MAR-18	R3994159
1,2-Dibromoethane	<0.20		0.20	ug/L		23-MAR-18	R3994159
1,2-Dichlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,3-Dichlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,4-Dichlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Dichlorodifluoromethane	<2.0		2.0	ug/L		23-MAR-18	R3994159
1,1-Dichloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,2-Dichloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1-Dichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994159
cis-1,2-Dichloroethylene	2.67		0.50	ug/L		23-MAR-18	R3994159
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Methylene Chloride	<5.0		5.0	ug/L		23-MAR-18	R3994159
1,2-Dichloropropane	<0.50		0.50	ug/L		23-MAR-18	R3994159
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		23-MAR-18	R3994159
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		23-MAR-18	R3994159
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		23-MAR-18	
Ethylbenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
n-Hexane	<0.50		0.50	ug/L		23-MAR-18	R3994159
Methyl Ethyl Ketone	<20		20	ug/L		23-MAR-18	R3994159
Methyl Isobutyl Ketone	<20		20	ug/L		23-MAR-18	R3994159
MTBE	<2.0		2.0	ug/L		23-MAR-18	R3994159
Styrene	<0.50		0.50	ug/L		23-MAR-18	R3994159

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2070926-5 OW13 Sampled By: LR/MS on 20-MAR-18 @ 17:45 Matrix: WATER							
Volatile Organic Compounds							
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
Tetrachloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Toluene	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1,1-Trichloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1,2-Trichloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
Trichloroethylene	0.75		0.50	ug/L		23-MAR-18	R3994159
Trichlorofluoromethane	<5.0		5.0	ug/L		23-MAR-18	R3994159
Vinyl chloride	<0.50		0.50	ug/L		23-MAR-18	R3994159
o-Xylene	<0.30		0.30	ug/L		23-MAR-18	R3994159
m+p-Xylenes	<0.40		0.40	ug/L		23-MAR-18	R3994159
Xylenes (Total)	<0.50		0.50	ug/L		23-MAR-18	
Surrogate: 4-Bromofluorobenzene	104.0		70-130	%		23-MAR-18	R3994159
Surrogate: 1,4-Difluorobenzene	99.9		70-130	%		23-MAR-18	R3994159
L2070926-6 OW235 Sampled By: LR/MS on 20-MAR-18 @ 17:20 Matrix: WATER							
Physical Tests							
Conductivity	0.827		0.0030	mS/cm		23-MAR-18	R3994819
pH	7.02		0.10	pH units		23-MAR-18	R3994819
Anions and Nutrients							
Chloride (Cl)	3.08		0.50	mg/L		26-MAR-18	R3996206
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		23-MAR-18	R3994290
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					23-MAR-18	R3994134
Dissolved Metals Filtration Location	FIELD					23-MAR-18	R3994014
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Arsenic (As)-Dissolved	1.13		0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Barium (Ba)-Dissolved	84.4		0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Boron (B)-Dissolved	55		10	ug/L	23-MAR-18	26-MAR-18	R3995938
Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	23-MAR-18	26-MAR-18	R3995938
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	23-MAR-18	26-MAR-18	R3995938
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	23-MAR-18	26-MAR-18	R3995938
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	23-MAR-18	26-MAR-18	R3995938
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	23-MAR-18	23-MAR-18	R3994430
Molybdenum (Mo)-Dissolved	0.310		0.050	ug/L	23-MAR-18	26-MAR-18	R3995938
Nickel (Ni)-Dissolved	<0.50		0.50	ug/L	23-MAR-18	26-MAR-18	R3995938
Selenium (Se)-Dissolved	0.185		0.050	ug/L	23-MAR-18	26-MAR-18	R3995938
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	23-MAR-18	26-MAR-18	R3995938

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2070926-6 OW235 Sampled By: LR/MS on 20-MAR-18 @ 17:20 Matrix: WATER							
Dissolved Metals							
Sodium (Na)-Dissolved	8740		500	ug/L	23-MAR-18	26-MAR-18	R3995938
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	23-MAR-18	26-MAR-18	R3995938
Uranium (U)-Dissolved	0.119		0.010	ug/L	23-MAR-18	26-MAR-18	R3995938
Vanadium (V)-Dissolved	0.64		0.50	ug/L	23-MAR-18	26-MAR-18	R3995938
Zinc (Zn)-Dissolved	<1.0		1.0	ug/L	23-MAR-18	26-MAR-18	R3995938
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		27-MAR-18	R3996507
Volatile Organic Compounds							
Acetone	<30		30	ug/L		23-MAR-18	R3994159
Benzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Bromodichloromethane	<2.0		2.0	ug/L		23-MAR-18	R3994159
Bromoform	<5.0		5.0	ug/L		23-MAR-18	R3994159
Bromomethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
Carbon tetrachloride	<0.20		0.20	ug/L		23-MAR-18	R3994159
Chlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Dibromochloromethane	<2.0		2.0	ug/L		23-MAR-18	R3994159
Chloroform	<1.0		1.0	ug/L		23-MAR-18	R3994159
1,2-Dibromoethane	<0.20		0.20	ug/L		23-MAR-18	R3994159
1,2-Dichlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,3-Dichlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,4-Dichlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Dichlorodifluoromethane	<2.0		2.0	ug/L		23-MAR-18	R3994159
1,1-Dichloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,2-Dichloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1-Dichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994159
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994159
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Methylene Chloride	<5.0		5.0	ug/L		23-MAR-18	R3994159
1,2-Dichloropropane	<0.50		0.50	ug/L		23-MAR-18	R3994159
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		23-MAR-18	R3994159
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		23-MAR-18	R3994159
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		23-MAR-18	
Ethylbenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
n-Hexane	<0.50		0.50	ug/L		23-MAR-18	R3994159
Methyl Ethyl Ketone	<20		20	ug/L		23-MAR-18	R3994159
Methyl Isobutyl Ketone	<20		20	ug/L		23-MAR-18	R3994159
MTBE	<2.0		2.0	ug/L		23-MAR-18	R3994159
Styrene	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
Tetrachloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994159

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2070926-6 OW235 Sampled By: LR/MS on 20-MAR-18 @ 17:20 Matrix: WATER							
Volatile Organic Compounds							
Toluene	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1,1-Trichloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1,2-Trichloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
Trichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Trichlorofluoromethane	<5.0		5.0	ug/L		23-MAR-18	R3994159
Vinyl chloride	<0.50		0.50	ug/L		23-MAR-18	R3994159
o-Xylene	0.49		0.30	ug/L		23-MAR-18	R3994159
m+p-Xylenes	<0.40		0.40	ug/L		23-MAR-18	R3994159
Xylenes (Total)	<0.50		0.50	ug/L		23-MAR-18	
Surrogate: 4-Bromofluorobenzene	102.4		70-130	%		23-MAR-18	R3994159
Surrogate: 1,4-Difluorobenzene	100.3		70-130	%		23-MAR-18	R3994159
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		26-MAR-18	R3995262
F1-BTEX	<25		25	ug/L		29-MAR-18	
F2 (C10-C16)	120		100	ug/L	26-MAR-18	26-MAR-18	R3995906
F2-Naphth	120		100	ug/L		29-MAR-18	
F3 (C16-C34)	7360		250	ug/L	26-MAR-18	26-MAR-18	R3995906
F3-PAH	7350		250	ug/L		29-MAR-18	
F4 (C34-C50)	430		250	ug/L	26-MAR-18	26-MAR-18	R3995906
Total Hydrocarbons (C6-C50)	7900		370	ug/L		29-MAR-18	
Chrom. to baseline at nC50	YES				26-MAR-18	26-MAR-18	R3995906
Surrogate: 2-Bromobenzotrifluoride	96.8		60-140	%	26-MAR-18	26-MAR-18	R3995906
Surrogate: 3,4-Dichlorotoluene	82.4		60-140	%		26-MAR-18	R3995262
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	0.086		0.020	ug/L	26-MAR-18	29-MAR-18	R3997800
Acenaphthylene	0.020		0.020	ug/L	26-MAR-18	29-MAR-18	R3997800
Anthracene	0.068		0.020	ug/L	26-MAR-18	29-MAR-18	R3997800
Benzo(a)anthracene	0.108		0.020	ug/L	26-MAR-18	29-MAR-18	R3997800
Benzo(a)pyrene	<0.025	DLM	0.025	ug/L	26-MAR-18	29-MAR-18	R3997800
Benzo(b)fluoranthene	0.028		0.020	ug/L	26-MAR-18	29-MAR-18	R3997800
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	26-MAR-18	29-MAR-18	R3997800
Benzo(k)fluoranthene	<0.020		0.020	ug/L	26-MAR-18	29-MAR-18	R3997800
Chrysene	0.222		0.020	ug/L	26-MAR-18	29-MAR-18	R3997800
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	26-MAR-18	29-MAR-18	R3997800
Fluoranthene	0.142		0.020	ug/L	26-MAR-18	29-MAR-18	R3997800
Fluorene	0.318		0.020	ug/L	26-MAR-18	29-MAR-18	R3997800
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	26-MAR-18	29-MAR-18	R3997800
1+2-Methylnaphthalenes	0.526		0.028	ug/L		29-MAR-18	
1-Methylnaphthalene	0.456		0.020	ug/L	26-MAR-18	29-MAR-18	R3997800
2-Methylnaphthalene	0.070		0.020	ug/L	26-MAR-18	29-MAR-18	R3997800
Naphthalene	0.118		0.050	ug/L	26-MAR-18	29-MAR-18	R3997800

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2070926-6 OW235 Sampled By: LR/MS on 20-MAR-18 @ 17:20 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Phenanthrene	1.33		0.020	ug/L	26-MAR-18	29-MAR-18	R3997800
Pyrene	0.308		0.020	ug/L	26-MAR-18	29-MAR-18	R3997800
Surrogate: d10-Acenaphthene	99		60-140	%	26-MAR-18	29-MAR-18	R3997800
Surrogate: d12-Chrysene	61		60-140	%	26-MAR-18	29-MAR-18	R3997800
Surrogate: d8-Naphthalene	94		60-140	%	26-MAR-18	29-MAR-18	R3997800
Surrogate: d10-Phenanthrene	96		60-140	%	26-MAR-18	29-MAR-18	R3997800
L2070926-7 OW07-33 Sampled By: LR/MS on 20-MAR-18 @ 15:50 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					23-MAR-18	R3994014
Antimony (Sb)-Dissolved	0.23		0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Arsenic (As)-Dissolved	0.42		0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Barium (Ba)-Dissolved	41.7		0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Boron (B)-Dissolved	56		10	ug/L	23-MAR-18	26-MAR-18	R3995938
Cadmium (Cd)-Dissolved	0.712		0.010	ug/L	23-MAR-18	26-MAR-18	R3995938
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	23-MAR-18	26-MAR-18	R3995938
Cobalt (Co)-Dissolved	1.28		0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Copper (Cu)-Dissolved	4.33		0.20	ug/L	23-MAR-18	26-MAR-18	R3995938
Lead (Pb)-Dissolved	8.92		0.050	ug/L	23-MAR-18	26-MAR-18	R3995938
Molybdenum (Mo)-Dissolved	2.98		0.050	ug/L	23-MAR-18	26-MAR-18	R3995938
Nickel (Ni)-Dissolved	4.68		0.50	ug/L	23-MAR-18	26-MAR-18	R3995938
Selenium (Se)-Dissolved	0.422		0.050	ug/L	23-MAR-18	26-MAR-18	R3995938
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	23-MAR-18	26-MAR-18	R3995938
Sodium (Na)-Dissolved	122000	DLHC	5000	ug/L	23-MAR-18	26-MAR-18	R3995938
Thallium (Tl)-Dissolved	0.108		0.010	ug/L	23-MAR-18	26-MAR-18	R3995938
Uranium (U)-Dissolved	4.23		0.010	ug/L	23-MAR-18	26-MAR-18	R3995938
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	23-MAR-18	26-MAR-18	R3995938
Zinc (Zn)-Dissolved	655		1.0	ug/L	23-MAR-18	26-MAR-18	R3995938
L2070926-8 DUP 1 Sampled By: LR/MS on 20-MAR-18 @ 16:05 Matrix: WATER							
Physical Tests							
Conductivity	0.835		0.0030	mS/cm		23-MAR-18	R3994819
pH	7.01		0.10	pH units		23-MAR-18	R3994819
Anions and Nutrients							
Chloride (Cl)	3.04		0.50	mg/L		26-MAR-18	R3996206
Cyanides							
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L		23-MAR-18	R3994290
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					23-MAR-18	R3994134

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2070926-8 DUP 1 Sampled By: LR/MS on 20-MAR-18 @ 16:05 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					23-MAR-18	R3994014
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Arsenic (As)-Dissolved	1.17		0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Barium (Ba)-Dissolved	83.1		0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Boron (B)-Dissolved	56		10	ug/L	23-MAR-18	26-MAR-18	R3995938
Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	23-MAR-18	26-MAR-18	R3995938
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	23-MAR-18	26-MAR-18	R3995938
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	23-MAR-18	26-MAR-18	R3995938
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	23-MAR-18	26-MAR-18	R3995938
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	23-MAR-18	23-MAR-18	R3994430
Molybdenum (Mo)-Dissolved	0.318		0.050	ug/L	23-MAR-18	26-MAR-18	R3995938
Nickel (Ni)-Dissolved	<0.50		0.50	ug/L	23-MAR-18	26-MAR-18	R3995938
Selenium (Se)-Dissolved	0.270		0.050	ug/L	23-MAR-18	26-MAR-18	R3995938
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	23-MAR-18	26-MAR-18	R3995938
Sodium (Na)-Dissolved	8870		500	ug/L	23-MAR-18	26-MAR-18	R3995938
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	23-MAR-18	26-MAR-18	R3995938
Uranium (U)-Dissolved	0.123		0.010	ug/L	23-MAR-18	26-MAR-18	R3995938
Vanadium (V)-Dissolved	0.63		0.50	ug/L	23-MAR-18	26-MAR-18	R3995938
Zinc (Zn)-Dissolved	1.0		1.0	ug/L	23-MAR-18	26-MAR-18	R3995938
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		27-MAR-18	R3996507
Volatile Organic Compounds							
Acetone	<30		30	ug/L		23-MAR-18	R3994159
Benzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Bromodichloromethane	<2.0		2.0	ug/L		23-MAR-18	R3994159
Bromoform	<5.0		5.0	ug/L		23-MAR-18	R3994159
Bromomethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
Carbon tetrachloride	<0.20		0.20	ug/L		23-MAR-18	R3994159
Chlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Dibromochloromethane	<2.0		2.0	ug/L		23-MAR-18	R3994159
Chloroform	<1.0		1.0	ug/L		23-MAR-18	R3994159
1,2-Dibromoethane	<0.20		0.20	ug/L		23-MAR-18	R3994159
1,2-Dichlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,3-Dichlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,4-Dichlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Dichlorodifluoromethane	<2.0		2.0	ug/L		23-MAR-18	R3994159
1,1-Dichloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,2-Dichloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1-Dichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994159

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2070926-8 DUP 1 Sampled By: LR/MS on 20-MAR-18 @ 16:05 Matrix: WATER							
Volatile Organic Compounds							
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994159
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Methylene Chloride	<5.0		5.0	ug/L		23-MAR-18	R3994159
1,2-Dichloropropane	<0.50		0.50	ug/L		23-MAR-18	R3994159
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		23-MAR-18	R3994159
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		23-MAR-18	R3994159
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		23-MAR-18	
Ethylbenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
n-Hexane	<0.50		0.50	ug/L		23-MAR-18	R3994159
Methyl Ethyl Ketone	<20		20	ug/L		23-MAR-18	R3994159
Methyl Isobutyl Ketone	<20		20	ug/L		23-MAR-18	R3994159
MTBE	<2.0		2.0	ug/L		23-MAR-18	R3994159
Styrene	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
Tetrachloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Toluene	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1,1-Trichloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1,2-Trichloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
Trichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Trichlorofluoromethane	<5.0		5.0	ug/L		23-MAR-18	R3994159
Vinyl chloride	<0.50		0.50	ug/L		23-MAR-18	R3994159
o-Xylene	0.48		0.30	ug/L		23-MAR-18	R3994159
m+p-Xylenes	<0.40		0.40	ug/L		23-MAR-18	R3994159
Xylenes (Total)	<0.50		0.50	ug/L		23-MAR-18	
Surrogate: 4-Bromofluorobenzene	102.2		70-130	%		23-MAR-18	R3994159
Surrogate: 1,4-Difluorobenzene	100.6		70-130	%		23-MAR-18	R3994159
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		26-MAR-18	R3995262
F1-BTEX	<25		25	ug/L		29-MAR-18	
F2 (C10-C16)	130		100	ug/L	26-MAR-18	26-MAR-18	R3995906
F2-Naphth	130		100	ug/L		29-MAR-18	
F3 (C16-C34)	8060		250	ug/L	26-MAR-18	26-MAR-18	R3995906
F3-PAH	8050		250	ug/L		29-MAR-18	
F4 (C34-C50)	550		250	ug/L	26-MAR-18	26-MAR-18	R3995906
Total Hydrocarbons (C6-C50)	8730		370	ug/L		29-MAR-18	
Chrom. to baseline at nC50	YES				26-MAR-18	26-MAR-18	R3995906
Surrogate: 2-Bromobenzotrifluoride	87.2		60-140	%	26-MAR-18	26-MAR-18	R3995906
Surrogate: 3,4-Dichlorotoluene	78.2		60-140	%		26-MAR-18	R3995262
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	0.072		0.020	ug/L	26-MAR-18	29-MAR-18	R3997800

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2070926-8 DUP 1 Sampled By: LR/MS on 20-MAR-18 @ 16:05 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Acenaphthylene	0.020		0.020	ug/L	26-MAR-18	29-MAR-18	R3997800
Anthracene	0.102		0.020	ug/L	26-MAR-18	29-MAR-18	R3997800
Benzo(a)anthracene	0.114		0.020	ug/L	26-MAR-18	29-MAR-18	R3997800
Benzo(a)pyrene	<0.025	DLM	0.025	ug/L	26-MAR-18	29-MAR-18	R3997800
Benzo(b)fluoranthene	0.030		0.020	ug/L	26-MAR-18	29-MAR-18	R3997800
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	26-MAR-18	29-MAR-18	R3997800
Benzo(k)fluoranthene	<0.020		0.020	ug/L	26-MAR-18	29-MAR-18	R3997800
Chrysene	0.266		0.020	ug/L	26-MAR-18	29-MAR-18	R3997800
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	26-MAR-18	29-MAR-18	R3997800
Fluoranthene	0.140		0.020	ug/L	26-MAR-18	29-MAR-18	R3997800
Fluorene	0.332		0.020	ug/L	26-MAR-18	29-MAR-18	R3997800
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	26-MAR-18	29-MAR-18	R3997800
1+2-Methylnaphthalenes	0.532		0.028	ug/L		29-MAR-18	
1-Methylnaphthalene	0.456		0.020	ug/L	26-MAR-18	29-MAR-18	R3997800
2-Methylnaphthalene	0.076		0.020	ug/L	26-MAR-18	29-MAR-18	R3997800
Naphthalene	0.112		0.050	ug/L	26-MAR-18	29-MAR-18	R3997800
Phenanthrene	1.43		0.020	ug/L	26-MAR-18	29-MAR-18	R3997800
Pyrene	0.322		0.020	ug/L	26-MAR-18	29-MAR-18	R3997800
Surrogate: d10-Acenaphthene	100		60-140	%	26-MAR-18	29-MAR-18	R3997800
Surrogate: d12-Chrysene	64		60-140	%	26-MAR-18	29-MAR-18	R3997800
Surrogate: d8-Naphthalene	97		60-140	%	26-MAR-18	29-MAR-18	R3997800
Surrogate: d10-Phenanthrene	93		60-140	%	26-MAR-18	29-MAR-18	R3997800
L2070926-9 MW17-101D Sampled By: LR/MS on 21-MAR-18 @ 10:30 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					23-MAR-18	R3994014
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Arsenic (As)-Dissolved	6.87		0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	23-MAR-18	26-MAR-18	R3995938
L2070926-10 OW14 Sampled By: LR/MS on 21-MAR-18 @ 12:10 Matrix: WATER							
Volatile Organic Compounds							
Acetone	<30		30	ug/L		23-MAR-18	R3994159
Benzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Bromodichloromethane	<2.0		2.0	ug/L		23-MAR-18	R3994159
Bromoform	<5.0		5.0	ug/L		23-MAR-18	R3994159
Bromomethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
Carbon tetrachloride	<0.20		0.20	ug/L		23-MAR-18	R3994159
Chlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Dibromochloromethane	<2.0		2.0	ug/L		23-MAR-18	R3994159

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2070926-10 OW14 Sampled By: LR/MS on 21-MAR-18 @ 12:10 Matrix: WATER							
Volatile Organic Compounds							
Chloroform	<1.0		1.0	ug/L		23-MAR-18	R3994159
1,2-Dibromoethane	<0.20		0.20	ug/L		23-MAR-18	R3994159
1,2-Dichlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,3-Dichlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,4-Dichlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Dichlorodifluoromethane	<2.0		2.0	ug/L		23-MAR-18	R3994159
1,1-Dichloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,2-Dichloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1-Dichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994159
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994159
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Methylene Chloride	<5.0		5.0	ug/L		23-MAR-18	R3994159
1,2-Dichloropropane	<0.50		0.50	ug/L		23-MAR-18	R3994159
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		23-MAR-18	R3994159
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		23-MAR-18	R3994159
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		23-MAR-18	
Ethylbenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
n-Hexane	<0.50		0.50	ug/L		23-MAR-18	R3994159
Methyl Ethyl Ketone	<20		20	ug/L		23-MAR-18	R3994159
Methyl Isobutyl Ketone	<20		20	ug/L		23-MAR-18	R3994159
MTBE	<2.0		2.0	ug/L		23-MAR-18	R3994159
Styrene	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
Tetrachloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Toluene	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1,1-Trichloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1,2-Trichloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
Trichloroethylene	0.85		0.50	ug/L		23-MAR-18	R3994159
Trichlorofluoromethane	<5.0		5.0	ug/L		23-MAR-18	R3994159
Vinyl chloride	<0.50		0.50	ug/L		23-MAR-18	R3994159
o-Xylene	<0.30		0.30	ug/L		23-MAR-18	R3994159
m+p-Xylenes	<0.40		0.40	ug/L		23-MAR-18	R3994159
Xylenes (Total)	<0.50		0.50	ug/L		23-MAR-18	
Surrogate: 4-Bromofluorobenzene	103.0		70-130	%		23-MAR-18	R3994159
Surrogate: 1,4-Difluorobenzene	99.7		70-130	%		23-MAR-18	R3994159
L2070926-11 OW19 Sampled By: LR/MS on 21-MAR-18 @ 11:35 Matrix: WATER							
Volatile Organic Compounds							
Acetone	<30		30	ug/L		23-MAR-18	R3994159
Benzene	<0.50		0.50	ug/L		23-MAR-18	R3994159

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2070926-11 OW19 Sampled By: LR/MS on 21-MAR-18 @ 11:35 Matrix: WATER							
Volatile Organic Compounds							
Bromodichloromethane	<2.0		2.0	ug/L		23-MAR-18	R3994159
Bromoform	<5.0		5.0	ug/L		23-MAR-18	R3994159
Bromomethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
Carbon tetrachloride	<0.20		0.20	ug/L		23-MAR-18	R3994159
Chlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Dibromochloromethane	<2.0		2.0	ug/L		23-MAR-18	R3994159
Chloroform	<1.0		1.0	ug/L		23-MAR-18	R3994159
1,2-Dibromoethane	<0.20		0.20	ug/L		23-MAR-18	R3994159
1,2-Dichlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,3-Dichlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,4-Dichlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Dichlorodifluoromethane	<2.0		2.0	ug/L		23-MAR-18	R3994159
1,1-Dichloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,2-Dichloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1-Dichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994159
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994159
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Methylene Chloride	<5.0		5.0	ug/L		23-MAR-18	R3994159
1,2-Dichloropropane	<0.50		0.50	ug/L		23-MAR-18	R3994159
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		23-MAR-18	R3994159
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		23-MAR-18	R3994159
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		23-MAR-18	
Ethylbenzene	<0.50		0.50	ug/L		23-MAR-18	R3994159
n-Hexane	<0.50		0.50	ug/L		23-MAR-18	R3994159
Methyl Ethyl Ketone	<20		20	ug/L		23-MAR-18	R3994159
Methyl Isobutyl Ketone	<20		20	ug/L		23-MAR-18	R3994159
MTBE	<2.0		2.0	ug/L		23-MAR-18	R3994159
Styrene	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
Tetrachloroethylene	1.14		0.50	ug/L		23-MAR-18	R3994159
Toluene	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1,1-Trichloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
1,1,2-Trichloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994159
Trichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994159
Trichlorofluoromethane	<5.0		5.0	ug/L		23-MAR-18	R3994159
Vinyl chloride	<0.50		0.50	ug/L		23-MAR-18	R3994159
o-Xylene	<0.30		0.30	ug/L		23-MAR-18	R3994159
m+p-Xylenes	<0.40		0.40	ug/L		23-MAR-18	R3994159
Xylenes (Total)	<0.50		0.50	ug/L		23-MAR-18	
Surrogate: 4-Bromofluorobenzene	102.6		70-130	%		23-MAR-18	R3994159

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2070926-11 OW19 Sampled By: LR/MS on 21-MAR-18 @ 11:35 Matrix: WATER							
Volatile Organic Compounds							
Surrogate: 1,4-Difluorobenzene	99.7		70-130	%		23-MAR-18	R3994159
L2070926-12 OW225 Sampled By: LR/MS on 21-MAR-18 @ 11:15 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					23-MAR-18	R3994014
Antimony (Sb)-Dissolved	<1.0	DLHC	1.0	ug/L	23-MAR-18	26-MAR-18	R3995938
Arsenic (As)-Dissolved	<1.0	DLHC	1.0	ug/L	23-MAR-18	26-MAR-18	R3995938
Barium (Ba)-Dissolved	18.9	DLHC	1.0	ug/L	23-MAR-18	26-MAR-18	R3995938
Beryllium (Be)-Dissolved	<1.0	DLHC	1.0	ug/L	23-MAR-18	26-MAR-18	R3995938
Boron (B)-Dissolved	<100	DLHC	100	ug/L	23-MAR-18	26-MAR-18	R3995938
Cadmium (Cd)-Dissolved	0.240	DLHC	0.050	ug/L	23-MAR-18	26-MAR-18	R3995938
Chromium (Cr)-Dissolved	<5.0	DLHC	5.0	ug/L	23-MAR-18	26-MAR-18	R3995938
Cobalt (Co)-Dissolved	<1.0	DLHC	1.0	ug/L	23-MAR-18	26-MAR-18	R3995938
Copper (Cu)-Dissolved	6.7	DLHC	2.0	ug/L	23-MAR-18	26-MAR-18	R3995938
Lead (Pb)-Dissolved	1.90	DLHC	0.50	ug/L	23-MAR-18	26-MAR-18	R3995938
Molybdenum (Mo)-Dissolved	12.5	DLHC	0.50	ug/L	23-MAR-18	26-MAR-18	R3995938
Nickel (Ni)-Dissolved	12.0	DLHC	5.0	ug/L	23-MAR-18	26-MAR-18	R3995938
Selenium (Se)-Dissolved	<0.50	DLHC	0.50	ug/L	23-MAR-18	26-MAR-18	R3995938
Silver (Ag)-Dissolved	<0.50	DLHC	0.50	ug/L	23-MAR-18	26-MAR-18	R3995938
Sodium (Na)-Dissolved	<5000	DLHC	5000	ug/L	23-MAR-18	26-MAR-18	R3995938
Thallium (Tl)-Dissolved	<0.10	DLHC	0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Uranium (U)-Dissolved	7.24	DLHC	0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Vanadium (V)-Dissolved	<5.0	DLHC	5.0	ug/L	23-MAR-18	26-MAR-18	R3995938
Zinc (Zn)-Dissolved	1740	DLHC	10	ug/L	23-MAR-18	26-MAR-18	R3995938
Volatile Organic Compounds							
Acetone	<30		30	ug/L		23-MAR-18	R3994268
Benzene	<0.50		0.50	ug/L		23-MAR-18	R3994268
Bromodichloromethane	<2.0		2.0	ug/L		23-MAR-18	R3994268
Bromoform	<5.0		5.0	ug/L		23-MAR-18	R3994268
Bromomethane	<0.50		0.50	ug/L		23-MAR-18	R3994268
Carbon tetrachloride	<0.20		0.20	ug/L		23-MAR-18	R3994268
Chlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994268
Dibromochloromethane	<2.0		2.0	ug/L		23-MAR-18	R3994268
Chloroform	<1.0		1.0	ug/L		23-MAR-18	R3994268
1,2-Dibromoethane	<3.0	DLVH	3.0	ug/L		23-MAR-18	R3994268
1,2-Dichlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994268
1,3-Dichlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994268
1,4-Dichlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994268
Dichlorodifluoromethane	<2.0		2.0	ug/L		23-MAR-18	R3994268
1,1-Dichloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994268
1,2-Dichloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994268

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2070926-12 OW225 Sampled By: LR/MS on 21-MAR-18 @ 11:15 Matrix: WATER							
Volatile Organic Compounds							
1,1-Dichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994268
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994268
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994268
Methylene Chloride	<5.0		5.0	ug/L		23-MAR-18	R3994268
1,2-Dichloropropane	<0.50		0.50	ug/L		23-MAR-18	R3994268
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		23-MAR-18	R3994268
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		23-MAR-18	R3994268
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		23-MAR-18	
Ethylbenzene	<0.50		0.50	ug/L		23-MAR-18	R3994268
n-Hexane	<0.50		0.50	ug/L		23-MAR-18	R3994268
Methyl Ethyl Ketone	<20		20	ug/L		23-MAR-18	R3994268
Methyl Isobutyl Ketone	<20		20	ug/L		23-MAR-18	R3994268
MTBE	<2.0		2.0	ug/L		23-MAR-18	R3994268
Styrene	<0.50		0.50	ug/L		23-MAR-18	R3994268
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994268
1,1,2,2-Tetrachloroethane	<20	DLVH	20	ug/L		23-MAR-18	R3994268
Tetrachloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994268
Toluene	<0.50		0.50	ug/L		23-MAR-18	R3994268
1,1,1-Trichloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994268
1,1,2-Trichloroethane	<3.0	DLVH	3.0	ug/L		23-MAR-18	R3994268
Trichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994268
Trichlorofluoromethane	<5.0		5.0	ug/L		23-MAR-18	R3994268
Vinyl chloride	<0.50		0.50	ug/L		23-MAR-18	R3994268
o-Xylene	<0.30		0.30	ug/L		23-MAR-18	R3994268
m+p-Xylenes	<0.40		0.40	ug/L		23-MAR-18	R3994268
Xylenes (Total)	<0.50		0.50	ug/L		23-MAR-18	
Surrogate: 4-Bromofluorobenzene	102.7		70-130	%		23-MAR-18	R3994268
Surrogate: 1,4-Difluorobenzene	99.1		70-130	%		23-MAR-18	R3994268
L2070926-13 OW07-31 Sampled By: LR/MS on 21-MAR-18 @ 09:40 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					23-MAR-18	R3994014
Antimony (Sb)-Dissolved	0.14		0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Arsenic (As)-Dissolved	33.9		0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Barium (Ba)-Dissolved	50.6		0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Boron (B)-Dissolved	52		10	ug/L	23-MAR-18	26-MAR-18	R3995938
Cadmium (Cd)-Dissolved	0.018		0.010	ug/L	23-MAR-18	26-MAR-18	R3995938
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	23-MAR-18	26-MAR-18	R3995938
Cobalt (Co)-Dissolved	0.51		0.10	ug/L	23-MAR-18	26-MAR-18	R3995938
Copper (Cu)-Dissolved	0.39		0.20	ug/L	23-MAR-18	26-MAR-18	R3995938

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2070926-13 OW07-31 Sampled By: LR/MS on 21-MAR-18 @ 09:40 Matrix: WATER							
Dissolved Metals							
Lead (Pb)-Dissolved	0.299		0.050	ug/L	23-MAR-18	26-MAR-18	R3995938
Molybdenum (Mo)-Dissolved	1.67		0.050	ug/L	23-MAR-18	26-MAR-18	R3995938
Nickel (Ni)-Dissolved	1.37		0.50	ug/L	23-MAR-18	26-MAR-18	R3995938
Selenium (Se)-Dissolved	0.318		0.050	ug/L	23-MAR-18	26-MAR-18	R3995938
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	23-MAR-18	26-MAR-18	R3995938
Sodium (Na)-Dissolved	97500		500	ug/L	23-MAR-18	26-MAR-18	R3995938
Thallium (Tl)-Dissolved	0.012		0.010	ug/L	23-MAR-18	26-MAR-18	R3995938
Uranium (U)-Dissolved	1.77		0.010	ug/L	23-MAR-18	26-MAR-18	R3995938
Vanadium (V)-Dissolved	1.14		0.50	ug/L	23-MAR-18	26-MAR-18	R3995938
Zinc (Zn)-Dissolved	73.3		1.0	ug/L	23-MAR-18	26-MAR-18	R3995938
L2070926-14 TRIP BLANK Sampled By: LR/MS on 20-MAR-18 @ 16:05 Matrix: WATER							
Volatile Organic Compounds							
Acetone	<30		30	ug/L		23-MAR-18	R3994268
Benzene	<0.50		0.50	ug/L		23-MAR-18	R3994268
Bromodichloromethane	<2.0		2.0	ug/L		23-MAR-18	R3994268
Bromoform	<5.0		5.0	ug/L		23-MAR-18	R3994268
Bromomethane	<0.50		0.50	ug/L		23-MAR-18	R3994268
Carbon tetrachloride	<0.20		0.20	ug/L		23-MAR-18	R3994268
Chlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994268
Dibromochloromethane	<2.0		2.0	ug/L		23-MAR-18	R3994268
Chloroform	<1.0		1.0	ug/L		23-MAR-18	R3994268
1,2-Dibromoethane	<0.20		0.20	ug/L		23-MAR-18	R3994268
1,2-Dichlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994268
1,3-Dichlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994268
1,4-Dichlorobenzene	<0.50		0.50	ug/L		23-MAR-18	R3994268
Dichlorodifluoromethane	<2.0		2.0	ug/L		23-MAR-18	R3994268
1,1-Dichloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994268
1,2-Dichloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994268
1,1-Dichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994268
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994268
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994268
Methylene Chloride	<5.0		5.0	ug/L		23-MAR-18	R3994268
1,2-Dichloropropane	<0.50		0.50	ug/L		23-MAR-18	R3994268
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		23-MAR-18	R3994268
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		23-MAR-18	R3994268
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		23-MAR-18	
Ethylbenzene	<0.50		0.50	ug/L		23-MAR-18	R3994268
n-Hexane	<0.50		0.50	ug/L		23-MAR-18	R3994268
Methyl Ethyl Ketone	<20		20	ug/L		23-MAR-18	R3994268
Methyl Isobutyl Ketone	<20		20	ug/L		23-MAR-18	R3994268

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2070926-14 TRIP BLANK Sampled By: LR/MS on 20-MAR-18 @ 16:05 Matrix: WATER							
Volatile Organic Compounds							
MTBE	<2.0		2.0	ug/L		23-MAR-18	R3994268
Styrene	<0.50		0.50	ug/L		23-MAR-18	R3994268
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994268
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994268
Tetrachloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994268
Toluene	<0.50		0.50	ug/L		23-MAR-18	R3994268
1,1,1-Trichloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994268
1,1,2-Trichloroethane	<0.50		0.50	ug/L		23-MAR-18	R3994268
Trichloroethylene	<0.50		0.50	ug/L		23-MAR-18	R3994268
Trichlorofluoromethane	<5.0		5.0	ug/L		23-MAR-18	R3994268
Vinyl chloride	<0.50		0.50	ug/L		23-MAR-18	R3994268
o-Xylene	<0.30		0.30	ug/L		23-MAR-18	R3994268
m+p-Xylenes	<0.40		0.40	ug/L		23-MAR-18	R3994268
Xylenes (Total)	<0.50		0.50	ug/L		23-MAR-18	
Surrogate: 4-Bromofluorobenzene	94.0		70-130	%		23-MAR-18	R3994268
Surrogate: 1,4-Difluorobenzene	99.4		70-130	%		23-MAR-18	R3994268
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		23-MAR-18	R3994268
F1-BTEX	<25		25	ug/L		23-MAR-18	
Surrogate: 3,4-Dichlorotoluene	104.5		60-140	%		23-MAR-18	R3994268

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Laboratory Control Sample	Dichlorodifluoromethane	MES	L2070926-1, -10, -11, -4, -5, -6, -8
Matrix Spike	Dichlorodifluoromethane	MES	L2070926-12, -14
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L2070926-12, -13, -2, -3, -6, -7, -8
Matrix Spike	Boron (B)-Dissolved	MS-B	L2070926-12, -13, -2, -3, -6, -7, -8
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L2070926-12, -13, -2, -3, -6, -7, -8
Matrix Spike	Uranium (U)-Dissolved	MS-B	L2070926-12, -13, -2, -3, -6, -7, -8
Matrix Spike	Zinc (Zn)-Dissolved	MS-B	L2070926-12, -13, -2, -3, -6, -7, -8

Sample Parameter Qualifier key listed:

Qualifier	Description
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
DLVH	Detection Limit raised due to interference from Volatile Hydrocarbons on VOC method. Chromatographic elution of interfering peaks in the same region as test analytes prevents a determination of whether VOC analyte is present or absent (above/below regular detection limits).
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
R	The ion abundance ratio(s) did not meet the acceptance criteria. Value is an estimated maximum.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Water	Cyanide (WAD)-O.Reg 153/04	APHA 4500CN I-Weak acid Dist Colorimet

Weak acid dissociable cyanide (WAD) is determined by undergoing a distillation procedure. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-R511-WT	Water	Hex Chrom-O.Reg 153/04 (July 2011)	EPA 7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

EC-R511-WT	Water	Conductivity-O.Reg 153/04 (July 2011)	APHA 2510 B

Water samples can be measured directly by immersing the conductivity cell into the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-F4-511-CALC-WT	Water	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-L

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:

Reference Information

1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Water	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Water	F2-F4-O.Reg 153/04 (July 2011)	EPA 3511/CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from water using a hexane micro-extraction technique. Instrumental analysis is by GC-FID, as per the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Tier 1 Method, CCME, 2001.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

HG-D-UG/L-CVAA-WT	Water	Diss. Mercury in Water by CVAAS (ug/L)	EPA 1631E (mod)

Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8

The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT	Water	PAH-Calculated Parameters	SW846 8270
PAH-511-WT	Water	PAH-O. Reg 153/04 (July 2011)	SW846 3510/8270

Aqueous samples, fortified with surrogates, are extracted using liquid/liquid extraction technique. The sample extracts are concentrated and then analyzed using GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PH-WT	Water	pH	APHA 4500 H-Electrode

Water samples are analyzed directly by a calibrated pH meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Holdtime for samples under this regulation is 28 days

VOC-1,3-DCP-CALC-WT	Water	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Water	VOC by GCMS HS O.Reg 153/04 (July 2011)	SW846 8260

Liquid samples are analyzed by headspace GC/MSD.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location

Reference Information

WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

17-622470 17-622471

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2070926 Report Date: 29-MAR-18

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-WT	**Water**							
Batch R3996206								
WG2739654-2 LCS								
Chloride (Cl)			100.1		%		90-110	26-MAR-18
WG2739654-1 MB								
Chloride (Cl)			<0.50		mg/L		0.5	26-MAR-18
CN-WAD-R511-WT	**Water**							
Batch R3994290								
WG2738389-2 LCS								
Cyanide, Weak Acid Diss			101.6		%		80-120	23-MAR-18
WG2738389-1 MB								
Cyanide, Weak Acid Diss			<2.0		ug/L		2	23-MAR-18
CR-CR6-IC-R511-WT	**Water**							
Batch R3996507								
WG2740462-2 LCS								
Chromium, Hexavalent			103.3		%		80-120	27-MAR-18
WG2740462-1 MB								
Chromium, Hexavalent			<1.0		ug/L		1	27-MAR-18
EC-R511-WT	**Water**							
Batch R3994819								
WG2738267-2 LCS								
Conductivity			99.3		%		90-110	23-MAR-18
WG2738267-1 MB								
Conductivity			<0.0030		mS/cm		0.003	23-MAR-18
F1-HS-511-WT	**Water**							
Batch R3994268								
WG2736500-1 LCS								
F1 (C6-C10)			111.7		%		80-120	23-MAR-18
WG2736500-2 MB								
F1 (C6-C10)			<25		ug/L		25	23-MAR-18
Surrogate: 3,4-Dichlorotoluene			109.7		%		60-140	23-MAR-18
Batch R3995262								
WG2735043-1 LCS								
F1 (C6-C10)			95.8		%		80-120	23-MAR-18
WG2735043-2 MB								
F1 (C6-C10)			<25		ug/L		25	26-MAR-18
Surrogate: 3,4-Dichlorotoluene			100.6		%		60-140	26-MAR-18
F2-F4-511-WT	**Water**							

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-511-WT	**Water**							
Batch R3995906								
WG2739458-2 LCS								
F2 (C10-C16)			107.1		%		70-130	26-MAR-18
F3 (C16-C34)			109.1		%		70-130	26-MAR-18
F4 (C34-C50)			106.5		%		70-130	26-MAR-18
WG2739458-3 LCSD		**WG2739458-2**						
F2 (C10-C16)		107.1	113		%	5.4	50	26-MAR-18
F3 (C16-C34)		109.1	116		%	6.2	50	26-MAR-18
F4 (C34-C50)		106.5	113		%	6.3	50	26-MAR-18
WG2739458-1 MB								
F2 (C10-C16)			<100		ug/L		100	26-MAR-18
F3 (C16-C34)			<250		ug/L		250	26-MAR-18
F4 (C34-C50)			<250		ug/L		250	26-MAR-18
Surrogate: 2-Bromobenzotrifluoride			105.9		%		60-140	26-MAR-18
HG-D-UG/L-CVAA-WT	**Water**							
Batch R3994430								
WG2738375-2 LCS								
Mercury (Hg)-Dissolved			101.0		%		80-120	23-MAR-18
WG2738375-1 MB								
Mercury (Hg)-Dissolved			<0.010		ug/L		0.01	23-MAR-18
MET-D-UG/L-MS-WT	**Water**							
Batch R3995938								
WG2738198-2 LCS								
Antimony (Sb)-Dissolved			97.4		%		80-120	26-MAR-18
Arsenic (As)-Dissolved			102.8		%		80-120	26-MAR-18
Barium (Ba)-Dissolved			98.2		%		80-120	26-MAR-18
Beryllium (Be)-Dissolved			104.5		%		80-120	26-MAR-18
Boron (B)-Dissolved			103.0		%		80-120	26-MAR-18
Cadmium (Cd)-Dissolved			103.7		%		80-120	26-MAR-18
Chromium (Cr)-Dissolved			102.7		%		80-120	26-MAR-18
Cobalt (Co)-Dissolved			102.2		%		80-120	26-MAR-18
Copper (Cu)-Dissolved			102.1		%		80-120	26-MAR-18
Lead (Pb)-Dissolved			96.3		%		80-120	26-MAR-18
Molybdenum (Mo)-Dissolved			107.4		%		80-120	26-MAR-18
Nickel (Ni)-Dissolved			99.3		%		80-120	26-MAR-18
Selenium (Se)-Dissolved			104.3		%		80-120	26-MAR-18
Silver (Ag)-Dissolved			96.3		%		80-120	26-MAR-18

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R3995938								
WG2738198-2 LCS								
Sodium (Na)-Dissolved			111.1		%		80-120	26-MAR-18
Thallium (Tl)-Dissolved			95.5		%		80-120	26-MAR-18
Uranium (U)-Dissolved			97.9		%		80-120	26-MAR-18
Vanadium (V)-Dissolved			104.0		%		80-120	26-MAR-18
Zinc (Zn)-Dissolved			99.5		%		80-120	26-MAR-18
WG2738198-1 MB								
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	26-MAR-18
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	26-MAR-18
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	26-MAR-18
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	26-MAR-18
Boron (B)-Dissolved			<10		ug/L		10	26-MAR-18
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	26-MAR-18
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	26-MAR-18
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	26-MAR-18
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	26-MAR-18
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	26-MAR-18
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	26-MAR-18
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	26-MAR-18
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	26-MAR-18
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	26-MAR-18
Sodium (Na)-Dissolved			<500		ug/L		500	26-MAR-18
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	26-MAR-18
Uranium (U)-Dissolved			<0.010		ug/L		0.01	26-MAR-18
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	26-MAR-18
Zinc (Zn)-Dissolved			<1.0		ug/L		1	26-MAR-18
WG2738198-5 MS		**L2070926-3**						
Antimony (Sb)-Dissolved			89.1		%		70-130	26-MAR-18
Arsenic (As)-Dissolved			100.6		%		70-130	26-MAR-18
Barium (Ba)-Dissolved			N/A	MS-B	%		-	26-MAR-18
Beryllium (Be)-Dissolved			98.5		%		70-130	26-MAR-18
Boron (B)-Dissolved			N/A	MS-B	%		-	26-MAR-18
Cadmium (Cd)-Dissolved			95.0		%		70-130	26-MAR-18
Chromium (Cr)-Dissolved			96.0		%		70-130	26-MAR-18
Cobalt (Co)-Dissolved			91.9		%		70-130	26-MAR-18

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R3995938								
WG2738198-5 MS		**L2070926-3**						
Copper (Cu)-Dissolved			90.4		%		70-130	26-MAR-18
Lead (Pb)-Dissolved			83.8		%		70-130	26-MAR-18
Molybdenum (Mo)-Dissolved			99.6		%		70-130	26-MAR-18
Nickel (Ni)-Dissolved			88.2		%		70-130	26-MAR-18
Selenium (Se)-Dissolved			100.1		%		70-130	26-MAR-18
Silver (Ag)-Dissolved			87.3		%		70-130	26-MAR-18
Sodium (Na)-Dissolved			N/A	MS-B	%		-	26-MAR-18
Thallium (Tl)-Dissolved			84.3		%		70-130	26-MAR-18
Uranium (U)-Dissolved			N/A	MS-B	%		-	26-MAR-18
Vanadium (V)-Dissolved			100.0		%		70-130	26-MAR-18
Zinc (Zn)-Dissolved			N/A	MS-B	%		-	26-MAR-18
PAH-511-WT	**Water**							
Batch R3997800								
WG2739458-2 LCS								
1-Methylnaphthalene			99.2		%		50-140	28-MAR-18
2-Methylnaphthalene			102.2		%		50-140	28-MAR-18
Acenaphthene			103.6		%		50-140	28-MAR-18
Acenaphthylene			103.7		%		50-140	28-MAR-18
Anthracene			109.0		%		50-140	28-MAR-18
Benzo(a)anthracene			121.7		%		50-140	28-MAR-18
Benzo(a)pyrene			96.8		%		50-140	28-MAR-18
Benzo(b)fluoranthene			95.3		%		50-140	28-MAR-18
Benzo(g,h,i)perylene			115.6		%		50-140	28-MAR-18
Benzo(k)fluoranthene			93.7		%		50-140	28-MAR-18
Chrysene			115.7		%		50-140	28-MAR-18
Dibenzo(ah)anthracene			110.9		%		50-140	28-MAR-18
Fluoranthene			105.7		%		50-140	28-MAR-18
Fluorene			104.5		%		50-140	28-MAR-18
Indeno(1,2,3-cd)pyrene			121.7		%		50-140	28-MAR-18
Naphthalene			97.7		%		50-140	28-MAR-18
Phenanthrene			108.5		%		50-140	28-MAR-18
Pyrene			107.7		%		50-140	28-MAR-18
WG2739458-3 LCSD		**WG2739458-2**						
1-Methylnaphthalene		99.2	98		%	0.7	50	28-MAR-18

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R3997800								
WG2739458-3 LCSD		**WG2739458-2**						
2-Methylnaphthalene		102.2	101		%	0.9	50	28-MAR-18
Acenaphthene		103.6	101		%	3.0	50	28-MAR-18
Acenaphthylene		103.7	100		%	3.5	50	28-MAR-18
Anthracene		109.0	104		%	5.0	50	28-MAR-18
Benzo(a)anthracene		121.7	117		%	3.7	50	28-MAR-18
Benzo(a)pyrene		96.8	93		%	4.2	50	28-MAR-18
Benzo(b)fluoranthene		95.3	91		%	4.1	50	28-MAR-18
Benzo(g,h,i)perylene		115.6	108		%	7.1	50	28-MAR-18
Benzo(k)fluoranthene		93.7	92		%	1.5	50	28-MAR-18
Chrysene		115.7	110		%	4.9	50	28-MAR-18
Dibenzo(ah)anthracene		110.9	105		%	5.4	50	28-MAR-18
Fluoranthene		105.7	102		%	3.3	50	28-MAR-18
Fluorene		104.5	101		%	3.0	50	28-MAR-18
Indeno(1,2,3-cd)pyrene		121.7	117		%	4.0	50	28-MAR-18
Naphthalene		97.7	98		%	0.2	50	28-MAR-18
Phenanthrene		108.5	104		%	4.5	50	28-MAR-18
Pyrene		107.7	104		%	3.4	50	28-MAR-18
WG2739458-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	28-MAR-18
2-Methylnaphthalene			<0.020		ug/L		0.02	28-MAR-18
Acenaphthene			<0.020		ug/L		0.02	28-MAR-18
Acenaphthylene			<0.020		ug/L		0.02	28-MAR-18
Anthracene			<0.020		ug/L		0.02	28-MAR-18
Benzo(a)anthracene			<0.020		ug/L		0.02	28-MAR-18
Benzo(a)pyrene			<0.010		ug/L		0.01	28-MAR-18
Benzo(b)fluoranthene			<0.020		ug/L		0.02	28-MAR-18
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	28-MAR-18
Benzo(k)fluoranthene			<0.020		ug/L		0.02	28-MAR-18
Chrysene			<0.020		ug/L		0.02	28-MAR-18
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	28-MAR-18
Fluoranthene			<0.020		ug/L		0.02	28-MAR-18
Fluorene			<0.020		ug/L		0.02	28-MAR-18
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	28-MAR-18
Naphthalene			<0.050		ug/L		0.05	28-MAR-18

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R3997800								
WG2739458-1 MB								
Phenanthrene			<0.020		ug/L		0.02	28-MAR-18
Pyrene			<0.020		ug/L		0.02	28-MAR-18
Surrogate: d8-Naphthalene			91.8		%		60-140	28-MAR-18
Surrogate: d10-Phenanthrene			101.5		%		60-140	28-MAR-18
Surrogate: d12-Chrysene			107.4		%		60-140	28-MAR-18
Surrogate: d10-Acenaphthene			99.0		%		60-140	28-MAR-18
PH-WT	**Water**							
Batch R3994819								
WG2738267-2 LCS								
pH			6.98		pH units		6.9-7.1	23-MAR-18
VOC-511-HS-WT	**Water**							
Batch R3994159								
WG2732053-1 LCS								
1,1,1,2-Tetrachloroethane			103.7		%		70-130	22-MAR-18
1,1,2,2-Tetrachloroethane			103.4		%		70-130	22-MAR-18
1,1,1-Trichloroethane			97.5		%		70-130	22-MAR-18
1,1,2-Trichloroethane			108.9		%		70-130	22-MAR-18
1,1-Dichloroethane			99.3		%		70-130	22-MAR-18
1,1-Dichloroethylene			87.6		%		70-130	22-MAR-18
1,2-Dibromoethane			108.6		%		70-130	22-MAR-18
1,2-Dichlorobenzene			99.3		%		70-130	22-MAR-18
1,2-Dichloroethane			105.8		%		70-130	22-MAR-18
1,2-Dichloropropane			105.8		%		70-130	22-MAR-18
1,3-Dichlorobenzene			94.6		%		70-130	22-MAR-18
1,4-Dichlorobenzene			95.2		%		70-130	22-MAR-18
Acetone			123.5		%		60-140	22-MAR-18
Benzene			100.9		%		70-130	22-MAR-18
Bromodichloromethane			100.1		%		70-130	22-MAR-18
Bromoform			102.4		%		70-130	22-MAR-18
Bromomethane			90.8		%		60-140	22-MAR-18
Carbon tetrachloride			95.0		%		70-130	22-MAR-18
Chlorobenzene			101.5		%		70-130	22-MAR-18
Chloroform			101.1		%		70-130	22-MAR-18
cis-1,2-Dichloroethylene			100.3		%		70-130	22-MAR-18

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3994159								
WG2732053-1 LCS								
cis-1,3-Dichloropropene			99.4		%		70-130	22-MAR-18
Dibromochloromethane			107.8		%		70-130	22-MAR-18
Dichlorodifluoromethane			49.7	MES	%		50-140	22-MAR-18
Ethylbenzene			99.0		%		70-130	22-MAR-18
n-Hexane			110.9		%		70-130	22-MAR-18
m+p-Xylenes			98.0		%		70-130	22-MAR-18
Methyl Ethyl Ketone			109.0		%		60-140	22-MAR-18
Methyl Isobutyl Ketone			105.4		%		60-140	22-MAR-18
Methylene Chloride			103.3		%		70-130	22-MAR-18
MTBE			101.8		%		70-130	22-MAR-18
o-Xylene			99.8		%		70-130	22-MAR-18
Styrene			101.1		%		70-130	22-MAR-18
Tetrachloroethylene			96.0		%		70-130	22-MAR-18
Toluene			101.0		%		70-130	22-MAR-18
trans-1,2-Dichloroethylene			95.3		%		70-130	22-MAR-18
trans-1,3-Dichloropropene			99.5		%		70-130	22-MAR-18
Trichloroethylene			98.7		%		70-130	22-MAR-18
Trichlorofluoromethane			95.5		%		60-140	22-MAR-18
Vinyl chloride			85.0		%		60-140	22-MAR-18
WG2732053-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	22-MAR-18
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	22-MAR-18
1,1,1-Trichloroethane			<0.50		ug/L		0.5	22-MAR-18
1,1,2-Trichloroethane			<0.50		ug/L		0.5	22-MAR-18
1,1-Dichloroethane			<0.50		ug/L		0.5	22-MAR-18
1,1-Dichloroethylene			<0.50		ug/L		0.5	22-MAR-18
1,2-Dibromoethane			<0.20		ug/L		0.2	22-MAR-18
1,2-Dichlorobenzene			<0.50		ug/L		0.5	22-MAR-18
1,2-Dichloroethane			<0.50		ug/L		0.5	22-MAR-18
1,2-Dichloropropane			<0.50		ug/L		0.5	22-MAR-18
1,3-Dichlorobenzene			<0.50		ug/L		0.5	22-MAR-18
1,4-Dichlorobenzene			<0.50		ug/L		0.5	22-MAR-18
Acetone			<30		ug/L		30	22-MAR-18
Benzene			<0.50		ug/L		0.5	22-MAR-18

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3994159								
WG2732053-2 MB								
Bromodichloromethane			<2.0		ug/L		2	22-MAR-18
Bromoform			<5.0		ug/L		5	22-MAR-18
Bromomethane			<0.50		ug/L		0.5	22-MAR-18
Carbon tetrachloride			<0.20		ug/L		0.2	22-MAR-18
Chlorobenzene			<0.50		ug/L		0.5	22-MAR-18
Chloroform			<1.0		ug/L		1	22-MAR-18
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	22-MAR-18
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	22-MAR-18
Dibromochloromethane			<2.0		ug/L		2	22-MAR-18
Dichlorodifluoromethane			<2.0		ug/L		2	22-MAR-18
Ethylbenzene			<0.50		ug/L		0.5	22-MAR-18
n-Hexane			<0.50		ug/L		0.5	22-MAR-18
m+p-Xylenes			<0.40		ug/L		0.4	22-MAR-18
Methyl Ethyl Ketone			<20		ug/L		20	22-MAR-18
Methyl Isobutyl Ketone			<20		ug/L		20	22-MAR-18
Methylene Chloride			<5.0		ug/L		5	22-MAR-18
MTBE			<2.0		ug/L		2	22-MAR-18
o-Xylene			<0.30		ug/L		0.3	22-MAR-18
Styrene			<0.50		ug/L		0.5	22-MAR-18
Tetrachloroethylene			<0.50		ug/L		0.5	22-MAR-18
Toluene			<0.50		ug/L		0.5	22-MAR-18
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	22-MAR-18
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	22-MAR-18
Trichloroethylene			<0.50		ug/L		0.5	22-MAR-18
Trichlorofluoromethane			<5.0		ug/L		5	22-MAR-18
Vinyl chloride			<0.50		ug/L		0.5	22-MAR-18
Surrogate: 1,4-Difluorobenzene			98.8		%		70-130	22-MAR-18
Surrogate: 4-Bromofluorobenzene			100.5		%		70-130	22-MAR-18
Batch R3994268								
WG2736500-1 LCS								
1,1,1,2-Tetrachloroethane			96.2		%		70-130	23-MAR-18
1,1,2,2-Tetrachloroethane			98.0		%		70-130	23-MAR-18
1,1,1-Trichloroethane			100.5		%		70-130	23-MAR-18
1,1,2-Trichloroethane			102.7		%		70-130	23-MAR-18

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3994268								
WG2736500-1 LCS								
1,1-Dichloroethane			105.1		%		70-130	23-MAR-18
1,1-Dichloroethylene			98.7		%		70-130	23-MAR-18
1,2-Dibromoethane			101.3		%		70-130	23-MAR-18
1,2-Dichlorobenzene			101.2		%		70-130	23-MAR-18
1,2-Dichloroethane			106.4		%		70-130	23-MAR-18
1,2-Dichloropropane			105.9		%		70-130	23-MAR-18
1,3-Dichlorobenzene			100.4		%		70-130	23-MAR-18
1,4-Dichlorobenzene			102.3		%		70-130	23-MAR-18
Acetone			114.8		%		60-140	23-MAR-18
Benzene			105.9		%		70-130	23-MAR-18
Bromodichloromethane			99.5		%		70-130	23-MAR-18
Bromoform			90.9		%		70-130	23-MAR-18
Bromomethane			104.6		%		60-140	23-MAR-18
Carbon tetrachloride			98.7		%		70-130	23-MAR-18
Chlorobenzene			101.8		%		70-130	23-MAR-18
Chloroform			104.2		%		70-130	23-MAR-18
cis-1,2-Dichloroethylene			104.0		%		70-130	23-MAR-18
cis-1,3-Dichloropropene			101.1		%		70-130	23-MAR-18
Dibromochloromethane			99.4		%		70-130	23-MAR-18
Dichlorodifluoromethane			86.6		%		50-140	23-MAR-18
Ethylbenzene			98.2		%		70-130	23-MAR-18
n-Hexane			127.6		%		70-130	23-MAR-18
m+p-Xylenes			100.8		%		70-130	23-MAR-18
Methyl Ethyl Ketone			102.0		%		60-140	23-MAR-18
Methyl Isobutyl Ketone			97.4		%		60-140	23-MAR-18
Methylene Chloride			107.6		%		70-130	23-MAR-18
MTBE			100.6		%		70-130	23-MAR-18
o-Xylene			97.7		%		70-130	23-MAR-18
Styrene			94.6		%		70-130	23-MAR-18
Tetrachloroethylene			99.4		%		70-130	23-MAR-18
Toluene			101.2		%		70-130	23-MAR-18
trans-1,2-Dichloroethylene			107.0		%		70-130	23-MAR-18
trans-1,3-Dichloropropene			97.9		%		70-130	23-MAR-18
Trichloroethylene			102.7		%		70-130	23-MAR-18

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3994268								
WG2736500-1 LCS								
Trichlorofluoromethane			108.2		%		60-140	23-MAR-18
Vinyl chloride			106.1		%		60-140	23-MAR-18
WG2736500-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	23-MAR-18
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	23-MAR-18
1,1,1-Trichloroethane			<0.50		ug/L		0.5	23-MAR-18
1,1,2-Trichloroethane			<0.50		ug/L		0.5	23-MAR-18
1,1-Dichloroethane			<0.50		ug/L		0.5	23-MAR-18
1,1-Dichloroethylene			<0.50		ug/L		0.5	23-MAR-18
1,2-Dibromoethane			<0.20		ug/L		0.2	23-MAR-18
1,2-Dichlorobenzene			<0.50		ug/L		0.5	23-MAR-18
1,2-Dichloroethane			<0.50		ug/L		0.5	23-MAR-18
1,2-Dichloropropane			<0.50		ug/L		0.5	23-MAR-18
1,3-Dichlorobenzene			<0.50		ug/L		0.5	23-MAR-18
1,4-Dichlorobenzene			<0.50		ug/L		0.5	23-MAR-18
Acetone			<30		ug/L		30	23-MAR-18
Benzene			<0.50		ug/L		0.5	23-MAR-18
Bromodichloromethane			<2.0		ug/L		2	23-MAR-18
Bromoform			<5.0		ug/L		5	23-MAR-18
Bromomethane			<0.50		ug/L		0.5	23-MAR-18
Carbon tetrachloride			<0.20		ug/L		0.2	23-MAR-18
Chlorobenzene			<0.50		ug/L		0.5	23-MAR-18
Chloroform			<1.0		ug/L		1	23-MAR-18
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	23-MAR-18
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	23-MAR-18
Dibromochloromethane			<2.0		ug/L		2	23-MAR-18
Dichlorodifluoromethane			<2.0		ug/L		2	23-MAR-18
Ethylbenzene			<0.50		ug/L		0.5	23-MAR-18
n-Hexane			<0.50		ug/L		0.5	23-MAR-18
m+p-Xylenes			<0.40		ug/L		0.4	23-MAR-18
Methyl Ethyl Ketone			<20		ug/L		20	23-MAR-18
Methyl Isobutyl Ketone			<20		ug/L		20	23-MAR-18
Methylene Chloride			<5.0		ug/L		5	23-MAR-18
MTBE			<2.0		ug/L		2	23-MAR-18

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3994268								
WG2736500-2 MB								
o-Xylene			<0.30		ug/L		0.3	23-MAR-18
Styrene			<0.50		ug/L		0.5	23-MAR-18
Tetrachloroethylene			<0.50		ug/L		0.5	23-MAR-18
Toluene			<0.50		ug/L		0.5	23-MAR-18
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	23-MAR-18
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	23-MAR-18
Trichloroethylene			<0.50		ug/L		0.5	23-MAR-18
Trichlorofluoromethane			<5.0		ug/L		5	23-MAR-18
Vinyl chloride			<0.50		ug/L		0.5	23-MAR-18
Surrogate: 1,4-Difluorobenzene			99.4		%		70-130	23-MAR-18
Surrogate: 4-Bromofluorobenzene			94.0		%		70-130	23-MAR-18

Quality Control Report

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

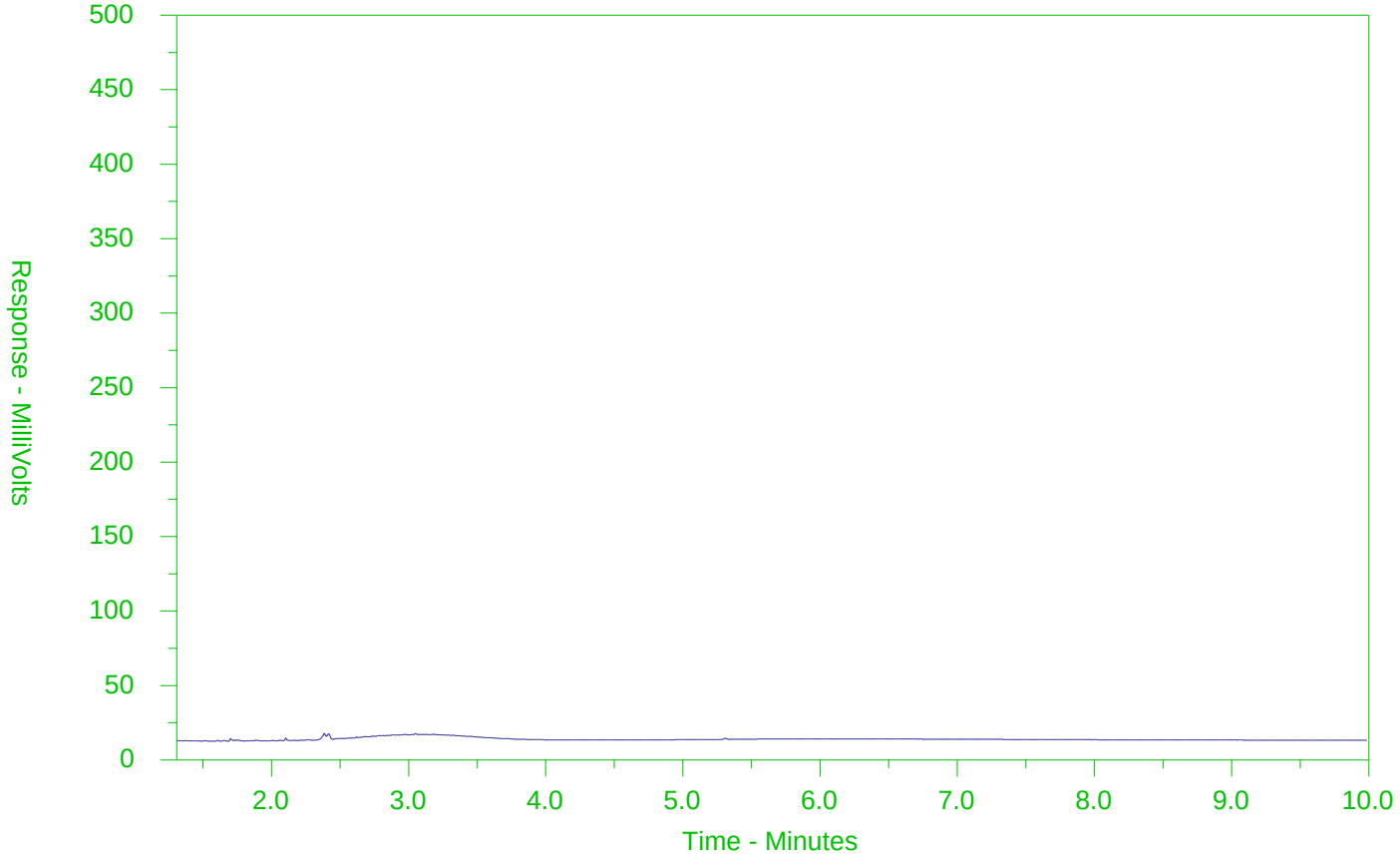
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2070926-1
Client Sample ID: MW17-1085



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

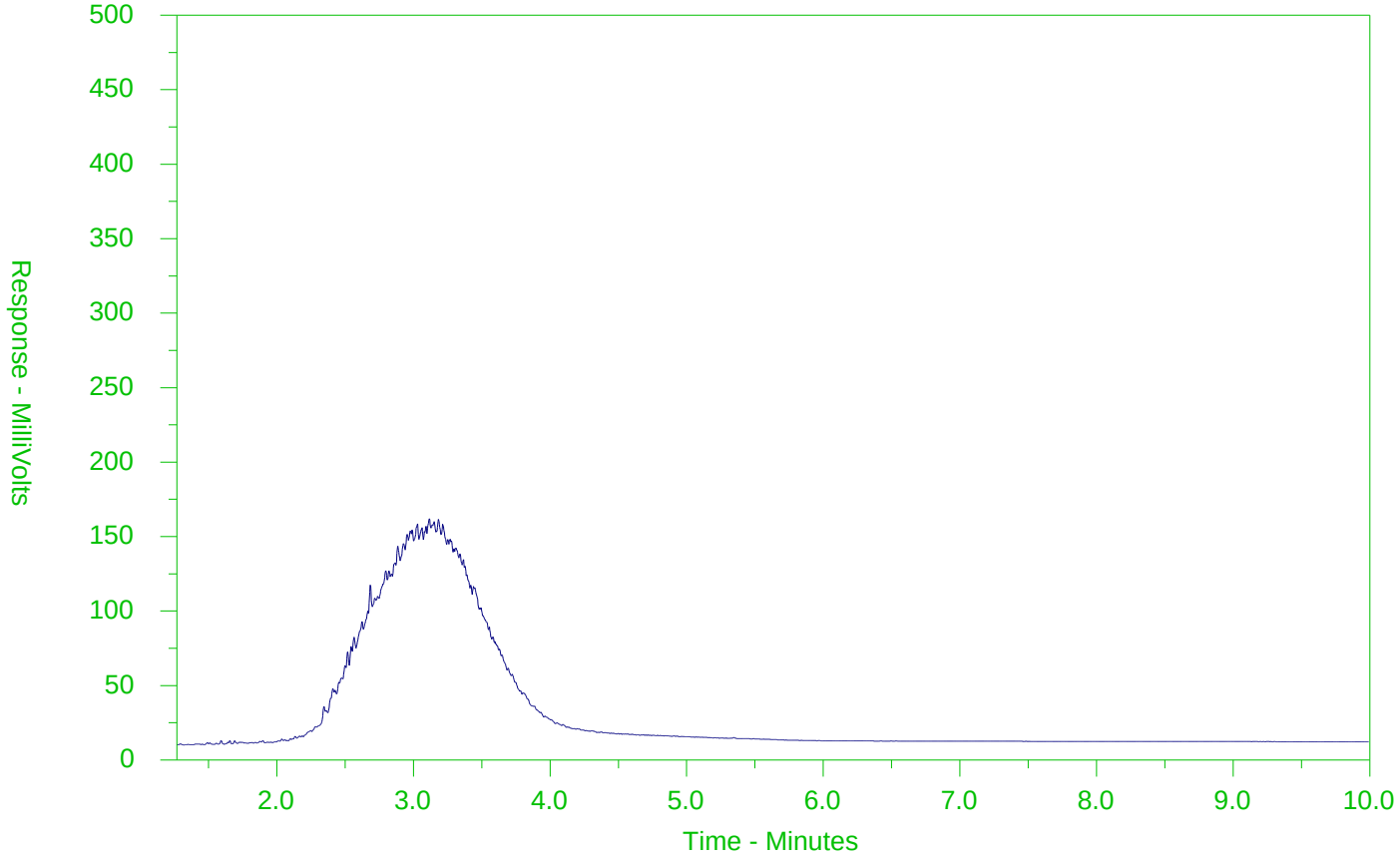
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2070926-6
Client Sample ID: OW235



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

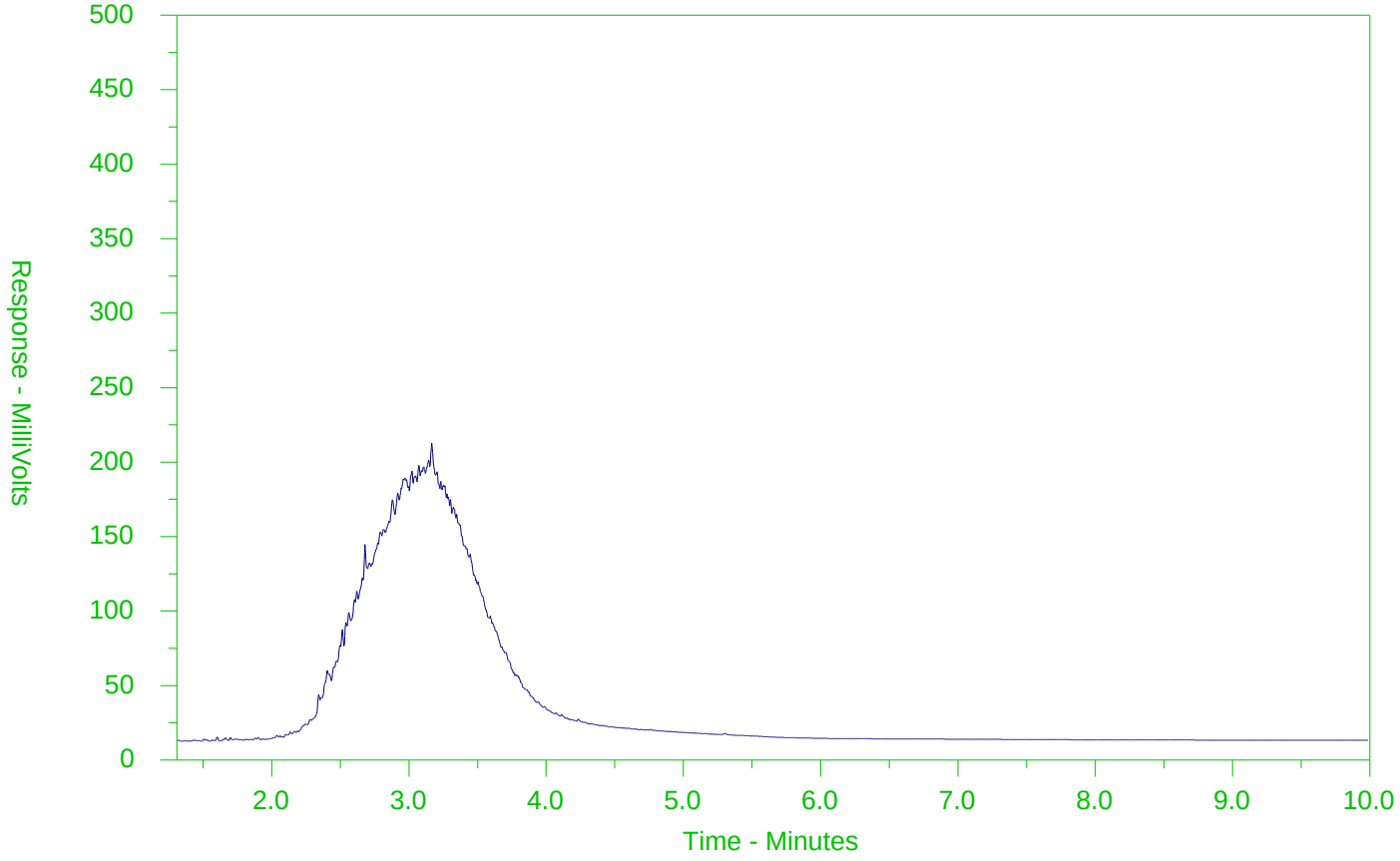
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2070926-8
Client Sample ID: DUP 1



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2070926-COFC

COC Number: 17 - 622471

Page 1 of 2

Report To	Contact and company name below will appear on the final report
Company:	CH2M
Contact:	T. McCarthy / E. Taves
Phone:	
Company address below will appear on the final report	
Street:	
City/Province:	
Postal Code:	

Report Format / Distribution	
Select Report Format:	[X] PDF [X] EXCEL [X] EDD (DIGITAL)
Quality Control (QC) Report with Report	[X] YES [ ] NO
[X] Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	[X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax	
Email 2	
Email 3	

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)			
Regular [R]	[X] Standard TAT if received by 3 pm - business days - no surcharges apply		
PRIORITY (Business Days)	4 day [P4-20%] [ ]	EMERGENCY	1 Business day [E-100%] [ ]
	3 day [P3-25%] [ ]		Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] [ ]
	2 day [P2-50%] [ ]		
Date and Time Required for all E&P TATs:	dd-mmm-yy hh:mm		

For tests that can not be performed according to the service level selected, you will be contacted.

Invoice To	Same as Report To [ ] YES [X] NO
	Copy of Invoice with Report [ ] YES [X] NO
Company:	
Contact:	Acct Payable

Invoice Distribution	
Select Invoice Distribution:	[X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax	
Email 2	

Project Information	
ALS Account # / Quote #:	Q 62156
Job #:	694757
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only): L2070926

ALS Contact: Mathy

Sampler: M. Shirley

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	O. Reg Metals + Trace (F)	O. Reg Hydride Metals (F/P)	O. Reg Metals only (F)	O. Reg PAH	O. Reg PHCs	O. Reg VOCs	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
1	MW17-108S	20-Mar-18	1605	Water				X	X	X			6
2	OW9-II		1700				X						1
3	OW11-II		1340				X						1
4	OW12		1450							X			2
5	OW13		1745							X			2
6	OW23S		1720		X			X	X	X			11
7	OW~~07~~-33		1550				X						1
8	DUP 1		—		X			X	X	X			11
9	MW17-101D	21-Mar-18	1030			X							1
10	OW14		12:10							X			2
11	OW19		1135							X			2
12	OW22S		1115				X			X			3

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? [ ] YES [X] NO	
Are samples for human consumption/ use? [ ] YES [X] NO	

SAMPLE CONDITION AS RECEIVED (lab use only)			
Frozen	[ ]	SIF Observations	Yes [ ] No [ ]
Ice Packs	[X] Ice Cubes [X]	Custody seal intact	Yes [ ] No [ ]
Cooling Initiated	[ ]		
INITIAL COOLER TEMPERATURES °C	4.0	FINAL COOLER TEMPERATURES °C	6.6

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Lucas Ribeiro	Date: 2018/Mar/21	Time: 1540	Received by: Mel	Date: 21/03/18	Time: 15:14	Received by: AP	Date: 21-3-18	Time: 17:00

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JULY 2017 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2070926-COFC

COC Number: 17 - 622470

Report To — Contact and company name below will appear on the final report

Company: CHZM
Contact: T. McCarthy / E. Graves
Phone:
Company address below will appear on the final report
Street:
City/Province:
Postal Code:

Report Format / Distribution

Select Report Format: [X] PDF [X] EXCEL [X] EDD (DIGITAL)
Quality Control (QC) Report with Report [X] YES [ ] NO
[X] Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: [X] EMAIL | | MAIL [ ] FAX
Email 1 or Fax
Email 2
Email 3

- Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] [X] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] [ ] 3 day [P3-25%] [ ] 2 day [P2-50%] [ ]
EMERGENCY: 1 Business day [E-100%] [ ] Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] [ ]

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
For tests that can not be performed according to the service level selected, you will be contacted.

Invoice To — Same as Report To [ ] YES [X] NO
Copy of Invoice with Report [ ] YES [X] NO
Company:
Contact: Acct Payable

Invoice Distribution

Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax
Email 2

Project Information

ALS Account # / Quote #: 262156
Job #: 694757
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only):
ALS Contact: Kathy
Sampler: M. Stuyt

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	VOCs + F1	O.Reg Metals only (F/P) 7.2.2	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
13	GW07-37	21-Mar-18	9:40	Water		X			1
14	Trip Blank	↓	—	↓	X				2

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] YES [X] NO
Are samples for human consumption/ use? | | YES [X] NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] SIF Observations Yes [ ] No [ ]
Ice Packs [X] Ice Cubes [X] Custody seal intact Yes [ ] No [ ]
Cooling Initiated [ ]

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
4.0							

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Lucas Ribeiro	Date: 2018/Mar/21	Time: 15:40	Received by: Mel	Date: 21/03/18	Time: 15:15	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION
WHITE - LABORATORY COPY YELLOW - CLIENT COPY
JULY 2017 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

CH2M HILL CANADA LIMITED
ATTN: JON GOWING
72 VICTORIA ST SOUTH
SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 13-APR-18
Report Date: 17-APR-18 09:24 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2080020

Project P.O. #: NOT SUBMITTED
Job Reference: 694757
C of C Numbers: 15-612164
Legal Site Desc:

Comments: ADDITIONAL 17-APR-18 08:57

Mathy Mahadeva
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2080020-1 OW11-11 Sampled By: J.GOWING on 13-APR-18 @ 08:50 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					16-APR-18	R4013367
Antimony (Sb)-Dissolved	0.13		0.10	ug/L	16-APR-18	16-APR-18	R4015472
Arsenic (As)-Dissolved	0.19		0.10	ug/L	16-APR-18	16-APR-18	R4015472
Barium (Ba)-Dissolved	37.4		0.10	ug/L	16-APR-18	16-APR-18	R4015472
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	16-APR-18	16-APR-18	R4015472
Boron (B)-Dissolved	54		10	ug/L	16-APR-18	16-APR-18	R4015472
Cadmium (Cd)-Dissolved	0.103		0.010	ug/L	16-APR-18	16-APR-18	R4015472
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	16-APR-18	16-APR-18	R4015472
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	16-APR-18	16-APR-18	R4015472
Copper (Cu)-Dissolved	1.70		0.20	ug/L	16-APR-18	16-APR-18	R4015472
Lead (Pb)-Dissolved	4.76		0.050	ug/L	16-APR-18	16-APR-18	R4015472
Molybdenum (Mo)-Dissolved	0.172		0.050	ug/L	16-APR-18	16-APR-18	R4015472
Nickel (Ni)-Dissolved	<0.50		0.50	ug/L	16-APR-18	16-APR-18	R4015472
Selenium (Se)-Dissolved	3.25		0.050	ug/L	16-APR-18	16-APR-18	R4015472
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	16-APR-18	16-APR-18	R4015472
Sodium (Na)-Dissolved	2810		500	ug/L	16-APR-18	16-APR-18	R4015472
Thallium (Tl)-Dissolved	0.025		0.010	ug/L	16-APR-18	16-APR-18	R4015472
Uranium (U)-Dissolved	0.990		0.010	ug/L	16-APR-18	16-APR-18	R4015472
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	16-APR-18	16-APR-18	R4015472
Zinc (Zn)-Dissolved	50.4		1.0	ug/L	16-APR-18	16-APR-18	R4015472
L2080020-2 OW07-33 Sampled By: J.GOWING on 13-APR-18 @ 09:55 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					16-APR-18	R4013367
Antimony (Sb)-Dissolved	0.23		0.10	ug/L	16-APR-18	16-APR-18	R4015472
Arsenic (As)-Dissolved	0.46		0.10	ug/L	16-APR-18	16-APR-18	R4015472
Barium (Ba)-Dissolved	45.3		0.10	ug/L	16-APR-18	16-APR-18	R4015472
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	16-APR-18	16-APR-18	R4015472
Boron (B)-Dissolved	53		10	ug/L	16-APR-18	16-APR-18	R4015472
Cadmium (Cd)-Dissolved	0.779		0.010	ug/L	16-APR-18	16-APR-18	R4015472
Chromium (Cr)-Dissolved	0.51		0.50	ug/L	16-APR-18	16-APR-18	R4015472
Cobalt (Co)-Dissolved	1.28		0.10	ug/L	16-APR-18	16-APR-18	R4015472
Copper (Cu)-Dissolved	4.63		0.20	ug/L	16-APR-18	16-APR-18	R4015472
Lead (Pb)-Dissolved	7.37		0.050	ug/L	16-APR-18	16-APR-18	R4015472
Molybdenum (Mo)-Dissolved	2.76		0.050	ug/L	16-APR-18	16-APR-18	R4015472
Nickel (Ni)-Dissolved	4.72		0.50	ug/L	16-APR-18	16-APR-18	R4015472
Selenium (Se)-Dissolved	0.480		0.050	ug/L	16-APR-18	16-APR-18	R4015472
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	16-APR-18	16-APR-18	R4015472
Sodium (Na)-Dissolved	129000	DLHC	500	ug/L	16-APR-18	16-APR-18	R4015472
Thallium (Tl)-Dissolved	0.088		0.010	ug/L	16-APR-18	16-APR-18	R4015472
Uranium (U)-Dissolved	4.25		0.010	ug/L	16-APR-18	16-APR-18	R4015472

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2080020-2 OW07-33 Sampled By: J.GOWING on 13-APR-18 @ 09:55 Matrix: WATER							
Dissolved Metals							
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	16-APR-18	16-APR-18	R4015472
Zinc (Zn)-Dissolved	685		1.0	ug/L	16-APR-18	16-APR-18	R4015472
L2080020-3 OW22S Sampled By: J.GOWING on 13-APR-18 @ 11:05 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					16-APR-18	R4013367
Antimony (Sb)-Dissolved	<1.0	DLHC	1.0	ug/L	16-APR-18	16-APR-18	R4015472
Arsenic (As)-Dissolved	<1.0	DLHC	1.0	ug/L	16-APR-18	16-APR-18	R4015472
Barium (Ba)-Dissolved	16.7	DLHC	1.0	ug/L	16-APR-18	16-APR-18	R4015472
Beryllium (Be)-Dissolved	<1.0	DLHC	1.0	ug/L	16-APR-18	16-APR-18	R4015472
Boron (B)-Dissolved	<100	DLHC	100	ug/L	16-APR-18	16-APR-18	R4015472
Cadmium (Cd)-Dissolved	0.193	DLHC	0.050	ug/L	16-APR-18	16-APR-18	R4015472
Chromium (Cr)-Dissolved	<5.0	DLHC	5.0	ug/L	16-APR-18	16-APR-18	R4015472
Cobalt (Co)-Dissolved	<1.0	DLHC	1.0	ug/L	16-APR-18	16-APR-18	R4015472
Copper (Cu)-Dissolved	<2.0	DLHC	2.0	ug/L	16-APR-18	16-APR-18	R4015472
Lead (Pb)-Dissolved	2.08	DLHC	0.50	ug/L	16-APR-18	16-APR-18	R4015472
Molybdenum (Mo)-Dissolved	11.9	DLHC	0.50	ug/L	16-APR-18	16-APR-18	R4015472
Nickel (Ni)-Dissolved	10.3	DLHC	5.0	ug/L	16-APR-18	16-APR-18	R4015472
Selenium (Se)-Dissolved	<0.50	DLHC	0.50	ug/L	16-APR-18	16-APR-18	R4015472
Silver (Ag)-Dissolved	<0.50	DLHC	0.50	ug/L	16-APR-18	16-APR-18	R4015472
Sodium (Na)-Dissolved	1300	DLHC	500	ug/L	16-APR-18	16-APR-18	R4015472
Thallium (Tl)-Dissolved	<0.10	DLHC	0.10	ug/L	16-APR-18	16-APR-18	R4015472
Uranium (U)-Dissolved	6.05	DLHC	0.10	ug/L	16-APR-18	16-APR-18	R4015472
Vanadium (V)-Dissolved	<5.0	DLHC	5.0	ug/L	16-APR-18	16-APR-18	R4015472
Zinc (Zn)-Dissolved	1390	DLHC	10	ug/L	16-APR-18	16-APR-18	R4015472
L2080020-4 OW9-11 Sampled By: J.GOWING on 13-APR-18 @ 13:55 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					16-APR-18	R4013367
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	16-APR-18	16-APR-18	R4015472
Arsenic (As)-Dissolved	21.4		0.10	ug/L	16-APR-18	16-APR-18	R4015472
Barium (Ba)-Dissolved	154		0.10	ug/L	16-APR-18	16-APR-18	R4015472
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	16-APR-18	16-APR-18	R4015472
Boron (B)-Dissolved	72		10	ug/L	16-APR-18	16-APR-18	R4015472
Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	16-APR-18	16-APR-18	R4015472
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	16-APR-18	16-APR-18	R4015472
Cobalt (Co)-Dissolved	0.47		0.10	ug/L	16-APR-18	16-APR-18	R4015472
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	16-APR-18	16-APR-18	R4015472
Lead (Pb)-Dissolved	14.3		0.050	ug/L	16-APR-18	16-APR-18	R4015472
Molybdenum (Mo)-Dissolved	1.82		0.050	ug/L	16-APR-18	16-APR-18	R4015472

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2080020-4 OW9-11 Sampled By: J.GOWING on 13-APR-18 @ 13:55 Matrix: WATER							
Dissolved Metals							
Nickel (Ni)-Dissolved	4.96		0.50	ug/L	16-APR-18	16-APR-18	R4015472
Selenium (Se)-Dissolved	0.073		0.050	ug/L	16-APR-18	16-APR-18	R4015472
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	16-APR-18	16-APR-18	R4015472
Sodium (Na)-Dissolved	13700		500	ug/L	16-APR-18	16-APR-18	R4015472
Thallium (Tl)-Dissolved	0.109		0.010	ug/L	16-APR-18	16-APR-18	R4015472
Uranium (U)-Dissolved	1.18		0.010	ug/L	16-APR-18	16-APR-18	R4015472
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	16-APR-18	16-APR-18	R4015472
Zinc (Zn)-Dissolved	601		1.0	ug/L	16-APR-18	16-APR-18	R4015472
L2080020-5 DUP1 Sampled By: J.GOWING on 13-APR-18 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					16-APR-18	R4013367
Antimony (Sb)-Dissolved	0.25		0.10	ug/L	16-APR-18	16-APR-18	R4015472
Arsenic (As)-Dissolved	0.41		0.10	ug/L	16-APR-18	16-APR-18	R4015472
Barium (Ba)-Dissolved	45.8		0.10	ug/L	16-APR-18	16-APR-18	R4015472
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	16-APR-18	16-APR-18	R4015472
Boron (B)-Dissolved	52		10	ug/L	16-APR-18	16-APR-18	R4015472
Cadmium (Cd)-Dissolved	0.765		0.010	ug/L	16-APR-18	16-APR-18	R4015472
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	16-APR-18	16-APR-18	R4015472
Cobalt (Co)-Dissolved	1.27		0.10	ug/L	16-APR-18	16-APR-18	R4015472
Copper (Cu)-Dissolved	4.54		0.20	ug/L	16-APR-18	16-APR-18	R4015472
Lead (Pb)-Dissolved	7.68		0.050	ug/L	16-APR-18	16-APR-18	R4015472
Molybdenum (Mo)-Dissolved	2.75		0.050	ug/L	16-APR-18	16-APR-18	R4015472
Nickel (Ni)-Dissolved	4.70		0.50	ug/L	16-APR-18	16-APR-18	R4015472
Selenium (Se)-Dissolved	0.485		0.050	ug/L	16-APR-18	16-APR-18	R4015472
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	16-APR-18	16-APR-18	R4015472
Sodium (Na)-Dissolved	128000	DLHC	500	ug/L	16-APR-18	16-APR-18	R4015472
Thallium (Tl)-Dissolved	0.093		0.010	ug/L	16-APR-18	16-APR-18	R4015472
Uranium (U)-Dissolved	4.43		0.010	ug/L	16-APR-18	16-APR-18	R4015472
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	16-APR-18	16-APR-18	R4015472
Zinc (Zn)-Dissolved	680		1.0	ug/L	16-APR-18	16-APR-18	R4015472
L2080020-6 MW17-101D Sampled By: J.GOWING on 13-APR-18 @ 12:50 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					16-APR-18	R4013367
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	16-APR-18	16-APR-18	R4015472
Arsenic (As)-Dissolved	6.19		0.10	ug/L	16-APR-18	16-APR-18	R4015472
Selenium (Se)-Dissolved	0.097		0.050	ug/L	16-APR-18	16-APR-18	R4015472

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L2080020-1, -2, -3, -4, -5
Matrix Spike	Boron (B)-Dissolved	MS-B	L2080020-1, -2, -3, -4, -5
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L2080020-1, -2, -3, -4, -5
Matrix Spike	Uranium (U)-Dissolved	MS-B	L2080020-1, -2, -3, -4, -5
Matrix Spike	Zinc (Zn)-Dissolved	MS-B	L2080020-1, -2, -3, -4, -5

Sample Parameter Qualifier key listed:

Qualifier	Description
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8

The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

15-612164

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2080020 Report Date: 17-APR-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: JON GOWING

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R4015472								
WG2751699-4 DUP		**WG2751699-3**						
Antimony (Sb)-Dissolved		0.13	0.12		ug/L	3.6	20	16-APR-18
Arsenic (As)-Dissolved		0.19	0.19		ug/L	0.5	20	16-APR-18
Barium (Ba)-Dissolved		37.4	37.1		ug/L	0.8	20	16-APR-18
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	16-APR-18
Boron (B)-Dissolved		54	53		ug/L	0.5	20	16-APR-18
Cadmium (Cd)-Dissolved		0.103	0.103		ug/L	0.7	20	16-APR-18
Chromium (Cr)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	16-APR-18
Cobalt (Co)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	16-APR-18
Copper (Cu)-Dissolved		1.70	1.73		ug/L	1.6	20	16-APR-18
Lead (Pb)-Dissolved		4.76	4.61		ug/L	3.2	20	16-APR-18
Molybdenum (Mo)-Dissolved		0.172	0.152		ug/L	13	20	16-APR-18
Nickel (Ni)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	16-APR-18
Selenium (Se)-Dissolved		3.25	3.12		ug/L	4.1	20	16-APR-18
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	16-APR-18
Sodium (Na)-Dissolved		2810	2890		ug/L	2.8	20	16-APR-18
Thallium (Tl)-Dissolved		0.025	0.026		ug/L	2.7	20	16-APR-18
Uranium (U)-Dissolved		0.990	0.946		ug/L	4.5	20	16-APR-18
Vanadium (V)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	16-APR-18
Zinc (Zn)-Dissolved		50.4	50.4		ug/L	0.0	20	16-APR-18
WG2751699-2 LCS								
Antimony (Sb)-Dissolved			98.1		%		80-120	16-APR-18
Arsenic (As)-Dissolved			99.0		%		80-120	16-APR-18
Barium (Ba)-Dissolved			94.9		%		80-120	16-APR-18
Beryllium (Be)-Dissolved			97.5		%		80-120	16-APR-18
Boron (B)-Dissolved			95.0		%		80-120	16-APR-18
Cadmium (Cd)-Dissolved			100.9		%		80-120	16-APR-18
Chromium (Cr)-Dissolved			100.1		%		80-120	16-APR-18
Cobalt (Co)-Dissolved			97.4		%		80-120	16-APR-18
Copper (Cu)-Dissolved			97.3		%		80-120	16-APR-18
Lead (Pb)-Dissolved			99.5		%		80-120	16-APR-18
Molybdenum (Mo)-Dissolved			106.2		%		80-120	16-APR-18
Nickel (Ni)-Dissolved			96.1		%		80-120	16-APR-18
Selenium (Se)-Dissolved			98.7		%		80-120	16-APR-18

Quality Control Report

Workorder: L2080020 Report Date: 17-APR-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: JON GOWING

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch	**R4015472**							
WG2751699-2	**LCS**							
Silver (Ag)-Dissolved			95.0		%		80-120	16-APR-18
Sodium (Na)-Dissolved			99.0		%		80-120	16-APR-18
Thallium (Tl)-Dissolved			99.8		%		80-120	16-APR-18
Uranium (U)-Dissolved			100.1		%		80-120	16-APR-18
Vanadium (V)-Dissolved			98.8		%		80-120	16-APR-18
Zinc (Zn)-Dissolved			95.5		%		80-120	16-APR-18
WG2751699-1	**MB**							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	16-APR-18
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	16-APR-18
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	16-APR-18
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	16-APR-18
Boron (B)-Dissolved			<10		ug/L		10	16-APR-18
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	16-APR-18
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	16-APR-18
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	16-APR-18
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	16-APR-18
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	16-APR-18
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	16-APR-18
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	16-APR-18
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	16-APR-18
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	16-APR-18
Sodium (Na)-Dissolved			<50		ug/L		50	16-APR-18
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	16-APR-18
Uranium (U)-Dissolved			<0.010		ug/L		0.01	16-APR-18
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	16-APR-18
Zinc (Zn)-Dissolved			<1.0		ug/L		1	16-APR-18
WG2751699-5	**MS**	**WG2751699-6**						
Antimony (Sb)-Dissolved			90.4		%		70-130	16-APR-18
Arsenic (As)-Dissolved			105.1		%		70-130	16-APR-18
Barium (Ba)-Dissolved			N/A	MS-B	%		-	16-APR-18
Beryllium (Be)-Dissolved			101.4		%		70-130	16-APR-18
Boron (B)-Dissolved			N/A	MS-B	%		-	16-APR-18
Cadmium (Cd)-Dissolved			97.4		%		70-130	16-APR-18
Chromium (Cr)-Dissolved			98.1		%		70-130	16-APR-18

Quality Control Report

Workorder: L2080020 Report Date: 17-APR-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: JON GOWING

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R4015472								
WG2751699-5 MS		**WG2751699-6**						
Cobalt (Co)-Dissolved			95.7		%		70-130	16-APR-18
Copper (Cu)-Dissolved			90.9		%		70-130	16-APR-18
Lead (Pb)-Dissolved			89.6		%		70-130	16-APR-18
Molybdenum (Mo)-Dissolved			102.8		%		70-130	16-APR-18
Nickel (Ni)-Dissolved			90.9		%		70-130	16-APR-18
Selenium (Se)-Dissolved			107.1		%		70-130	16-APR-18
Silver (Ag)-Dissolved			89.0		%		70-130	16-APR-18
Sodium (Na)-Dissolved			N/A	MS-B	%		-	16-APR-18
Thallium (Tl)-Dissolved			92.5		%		70-130	16-APR-18
Uranium (U)-Dissolved			N/A	MS-B	%		-	16-APR-18
Vanadium (V)-Dissolved			103.4		%		70-130	16-APR-18
Zinc (Zn)-Dissolved			N/A	MS-B	%		-	16-APR-18

Quality Control Report

Workorder: L2080020 Report Date: 17-APR-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9
Contact: JON GOWING

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2080020-COFC

COC Number: 15 - 612164

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	CH2M HILL / JACOBS
Contact:	Jon Gowing
Phone:	519-579-3500
	Company address below will appear on the final report
Street:	72 Victoria St South
City/Province:	Kitchener ONT
Postal Code:	
Invoice To	Same as Report To ☒ YES ☐ NO
	Copy of Invoice with Report ☒ YES ☐ NO
Company:	
Contact:	

Report Format / Distribution

Select Report Format: ☒ PDF ☒ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report ☒ YES ☐ NO
☒ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: Ed.Davies@CH2M.com
Email 2: Tania.McCarthy@CH2M.com
Email 3:

Invoice Distribution

Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax:
Email 2:

Project Information

ALS Account # / Quote #:
Job #: 694757
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#:
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2080020 RK 13/P
ALS Contact: MATHY
Sampler: J. Gowing

...all E&P TATs with your AM - surcharges will apply

Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
4 day [P4]	☐	1 Business day [E1]	☐
3 day [P3]	☐	Same Day, Weekend or Statutory holiday [E0]	☐
2 day [P2]	☐		

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	ORes 153/04 Hydride Forming Metals	ORes 153/04 Metals Only	Number of Containers
1	OW11-11	13-04-18	0850	GW		X	5
2	OW07-33	"	0955	"		X	5
3	OW22S	"	1105	"		X	5
4 (6)	MW17-101D	"	1250	"	X		5
5 (4)	OW9-11	"	1355	"		X	5
(5)	DUP2	"	—	"		X	5

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO
Are samples for human drinking water use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Contact Tania McCarthy for Specific Sample instructions

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
			7.5		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date: 04/13/18	Time: 1535	Received by:	Date:	Time:	Received by:	Date: 13-Apr-18	Time: 1535

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION
WHITE - LABORATORY COPY YELLOW - CLIENT COPY
OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

CH2M HILL CANADA LIMITED
ATTN: TANIA MCCARTHY
CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 25-JUN-18
Report Date: 28-JUN-18 14:30 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2118212
Project P.O. #: NOT SUBMITTED
Job Reference: 694757
C of C Numbers:
Legal Site Desc:

Mathy Mahadeva
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2118212-1 MW18-120D-3.0 Sampled By: CLIENT on 21-JUN-18 @ 16:35 Matrix: SIOL							
Metals							
Antimony (Sb)	<1.0		1.0	ug/g	27-JUN-18	27-JUN-18	R4099147
Arsenic (As)	7.2		1.0	ug/g	27-JUN-18	27-JUN-18	R4099147
Barium (Ba)	68.6		1.0	ug/g	27-JUN-18	27-JUN-18	R4099147
Beryllium (Be)	<0.50		0.50	ug/g	27-JUN-18	27-JUN-18	R4099147
Boron (B)	12.2		5.0	ug/g	27-JUN-18	27-JUN-18	R4099147
Cadmium (Cd)	1.19		0.50	ug/g	27-JUN-18	27-JUN-18	R4099147
Chromium (Cr)	10.6		1.0	ug/g	27-JUN-18	27-JUN-18	R4099147
Cobalt (Co)	8.2		1.0	ug/g	27-JUN-18	27-JUN-18	R4099147
Copper (Cu)	17.2		1.0	ug/g	27-JUN-18	27-JUN-18	R4099147
Lead (Pb)	39.4		1.0	ug/g	27-JUN-18	27-JUN-18	R4099147
Molybdenum (Mo)	<1.0		1.0	ug/g	27-JUN-18	27-JUN-18	R4099147
Nickel (Ni)	13.1		1.0	ug/g	27-JUN-18	27-JUN-18	R4099147
Selenium (Se)	<1.0		1.0	ug/g	27-JUN-18	27-JUN-18	R4099147
Silver (Ag)	<0.20		0.20	ug/g	27-JUN-18	27-JUN-18	R4099147
Thallium (Tl)	<0.50		0.50	ug/g	27-JUN-18	27-JUN-18	R4099147
Uranium (U)	<1.0		1.0	ug/g	27-JUN-18	27-JUN-18	R4099147
Vanadium (V)	23.4		1.0	ug/g	27-JUN-18	27-JUN-18	R4099147
Zinc (Zn)	585		5.0	ug/g	27-JUN-18	27-JUN-18	R4099147

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)

This method uses a heated strong acid digestion with HNO3 and HCl and is intended to liberate metals that may be environmentally available. Silicate minerals are not solubilized. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. Analysis is by Collision/Reaction Cell ICPMS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2118212 Report Date: 28-JUN-18

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R4099147								
WG2807867-2 CRM		**WT-CANMET-TILL1**						
Antimony (Sb)			95.8		%		70-130	27-JUN-18
Arsenic (As)			101.7		%		70-130	27-JUN-18
Barium (Ba)			99.4		%		70-130	27-JUN-18
Beryllium (Be)			108.5		%		70-130	27-JUN-18
Boron (B)			3.5		mg/kg		0-8.2	27-JUN-18
Cadmium (Cd)			102.0		%		70-130	27-JUN-18
Chromium (Cr)			101.8		%		70-130	27-JUN-18
Cobalt (Co)			100.6		%		70-130	27-JUN-18
Copper (Cu)			101.1		%		70-130	27-JUN-18
Lead (Pb)			95.2		%		70-130	27-JUN-18
Molybdenum (Mo)			105.6		%		70-130	27-JUN-18
Nickel (Ni)			99.0		%		70-130	27-JUN-18
Selenium (Se)			0.28		mg/kg		0.11-0.51	27-JUN-18
Silver (Ag)			0.23		mg/kg		0.13-0.33	27-JUN-18
Thallium (Tl)			0.119		mg/kg		0.077-0.18	27-JUN-18
Uranium (U)			106.4		%		70-130	27-JUN-18
Vanadium (V)			102.1		%		70-130	27-JUN-18
Zinc (Zn)			100.2		%		70-130	27-JUN-18
WG2807867-6 DUP		**WG2807867-5**						
Antimony (Sb)		0.14	0.13		ug/g	8.5	30	27-JUN-18
Arsenic (As)		7.06	6.45		ug/g	9.0	30	27-JUN-18
Barium (Ba)		47.4	41.2		ug/g	14	40	27-JUN-18
Beryllium (Be)		0.68	0.57		ug/g	18	30	27-JUN-18
Boron (B)		12.2	9.9		ug/g	21	30	27-JUN-18
Cadmium (Cd)		0.077	0.065		ug/g	16	30	27-JUN-18
Chromium (Cr)		19.9	16.7		ug/g	17	30	27-JUN-18
Cobalt (Co)		13.3	12.0		ug/g	9.9	30	27-JUN-18
Copper (Cu)		35.6	33.0		ug/g	7.8	30	27-JUN-18
Lead (Pb)		10.9	10.3		ug/g	5.7	40	27-JUN-18
Molybdenum (Mo)		0.40	0.35		ug/g	14	40	27-JUN-18
Nickel (Ni)		25.1	23.0		ug/g	8.9	30	27-JUN-18
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	27-JUN-18
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	27-JUN-18

Quality Control Report

Workorder: L2118212 Report Date: 28-JUN-18

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R4099147								
WG2807867-6 DUP		**WG2807867-5**						
Thallium (Tl)		0.130	0.111		ug/g	16	30	27-JUN-18
Uranium (U)		0.450	0.426		ug/g	5.4	30	27-JUN-18
Vanadium (V)		29.3	24.9		ug/g	16	30	27-JUN-18
Zinc (Zn)		56.7	52.0		ug/g	8.5	30	27-JUN-18
WG2807867-4 LCS								
Antimony (Sb)			102.3		%		80-120	27-JUN-18
Arsenic (As)			100.8		%		80-120	27-JUN-18
Barium (Ba)			95.5		%		80-120	27-JUN-18
Beryllium (Be)			98.2		%		80-120	27-JUN-18
Boron (B)			93.5		%		80-120	27-JUN-18
Cadmium (Cd)			99.0		%		80-120	27-JUN-18
Chromium (Cr)			100.4		%		80-120	27-JUN-18
Cobalt (Co)			97.8		%		80-120	27-JUN-18
Copper (Cu)			97.1		%		80-120	27-JUN-18
Lead (Pb)			97.2		%		80-120	27-JUN-18
Molybdenum (Mo)			103.9		%		80-120	27-JUN-18
Nickel (Ni)			96.8		%		80-120	27-JUN-18
Selenium (Se)			95.9		%		80-120	27-JUN-18
Silver (Ag)			95.8		%		80-120	27-JUN-18
Thallium (Tl)			98.6		%		80-120	27-JUN-18
Uranium (U)			98.1		%		80-120	27-JUN-18
Vanadium (V)			101.2		%		80-120	27-JUN-18
Zinc (Zn)			94.0		%		80-120	27-JUN-18
WG2807867-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	27-JUN-18
Arsenic (As)			<0.10		mg/kg		0.1	27-JUN-18
Barium (Ba)			<0.50		mg/kg		0.5	27-JUN-18
Beryllium (Be)			<0.10		mg/kg		0.1	27-JUN-18
Boron (B)			<5.0		mg/kg		5	27-JUN-18
Cadmium (Cd)			<0.020		mg/kg		0.02	27-JUN-18
Chromium (Cr)			<0.50		mg/kg		0.5	27-JUN-18
Cobalt (Co)			<0.10		mg/kg		0.1	27-JUN-18
Copper (Cu)			<0.50		mg/kg		0.5	27-JUN-18
Lead (Pb)			<0.50		mg/kg		0.5	27-JUN-18

Quality Control Report

Workorder: L2118212 Report Date: 28-JUN-18

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R4099147								
WG2807867-1 MB								
Molybdenum (Mo)			<0.10		mg/kg		0.1	27-JUN-18
Nickel (Ni)			<0.50		mg/kg		0.5	27-JUN-18
Selenium (Se)			<0.20		mg/kg		0.2	27-JUN-18
Silver (Ag)			<0.10		mg/kg		0.1	27-JUN-18
Thallium (Tl)			<0.050		mg/kg		0.05	27-JUN-18
Uranium (U)			<0.050		mg/kg		0.05	27-JUN-18
Vanadium (V)			<0.20		mg/kg		0.2	27-JUN-18
Zinc (Zn)			<2.0		mg/kg		2	27-JUN-18

Quality Control Report

Workorder: L2118212 Report Date: 28-JUN-18

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9
Contact: TANIA MCCARTHY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2118212-COFC

COC Number: 15 -

Page of

Report To	Contact and company name below will appear on the final report
Company:	CH2M Hill
Contact:	Tania McCarthy
Phone:	519 579 3500
	Company address below will appear on the final report
Street:	72 Victoria Street South, Suite 300
City/Province:	Kitchener
Postal Code:	N2G 4Y9
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	CH2M Hill
Contact:	Accounts Payable

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax

Email 2 lucas.ribeiro@jacobs.com

Email 3

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax

Email 2

Project Information

ALS Account # / Quote #:

Job #:

PO / AFE:

LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#

Major/Minor Code: Routing Code:

Requisitioner:

Location:

ALS Lab Work Order # (lab use only): L2118212

ALS Contact: Mathy

Sampler:

E&P TATs with your AM - surcharges will apply

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4] ☐ 3 day [P3] ☐ 2 day [P2] ☐

EMERGENCY: 1 Business day [E1] ☐ Same Day, Weekend or Statutory holiday [E0] ☐

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Metals & Inorganics	Metals	PAH	F1-F4	BTEX	VOC	PCB	Number of Containers
	MW18-120D-3.0	21-JUN-18	16:30	Soil		X						

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human drinking water use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
			7.3		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Lucas Ribeiro	Date: 25 JUN. 2018	Time: 10:20	Received by: AK	Date: 6-25-18	Time: 10:20	Received by:	Date: June 25/18	Time: 14:45

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white report copy

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

CH2M HILL CANADA LIMITED
ATTN: TANIA MCCARTHY
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 28-JUN-18
Report Date: 09-JUL-18 13:21 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2120855
Project P.O. #: NOT SUBMITTED
Job Reference: 694757
C of C Numbers:
Legal Site Desc:

Mathy Mahadeva
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2120855-1 MW18-123D-2.5 Sampled By: CLIENT on 27-JUN-18 @ 13:30 Matrix: SOIL							
Physical Tests							
Conductivity	0.330		0.0040	mS/cm		05-JUL-18	R4113658
% Moisture	20.8		0.10	%	04-JUL-18	05-JUL-18	R4112901
pH	7.72		0.10	pH units		03-JUL-18	R4110544
Cyanides							
Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	29-JUN-18	03-JUL-18	R4110089
Saturated Paste Extractables							
SAR	0.12		0.10	SAR		05-JUL-18	R4113375
Calcium (Ca)	22.3		1.0	mg/L		05-JUL-18	R4113375
Calcium (Ca)	22.3		1.0	mg/L		05-JUL-18	R4113375
Magnesium (Mg)	10.3		1.0	mg/L		05-JUL-18	R4113375
Sodium (Na)	2.6		1.0	mg/L		05-JUL-18	R4113375
Metals							
Antimony (Sb)	<1.0		1.0	ug/g	04-JUL-18	05-JUL-18	R4114148
Arsenic (As)	8.5		1.0	ug/g	04-JUL-18	05-JUL-18	R4114148
Barium (Ba)	84.7		1.0	ug/g	04-JUL-18	05-JUL-18	R4114148
Beryllium (Be)	0.55		0.50	ug/g	04-JUL-18	05-JUL-18	R4114148
Boron (B)	10.1		5.0	ug/g	04-JUL-18	05-JUL-18	R4114148
Boron (B), Hot Water Ext.	0.78		0.10	ug/g	04-JUL-18	05-JUL-18	R4113368
Cadmium (Cd)	1.82		0.50	ug/g	04-JUL-18	05-JUL-18	R4114148
Chromium (Cr)	16.0		1.0	ug/g	04-JUL-18	05-JUL-18	R4114148
Cobalt (Co)	6.1		1.0	ug/g	04-JUL-18	05-JUL-18	R4114148
Copper (Cu)	24.0		1.0	ug/g	04-JUL-18	05-JUL-18	R4114148
Lead (Pb)	186		1.0	ug/g	04-JUL-18	05-JUL-18	R4114148
Mercury (Hg)	0.0903		0.0050	ug/g	04-JUL-18	05-JUL-18	R4113097
Molybdenum (Mo)	<1.0		1.0	ug/g	04-JUL-18	05-JUL-18	R4114148
Nickel (Ni)	17.2		1.0	ug/g	04-JUL-18	05-JUL-18	R4114148
Selenium (Se)	<1.0		1.0	ug/g	04-JUL-18	05-JUL-18	R4114148
Silver (Ag)	<0.20		0.20	ug/g	04-JUL-18	05-JUL-18	R4114148
Thallium (Tl)	<0.50		0.50	ug/g	04-JUL-18	05-JUL-18	R4114148
Uranium (U)	<1.0		1.0	ug/g	04-JUL-18	05-JUL-18	R4114148
Vanadium (V)	27.7		1.0	ug/g	04-JUL-18	05-JUL-18	R4114148
Zinc (Zn)	543		5.0	ug/g	04-JUL-18	05-JUL-18	R4114148
Speciated Metals							
Chromium, Hexavalent	<0.20		0.20	ug/g	29-JUN-18	03-JUL-18	R4109452
L2120855-2 MW18-123D-5 Sampled By: CLIENT on 27-JUN-18 @ 13:45 Matrix: SOIL							
Physical Tests							
% Moisture	4.67		0.10	%	04-JUL-18	05-JUL-18	R4112901
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	28-JUN-18	04-JUL-18	R4111890
Benzene	<0.0068		0.0068	ug/g	28-JUN-18	04-JUL-18	R4111890

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2120855-2 MW18-123D-5 Sampled By: CLIENT on 27-JUN-18 @ 13:45 Matrix: SOIL							
Volatile Organic Compounds							
Bromodichloromethane	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
Bromoform	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
Bromomethane	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
Carbon tetrachloride	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
Chlorobenzene	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
Dibromochloromethane	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
Chloroform	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
1,2-Dibromoethane	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
1,2-Dichlorobenzene	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
1,3-Dichlorobenzene	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
1,4-Dichlorobenzene	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
Dichlorodifluoromethane	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
1,1-Dichloroethane	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
1,2-Dichloroethane	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
1,1-Dichloroethylene	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
Methylene Chloride	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
1,2-Dichloropropane	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	28-JUN-18	04-JUL-18	R4111890
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	28-JUN-18	04-JUL-18	R4111890
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		05-JUL-18	
Ethylbenzene	<0.018		0.018	ug/g	28-JUN-18	04-JUL-18	R4111890
n-Hexane	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
Methyl Ethyl Ketone	<0.50		0.50	ug/g	28-JUN-18	04-JUL-18	R4111890
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	28-JUN-18	04-JUL-18	R4111890
MTBE	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
Styrene	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
Tetrachloroethylene	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
Toluene	<0.080		0.080	ug/g	28-JUN-18	04-JUL-18	R4111890
1,1,1-Trichloroethane	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
1,1,2-Trichloroethane	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
Trichloroethylene	<0.010		0.010	ug/g	28-JUN-18	04-JUL-18	R4111890
Trichlorofluoromethane	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
Vinyl chloride	<0.020		0.020	ug/g	28-JUN-18	04-JUL-18	R4111890
o-Xylene	<0.020		0.020	ug/g	28-JUN-18	04-JUL-18	R4111890
m+p-Xylenes	<0.030		0.030	ug/g	28-JUN-18	04-JUL-18	R4111890
Xylenes (Total)	<0.050		0.050	ug/g		05-JUL-18	
Surrogate: 4-Bromofluorobenzene	98.5		50-140	%	28-JUN-18	04-JUL-18	R4111890

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2120855-2 MW18-123D-5 Sampled By: CLIENT on 27-JUN-18 @ 13:45 Matrix: SOIL							
Volatile Organic Compounds							
Surrogate: 1,4-Difluorobenzene	101.9		50-140	%	28-JUN-18	04-JUL-18	R4111890
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.050		0.050	ug/g	29-JUN-18	06-JUL-18	R4114136
Acenaphthylene	<0.050		0.050	ug/g	29-JUN-18	06-JUL-18	R4114136
Anthracene	<0.050		0.050	ug/g	29-JUN-18	06-JUL-18	R4114136
Benzo(a)anthracene	<0.050		0.050	ug/g	29-JUN-18	06-JUL-18	R4114136
Benzo(a)pyrene	<0.050		0.050	ug/g	29-JUN-18	06-JUL-18	R4114136
Benzo(b)fluoranthene	<0.050		0.050	ug/g	29-JUN-18	06-JUL-18	R4114136
Benzo(g,h,i)perylene	<0.050		0.050	ug/g	29-JUN-18	06-JUL-18	R4114136
Benzo(k)fluoranthene	<0.050		0.050	ug/g	29-JUN-18	06-JUL-18	R4114136
Chrysene	<0.050		0.050	ug/g	29-JUN-18	06-JUL-18	R4114136
Dibenzo(ah)anthracene	<0.050		0.050	ug/g	29-JUN-18	06-JUL-18	R4114136
Fluoranthene	<0.050		0.050	ug/g	29-JUN-18	06-JUL-18	R4114136
Fluorene	<0.050		0.050	ug/g	29-JUN-18	06-JUL-18	R4114136
Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	29-JUN-18	06-JUL-18	R4114136
1+2-Methylnaphthalenes	<0.042		0.042	ug/g		06-JUL-18	
1-Methylnaphthalene	<0.030		0.030	ug/g	29-JUN-18	06-JUL-18	R4114136
2-Methylnaphthalene	<0.030		0.030	ug/g	29-JUN-18	06-JUL-18	R4114136
Naphthalene	<0.013		0.013	ug/g	29-JUN-18	06-JUL-18	R4114136
Phenanthrene	<0.046		0.046	ug/g	29-JUN-18	06-JUL-18	R4114136
Pyrene	<0.050		0.050	ug/g	29-JUN-18	06-JUL-18	R4114136
Surrogate: 2-Fluorobiphenyl	87.3		50-140	%	29-JUN-18	06-JUL-18	R4114136
Surrogate: p-Terphenyl d14	80.0		50-140	%	29-JUN-18	06-JUL-18	R4114136
L2120855-3 TB1 Sampled By: CLIENT on 28-JUN-18 @ 10:30 Matrix: SOIL							
Physical Tests							
% Moisture	<0.10		0.10	%	04-JUL-18	05-JUL-18	R4112901
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	28-JUN-18	04-JUL-18	R4111890
Benzene	<0.0068		0.0068	ug/g	28-JUN-18	04-JUL-18	R4111890
Bromodichloromethane	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
Bromoform	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
Bromomethane	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
Carbon tetrachloride	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
Chlorobenzene	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
Dibromochloromethane	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
Chloroform	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
1,2-Dibromoethane	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
1,2-Dichlorobenzene	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
1,3-Dichlorobenzene	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
1,4-Dichlorobenzene	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2120855-3 TB1 Sampled By: CLIENT on 28-JUN-18 @ 10:30 Matrix: SOIL							
Volatile Organic Compounds							
Dichlorodifluoromethane	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
1,1-Dichloroethane	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
1,2-Dichloroethane	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
1,1-Dichloroethylene	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
Methylene Chloride	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
1,2-Dichloropropane	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	28-JUN-18	04-JUL-18	R4111890
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	28-JUN-18	04-JUL-18	R4111890
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		05-JUL-18	
Ethylbenzene	<0.018		0.018	ug/g	28-JUN-18	04-JUL-18	R4111890
n-Hexane	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
Methyl Ethyl Ketone	<0.50		0.50	ug/g	28-JUN-18	04-JUL-18	R4111890
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	28-JUN-18	04-JUL-18	R4111890
MTBE	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
Styrene	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
Tetrachloroethylene	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
Toluene	<0.080		0.080	ug/g	28-JUN-18	04-JUL-18	R4111890
1,1,1-Trichloroethane	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
1,1,2-Trichloroethane	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
Trichloroethylene	<0.010		0.010	ug/g	28-JUN-18	04-JUL-18	R4111890
Trichlorofluoromethane	<0.050		0.050	ug/g	28-JUN-18	04-JUL-18	R4111890
Vinyl chloride	<0.020		0.020	ug/g	28-JUN-18	04-JUL-18	R4111890
o-Xylene	<0.020		0.020	ug/g	28-JUN-18	04-JUL-18	R4111890
m+p-Xylenes	<0.030		0.030	ug/g	28-JUN-18	04-JUL-18	R4111890
Xylenes (Total)	<0.050		0.050	ug/g		05-JUL-18	
Surrogate: 4-Bromofluorobenzene	109.1		50-140	%	28-JUN-18	04-JUL-18	R4111890
Surrogate: 1,4-Difluorobenzene	115.1		50-140	%	28-JUN-18	04-JUL-18	R4111890

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B

A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD

The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

EC-WT	Soil	Conductivity (EC)	MOEE E3138

A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

HG-200.2-CVAA-WT	Soil	Mercury in Soil by CVAAS	EPA 200.2/1631E (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)

This method uses a heated strong acid digestion with HNO3 and HCl and is intended to liberate metals that may be environmentally available. Silicate minerals are not solubilized. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. Analysis is by Collision/Reaction Cell ICPMS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT	Soil	ABN-Calculated Parameters	SW846 8270
MOISTURE-WT	Soil	% Moisture	Gravimetric: Oven Dried
PAH-511-WT	Soil	PAH-O.Reg 153/04 (July 2011)	SW846 3510/8270

A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking techniqueis used to extract the sample with a mixture of methanol and toluene. The extracts are concentrated and analyzed by GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PH-WT	Soil	pH	MOEE E3137A

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C

Reference Information

A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

VOC-1,3-DCP-CALC-WT	Soil	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Soil	VOC-O.Reg 153/04 (July 2011)	SW846 8260 (511)

Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2120855 Report Date: 09-JUL-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT	**Soil**							
Batch R4113368								
WG2813821-4 DUP		**L2121117-6**						
Boron (B), Hot Water Ext.		0.64	0.63		ug/g	1.5	30	05-JUL-18
WG2813821-2 IRM		**HOTB-SAL_SOIL5**						
Boron (B), Hot Water Ext.			88.8		%		70-130	05-JUL-18
WG2813821-3 LCS								
Boron (B), Hot Water Ext.			107.8		%		70-130	05-JUL-18
WG2813821-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	05-JUL-18
CN-WAD-R511-WT	**Soil**							
Batch R4110089								
WG2810975-3 DUP		**L2121349-1**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	03-JUL-18
WG2810975-2 LCS								
Cyanide, Weak Acid Diss			89.3		%		80-120	03-JUL-18
WG2810975-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	03-JUL-18
WG2810975-4 MS		**L2121349-1**						
Cyanide, Weak Acid Diss			97.5		%		70-130	03-JUL-18
CR-CR6-IC-WT	**Soil**							
Batch R4109452								
WG2811072-4 CRM		**WT-SQC012**						
Chromium, Hexavalent			86.3		%		70-130	03-JUL-18
WG2811072-2 LCS								
Chromium, Hexavalent			100.3		%		80-120	03-JUL-18
WG2811072-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	03-JUL-18
EC-WT	**Soil**							
Batch R4113658								
WG2813866-4 DUP		**WG2813866-3**						
Conductivity		1.57	1.66		mS/cm	5.5	20	05-JUL-18
WG2814469-1 LCS								
Conductivity			98.7		%		90-110	05-JUL-18
WG2813866-1 MB								
Conductivity			<0.0040		mS/cm		0.004	05-JUL-18
HG-200.2-CVAA-WT	**Soil**							

Quality Control Report

Workorder: L2120855 Report Date: 09-JUL-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-200.2-CVAA-WT	**Soil**							
Batch R4113097								
WG2813764-2 CRM		**WT-CANMET-TILL1**						
Mercury (Hg)			102.1		%		70-130	05-JUL-18
WG2813764-6 DUP		**WG2813764-5**						
Mercury (Hg)		0.0362	0.0374		ug/g	3.1	40	05-JUL-18
WG2813764-3 LCS								
Mercury (Hg)			108.0		%		80-120	05-JUL-18
WG2813764-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	05-JUL-18
MET-200.2-CCMS-WT	**Soil**							
Batch R4114148								
WG2813764-2 CRM		**WT-CANMET-TILL1**						
Antimony (Sb)			106.6		%		70-130	05-JUL-18
Arsenic (As)			104.2		%		70-130	05-JUL-18
Barium (Ba)			104.4		%		70-130	05-JUL-18
Beryllium (Be)			94.6		%		70-130	05-JUL-18
Boron (B)			2.7		mg/kg		0-8.2	05-JUL-18
Cadmium (Cd)			102.6		%		70-130	05-JUL-18
Chromium (Cr)			99.0		%		70-130	05-JUL-18
Cobalt (Co)			99.9		%		70-130	05-JUL-18
Copper (Cu)			101.3		%		70-130	05-JUL-18
Lead (Pb)			101.5		%		70-130	05-JUL-18
Molybdenum (Mo)			93.6		%		70-130	05-JUL-18
Nickel (Ni)			98.9		%		70-130	05-JUL-18
Selenium (Se)			0.33		mg/kg		0.11-0.51	05-JUL-18
Silver (Ag)			0.23		mg/kg		0.13-0.33	05-JUL-18
Thallium (Tl)			0.123		mg/kg		0.077-0.18	05-JUL-18
Uranium (U)			96.7		%		70-130	05-JUL-18
Vanadium (V)			100.1		%		70-130	05-JUL-18
Zinc (Zn)			96.3		%		70-130	05-JUL-18
WG2813764-6 DUP		**WG2813764-5**						
Antimony (Sb)		0.57	0.40	J	ug/g	0.16	0.2	05-JUL-18
Arsenic (As)		3.26	3.10		ug/g	5.0	30	05-JUL-18
Barium (Ba)		107	101		ug/g	5.6	40	05-JUL-18
Beryllium (Be)		0.61	0.58		ug/g	4.9	30	05-JUL-18
Boron (B)		7.9	7.9		ug/g	0.4	30	05-JUL-18

Quality Control Report

Workorder: L2120855 Report Date: 09-JUL-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R4114148								
WG2813764-6 DUP		**WG2813764-5**						
Cadmium (Cd)		0.225	0.216		ug/g	4.2	30	05-JUL-18
Chromium (Cr)		27.1	25.9		ug/g	4.4	30	05-JUL-18
Cobalt (Co)		7.50	7.25		ug/g	3.3	30	05-JUL-18
Copper (Cu)		22.3	20.4		ug/g	9.0	30	05-JUL-18
Lead (Pb)		19.8	17.9		ug/g	10	40	05-JUL-18
Molybdenum (Mo)		0.66	0.50		ug/g	28	40	05-JUL-18
Nickel (Ni)		16.5	15.3		ug/g	7.9	30	05-JUL-18
Selenium (Se)		0.26	0.24		ug/g	9.6	30	05-JUL-18
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	05-JUL-18
Thallium (Tl)		0.139	0.132		ug/g	5.8	30	05-JUL-18
Uranium (U)		0.562	0.555		ug/g	1.3	30	05-JUL-18
Vanadium (V)		33.9	33.0		ug/g	2.8	30	05-JUL-18
Zinc (Zn)		73.5	69.9		ug/g	5.0	30	05-JUL-18
WG2813764-4 LCS								
Antimony (Sb)			104.6		%		80-120	05-JUL-18
Arsenic (As)			105.8		%		80-120	05-JUL-18
Barium (Ba)			115.4		%		80-120	05-JUL-18
Beryllium (Be)			103.4		%		80-120	05-JUL-18
Boron (B)			101.3		%		80-120	05-JUL-18
Cadmium (Cd)			100.8		%		80-120	05-JUL-18
Chromium (Cr)			102.2		%		80-120	05-JUL-18
Cobalt (Co)			100.6		%		80-120	05-JUL-18
Copper (Cu)			101.3		%		80-120	05-JUL-18
Lead (Pb)			100.7		%		80-120	05-JUL-18
Molybdenum (Mo)			102.8		%		80-120	05-JUL-18
Nickel (Ni)			101.7		%		80-120	05-JUL-18
Selenium (Se)			102.1		%		80-120	05-JUL-18
Silver (Ag)			103.5		%		80-120	05-JUL-18
Thallium (Tl)			98.9		%		80-120	05-JUL-18
Uranium (U)			104.8		%		80-120	05-JUL-18
Vanadium (V)			106.7		%		80-120	05-JUL-18
Zinc (Zn)			93.9		%		80-120	05-JUL-18
WG2813764-1 MB								
							0.1	

Quality Control Report

Workorder: L2120855 Report Date: 09-JUL-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R4114148								
WG2813764-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	05-JUL-18
Arsenic (As)			<0.10		mg/kg		0.1	05-JUL-18
Barium (Ba)			<0.50		mg/kg		0.5	05-JUL-18
Beryllium (Be)			<0.10		mg/kg		0.1	05-JUL-18
Boron (B)			<5.0		mg/kg		5	05-JUL-18
Cadmium (Cd)			<0.020		mg/kg		0.02	05-JUL-18
Chromium (Cr)			<0.50		mg/kg		0.5	05-JUL-18
Cobalt (Co)			<0.10		mg/kg		0.1	05-JUL-18
Copper (Cu)			<0.50		mg/kg		0.5	05-JUL-18
Lead (Pb)			<0.50		mg/kg		0.5	05-JUL-18
Molybdenum (Mo)			<0.10		mg/kg		0.1	05-JUL-18
Nickel (Ni)			<0.50		mg/kg		0.5	05-JUL-18
Selenium (Se)			<0.20		mg/kg		0.2	05-JUL-18
Silver (Ag)			<0.10		mg/kg		0.1	05-JUL-18
Thallium (Tl)			<0.050		mg/kg		0.05	05-JUL-18
Uranium (U)			<0.050		mg/kg		0.05	05-JUL-18
Vanadium (V)			<0.20		mg/kg		0.2	05-JUL-18
Zinc (Zn)			<2.0		mg/kg		2	05-JUL-18
MOISTURE-WT	**Soil**							
Batch R4112901								
WG2813597-3 DUP		**L2121117-6**						
% Moisture		36.8	36.2		%	1.7	20	05-JUL-18
WG2813597-2 LCS								
% Moisture			99.7		%		90-110	05-JUL-18
WG2813597-1 MB								
% Moisture			<0.10		%		0.1	05-JUL-18
PAH-511-WT	**Soil**							
Batch R4114136								
WG2811030-3 DUP		**WG2811030-5**						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	06-JUL-18
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	06-JUL-18
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-JUL-18
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-JUL-18
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-JUL-18

Quality Control Report

Workorder: L2120855 Report Date: 09-JUL-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R4114136								
WG2811030-3 DUP		**WG2811030-5**						
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-JUL-18
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-JUL-18
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-JUL-18
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-JUL-18
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-JUL-18
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-JUL-18
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-JUL-18
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-JUL-18
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-JUL-18
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-JUL-18
Naphthalene		<0.013	<0.013	RPD-NA	ug/g	N/A	40	06-JUL-18
Phenanthrene		<0.046	<0.046	RPD-NA	ug/g	N/A	40	06-JUL-18
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-JUL-18
WG2811030-2 LCS								
1-Methylnaphthalene			91.9		%		50-140	06-JUL-18
2-Methylnaphthalene			91.6		%		50-140	06-JUL-18
Acenaphthene			91.8		%		50-140	06-JUL-18
Acenaphthylene			90.6		%		50-140	06-JUL-18
Anthracene			90.4		%		50-140	06-JUL-18
Benzo(a)anthracene			92.1		%		50-140	06-JUL-18
Benzo(a)pyrene			84.6		%		50-140	06-JUL-18
Benzo(b)fluoranthene			81.4		%		50-140	06-JUL-18
Benzo(g,h,i)perylene			89.3		%		50-140	06-JUL-18
Benzo(k)fluoranthene			85.7		%		50-140	06-JUL-18
Chrysene			89.8		%		50-140	06-JUL-18
Dibenzo(ah)anthracene			89.4		%		50-140	06-JUL-18
Fluoranthene			78.6		%		50-140	06-JUL-18
Fluorene			90.5		%		50-140	06-JUL-18
Indeno(1,2,3-cd)pyrene			81.3		%		50-140	06-JUL-18
Naphthalene			91.2		%		50-140	06-JUL-18
Phenanthrene			91.7		%		50-140	06-JUL-18
Pyrene			77.0		%		50-140	06-JUL-18
WG2811030-1 MB								
							0.03	

Quality Control Report

Workorder: L2120855 Report Date: 09-JUL-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R4114136								
WG2811030-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	06-JUL-18
2-Methylnaphthalene			<0.030		ug/g		0.03	06-JUL-18
Acenaphthene			<0.050		ug/g		0.05	06-JUL-18
Acenaphthylene			<0.050		ug/g		0.05	06-JUL-18
Anthracene			<0.050		ug/g		0.05	06-JUL-18
Benzo(a)anthracene			<0.050		ug/g		0.05	06-JUL-18
Benzo(a)pyrene			<0.050		ug/g		0.05	06-JUL-18
Benzo(b)fluoranthene			<0.050		ug/g		0.05	06-JUL-18
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	06-JUL-18
Benzo(k)fluoranthene			<0.050		ug/g		0.05	06-JUL-18
Chrysene			<0.050		ug/g		0.05	06-JUL-18
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	06-JUL-18
Fluoranthene			<0.050		ug/g		0.05	06-JUL-18
Fluorene			<0.050		ug/g		0.05	06-JUL-18
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	06-JUL-18
Naphthalene			<0.013		ug/g		0.013	06-JUL-18
Phenanthrene			<0.046		ug/g		0.046	06-JUL-18
Pyrene			<0.050		ug/g		0.05	06-JUL-18
Surrogate: 2-Fluorobiphenyl			90.7		%		50-140	06-JUL-18
Surrogate: p-Terphenyl d14			79.7		%		50-140	06-JUL-18
WG2811030-4 MS		**WG2811030-5**						
1-Methylnaphthalene			89.4		%		50-140	06-JUL-18
2-Methylnaphthalene			90.2		%		50-140	06-JUL-18
Acenaphthene			89.3		%		50-140	06-JUL-18
Acenaphthylene			86.4		%		50-140	06-JUL-18
Anthracene			89.7		%		50-140	06-JUL-18
Benzo(a)anthracene			91.7		%		50-140	06-JUL-18
Benzo(a)pyrene			87.1		%		50-140	06-JUL-18
Benzo(b)fluoranthene			87.8		%		50-140	06-JUL-18
Benzo(g,h,i)perylene			87.5		%		50-140	06-JUL-18
Benzo(k)fluoranthene			88.2		%		50-140	06-JUL-18
Chrysene			90.5		%		50-140	06-JUL-18
Dibenzo(ah)anthracene			91.4		%		50-140	06-JUL-18
Fluoranthene			78.3		%		50-140	06-JUL-18

Quality Control Report

Workorder: L2120855 Report Date: 09-JUL-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R4114136								
WG2811030-4 MS		**WG2811030-5**						
Fluorene			84.6		%		50-140	06-JUL-18
Indeno(1,2,3-cd)pyrene			84.1		%		50-140	06-JUL-18
Naphthalene			89.5		%		50-140	06-JUL-18
Phenanthrene			91.6		%		50-140	06-JUL-18
Pyrene			76.5		%		50-140	06-JUL-18
PH-WT	**Soil**							
Batch R4110544								
WG2810995-1 DUP		**L2121132-7**						
pH		7.02	7.08	J	pH units	0.06	0.3	03-JUL-18
WG2812340-1 LCS								
pH			6.97		pH units		6.9-7.1	03-JUL-18
SAR-R511-WT	**Soil**							
Batch R4113375								
WG2813866-4 DUP		**WG2813866-3**						
Calcium (Ca)		7.5	7.6		mg/L	1.3	30	05-JUL-18
Sodium (Na)		400	387		mg/L	3.3	30	05-JUL-18
Magnesium (Mg)		1.2	1.3		mg/L	7.2	30	05-JUL-18
WG2813866-2 IRM		**WT SAR2**						
Calcium (Ca)			74.5		%		70-130	05-JUL-18
Sodium (Na)			97.2		%		70-130	05-JUL-18
Magnesium (Mg)			82.3		%		70-130	05-JUL-18
WG2813866-1 MB								
Calcium (Ca)			<1.0		mg/L		1	05-JUL-18
Sodium (Na)			<1.0		mg/L		1	05-JUL-18
Magnesium (Mg)			<1.0		mg/L		1	05-JUL-18
VOC-511-HS-WT	**Soil**							
Batch R4111890								
WG2809817-4 DUP		**WG2809817-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-JUL-18
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-JUL-18
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-JUL-18
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-JUL-18
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-JUL-18
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-JUL-18

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72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R4111890								
WG2809817-4 DUP		**WG2809817-3**						
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-JUL-18
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-JUL-18
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-JUL-18
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-JUL-18
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-JUL-18
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-JUL-18
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	04-JUL-18
Benzene		0.0097	0.0090		ug/g	6.9	40	04-JUL-18
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-JUL-18
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-JUL-18
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-JUL-18
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-JUL-18
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-JUL-18
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-JUL-18
cis-1,2-Dichloroethylene		0.072	0.069		ug/g	5.5	40	04-JUL-18
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	04-JUL-18
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-JUL-18
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-JUL-18
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	04-JUL-18
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-JUL-18
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-JUL-18
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-JUL-18
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	04-JUL-18
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	04-JUL-18
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	04-JUL-18
o-Xylene		0.026	0.025		ug/g	3.7	40	04-JUL-18
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-JUL-18
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-JUL-18
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	04-JUL-18
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-JUL-18
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	04-JUL-18
Trichloroethylene		0.089	0.086		ug/g	2.6	40	04-JUL-18
Trichlorofluoromethane		<0.050	<0.050		ug/g			04-JUL-18

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Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R4111890								
WG2809817-4 DUP		**WG2809817-3**						
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-JUL-18
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	04-JUL-18
WG2809817-2 LCS								
1,1,1,2-Tetrachloroethane			104.1		%		60-130	04-JUL-18
1,1,2,2-Tetrachloroethane			87.4		%		60-130	04-JUL-18
1,1,1-Trichloroethane			109.5		%		60-130	04-JUL-18
1,1,2-Trichloroethane			94.5		%		60-130	04-JUL-18
1,1-Dichloroethane			102.9		%		60-130	04-JUL-18
1,1-Dichloroethylene			98.3		%		60-130	04-JUL-18
1,2-Dibromoethane			93.3		%		70-130	04-JUL-18
1,2-Dichlorobenzene			108.1		%		70-130	04-JUL-18
1,2-Dichloroethane			92.4		%		60-130	04-JUL-18
1,2-Dichloropropane			100.2		%		70-130	04-JUL-18
1,3-Dichlorobenzene			112.3		%		70-130	04-JUL-18
1,4-Dichlorobenzene			114.2		%		70-130	04-JUL-18
Acetone			89.5		%		60-140	04-JUL-18
Benzene			109.0		%		70-130	04-JUL-18
Bromodichloromethane			98.1		%		50-140	04-JUL-18
Bromoform			91.0		%		70-130	04-JUL-18
Bromomethane			89.4		%		50-140	04-JUL-18
Carbon tetrachloride			111.7		%		70-130	04-JUL-18
Chlorobenzene			106.9		%		70-130	04-JUL-18
Chloroform			105.2		%		70-130	04-JUL-18
cis-1,2-Dichloroethylene			105.9		%		70-130	04-JUL-18
cis-1,3-Dichloropropene			102.1		%		70-130	04-JUL-18
Dibromochloromethane			100.8		%		60-130	04-JUL-18
Dichlorodifluoromethane			57.0		%		50-140	04-JUL-18
Ethylbenzene			100.7		%		70-130	04-JUL-18
n-Hexane			121.4		%		70-130	04-JUL-18
Methylene Chloride			104.6		%		70-130	04-JUL-18
MTBE			106.5		%		70-130	04-JUL-18
m+p-Xylenes			106.5		%		70-130	04-JUL-18
Methyl Ethyl Ketone			85.2		%		60-140	04-JUL-18
Methyl Isobutyl Ketone			78.2		%		60-140	04-JUL-18

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KITCHENER ON N2G 4Y9

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch	**R4111890**							
WG2809817-2	**LCS**							
o-Xylene			98.7		%		70-130	04-JUL-18
Styrene			95.1		%		70-130	04-JUL-18
Tetrachloroethylene			115.4		%		60-130	04-JUL-18
Toluene			102.5		%		70-130	04-JUL-18
trans-1,2-Dichloroethylene			109.0		%		60-130	04-JUL-18
trans-1,3-Dichloropropene			89.9		%		70-130	04-JUL-18
Trichloroethylene			116.7		%		60-130	04-JUL-18
Trichlorofluoromethane			106.8		%		50-140	04-JUL-18
Vinyl chloride			75.3		%		60-140	04-JUL-18
WG2809817-1	**MB**							
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	04-JUL-18
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	04-JUL-18
1,1,1-Trichloroethane			<0.050		ug/g		0.05	04-JUL-18
1,1,2-Trichloroethane			<0.050		ug/g		0.05	04-JUL-18
1,1-Dichloroethane			<0.050		ug/g		0.05	04-JUL-18
1,1-Dichloroethylene			<0.050		ug/g		0.05	04-JUL-18
1,2-Dibromoethane			<0.050		ug/g		0.05	04-JUL-18
1,2-Dichlorobenzene			<0.050		ug/g		0.05	04-JUL-18
1,2-Dichloroethane			<0.050		ug/g		0.05	04-JUL-18
1,2-Dichloropropane			<0.050		ug/g		0.05	04-JUL-18
1,3-Dichlorobenzene			<0.050		ug/g		0.05	04-JUL-18
1,4-Dichlorobenzene			<0.050		ug/g		0.05	04-JUL-18
Acetone			<0.50		ug/g		0.5	04-JUL-18
Benzene			<0.0068		ug/g		0.0068	04-JUL-18
Bromodichloromethane			<0.050		ug/g		0.05	04-JUL-18
Bromoform			<0.050		ug/g		0.05	04-JUL-18
Bromomethane			<0.050		ug/g		0.05	04-JUL-18
Carbon tetrachloride			<0.050		ug/g		0.05	04-JUL-18
Chlorobenzene			<0.050		ug/g		0.05	04-JUL-18
Chloroform			<0.050		ug/g		0.05	04-JUL-18
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	04-JUL-18
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	04-JUL-18
Dibromochloromethane			<0.050		ug/g		0.05	04-JUL-18
Dichlorodifluoromethane			<0.050		ug/g		0.05	04-JUL-18

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R4111890								
WG2809817-1 MB								
Ethylbenzene			<0.018		ug/g		0.018	04-JUL-18
n-Hexane			<0.050		ug/g		0.05	04-JUL-18
Methylene Chloride			<0.050		ug/g		0.05	04-JUL-18
MTBE			<0.050		ug/g		0.05	04-JUL-18
m+p-Xylenes			<0.030		ug/g		0.03	04-JUL-18
Methyl Ethyl Ketone			<0.50		ug/g		0.5	04-JUL-18
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	04-JUL-18
o-Xylene			<0.020		ug/g		0.02	04-JUL-18
Styrene			<0.050		ug/g		0.05	04-JUL-18
Tetrachloroethylene			<0.050		ug/g		0.05	04-JUL-18
Toluene			<0.080		ug/g		0.08	04-JUL-18
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	04-JUL-18
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	04-JUL-18
Trichloroethylene			<0.010		ug/g		0.01	04-JUL-18
Trichlorofluoromethane			<0.050		ug/g		0.05	04-JUL-18
Vinyl chloride			<0.020		ug/g		0.02	04-JUL-18
Surrogate: 1,4-Difluorobenzene			105.2		%		50-140	04-JUL-18
Surrogate: 4-Bromofluorobenzene			102.1		%		50-140	04-JUL-18
WG2809817-5 MS		**L2120607-1**						
1,1,1,2-Tetrachloroethane			110.3		%		50-140	04-JUL-18
1,1,2,2-Tetrachloroethane			97.6		%		50-140	04-JUL-18
1,1,1-Trichloroethane			113.6		%		50-140	04-JUL-18
1,1,2-Trichloroethane			107.6		%		50-140	04-JUL-18
1,1-Dichloroethane			110.4		%		50-140	04-JUL-18
1,1-Dichloroethylene			101.7		%		50-140	04-JUL-18
1,2-Dibromoethane			104.4		%		50-140	04-JUL-18
1,2-Dichlorobenzene			105.1		%		50-140	04-JUL-18
1,2-Dichloroethane			103.1		%		50-140	04-JUL-18
1,2-Dichloropropane			108.5		%		50-140	04-JUL-18
1,3-Dichlorobenzene			105.1		%		50-140	04-JUL-18
1,4-Dichlorobenzene			107.3		%		50-140	04-JUL-18
Acetone			97.6		%		50-140	04-JUL-18
Benzene			114.7		%		50-140	04-JUL-18
Bromodichloromethane			105.5		%		50-140	04-JUL-18

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72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R4111890								
WG2809817-5 MS		**L2120607-1**						
Bromoform			99.1		%		50-140	04-JUL-18
Bromomethane			91.7		%		50-140	04-JUL-18
Carbon tetrachloride			112.3		%		50-140	04-JUL-18
Chlorobenzene			111.0		%		50-140	04-JUL-18
Chloroform			113.2		%		50-140	04-JUL-18
cis-1,2-Dichloroethylene			111.3		%		50-140	04-JUL-18
cis-1,3-Dichloropropene			102.9		%		50-140	04-JUL-18
Dibromochloromethane			110.8		%		50-140	04-JUL-18
Dichlorodifluoromethane			55.0		%		50-140	04-JUL-18
Ethylbenzene			101.0		%		50-140	04-JUL-18
n-Hexane			100.6		%		50-140	04-JUL-18
Methylene Chloride			113.1		%		50-140	04-JUL-18
MTBE			114.6		%		50-140	04-JUL-18
m+p-Xylenes			104.5		%		50-140	04-JUL-18
Methyl Ethyl Ketone			102.0		%		50-140	04-JUL-18
Methyl Isobutyl Ketone			91.3		%		50-140	04-JUL-18
o-Xylene			99.6		%		50-140	04-JUL-18
Styrene			93.9		%		50-140	04-JUL-18
Tetrachloroethylene			112.0		%		50-140	04-JUL-18
Toluene			107.3		%		50-140	04-JUL-18
trans-1,2-Dichloroethylene			112.0		%		50-140	04-JUL-18
trans-1,3-Dichloropropene			98.2		%		50-140	04-JUL-18
Trichloroethylene			116.4		%		50-140	04-JUL-18
Trichlorofluoromethane			108.5		%		50-140	04-JUL-18
Vinyl chloride			77.7		%		50-140	04-JUL-18

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Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2120855-COFC

COC Number: 15 -

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Report To	Contact and company name below will appear on the final report
Company:	CH2M Hill
Contact:	Tania McCarthy
Phone:	519 579 3500
	Company address below will appear on the final report
Street:	72 Victoria Street South, Suite 300
City/Province:	Kitchener
Postal Code:	N2G 4Y9
Invoice To	Same as Report To ☐ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	CH2M Hill
Contact:	Accounts Payable

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax

Email 2

Email 3

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax

Email 2

Project Information

ALS Account # / Quote #:

Job #: 694757

PO / AFE:

LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#

Major/Minor Code: Routing Code:

Requisitioner:

Location:

ALS Lab Work Order # (lab use only): L2120855 ALS Contact: Mathy Sampler:

Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)			EMERGENCY	
	4 day [P4]	☐	1 Business day [E1]	☐
	3 day [P3]	☐	Same Day, Weekend or Statutory holiday [E0]	☐
	2 day [P2]	☐		

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Metals & Inorganics	Metals	PAH	F1-F4	BTEX	VOC	PCB	Moisture						Number of Containers
	MW19-123D-2.5	27-JUN-18	13:30	Soil	X													
	MW18-123D-5	27-JUN-18	13:45	Soil			X			X		X						
	TB1	28-JUN-18	10:30	Soil						X								

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human drinking water use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
			15.9		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Lucas Ribeiro	Date: 28-JUN-2018	Time: 10:30	Received by: PK	Date: 6-28-18	Time: 10:30	Received by:	Date: JUNE 28/18	Time: 15:30

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

CH2M HILL CANADA LIMITED
ATTN: TANIA MCCARTHY
CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 06-JUL-18
Report Date: 13-JUL-18 14:25 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2125177
Project P.O. #: NOT SUBMITTED
Job Reference: 694757.01.CC.02
C of C Numbers:
Legal Site Desc:

Mathy Mahadeva
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2125177-1 TP18-310-4 Sampled By: J. GOWING on 05-JUL-18 @ 09:10 Matrix: SOIL							
Physical Tests							
% Moisture	6.41		0.10	%	10-JUL-18	11-JUL-18	R4121946
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	06-JUL-18	11-JUL-18	R4122122
F2 (C10-C16)	<10		10	ug/g	09-JUL-18	10-JUL-18	R4121247
F3 (C16-C34)	82		50	ug/g	09-JUL-18	10-JUL-18	R4121247
F4 (C34-C50)	<50		50	ug/g	09-JUL-18	10-JUL-18	R4121247
Total Hydrocarbons (C6-C50)	82		72	ug/g		11-JUL-18	
Chrom. to baseline at nC50	YES				09-JUL-18	10-JUL-18	R4121247
Surrogate: 2-Bromobenzotrifluoride	96.2		60-140	%	09-JUL-18	10-JUL-18	R4121247
Surrogate: 3,4-Dichlorotoluene	98.3		60-140	%	06-JUL-18	11-JUL-18	R4122122
L2125177-2 TP18-310-9 Sampled By: J. GOWING on 05-JUL-18 @ 10:05 Matrix: SOIL							
Metals							
Antimony (Sb)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Arsenic (As)	5.3		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Barium (Ba)	25.4		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Beryllium (Be)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123446
Boron (B)	6.8		5.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Cadmium (Cd)	2.67		0.50	ug/g	11-JUL-18	11-JUL-18	R4123446
Chromium (Cr)	12.3		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Cobalt (Co)	5.9		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Copper (Cu)	40.7		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Lead (Pb)	124		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Molybdenum (Mo)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Nickel (Ni)	17.5		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Selenium (Se)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Silver (Ag)	<0.20		0.20	ug/g	11-JUL-18	11-JUL-18	R4123446
Thallium (Tl)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123446
Uranium (U)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Vanadium (V)	22.7		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Zinc (Zn)	5530	DLHC	40	ug/g	11-JUL-18	11-JUL-18	R4123446
L2125177-3 TP18-309-5 Sampled By: J. GOWING on 05-JUL-18 @ 11:20 Matrix: SOIL							
Physical Tests							
% Moisture	5.88		0.10	%	10-JUL-18	11-JUL-18	R4121946
Metals							
Antimony (Sb)	1.2		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Arsenic (As)	5.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Barium (Ba)	24.9		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Beryllium (Be)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123446

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2125177-3 TP18-309-5 Sampled By: J. GOWING on 05-JUL-18 @ 11:20 Matrix: SOIL							
Metals							
Boron (B)	7.4		5.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Cadmium (Cd)	8.78		0.50	ug/g	11-JUL-18	11-JUL-18	R4123446
Chromium (Cr)	11.4		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Cobalt (Co)	6.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Copper (Cu)	35.2		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Lead (Pb)	165		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Molybdenum (Mo)	1.3		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Nickel (Ni)	13.7		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Selenium (Se)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Silver (Ag)	<0.20		0.20	ug/g	11-JUL-18	11-JUL-18	R4123446
Thallium (Tl)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123446
Uranium (U)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Vanadium (V)	22.8		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Zinc (Zn)	9890	DLHC	40	ug/g	11-JUL-18	11-JUL-18	R4123446
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	06-JUL-18	11-JUL-18	R4122122
F2 (C10-C16)	<10		10	ug/g	09-JUL-18	10-JUL-18	R4121247
F3 (C16-C34)	530		50	ug/g	09-JUL-18	10-JUL-18	R4121247
F4 (C34-C50)	879		50	ug/g	09-JUL-18	10-JUL-18	R4121247
F4G-SG (GHH-Silica)	2140		250	ug/g	10-JUL-18	10-JUL-18	R4122497
Total Hydrocarbons (C6-C50)	1410		72	ug/g		11-JUL-18	
Chrom. to baseline at nC50	NO				09-JUL-18	10-JUL-18	R4121247
Surrogate: 2-Bromobenzotrifluoride	97.6		60-140	%	09-JUL-18	10-JUL-18	R4121247
Surrogate: 3,4-Dichlorotoluene	99.7		60-140	%	06-JUL-18	11-JUL-18	R4122122
L2125177-4 TP18-309-9.5 Sampled By: J. GOWING on 05-JUL-18 @ 11:50 Matrix: SOIL							
Metals							
Antimony (Sb)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Arsenic (As)	6.5		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Barium (Ba)	38.6		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Beryllium (Be)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123446
Boron (B)	10.6		5.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Cadmium (Cd)	7.00		0.50	ug/g	11-JUL-18	11-JUL-18	R4123446
Chromium (Cr)	14.8		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Cobalt (Co)	6.1		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Copper (Cu)	58.1		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Lead (Pb)	144		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Molybdenum (Mo)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Nickel (Ni)	16.8		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Selenium (Se)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Silver (Ag)	<0.20		0.20	ug/g	11-JUL-18	11-JUL-18	R4123446

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2125177-4 TP18-309-9.5 Sampled By: J. GOWING on 05-JUL-18 @ 11:50 Matrix: SOIL							
Metals							
Thallium (Tl)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123446
Uranium (U)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Vanadium (V)	28.9		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Zinc (Zn)	20700	DLHC	800	ug/g	11-JUL-18	11-JUL-18	R4123446
L2125177-5 TP18-316-1 Sampled By: J. GOWING on 05-JUL-18 @ 13:00 Matrix: SOIL							
Physical Tests							
% Moisture	10.2		0.10	%	10-JUL-18	11-JUL-18	R4121946
Polychlorinated Biphenyls							
Aroclor 1242	<0.010		0.010	ug/g	13-JUL-18	13-JUL-18	R4124156
Aroclor 1248	<0.010		0.010	ug/g	13-JUL-18	13-JUL-18	R4124156
Aroclor 1254	<0.010		0.010	ug/g	13-JUL-18	13-JUL-18	R4124156
Aroclor 1260	<0.010		0.010	ug/g	13-JUL-18	13-JUL-18	R4124156
Total PCBs	<0.020		0.020	ug/g	13-JUL-18	13-JUL-18	R4124156
Surrogate: d14-Terphenyl	114.3		60-140	%	13-JUL-18	13-JUL-18	R4124156
L2125177-6 TP18-316-2 Sampled By: J. GOWING on 05-JUL-18 @ 13:05 Matrix: SOIL							
Physical Tests							
% Moisture	7.64		0.10	%	10-JUL-18	11-JUL-18	R4121933
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	06-JUL-18	11-JUL-18	R4122122
F2 (C10-C16)	12		10	ug/g	09-JUL-18	10-JUL-18	R4121247
F2-Naphth	12		10	ug/g		13-JUL-18	
F3 (C16-C34)	115		50	ug/g	09-JUL-18	10-JUL-18	R4121247
F3-PAH	112		50	ug/g		13-JUL-18	
F4 (C34-C50)	<50		50	ug/g	09-JUL-18	10-JUL-18	R4121247
Total Hydrocarbons (C6-C50)	127		72	ug/g		13-JUL-18	
Chrom. to baseline at nC50	YES				09-JUL-18	10-JUL-18	R4121247
Surrogate: 2-Bromobenzotrifluoride	97.3		60-140	%	09-JUL-18	10-JUL-18	R4121247
Surrogate: 3,4-Dichlorotoluene	109.7		60-140	%	06-JUL-18	11-JUL-18	R4122122
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Acenaphthylene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Anthracene	0.071		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(a)anthracene	0.334		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(a)pyrene	0.270		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(b)fluoranthene	0.351		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(g,h,i)perylene	0.142		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(k)fluoranthene	0.121		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Chrysene	0.292		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2125177-6 TP18-316-2 Sampled By: J. GOWING on 05-JUL-18 @ 13:05 Matrix: SOIL							
Polycyclic Aromatic Hydrocarbons							
Dibenzo(ah)anthracene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Fluoranthene	0.662		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Fluorene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Indeno(1,2,3-cd)pyrene	0.140		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
1+2-Methylnaphthalenes	0.089		0.042	ug/g		13-JUL-18	
1-Methylnaphthalene	0.042		0.030	ug/g	09-JUL-18	13-JUL-18	R4124100
2-Methylnaphthalene	0.047		0.030	ug/g	09-JUL-18	13-JUL-18	R4124100
Naphthalene	0.041		0.013	ug/g	09-JUL-18	13-JUL-18	R4124100
Phenanthrene	0.361		0.046	ug/g	09-JUL-18	13-JUL-18	R4124100
Pyrene	0.549		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Surrogate: 2-Fluorobiphenyl	83.0		50-140	%	09-JUL-18	13-JUL-18	R4124100
Surrogate: p-Terphenyl d14	88.7		50-140	%	09-JUL-18	13-JUL-18	R4124100
Polychlorinated Biphenyls							
Aroclor 1242	<0.010		0.010	ug/g	12-JUL-18	12-JUL-18	R4123114
Aroclor 1248	<0.010		0.010	ug/g	12-JUL-18	12-JUL-18	R4123114
Aroclor 1254	<0.010		0.010	ug/g	12-JUL-18	12-JUL-18	R4123114
Aroclor 1260	<0.010		0.010	ug/g	12-JUL-18	12-JUL-18	R4123114
Total PCBs	<0.020		0.020	ug/g	12-JUL-18	12-JUL-18	R4123114
Surrogate: d14-Terphenyl	107.9		60-140	%	12-JUL-18	12-JUL-18	R4123114
L2125177-8 TP18-319-2 Sampled By: J. GOWING on 05-JUL-18 @ 14:45 Matrix: SOIL							
Metals							
Antimony (Sb)	3.6		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Arsenic (As)	10.2		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Barium (Ba)	54.7		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Beryllium (Be)	0.59		0.50	ug/g	11-JUL-18	11-JUL-18	R4123446
Boron (B)	5.0		5.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Cadmium (Cd)	0.73		0.50	ug/g	11-JUL-18	11-JUL-18	R4123446
Chromium (Cr)	29.8		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Cobalt (Co)	7.9		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Copper (Cu)	113		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Lead (Pb)	139		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Molybdenum (Mo)	3.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Nickel (Ni)	26.8		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Selenium (Se)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Silver (Ag)	<0.20		0.20	ug/g	11-JUL-18	11-JUL-18	R4123446
Thallium (Tl)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123446
Uranium (U)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Vanadium (V)	23.3		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Zinc (Zn)	1680	DLHC	40	ug/g	11-JUL-18	11-JUL-18	R4123446
L2125177-9 TP18-319-3							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2125177-9 TP18-319-3 Sampled By: J. GOWING on 05-JUL-18 @ 14:50 Matrix: SOIL							
Physical Tests							
% Moisture	16.7		0.10	%	10-JUL-18	11-JUL-18	R4121933
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Acenaphthylene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Anthracene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(a)anthracene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(a)pyrene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(b)fluoranthene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(g,h,i)perylene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(k)fluoranthene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Chrysene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Dibenzo(ah)anthracene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Fluoranthene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Fluorene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
1+2-Methylnaphthalenes	0.127		0.042	ug/g		13-JUL-18	
1-Methylnaphthalene	0.060		0.030	ug/g	09-JUL-18	13-JUL-18	R4124100
2-Methylnaphthalene	0.067		0.030	ug/g	09-JUL-18	13-JUL-18	R4124100
Naphthalene	0.041		0.013	ug/g	09-JUL-18	13-JUL-18	R4124100
Phenanthrene	0.064		0.046	ug/g	09-JUL-18	13-JUL-18	R4124100
Pyrene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Surrogate: 2-Fluorobiphenyl	85.6		50-140	%	09-JUL-18	13-JUL-18	R4124100
Surrogate: p-Terphenyl d14	88.7		50-140	%	09-JUL-18	13-JUL-18	R4124100
L2125177-10 TP18-319-6 Sampled By: J. GOWING on 05-JUL-18 @ 15:10 Matrix: SOIL							
Physical Tests							
% Moisture	11.2		0.10	%	10-JUL-18	11-JUL-18	R4121933
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Acenaphthylene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Anthracene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(a)anthracene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(a)pyrene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(b)fluoranthene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(g,h,i)perylene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(k)fluoranthene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Chrysene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Dibenzo(ah)anthracene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Fluoranthene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Fluorene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2125177-10 TP18-319-6 Sampled By: J. GOWING on 05-JUL-18 @ 15:10 Matrix: SOIL							
Polycyclic Aromatic Hydrocarbons							
1+2-Methylnaphthalenes	0.108		0.042	ug/g		13-JUL-18	
1-Methylnaphthalene	0.053		0.030	ug/g	09-JUL-18	13-JUL-18	R4124100
2-Methylnaphthalene	0.055		0.030	ug/g	09-JUL-18	13-JUL-18	R4124100
Naphthalene	0.030		0.013	ug/g	09-JUL-18	13-JUL-18	R4124100
Phenanthrene	0.061		0.046	ug/g	09-JUL-18	13-JUL-18	R4124100
Pyrene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Surrogate: 2-Fluorobiphenyl	84.7		50-140	%	09-JUL-18	13-JUL-18	R4124100
Surrogate: p-Terphenyl d14	91.1		50-140	%	09-JUL-18	13-JUL-18	R4124100
L2125177-11 TP18-315-1 Sampled By: J. GOWING on 05-JUL-18 @ 15:50 Matrix: SOIL							
Physical Tests							
% Moisture	7.20		0.10	%	10-JUL-18	11-JUL-18	R4121933
Volatile Organic Compounds							
Benzene	0.0185		0.0068	ug/g	06-JUL-18	11-JUL-18	R4122122
Ethylbenzene	0.028		0.018	ug/g	06-JUL-18	11-JUL-18	R4122122
Toluene	0.099		0.080	ug/g	06-JUL-18	11-JUL-18	R4122122
o-Xylene	0.074		0.020	ug/g	06-JUL-18	11-JUL-18	R4122122
m+p-Xylenes	0.086		0.030	ug/g	06-JUL-18	11-JUL-18	R4122122
Xylenes (Total)	0.160		0.050	ug/g		11-JUL-18	
Surrogate: 4-Bromofluorobenzene	106.2		50-140	%	06-JUL-18	11-JUL-18	R4122122
Surrogate: 1,4-Difluorobenzene	106.5		50-140	%	06-JUL-18	11-JUL-18	R4122122
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	06-JUL-18	11-JUL-18	R4122122
F1-BTEX	<5.0		5.0	ug/g		11-JUL-18	
F2 (C10-C16)	12		10	ug/g	09-JUL-18	10-JUL-18	R4121247
F3 (C16-C34)	197		50	ug/g	09-JUL-18	10-JUL-18	R4121247
F4 (C34-C50)	92		50	ug/g	09-JUL-18	10-JUL-18	R4121247
F4G-SG (GHH-Silica)	310		250	ug/g	10-JUL-18	10-JUL-18	R4122497
Total Hydrocarbons (C6-C50)	301		72	ug/g		11-JUL-18	
Chrom. to baseline at nC50	NO				09-JUL-18	10-JUL-18	R4121247
Surrogate: 2-Bromobenzotrifluoride	97.0		60-140	%	09-JUL-18	10-JUL-18	R4121247
Surrogate: 3,4-Dichlorotoluene	100.1		60-140	%	06-JUL-18	11-JUL-18	R4122122
L2125177-12 TP18-315-2 Sampled By: J. GOWING on 05-JUL-18 @ 16:00 Matrix: SOIL							
Physical Tests							
% Moisture	7.55		0.10	%	10-JUL-18	11-JUL-18	R4121933
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Acenaphthylene	0.108		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Anthracene	0.108		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2125177-12 TP18-315-2 Sampled By: J. GOWING on 05-JUL-18 @ 16:00 Matrix: SOIL							
Polycyclic Aromatic Hydrocarbons							
Benzo(a)anthracene	0.865		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(a)pyrene	0.749		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(b)fluoranthene	0.928		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(g,h,i)perylene	0.370		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(k)fluoranthene	0.300		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Chrysene	0.685		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Dibenzo(ah)anthracene	0.105		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Fluoranthene	1.43		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Fluorene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Indeno(1,2,3-cd)pyrene	0.376		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
1+2-Methylnaphthalenes	<0.042		0.042	ug/g		13-JUL-18	
1-Methylnaphthalene	<0.030		0.030	ug/g	09-JUL-18	13-JUL-18	R4124100
2-Methylnaphthalene	0.032		0.030	ug/g	09-JUL-18	13-JUL-18	R4124100
Naphthalene	0.041		0.013	ug/g	09-JUL-18	13-JUL-18	R4124100
Phenanthrene	0.325		0.046	ug/g	09-JUL-18	13-JUL-18	R4124100
Pyrene	1.28		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Surrogate: 2-Fluorobiphenyl	81.5		50-140	%	09-JUL-18	13-JUL-18	R4124100
Surrogate: p-Terphenyl d14	85.8		50-140	%	09-JUL-18	13-JUL-18	R4124100
L2125177-13 TP18-315-5 Sampled By: J. GOWING on 05-JUL-18 @ 16:20 Matrix: SOIL							
Physical Tests							
% Moisture	8.78		0.10	%	10-JUL-18	11-JUL-18	R4121933
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	0.390		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Acenaphthylene	0.112		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Anthracene	0.833		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(a)anthracene	2.42		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(a)pyrene	1.98		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(b)fluoranthene	2.62		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(g,h,i)perylene	0.939		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(k)fluoranthene	0.864		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Chrysene	2.08		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Dibenzo(ah)anthracene	0.266		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Fluoranthene	5.64		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Fluorene	0.370		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Indeno(1,2,3-cd)pyrene	1.00		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
1+2-Methylnaphthalenes	0.644		0.042	ug/g		13-JUL-18	
1-Methylnaphthalene	0.286		0.030	ug/g	09-JUL-18	13-JUL-18	R4124100
2-Methylnaphthalene	0.358		0.030	ug/g	09-JUL-18	13-JUL-18	R4124100
Naphthalene	0.672		0.013	ug/g	09-JUL-18	13-JUL-18	R4124100
Phenanthrene	5.09		0.046	ug/g	09-JUL-18	13-JUL-18	R4124100

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2125177-13 TP18-315-5 Sampled By: J. GOWING on 05-JUL-18 @ 16:20 Matrix: SOIL							
Polycyclic Aromatic Hydrocarbons							
Pyrene	4.39		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Surrogate: 2-Fluorobiphenyl	85.0		50-140	%	09-JUL-18	13-JUL-18	R4124100
Surrogate: p-Terphenyl d14	92.2		50-140	%	09-JUL-18	13-JUL-18	R4124100
L2125177-14 TP18-311-2 Sampled By: J. GOWING on 06-JUL-18 @ 08:38 Matrix: SOIL							
Metals							
Antimony (Sb)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Arsenic (As)	3.6		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Barium (Ba)	19.2		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Beryllium (Be)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123446
Boron (B)	5.0		5.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Cadmium (Cd)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123446
Chromium (Cr)	8.8		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Cobalt (Co)	3.3		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Copper (Cu)	15.4		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Lead (Pb)	20.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Molybdenum (Mo)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Nickel (Ni)	6.1		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Selenium (Se)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Silver (Ag)	<0.20		0.20	ug/g	11-JUL-18	11-JUL-18	R4123446
Thallium (Tl)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123446
Uranium (U)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Vanadium (V)	22.4		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Zinc (Zn)	103		5.0	ug/g	11-JUL-18	11-JUL-18	R4123446
L2125177-15 TP18-311-6.5 Sampled By: J. GOWING on 06-JUL-18 @ 08:50 Matrix: SOIL							
Metals							
Antimony (Sb)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Arsenic (As)	3.9		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Barium (Ba)	27.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Beryllium (Be)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123446
Boron (B)	<5.0		5.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Cadmium (Cd)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123446
Chromium (Cr)	8.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Cobalt (Co)	3.1		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Copper (Cu)	22.4		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Lead (Pb)	47.8		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Molybdenum (Mo)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Nickel (Ni)	6.7		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Selenium (Se)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2125177-15 TP18-311-6.5 Sampled By: J. GOWING on 06-JUL-18 @ 08:50 Matrix: SOIL							
Metals							
Silver (Ag)	<0.20		0.20	ug/g	11-JUL-18	11-JUL-18	R4123446
Thallium (Tl)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123446
Uranium (U)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Vanadium (V)	17.1		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Zinc (Zn)	152		5.0	ug/g	11-JUL-18	11-JUL-18	R4123446
L2125177-16 TP18-314-2 Sampled By: J. GOWING on 06-JUL-18 @ 09:00 Matrix: SOIL							
Metals							
Antimony (Sb)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Arsenic (As)	2.7		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Barium (Ba)	18.5		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Beryllium (Be)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123446
Boron (B)	<5.0		5.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Cadmium (Cd)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123446
Chromium (Cr)	7.7		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Cobalt (Co)	3.4		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Copper (Cu)	13.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Lead (Pb)	8.8		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Molybdenum (Mo)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Nickel (Ni)	6.1		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Selenium (Se)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Silver (Ag)	<0.20		0.20	ug/g	11-JUL-18	11-JUL-18	R4123446
Thallium (Tl)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123446
Uranium (U)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Vanadium (V)	20.6		1.0	ug/g	11-JUL-18	11-JUL-18	R4123446
Zinc (Zn)	68.4		5.0	ug/g	11-JUL-18	11-JUL-18	R4123446
L2125177-17 TP18-314-6 Sampled By: J. GOWING on 06-JUL-18 @ 09:30 Matrix: SOIL							
Metals							
Antimony (Sb)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Arsenic (As)	4.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Barium (Ba)	20.8		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Beryllium (Be)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123456
Boron (B)	5.2		5.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Cadmium (Cd)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123456
Chromium (Cr)	8.8		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Cobalt (Co)	4.4		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Copper (Cu)	19.6		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Lead (Pb)	42.6		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Molybdenum (Mo)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2125177-17 TP18-314-6 Sampled By: J. GOWING on 06-JUL-18 @ 09:30 Matrix: SOIL							
Metals							
Nickel (Ni)	9.3		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Selenium (Se)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Silver (Ag)	<0.20		0.20	ug/g	11-JUL-18	11-JUL-18	R4123456
Thallium (Tl)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123456
Uranium (U)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Vanadium (V)	19.7		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Zinc (Zn)	438		5.0	ug/g	11-JUL-18	11-JUL-18	R4123456
L2125177-18 TP18-313-2 Sampled By: J. GOWING on 06-JUL-18 @ 10:00 Matrix: SOIL							
Metals							
Antimony (Sb)	1.2		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Arsenic (As)	7.9		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Barium (Ba)	116		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Beryllium (Be)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123456
Boron (B)	7.6		5.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Cadmium (Cd)	1.84		0.50	ug/g	11-JUL-18	11-JUL-18	R4123456
Chromium (Cr)	14.8		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Cobalt (Co)	6.3		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Copper (Cu)	27.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Lead (Pb)	155		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Molybdenum (Mo)	1.2		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Nickel (Ni)	15.9		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Selenium (Se)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Silver (Ag)	<0.20		0.20	ug/g	11-JUL-18	11-JUL-18	R4123456
Thallium (Tl)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123456
Uranium (U)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Vanadium (V)	28.3		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Zinc (Zn)	517		5.0	ug/g	11-JUL-18	11-JUL-18	R4123456
L2125177-19 TP18-313-6 Sampled By: J. GOWING on 06-JUL-18 @ 10:20 Matrix: SOIL							
Metals							
Antimony (Sb)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Arsenic (As)	7.1		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Barium (Ba)	49.5		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Beryllium (Be)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123456
Boron (B)	9.7		5.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Cadmium (Cd)	1.63		0.50	ug/g	11-JUL-18	11-JUL-18	R4123456
Chromium (Cr)	13.5		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Cobalt (Co)	5.5		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Copper (Cu)	25.3		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2125177-19 TP18-313-6 Sampled By: J. GOWING on 06-JUL-18 @ 10:20 Matrix: SOIL							
Metals							
Lead (Pb)	116		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Molybdenum (Mo)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Nickel (Ni)	13.8		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Selenium (Se)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Silver (Ag)	<0.20		0.20	ug/g	11-JUL-18	11-JUL-18	R4123456
Thallium (Tl)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123456
Uranium (U)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Vanadium (V)	25.1		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Zinc (Zn)	666		5.0	ug/g	11-JUL-18	11-JUL-18	R4123456
L2125177-20 TP18-312-3 Sampled By: J. GOWING on 06-JUL-18 @ 10:50 Matrix: SOIL							
Metals							
Antimony (Sb)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Arsenic (As)	7.1		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Barium (Ba)	71.4		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Beryllium (Be)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123456
Boron (B)	7.8		5.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Cadmium (Cd)	1.36		0.50	ug/g	11-JUL-18	11-JUL-18	R4123456
Chromium (Cr)	15.2		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Cobalt (Co)	5.5		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Copper (Cu)	18.4		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Lead (Pb)	123		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Molybdenum (Mo)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Nickel (Ni)	14.1		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Selenium (Se)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Silver (Ag)	<0.20		0.20	ug/g	11-JUL-18	11-JUL-18	R4123456
Thallium (Tl)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123456
Uranium (U)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Vanadium (V)	28.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Zinc (Zn)	442		5.0	ug/g	11-JUL-18	11-JUL-18	R4123456
L2125177-21 TP18-312-6 Sampled By: J. GOWING on 06-JUL-18 @ 11:05 Matrix: SOIL							
Metals							
Antimony (Sb)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Arsenic (As)	6.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Barium (Ba)	44.2		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Beryllium (Be)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123456
Boron (B)	5.5		5.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Cadmium (Cd)	0.98		0.50	ug/g	11-JUL-18	11-JUL-18	R4123456
Chromium (Cr)	13.6		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2125177-21 TP18-312-6 Sampled By: J. GOWING on 06-JUL-18 @ 11:05 Matrix: SOIL							
Metals							
Cobalt (Co)	5.7		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Copper (Cu)	18.2		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Lead (Pb)	105		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Molybdenum (Mo)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Nickel (Ni)	13.6		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Selenium (Se)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Silver (Ag)	<0.20		0.20	ug/g	11-JUL-18	11-JUL-18	R4123456
Thallium (Tl)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123456
Uranium (U)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Vanadium (V)	23.5		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Zinc (Zn)	727		5.0	ug/g	11-JUL-18	11-JUL-18	R4123456
L2125177-22 TP18-318-2 Sampled By: J. GOWING on 06-JUL-18 @ 11:28 Matrix: SOIL							
Physical Tests							
% Moisture	6.98		0.10	%	10-JUL-18	11-JUL-18	R4121933
Metals							
Antimony (Sb)	1.9		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Arsenic (As)	9.9		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Barium (Ba)	48.2		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Beryllium (Be)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123456
Boron (B)	<5.0		5.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Cadmium (Cd)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123456
Chromium (Cr)	14.6		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Cobalt (Co)	5.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Copper (Cu)	36.5		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Lead (Pb)	86.4		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Molybdenum (Mo)	1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Nickel (Ni)	14.3		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Selenium (Se)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Silver (Ag)	<0.20		0.20	ug/g	11-JUL-18	11-JUL-18	R4123456
Thallium (Tl)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123456
Uranium (U)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Vanadium (V)	22.1		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Zinc (Zn)	209		5.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Volatile Organic Compounds							
Benzene	0.0070		0.0068	ug/g	09-JUL-18	11-JUL-18	R4122232
Ethylbenzene	<0.018		0.018	ug/g	09-JUL-18	11-JUL-18	R4122232
Toluene	<0.080		0.080	ug/g	09-JUL-18	11-JUL-18	R4122232
o-Xylene	0.021		0.020	ug/g	09-JUL-18	11-JUL-18	R4122232
m+p-Xylenes	0.033		0.030	ug/g	09-JUL-18	11-JUL-18	R4122232
Xylenes (Total)	0.054		0.050	ug/g		11-JUL-18	

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2125177-22 TP18-318-2 Sampled By: J. GOWING on 06-JUL-18 @ 11:28 Matrix: SOIL							
Volatile Organic Compounds							
Surrogate: 4-Bromofluorobenzene	107.8		50-140	%	09-JUL-18	11-JUL-18	R4122232
Surrogate: 1,4-Difluorobenzene	113.1		50-140	%	09-JUL-18	11-JUL-18	R4122232
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	09-JUL-18	11-JUL-18	R4122232
F1-BTEX	<5.0		5.0	ug/g		13-JUL-18	
F2 (C10-C16)	11		10	ug/g	09-JUL-18	10-JUL-18	R4121247
F2-Naphth	11		10	ug/g		13-JUL-18	
F3 (C16-C34)	59		50	ug/g	09-JUL-18	10-JUL-18	R4121247
F3-PAH	59		50	ug/g		13-JUL-18	
F4 (C34-C50)	<50		50	ug/g	09-JUL-18	10-JUL-18	R4121247
Total Hydrocarbons (C6-C50)	<72		72	ug/g		13-JUL-18	
Chrom. to baseline at nC50	YES				09-JUL-18	10-JUL-18	R4121247
Surrogate: 2-Bromobenzotrifluoride	97.2		60-140	%	09-JUL-18	10-JUL-18	R4121247
Surrogate: 3,4-Dichlorotoluene	100.0		60-140	%	09-JUL-18	11-JUL-18	R4122232
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Acenaphthylene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Anthracene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(a)anthracene	0.072		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(a)pyrene	0.059		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(b)fluoranthene	0.112		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(g,h,i)perylene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(k)fluoranthene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Chrysene	0.081		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Dibenzo(ah)anthracene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Fluoranthene	0.115		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Fluorene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
1+2-Methylnaphthalenes	0.115		0.042	ug/g		13-JUL-18	
1-Methylnaphthalene	0.051		0.030	ug/g	09-JUL-18	13-JUL-18	R4124100
2-Methylnaphthalene	0.064		0.030	ug/g	09-JUL-18	13-JUL-18	R4124100
Naphthalene	0.058		0.013	ug/g	09-JUL-18	13-JUL-18	R4124100
Phenanthrene	0.093		0.046	ug/g	09-JUL-18	13-JUL-18	R4124100
Pyrene	0.096		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Surrogate: 2-Fluorobiphenyl	82.9		50-140	%	09-JUL-18	13-JUL-18	R4124100
Surrogate: p-Terphenyl d14	88.5		50-140	%	09-JUL-18	13-JUL-18	R4124100
Polychlorinated Biphenyls							
Aroclor 1242	<0.010		0.010	ug/g	12-JUL-18	12-JUL-18	R4123114
Aroclor 1248	<0.010		0.010	ug/g	12-JUL-18	12-JUL-18	R4123114
Aroclor 1254	<0.010		0.010	ug/g	12-JUL-18	12-JUL-18	R4123114
Aroclor 1260	<0.010		0.010	ug/g	12-JUL-18	12-JUL-18	R4123114
Total PCBs	<0.020		0.020	ug/g	12-JUL-18	12-JUL-18	R4123114

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2125177-22 TP18-318-2 Sampled By: J. GOWING on 06-JUL-18 @ 11:28 Matrix: SOIL							
Polychlorinated Biphenyls							
Surrogate: d14-Terphenyl	104.6		60-140	%	12-JUL-18	12-JUL-18	R4123114
L2125177-23 TP18-317-5 Sampled By: J. GOWING on 06-JUL-18 @ 12:30 Matrix: SOIL							
Physical Tests							
% Moisture	12.2		0.10	%	10-JUL-18	11-JUL-18	R4121933
Volatile Organic Compounds							
Benzene	<0.0068		0.0068	ug/g	09-JUL-18	11-JUL-18	R4122232
Ethylbenzene	<0.018		0.018	ug/g	09-JUL-18	11-JUL-18	R4122232
Toluene	<0.080		0.080	ug/g	09-JUL-18	11-JUL-18	R4122232
o-Xylene	<0.020		0.020	ug/g	09-JUL-18	11-JUL-18	R4122232
m+p-Xylenes	<0.030		0.030	ug/g	09-JUL-18	11-JUL-18	R4122232
Xylenes (Total)	<0.050		0.050	ug/g		11-JUL-18	
Surrogate: 4-Bromofluorobenzene	103.3		50-140	%	09-JUL-18	11-JUL-18	R4122232
Surrogate: 1,4-Difluorobenzene	104.4		50-140	%	09-JUL-18	11-JUL-18	R4122232
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	09-JUL-18	11-JUL-18	R4122232
F1-BTEX	<5.0		5.0	ug/g		11-JUL-18	
F2 (C10-C16)	<10		10	ug/g	09-JUL-18	10-JUL-18	R4121247
F3 (C16-C34)	61		50	ug/g	09-JUL-18	10-JUL-18	R4121247
F4 (C34-C50)	<50		50	ug/g	09-JUL-18	10-JUL-18	R4121247
Total Hydrocarbons (C6-C50)	<72		72	ug/g		11-JUL-18	
Chrom. to baseline at nC50	YES				09-JUL-18	10-JUL-18	R4121247
Surrogate: 2-Bromobenzotrifluoride	96.2		60-140	%	09-JUL-18	10-JUL-18	R4121247
Surrogate: 3,4-Dichlorotoluene	101.9		60-140	%	09-JUL-18	11-JUL-18	R4122232
L2125177-24 TP18-DUP1 Sampled By: J. GOWING on 06-JUL-18 Matrix: SOIL							
Metals							
Antimony (Sb)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Arsenic (As)	2.4		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Barium (Ba)	14.7		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Beryllium (Be)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123456
Boron (B)	<5.0		5.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Cadmium (Cd)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123456
Chromium (Cr)	6.7		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Cobalt (Co)	3.3		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Copper (Cu)	12.7		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Lead (Pb)	20.1		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Molybdenum (Mo)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Nickel (Ni)	6.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Selenium (Se)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2125177-24 TP18-DUP1 Sampled By: J. GOWING on 06-JUL-18 Matrix: SOIL							
Metals							
Silver (Ag)	<0.20		0.20	ug/g	11-JUL-18	11-JUL-18	R4123456
Thallium (Tl)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123456
Uranium (U)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Vanadium (V)	17.7		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Zinc (Zn)	223		5.0	ug/g	11-JUL-18	11-JUL-18	R4123456
L2125177-25 TP18-DUP2 Sampled By: J. GOWING on 06-JUL-18 Matrix: SOIL							
Physical Tests							
% Moisture	6.73		0.10	%	10-JUL-18	11-JUL-18	R4121933
Volatile Organic Compounds							
Benzene	0.0071		0.0068	ug/g	09-JUL-18	11-JUL-18	R4122232
Ethylbenzene	<0.018		0.018	ug/g	09-JUL-18	11-JUL-18	R4122232
Toluene	<0.080		0.080	ug/g	09-JUL-18	11-JUL-18	R4122232
o-Xylene	0.025		0.020	ug/g	09-JUL-18	11-JUL-18	R4122232
m+p-Xylenes	0.035		0.030	ug/g	09-JUL-18	11-JUL-18	R4122232
Xylenes (Total)	0.060		0.050	ug/g		11-JUL-18	
Surrogate: 4-Bromofluorobenzene	105.1		50-140	%	09-JUL-18	11-JUL-18	R4122232
Surrogate: 1,4-Difluorobenzene	108.8		50-140	%	09-JUL-18	11-JUL-18	R4122232
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	09-JUL-18	11-JUL-18	R4122232
F1-BTEX	<5.0		5.0	ug/g		13-JUL-18	
F2 (C10-C16)	<10		10	ug/g	09-JUL-18	10-JUL-18	R4121247
F2-Naphth	<10		10	ug/g		13-JUL-18	
F3 (C16-C34)	<50		50	ug/g	09-JUL-18	10-JUL-18	R4121247
F3-PAH	<50		50	ug/g		13-JUL-18	
F4 (C34-C50)	<50		50	ug/g	09-JUL-18	10-JUL-18	R4121247
Total Hydrocarbons (C6-C50)	<72		72	ug/g		13-JUL-18	
Chrom. to baseline at nC50	YES				09-JUL-18	10-JUL-18	R4121247
Surrogate: 2-Bromobenzotrifluoride	96.4		60-140	%	09-JUL-18	10-JUL-18	R4121247
Surrogate: 3,4-Dichlorotoluene	91.9		60-140	%	09-JUL-18	11-JUL-18	R4122232
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Acenaphthylene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Anthracene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(a)anthracene	0.065		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(a)pyrene	0.056		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(b)fluoranthene	0.092		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(g,h,i)perylene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Benzo(k)fluoranthene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Chrysene	0.077		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Dibenzo(ah)anthracene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2125177-25 TP18-DUP2 Sampled By: J. GOWING on 06-JUL-18 Matrix: SOIL							
Polycyclic Aromatic Hydrocarbons							
Fluoranthene	0.100		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Fluorene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
1+2-Methylnaphthalenes	0.121		0.042	ug/g		13-JUL-18	
1-Methylnaphthalene	0.054		0.030	ug/g	09-JUL-18	13-JUL-18	R4124100
2-Methylnaphthalene	0.068		0.030	ug/g	09-JUL-18	13-JUL-18	R4124100
Naphthalene	0.062		0.013	ug/g	09-JUL-18	13-JUL-18	R4124100
Phenanthrene	0.089		0.046	ug/g	09-JUL-18	13-JUL-18	R4124100
Pyrene	0.082		0.050	ug/g	09-JUL-18	13-JUL-18	R4124100
Surrogate: 2-Fluorobiphenyl	83.6		50-140	%	09-JUL-18	13-JUL-18	R4124100
Surrogate: p-Terphenyl d14	84.9		50-140	%	09-JUL-18	13-JUL-18	R4124100
Polychlorinated Biphenyls							
Aroclor 1242	<0.010		0.010	ug/g	12-JUL-18	12-JUL-18	R4123114
Aroclor 1248	<0.010		0.010	ug/g	12-JUL-18	12-JUL-18	R4123114
Aroclor 1254	<0.010		0.010	ug/g	12-JUL-18	12-JUL-18	R4123114
Aroclor 1260	<0.010		0.010	ug/g	12-JUL-18	12-JUL-18	R4123114
Total PCBs	<0.020		0.020	ug/g	12-JUL-18	12-JUL-18	R4123114
Surrogate: d14-Terphenyl	106.5		60-140	%	12-JUL-18	12-JUL-18	R4123114
L2125177-26 TRIP BLANK Sampled By: J. GOWING on 06-JUL-18 Matrix: SOIL							
Physical Tests							
% Moisture	<0.10		0.10	%	10-JUL-18	11-JUL-18	R4121933
Volatile Organic Compounds							
Benzene	<0.0068		0.0068	ug/g	09-JUL-18	11-JUL-18	R4122232
Ethylbenzene	<0.018		0.018	ug/g	09-JUL-18	11-JUL-18	R4122232
Toluene	<0.080		0.080	ug/g	09-JUL-18	11-JUL-18	R4122232
o-Xylene	<0.020		0.020	ug/g	09-JUL-18	11-JUL-18	R4122232
m+p-Xylenes	<0.030		0.030	ug/g	09-JUL-18	11-JUL-18	R4122232
Xylenes (Total)	<0.050		0.050	ug/g		11-JUL-18	
Surrogate: 4-Bromofluorobenzene	105.2		50-140	%	09-JUL-18	11-JUL-18	R4122232
Surrogate: 1,4-Difluorobenzene	109.0		50-140	%	09-JUL-18	11-JUL-18	R4122232
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	09-JUL-18	11-JUL-18	R4122232
F1-BTEX	<5.0		5.0	ug/g		11-JUL-18	
Surrogate: 3,4-Dichlorotoluene	121.1		60-140	%	09-JUL-18	11-JUL-18	R4122232
L2125177-27 TP18-310-5 Sampled By: J. GOWING on 05-JUL-18 @ 09:20 Matrix: SOIL							
Metals							
Antimony (Sb)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Arsenic (As)	6.5		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2125177-27 TP18-310-5 Sampled By: J. GOWING on 05-JUL-18 @ 09:20 Matrix: SOIL							
Metals							
Barium (Ba)	39.2		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Beryllium (Be)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123456
Boron (B)	7.3		5.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Cadmium (Cd)	1.42		0.50	ug/g	11-JUL-18	11-JUL-18	R4123456
Chromium (Cr)	21.6		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Cobalt (Co)	5.2		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Copper (Cu)	41.1		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Lead (Pb)	196		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Molybdenum (Mo)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Nickel (Ni)	13.4		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Selenium (Se)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Silver (Ag)	<0.20		0.20	ug/g	11-JUL-18	11-JUL-18	R4123456
Thallium (Tl)	<0.50		0.50	ug/g	11-JUL-18	11-JUL-18	R4123456
Uranium (U)	<1.0		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Vanadium (V)	29.7		1.0	ug/g	11-JUL-18	11-JUL-18	R4123456
Zinc (Zn)	1670		5.0	ug/g	11-JUL-18	11-JUL-18	R4123456

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier key listed:

Qualifier	Description
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTX-511-HS-WT	Soil	BTEX-O.Reg 153/04 (July 2011)	SW846 8260

BTX is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Soil	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Soil	F2-F4-O.Reg 153/04 (July 2011)	CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from soil with 1:1 hexane:acetone using a rotary extractor. Extracts are treated with silica gel to remove polar organic interferences. F2, F3, & F4 are analyzed by GC-FID. F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where both F4 (C34-C50) and F4G-sg are reported for a sample, the larger of the two values is used for comparison against the relevant CCME guideline for F4.
7. F4G-sg cannot be added to the C6 to C50 hydrocarbon results to obtain an estimate of total extractable hydrocarbons.
8. This method is validated for use.
9. Data from analysis of validation and quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram, unless otherwise indicated.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F4G-ADD-511-WT	Soil	F4G SG-O.Reg 153/04 (July 2011)	MOE DECPH-E3398/CCME TIER 1

F4G, gravimetric analysis, is determined if the chromatogram does not return to baseline at or before C50. A soil sample is extracted with a solvent mix, the solvent is evaporated and the weight of the residue is determined.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)

This method uses a heated strong acid digestion with HNO3 and HCl and is intended to liberate metals that may be environmentally available. Silicate

Reference Information

minerals are not solubilized. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. Analysis is by Collision/Reaction Cell ICPMS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT	Soil	ABN-Calculated Parameters	SW846 8270
MOISTURE-WT	Soil	% Moisture	Gravimetric: Oven Dried
PAH-511-WT	Soil	PAH-O.Reg 153/04 (July 2011)	SW846 3510/8270

A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking techniqueis used to extract the sample with a mixture of methanol and toluene. The extracts are concentrated and analyzed by GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PCB-511-WT	Soil	PCB-O.Reg 153/04 (July 2011)	SW846 3510/8082

An aliquot of a solid sample is extracted with a solvent, extract is cleaned up and analyzed on the GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2125177 Report Date: 13-JUL-18

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTX-511-HS-WT	**Soil**							
Batch R4122122								
WG2816134-4 DUP		**WG2816134-3**						
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	11-JUL-18
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	11-JUL-18
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	11-JUL-18
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	11-JUL-18
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	11-JUL-18
WG2816134-2 LCS								
Benzene			115.7		%		70-130	11-JUL-18
Ethylbenzene			113.8		%		70-130	11-JUL-18
m+p-Xylenes			114.4		%		70-130	11-JUL-18
o-Xylene			114.4		%		70-130	11-JUL-18
Toluene			117.0		%		70-130	11-JUL-18
WG2816134-1 MB								
Benzene			<0.0068		ug/g		0.0068	11-JUL-18
Ethylbenzene			<0.018		ug/g		0.018	11-JUL-18
m+p-Xylenes			<0.030		ug/g		0.03	11-JUL-18
o-Xylene			<0.020		ug/g		0.02	11-JUL-18
Toluene			<0.080		ug/g		0.08	11-JUL-18
Surrogate: 1,4-Difluorobenzene			109.2		%		50-140	11-JUL-18
Surrogate: 4-Bromofluorobenzene			108.4		%		50-140	11-JUL-18
WG2816134-5 MS		**WG2816134-3**						
Benzene			114.1		%		60-140	11-JUL-18
Ethylbenzene			110.6		%		60-140	11-JUL-18
m+p-Xylenes			109.3		%		60-140	11-JUL-18
o-Xylene			110.9		%		60-140	11-JUL-18
Toluene			113.9		%		60-140	11-JUL-18
Batch R4122232								
WG2817375-4 DUP		**WG2817375-3**						
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	11-JUL-18
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	11-JUL-18
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	11-JUL-18
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	11-JUL-18
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	11-JUL-18
WG2817375-2 LCS								
Benzene			110.7		%		70-130	11-JUL-18

Quality Control Report

Workorder: L2125177 Report Date: 13-JUL-18

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTX-511-HS-WT	**Soil**							
Batch R4122232								
WG2817375-2 LCS								
Ethylbenzene			104.1		%		70-130	11-JUL-18
m+p-Xylenes			107.0		%		70-130	11-JUL-18
o-Xylene			105.4		%		70-130	11-JUL-18
Toluene			107.0		%		70-130	11-JUL-18
WG2817375-1 MB								
Benzene			<0.0068		ug/g		0.0068	11-JUL-18
Ethylbenzene			<0.018		ug/g		0.018	11-JUL-18
m+p-Xylenes			<0.030		ug/g		0.03	11-JUL-18
o-Xylene			<0.020		ug/g		0.02	11-JUL-18
Toluene			<0.080		ug/g		0.08	11-JUL-18
Surrogate: 1,4-Difluorobenzene			109.5		%		50-140	11-JUL-18
Surrogate: 4-Bromofluorobenzene			107.6		%		50-140	11-JUL-18
WG2817375-8 MS		**L2125177-23**						
Benzene			109.6		%		60-140	11-JUL-18
Ethylbenzene			107.9		%		60-140	11-JUL-18
m+p-Xylenes			109.4		%		60-140	11-JUL-18
o-Xylene			107.0		%		60-140	11-JUL-18
Toluene			110.1		%		60-140	11-JUL-18
F1-HS-511-WT	**Soil**							
Batch R4122122								
WG2816134-4 DUP		**WG2816134-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	11-JUL-18
WG2816134-2 LCS								
F1 (C6-C10)			101.6		%		80-120	11-JUL-18
WG2816134-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	11-JUL-18
Surrogate: 3,4-Dichlorotoluene			106.1		%		60-140	11-JUL-18
WG2816134-6 MS		**L2124720-2**						
F1 (C6-C10)			103.2		%		60-140	11-JUL-18
Batch R4122232								
WG2817375-4 DUP		**WG2817375-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	11-JUL-18
WG2817375-2 LCS								
F1 (C6-C10)			109.1		%		80-120	11-JUL-18
WG2817375-1 MB								

Quality Control Report

Workorder: L2125177 Report Date: 13-JUL-18

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT	**Soil**							
Batch	**R4122232**							
WG2817375-1	**MB**							
F1 (C6-C10)			<5.0		ug/g		5	11-JUL-18
Surrogate: 3,4-Dichlorotoluene			117.7		%		60-140	11-JUL-18
WG2817375-7	**MS**	**L2125177-22**						
F1 (C6-C10)			99.3		%		60-140	11-JUL-18
F2-F4-511-WT	**Soil**							
Batch	**R4121247**							
WG2817566-3	**DUP**	**WG2817566-5**						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	10-JUL-18
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	10-JUL-18
F4 (C34-C50)		<50	82	RPD-NA	ug/g	N/A	30	10-JUL-18
WG2817566-2	**LCS**							
F2 (C10-C16)			109.9		%		80-120	10-JUL-18
F3 (C16-C34)			108.6		%		80-120	10-JUL-18
F4 (C34-C50)			106.5		%		80-120	10-JUL-18
WG2817566-1	**MB**							
F2 (C10-C16)			<10		ug/g		10	10-JUL-18
F3 (C16-C34)			<50		ug/g		50	10-JUL-18
F4 (C34-C50)			<50		ug/g		50	10-JUL-18
Surrogate: 2-Bromobenzotrifluoride			94.8		%		60-140	10-JUL-18
WG2817566-4	**MS**	**WG2817566-5**						
F2 (C10-C16)			103.6		%		60-140	10-JUL-18
F3 (C16-C34)			105.4		%		60-140	10-JUL-18
F4 (C34-C50)			98.1		%		60-140	10-JUL-18
F4G-ADD-511-WT	**Soil**							
Batch	**R4122497**							
WG2819599-2	**LCS**							
F4G-SG (GHH-Silica)			63.3		%		60-140	10-JUL-18
WG2819599-1	**MB**							
F4G-SG (GHH-Silica)			<250		ug/g		250	10-JUL-18
MET-200.2-CCMS-WT	**Soil**							
Batch	**R4123446**							
WG2819030-2	**CRM**	**WT-CANMET-TILL1**						
Antimony (Sb)			94.3		%		70-130	11-JUL-18
Arsenic (As)			103.4		%		70-130	11-JUL-18
Barium (Ba)			108.4		%		70-130	11-JUL-18

Quality Control Report

Workorder: L2125177 Report Date: 13-JUL-18

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R4123446								
WG2819030-2 CRM		**WT-CANMET-TILL1**						
Beryllium (Be)			98.1		%		70-130	11-JUL-18
Boron (B)			2.9		mg/kg		0-8.2	11-JUL-18
Cadmium (Cd)			105.4		%		70-130	11-JUL-18
Chromium (Cr)			95.9		%		70-130	11-JUL-18
Cobalt (Co)			98.4		%		70-130	11-JUL-18
Copper (Cu)			102.0		%		70-130	11-JUL-18
Lead (Pb)			99.0		%		70-130	11-JUL-18
Molybdenum (Mo)			97.4		%		70-130	11-JUL-18
Nickel (Ni)			98.4		%		70-130	11-JUL-18
Selenium (Se)			0.32		mg/kg		0.11-0.51	11-JUL-18
Silver (Ag)			0.21		mg/kg		0.13-0.33	11-JUL-18
Thallium (Tl)			0.116		mg/kg		0.077-0.18	11-JUL-18
Uranium (U)			91.5		%		70-130	11-JUL-18
Vanadium (V)			97.3		%		70-130	11-JUL-18
Zinc (Zn)			98.5		%		70-130	11-JUL-18
WG2819030-6 DUP		**WG2819030-5**						
Antimony (Sb)		0.55	0.56		ug/g	1.9	30	11-JUL-18
Arsenic (As)		4.03	4.38		ug/g	8.3	30	11-JUL-18
Barium (Ba)		32.2	33.2		ug/g	2.9	40	11-JUL-18
Beryllium (Be)		0.23	0.22		ug/g	3.5	30	11-JUL-18
Boron (B)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	11-JUL-18
Cadmium (Cd)		0.177	0.175		ug/g	0.8	30	11-JUL-18
Chromium (Cr)		13.4	14.0		ug/g	4.3	30	11-JUL-18
Cobalt (Co)		3.92	4.19		ug/g	6.7	30	11-JUL-18
Copper (Cu)		28.2	31.0		ug/g	9.2	30	11-JUL-18
Lead (Pb)		30.7	27.4		ug/g	12	40	11-JUL-18
Molybdenum (Mo)		0.42	0.41		ug/g	0.5	40	11-JUL-18
Nickel (Ni)		9.15	9.79		ug/g	6.8	30	11-JUL-18
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	11-JUL-18
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	11-JUL-18
Thallium (Tl)		0.052	<0.050	RPD-NA	ug/g	N/A	30	11-JUL-18
Uranium (U)		0.292	0.296		ug/g	1.4	30	11-JUL-18
Vanadium (V)		19.5	20.1		ug/g	3.0	30	11-JUL-18

Quality Control Report

Workorder: L2125177 Report Date: 13-JUL-18

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R4123446								
WG2819030-6 DUP		**WG2819030-5**						
Zinc (Zn)		58.0	61.2		ug/g	5.3	30	11-JUL-18
WG2819030-4 LCS								
Antimony (Sb)			101.5		%		80-120	11-JUL-18
Arsenic (As)			101.6		%		80-120	11-JUL-18
Barium (Ba)			98.6		%		80-120	11-JUL-18
Beryllium (Be)			97.6		%		80-120	11-JUL-18
Boron (B)			94.5		%		80-120	11-JUL-18
Cadmium (Cd)			103.4		%		80-120	11-JUL-18
Chromium (Cr)			97.1		%		80-120	11-JUL-18
Cobalt (Co)			96.4		%		80-120	11-JUL-18
Copper (Cu)			97.1		%		80-120	11-JUL-18
Lead (Pb)			93.5		%		80-120	11-JUL-18
Molybdenum (Mo)			95.5		%		80-120	11-JUL-18
Nickel (Ni)			98.1		%		80-120	11-JUL-18
Selenium (Se)			99.6		%		80-120	11-JUL-18
Silver (Ag)			87.1		%		80-120	11-JUL-18
Thallium (Tl)			101.9		%		80-120	11-JUL-18
Uranium (U)			94.1		%		80-120	11-JUL-18
Vanadium (V)			100.1		%		80-120	11-JUL-18
Zinc (Zn)			95.2		%		80-120	11-JUL-18
WG2819030-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	11-JUL-18
Arsenic (As)			<0.10		mg/kg		0.1	11-JUL-18
Barium (Ba)			<0.50		mg/kg		0.5	11-JUL-18
Beryllium (Be)			<0.10		mg/kg		0.1	11-JUL-18
Boron (B)			<5.0		mg/kg		5	11-JUL-18
Cadmium (Cd)			<0.020		mg/kg		0.02	11-JUL-18
Chromium (Cr)			<0.50		mg/kg		0.5	11-JUL-18
Cobalt (Co)			<0.10		mg/kg		0.1	11-JUL-18
Copper (Cu)			<0.50		mg/kg		0.5	11-JUL-18
Lead (Pb)			<0.50		mg/kg		0.5	11-JUL-18
Molybdenum (Mo)			<0.10		mg/kg		0.1	11-JUL-18
Nickel (Ni)			<0.50		mg/kg		0.5	11-JUL-18
Selenium (Se)			<0.20		mg/kg		0.2	11-JUL-18

Quality Control Report

Workorder: L2125177 Report Date: 13-JUL-18

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R4123446								
WG2819030-1 MB								
Silver (Ag)			<0.10		mg/kg		0.1	11-JUL-18
Thallium (Tl)			<0.050		mg/kg		0.05	11-JUL-18
Uranium (U)			<0.050		mg/kg		0.05	11-JUL-18
Vanadium (V)			<0.20		mg/kg		0.2	11-JUL-18
Zinc (Zn)			<2.0		mg/kg		2	11-JUL-18
Batch R4123456								
WG2819031-2 CRM		**WT-CANMET-TILL1**						
Antimony (Sb)			101.8		%		70-130	11-JUL-18
Arsenic (As)			116.0		%		70-130	11-JUL-18
Barium (Ba)			117.3		%		70-130	11-JUL-18
Beryllium (Be)			101.5		%		70-130	11-JUL-18
Boron (B)			3.4		mg/kg		0-8.2	11-JUL-18
Cadmium (Cd)			115.4		%		70-130	11-JUL-18
Chromium (Cr)			108.0		%		70-130	11-JUL-18
Cobalt (Co)			109.1		%		70-130	11-JUL-18
Copper (Cu)			111.9		%		70-130	11-JUL-18
Lead (Pb)			106.3		%		70-130	11-JUL-18
Molybdenum (Mo)			111.8		%		70-130	11-JUL-18
Nickel (Ni)			109.7		%		70-130	11-JUL-18
Selenium (Se)			0.33		mg/kg		0.11-0.51	11-JUL-18
Silver (Ag)			0.22		mg/kg		0.13-0.33	11-JUL-18
Thallium (Tl)			0.131		mg/kg		0.077-0.18	11-JUL-18
Uranium (U)			101.7		%		70-130	11-JUL-18
Vanadium (V)			111.0		%		70-130	11-JUL-18
Zinc (Zn)			114.6		%		70-130	11-JUL-18
WG2819031-4 DUP		**L2125177-20**						
Antimony (Sb)		<1.0	<1.0	RPD-NA	ug/g	N/A	30	11-JUL-18
Arsenic (As)		7.1	6.2		ug/g	14	30	11-JUL-18
Barium (Ba)		71.4	51.7		ug/g	32	40	11-JUL-18
Beryllium (Be)		<0.50	<0.50	RPD-NA	ug/g	N/A	30	11-JUL-18
Boron (B)		7.8	6.0		ug/g	26	30	11-JUL-18
Cadmium (Cd)		1.36	1.07		ug/g	24	30	11-JUL-18
Chromium (Cr)		15.2	12.6		ug/g	18	30	11-JUL-18
Cobalt (Co)		5.5	4.8		ug/g	13	30	11-JUL-18

Quality Control Report

Workorder: L2125177 Report Date: 13-JUL-18

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R4123456								
WG2819031-4 DUP		**L2125177-20**						
Copper (Cu)		18.4	16.1		ug/g	14	30	11-JUL-18
Lead (Pb)		123	106		ug/g	15	40	11-JUL-18
Molybdenum (Mo)		<1.0	<1.0	RPD-NA	ug/g	N/A	40	11-JUL-18
Nickel (Ni)		14.1	12.2		ug/g	14	30	11-JUL-18
Selenium (Se)		<1.0	<1.0	RPD-NA	ug/g	N/A	30	11-JUL-18
Silver (Ag)		<0.20	<0.20	RPD-NA	ug/g	N/A	40	11-JUL-18
Thallium (Tl)		<0.50	<0.50	RPD-NA	ug/g	N/A	30	11-JUL-18
Uranium (U)		<1.0	<1.0	RPD-NA	ug/g	N/A	30	11-JUL-18
Vanadium (V)		28.0	23.4		ug/g	18	30	11-JUL-18
Zinc (Zn)		442	377		ug/g	16	30	11-JUL-18
WG2819031-3 LCS								
Antimony (Sb)			115.4		%		80-120	11-JUL-18
Arsenic (As)			112.8		%		80-120	11-JUL-18
Barium (Ba)			111.7		%		80-120	11-JUL-18
Beryllium (Be)			102.0		%		80-120	11-JUL-18
Boron (B)			97.9		%		80-120	11-JUL-18
Cadmium (Cd)			110.1		%		80-120	11-JUL-18
Chromium (Cr)			115.1		%		80-120	11-JUL-18
Cobalt (Co)			112.0		%		80-120	11-JUL-18
Copper (Cu)			111.3		%		80-120	11-JUL-18
Lead (Pb)			107.7		%		80-120	11-JUL-18
Molybdenum (Mo)			103.4		%		80-120	11-JUL-18
Nickel (Ni)			111.3		%		80-120	11-JUL-18
Selenium (Se)			108.2		%		80-120	11-JUL-18
Silver (Ag)			104.0		%		80-120	11-JUL-18
Thallium (Tl)			108.9		%		80-120	11-JUL-18
Uranium (U)			103.8		%		80-120	11-JUL-18
Vanadium (V)			117.6		%		80-120	11-JUL-18
Zinc (Zn)			110.3		%		80-120	11-JUL-18
WG2819031-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	11-JUL-18
Arsenic (As)			<0.10		mg/kg		0.1	11-JUL-18
Barium (Ba)			<0.50		mg/kg		0.5	11-JUL-18
Beryllium (Be)			<0.10		mg/kg		0.1	11-JUL-18

Quality Control Report

Workorder: L2125177 Report Date: 13-JUL-18

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R4123456								
WG2819031-1 MB								
Boron (B)			<5.0		mg/kg		5	11-JUL-18
Cadmium (Cd)			<0.020		mg/kg		0.02	11-JUL-18
Chromium (Cr)			<0.50		mg/kg		0.5	11-JUL-18
Cobalt (Co)			<0.10		mg/kg		0.1	11-JUL-18
Copper (Cu)			<0.50		mg/kg		0.5	11-JUL-18
Lead (Pb)			<0.50		mg/kg		0.5	11-JUL-18
Molybdenum (Mo)			<0.10		mg/kg		0.1	11-JUL-18
Nickel (Ni)			<0.50		mg/kg		0.5	11-JUL-18
Selenium (Se)			<0.20		mg/kg		0.2	11-JUL-18
Silver (Ag)			<0.10		mg/kg		0.1	11-JUL-18
Thallium (Tl)			<0.050		mg/kg		0.05	11-JUL-18
Uranium (U)			<0.050		mg/kg		0.05	11-JUL-18
Vanadium (V)			<0.20		mg/kg		0.2	11-JUL-18
Zinc (Zn)			<2.0		mg/kg		2	11-JUL-18
MOISTURE-WT	**Soil**							
Batch R4121933								
WG2818266-3 DUP		**L2125177-6**						
% Moisture		7.64	7.30		%	4.5	20	11-JUL-18
WG2818266-2 LCS								
% Moisture			99.9		%		90-110	11-JUL-18
WG2818266-1 MB								
% Moisture			<0.10		%		0.1	11-JUL-18
Batch R4121946								
WG2818251-3 DUP		**L2123891-10**						
% Moisture		20.1	21.0		%	4.0	20	11-JUL-18
WG2818251-2 LCS								
% Moisture			100.0		%		90-110	11-JUL-18
WG2818251-1 MB								
% Moisture			<0.10		%		0.1	11-JUL-18
PAH-511-WT	**Soil**							
Batch R4124100								
WG2817443-3 DUP		**WG2817443-5**						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	13-JUL-18
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	13-JUL-18
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-JUL-18

Quality Control Report

Workorder: L2125177 Report Date: 13-JUL-18

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R4124100								
WG2817443-3 DUP		**WG2817443-5**						
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-JUL-18
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-JUL-18
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-JUL-18
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-JUL-18
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-JUL-18
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-JUL-18
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-JUL-18
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-JUL-18
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-JUL-18
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-JUL-18
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-JUL-18
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-JUL-18
Naphthalene		<0.013	<0.013	RPD-NA	ug/g	N/A	40	13-JUL-18
Phenanthrene		<0.046	<0.046	RPD-NA	ug/g	N/A	40	13-JUL-18
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-JUL-18
WG2817443-2 LCS								
1-Methylnaphthalene			95.4		%		50-140	13-JUL-18
2-Methylnaphthalene			94.9		%		50-140	13-JUL-18
Acenaphthene			94.9		%		50-140	13-JUL-18
Acenaphthylene			94.8		%		50-140	13-JUL-18
Anthracene			100.8		%		50-140	13-JUL-18
Benzo(a)anthracene			103.0		%		50-140	13-JUL-18
Benzo(a)pyrene			90.3		%		50-140	13-JUL-18
Benzo(b)fluoranthene			92.2		%		50-140	13-JUL-18
Benzo(g,h,i)perylene			78.8		%		50-140	13-JUL-18
Benzo(k)fluoranthene			85.8		%		50-140	13-JUL-18
Chrysene			93.6		%		50-140	13-JUL-18
Dibenzo(ah)anthracene			77.7		%		50-140	13-JUL-18
Fluoranthene			92.6		%		50-140	13-JUL-18
Fluorene			88.4		%		50-140	13-JUL-18
Indeno(1,2,3-cd)pyrene			74.2		%		50-140	13-JUL-18
Naphthalene			94.4		%		50-140	13-JUL-18
Phenanthrene			98.0		%		50-140	13-JUL-18

Quality Control Report

Workorder: L2125177 Report Date: 13-JUL-18

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R4124100								
WG2817443-2 LCS								
Pyrene			92.5		%		50-140	13-JUL-18
WG2817443-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	13-JUL-18
2-Methylnaphthalene			<0.030		ug/g		0.03	13-JUL-18
Acenaphthene			<0.050		ug/g		0.05	13-JUL-18
Acenaphthylene			<0.050		ug/g		0.05	13-JUL-18
Anthracene			<0.050		ug/g		0.05	13-JUL-18
Benzo(a)anthracene			<0.050		ug/g		0.05	13-JUL-18
Benzo(a)pyrene			<0.050		ug/g		0.05	13-JUL-18
Benzo(b)fluoranthene			<0.050		ug/g		0.05	13-JUL-18
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	13-JUL-18
Benzo(k)fluoranthene			<0.050		ug/g		0.05	13-JUL-18
Chrysene			<0.050		ug/g		0.05	13-JUL-18
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	13-JUL-18
Fluoranthene			<0.050		ug/g		0.05	13-JUL-18
Fluorene			<0.050		ug/g		0.05	13-JUL-18
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	13-JUL-18
Naphthalene			<0.013		ug/g		0.013	13-JUL-18
Phenanthrene			<0.046		ug/g		0.046	13-JUL-18
Pyrene			<0.050		ug/g		0.05	13-JUL-18
Surrogate: 2-Fluorobiphenyl			82.1		%		50-140	13-JUL-18
Surrogate: p-Terphenyl d14			82.0		%		50-140	13-JUL-18
WG2817443-4 MS		**WG2817443-5**						
1-Methylnaphthalene			91.7		%		50-140	13-JUL-18
2-Methylnaphthalene			90.1		%		50-140	13-JUL-18
Acenaphthene			91.5		%		50-140	13-JUL-18
Acenaphthylene			90.7		%		50-140	13-JUL-18
Anthracene			95.0		%		50-140	13-JUL-18
Benzo(a)anthracene			98.5		%		50-140	13-JUL-18
Benzo(a)pyrene			90.1		%		50-140	13-JUL-18
Benzo(b)fluoranthene			84.3		%		50-140	13-JUL-18
Benzo(g,h,i)perylene			77.7		%		50-140	13-JUL-18
Benzo(k)fluoranthene			93.9		%		50-140	13-JUL-18
Chrysene			89.9		%		50-140	13-JUL-18

Quality Control Report

Workorder: L2125177 Report Date: 13-JUL-18

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R4124100								
WG2817443-4 MS		**WG2817443-5**						
Dibenzo(ah)anthracene			75.2		%		50-140	13-JUL-18
Fluoranthene			88.1		%		50-140	13-JUL-18
Fluorene			86.0		%		50-140	13-JUL-18
Indeno(1,2,3-cd)pyrene			75.3		%		50-140	13-JUL-18
Naphthalene			91.2		%		50-140	13-JUL-18
Phenanthrene			93.7		%		50-140	13-JUL-18
Pyrene			88.0		%		50-140	13-JUL-18
PCB-511-WT	**Soil**							
Batch R4123114								
WG2817443-3 DUP		**WG2817443-5**						
Aroclor 1242		<0.010	<0.010	RPD-NA	ug/g	N/A	40	12-JUL-18
Aroclor 1248		<0.010	<0.010	RPD-NA	ug/g	N/A	40	12-JUL-18
Aroclor 1254		<0.010	<0.010	RPD-NA	ug/g	N/A	40	12-JUL-18
Aroclor 1260		<0.010	<0.010	RPD-NA	ug/g	N/A	40	12-JUL-18
WG2817443-2 LCS								
Aroclor 1242			90.8		%		60-140	12-JUL-18
Aroclor 1248			79.3		%		60-140	12-JUL-18
Aroclor 1254			87.6		%		60-140	12-JUL-18
Aroclor 1260			93.1		%		60-140	12-JUL-18
WG2817443-1 MB								
Aroclor 1242			<0.010		ug/g		0.01	12-JUL-18
Aroclor 1248			<0.010		ug/g		0.01	12-JUL-18
Aroclor 1254			<0.010		ug/g		0.01	12-JUL-18
Aroclor 1260			<0.010		ug/g		0.01	12-JUL-18
Surrogate: d14-Terphenyl			94.7		%		60-140	12-JUL-18
WG2817443-4 MS		**WG2817443-5**						
Aroclor 1242			89.5		%		60-140	12-JUL-18
Aroclor 1254			90.3		%		60-140	12-JUL-18
Aroclor 1260			110.1		%		60-140	12-JUL-18
Batch R4124156								
WG2817999-5 DUP		**WG2817999-1**						
Aroclor 1242		<0.010	<0.010	RPD-NA	ug/g	N/A	40	13-JUL-18
Aroclor 1248		<0.010	<0.010	RPD-NA	ug/g	N/A	40	13-JUL-18
Aroclor 1254		<0.010	<0.010	RPD-NA	ug/g	N/A	40	13-JUL-18

Quality Control Report

Workorder: L2125177 Report Date: 13-JUL-18

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PCB-511-WT	**Soil**							
Batch R4124156								
WG2817999-5 DUP		**WG2817999-1**						
Aroclor 1260		<0.010	<0.010	RPD-NA	ug/g	N/A	40	13-JUL-18
WG2817999-3 LCS								
Aroclor 1242			89.2		%		60-140	13-JUL-18
Aroclor 1248			82.3		%		60-140	13-JUL-18
Aroclor 1254			88.9		%		60-140	13-JUL-18
Aroclor 1260			96.6		%		60-140	13-JUL-18
WG2817999-2 MB								
Aroclor 1242			<0.010		ug/g		0.01	13-JUL-18
Aroclor 1248			<0.010		ug/g		0.01	13-JUL-18
Aroclor 1254			<0.010		ug/g		0.01	13-JUL-18
Aroclor 1260			<0.010		ug/g		0.01	13-JUL-18
Surrogate: d14-Terphenyl			107.9		%		60-140	13-JUL-18
WG2817999-4 MS		**WG2817999-1**						
Aroclor 1242			94.9		%		60-140	13-JUL-18
Aroclor 1254			94.7		%		60-140	13-JUL-18
Aroclor 1260			112.2		%		60-140	13-JUL-18

Quality Control Report

Workorder: L2125177 Report Date: 13-JUL-18

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9
Contact: TANIA MCCARTHY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

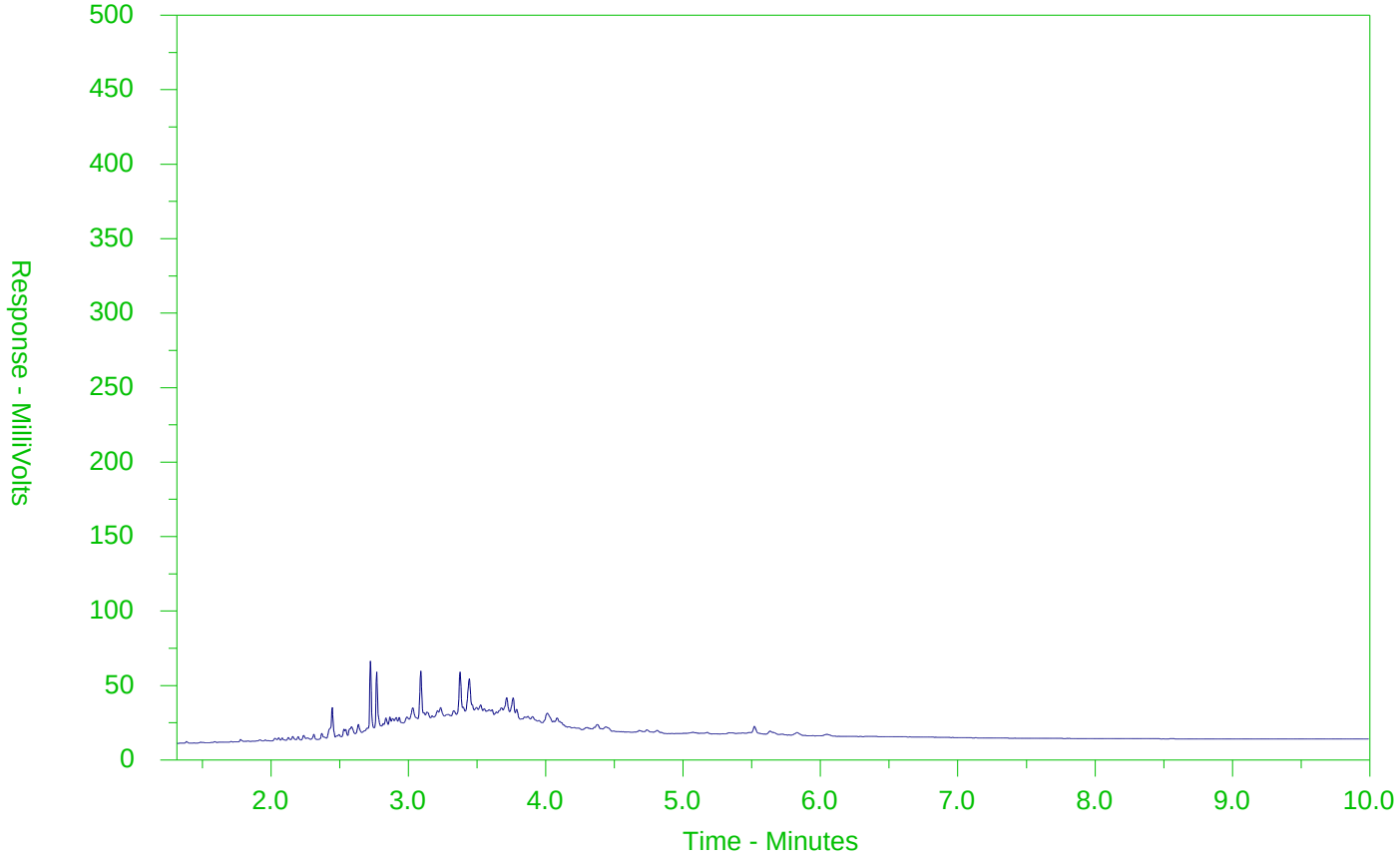
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2125177-1
Client Sample ID: TP18-310-4



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

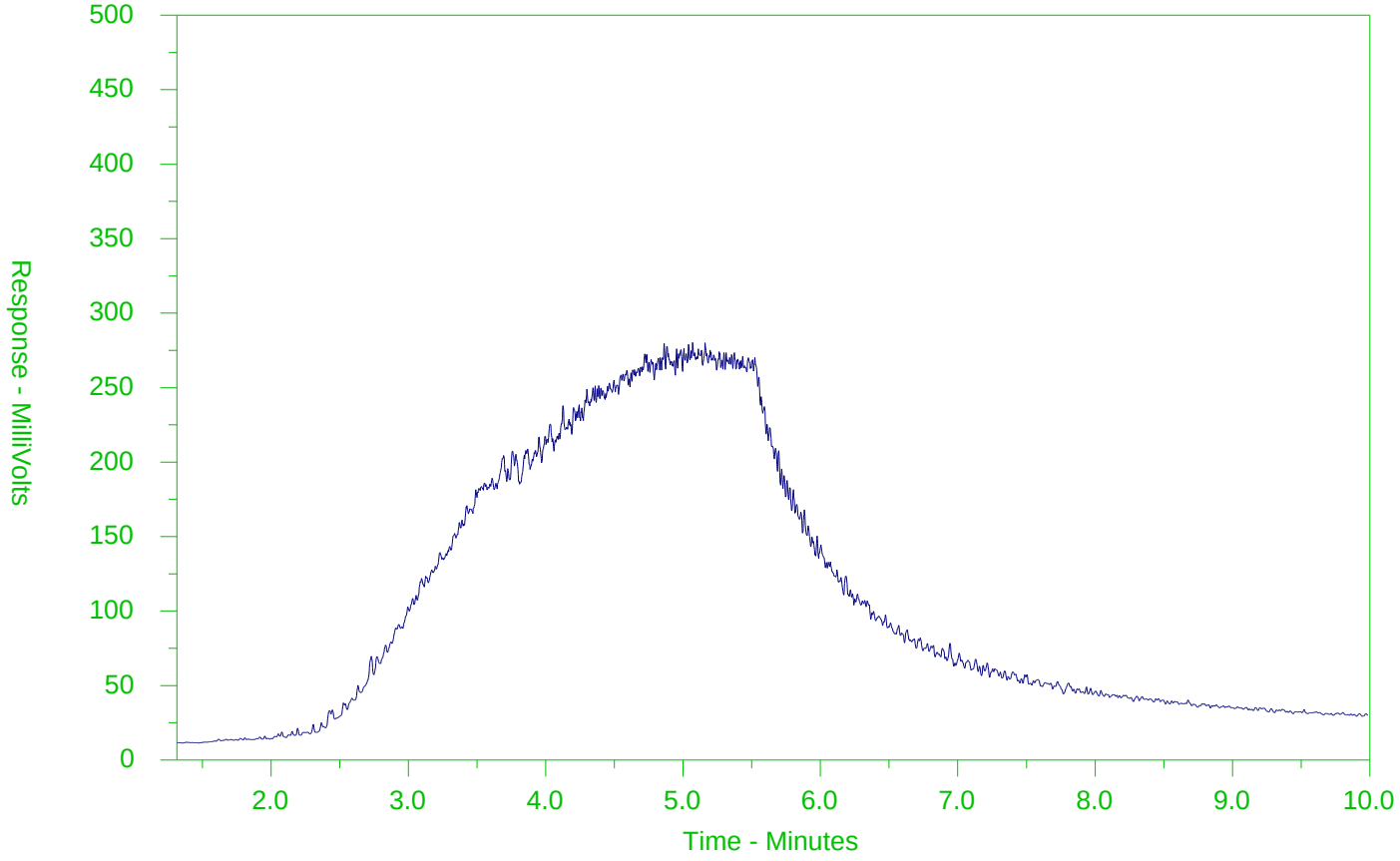
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2125177-3
Client Sample ID: TP18-309-5



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

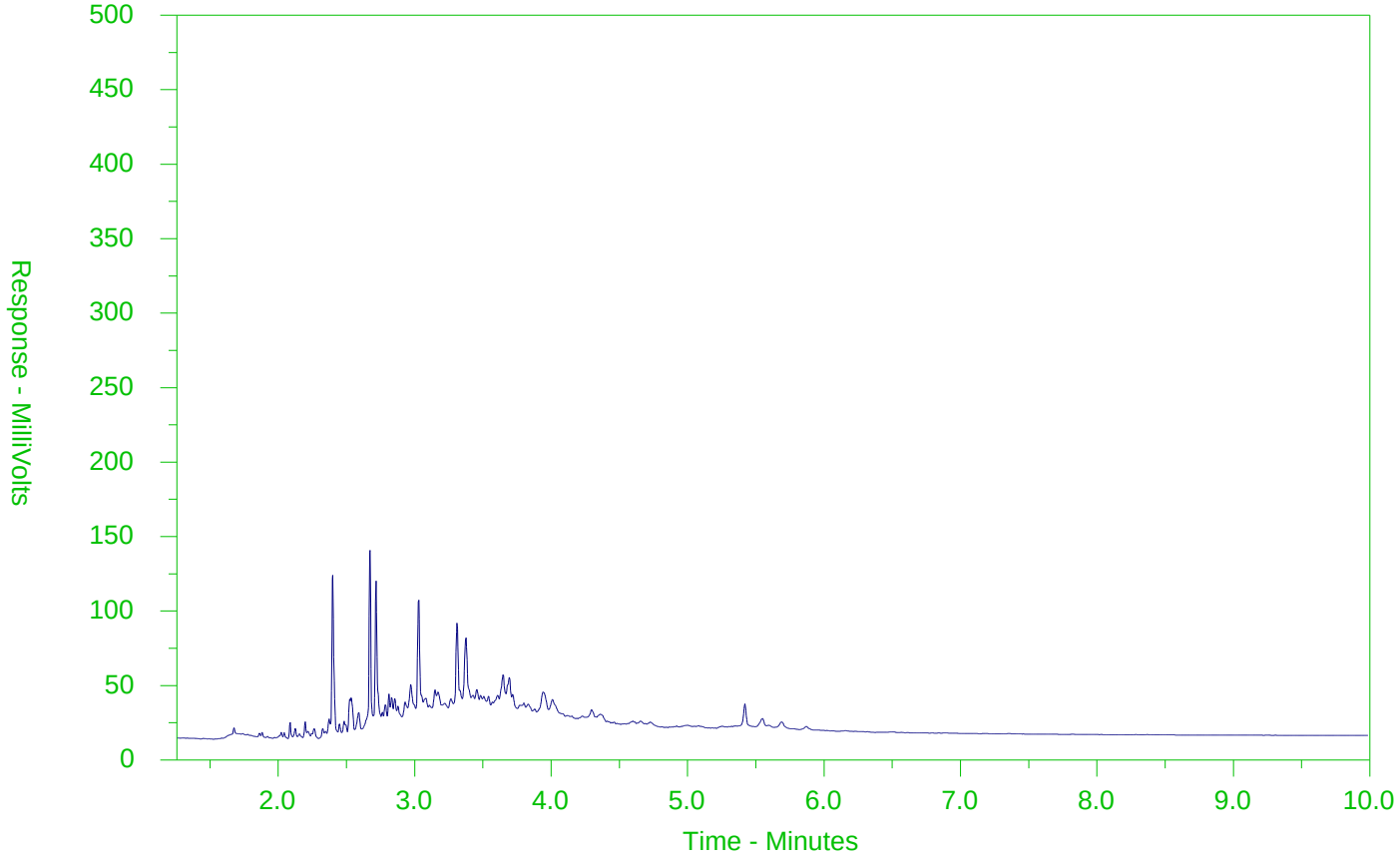
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2125177-6
Client Sample ID: TP18-316-2



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

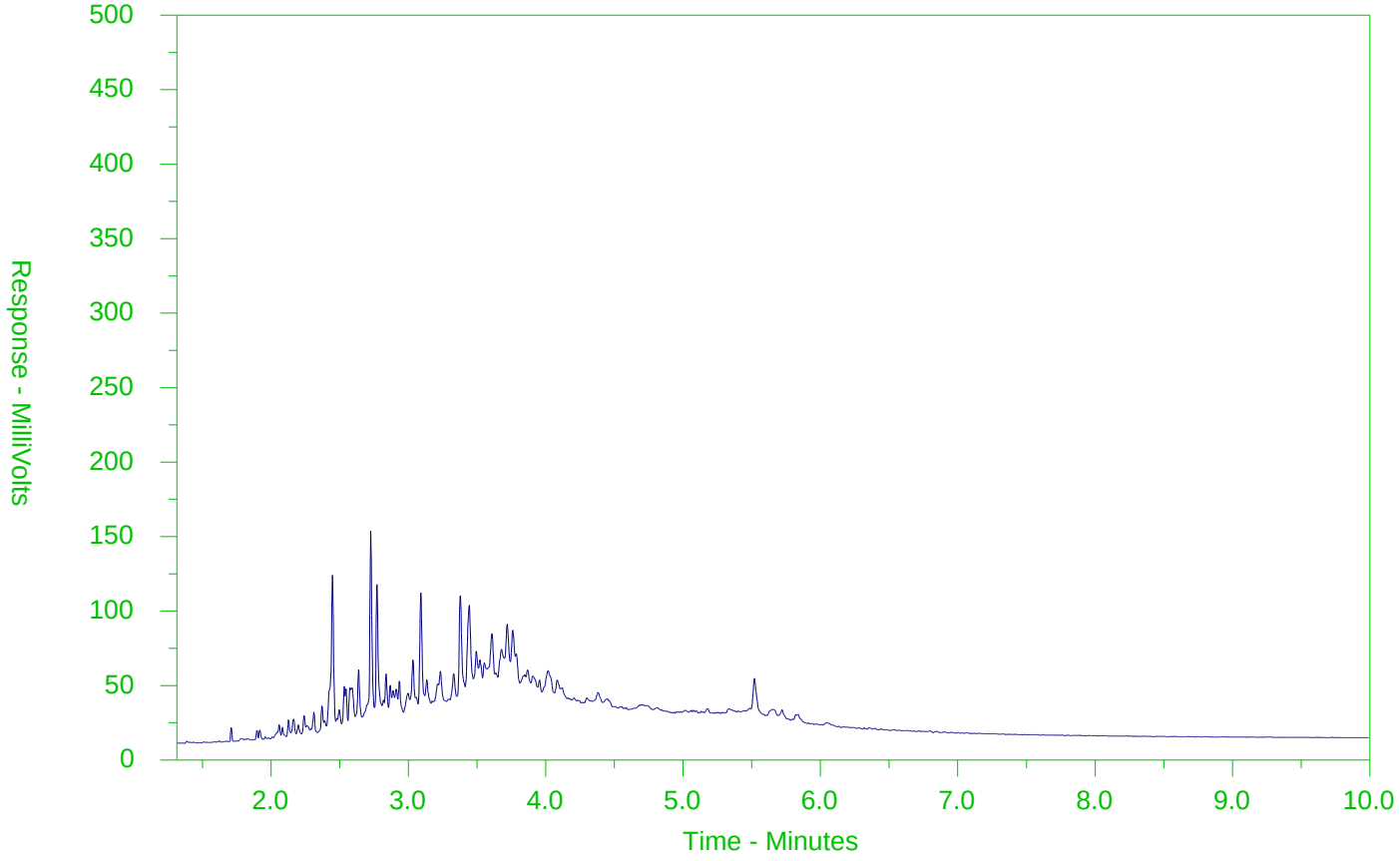
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2125177-11
Client Sample ID: TP18-315-1



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

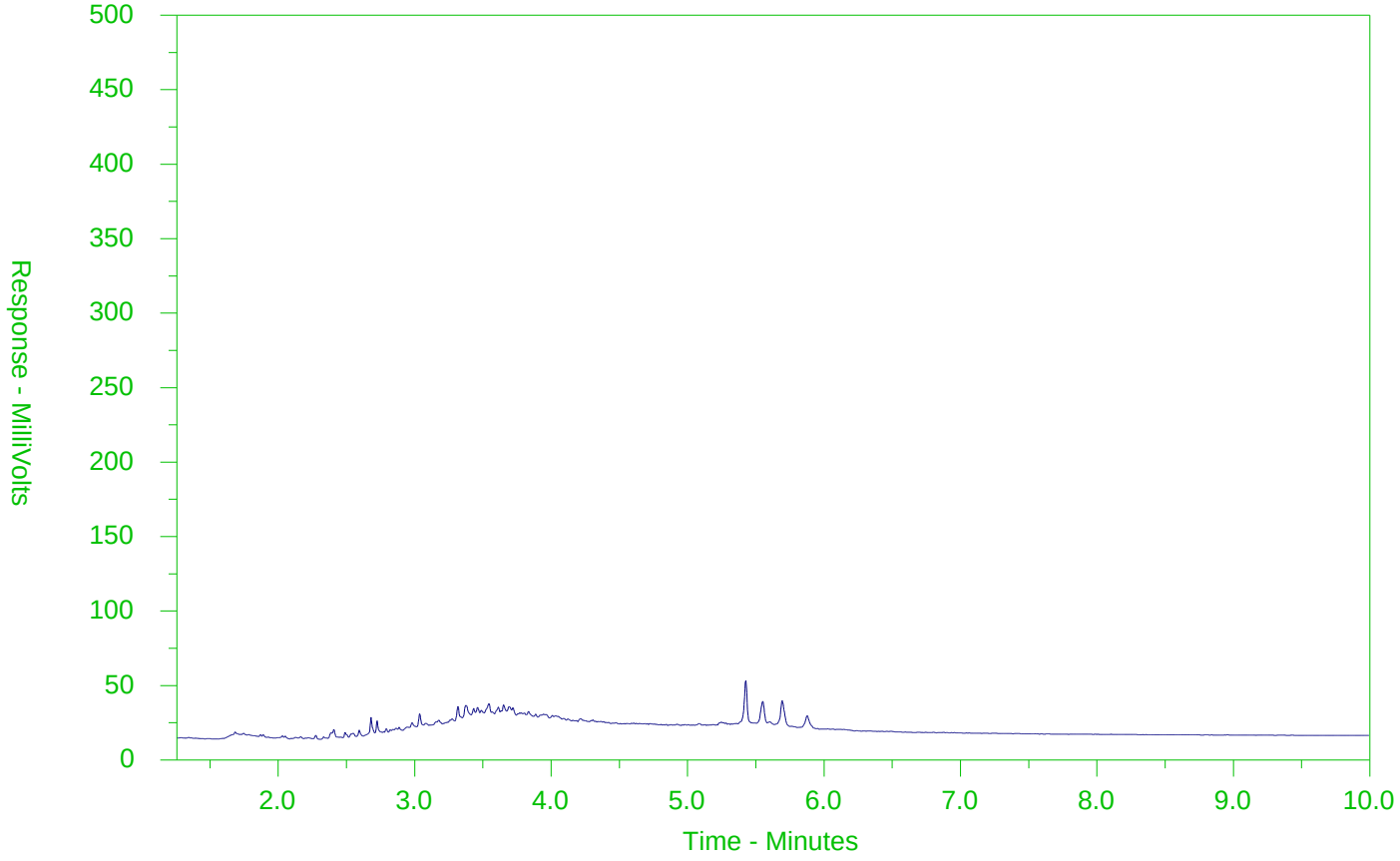
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2125177-22
Client Sample ID: TP18-318-2



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

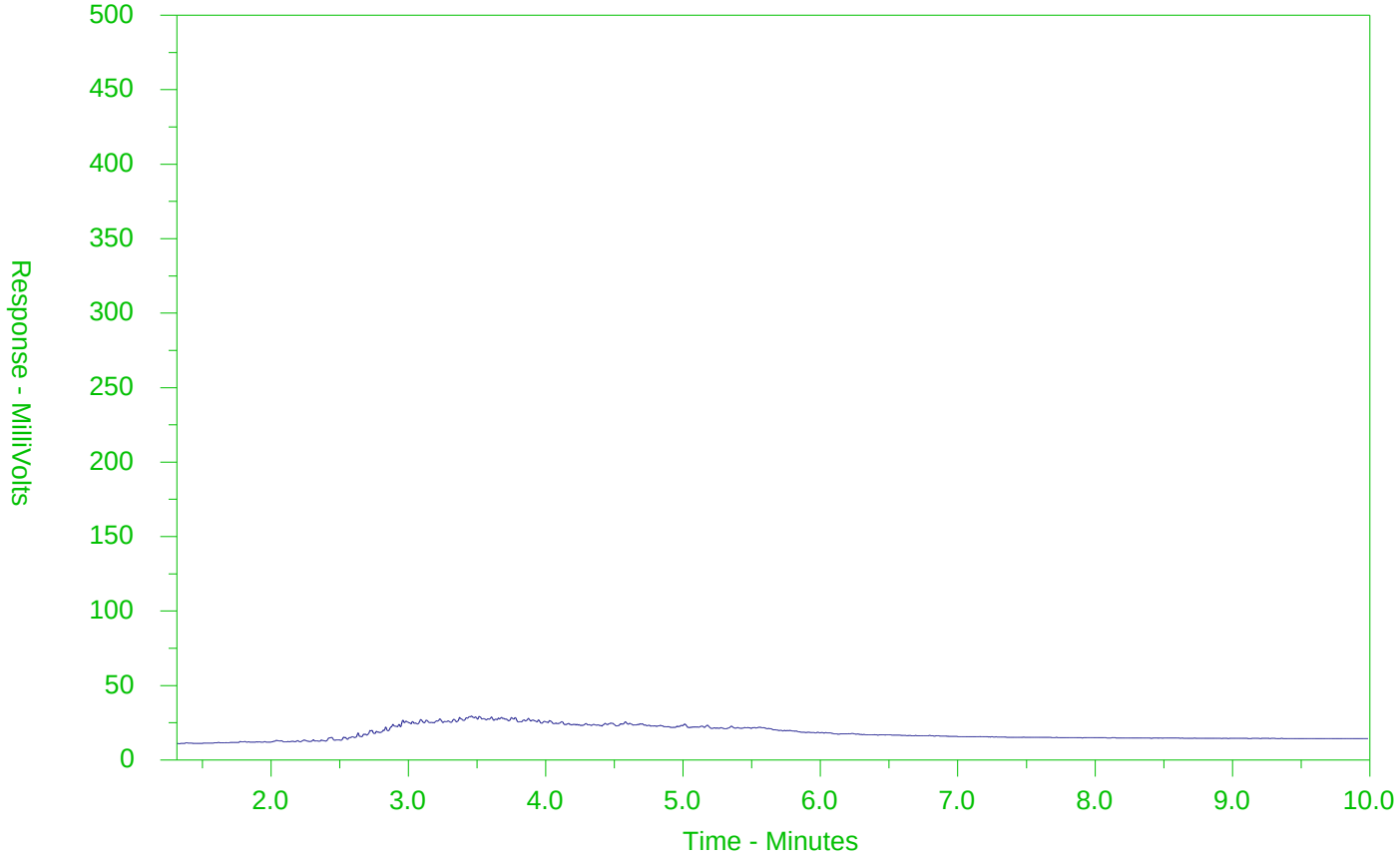
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2125177-23
Client Sample ID: TP18-317-5



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

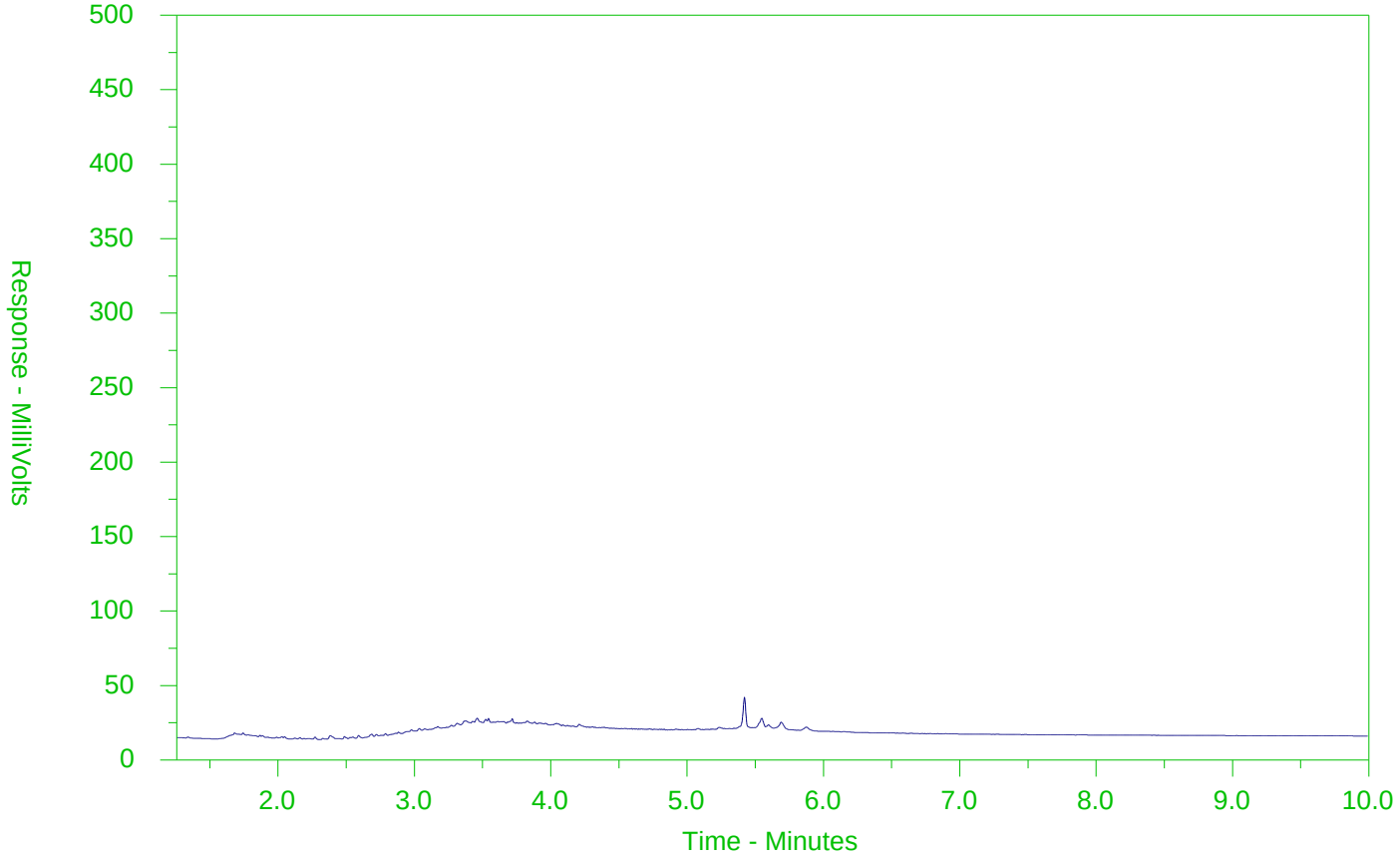
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2125177-25
Client Sample ID: TP18-DUP2



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2125177-COFC

COC Number: 15 -

Report To	Contact and company name below will appear on the final report
Company:	CH2M Hill
Contact:	Tania McCarthy
Phone:	519 579 3500
ED,	Company address below will appear on the final report
Street:	72 Victoria Street South, Suite 300
City/Province:	Kitchener
Postal Code:	N2G 4Y9
Invoice To	Same as Report To ☐ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	CH2M Hill
Contact:	Accounts Payable

Project Information

ALS Account # / Quote #:	
Job #:	694757.01.CC.02
PO / AFE:	
LSD:	
ALS Lab Work Order # (lab use only)	L2125177 06B

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: Tania McCarthy@CH2M

Email 2: Jon.Gowing@CH2M

Email 3:

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax:

Email 2:

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Contact: Mathy

Sampler: J. Gowing

Time Requirements

...m all E&P TATs with your AM - surcharges will apply

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)			EMERGENCY	
	4 day [P4]	☐	1 Business day [E1]	☐
	3 day [P3]	☐	Same Day, Weekend or Statutory holiday [E0]	☐
	2 day [P2]	☐		

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Metals & Inorganics	Metals	PAH	F1-F4	BTEX	VOC	PCB	Number of Containers
1	TP18-310-4	05-07-18	0910	Soil		X		X				4
2	TP18-310-9		1005	"		X						1
3	TP18-309-5		1120	"		X		X				4
4	TP18-309-9.5		1150	"		X						1
5	TP18-316-1		1300	"							X	1
6	TP18-316-2		1305	"			X	X			X	5
7	TP18-316-3 (Hold)		1310	"			X	X			X	5
8	TP18-319-2		1445	"		X	X					1
9	TP18-319-3		1450	"			X					1
10	TP18-319-6		1510	"			X					1
11	TP18-315-1		1550	"			X	X	X			3
12	-2		1600	"			X					1

MEAN TEMP

INIT

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human drinking water use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Contact Tania McCarthy for specific sample instructions.

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☒ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
	9.4

SHIPMENT RELEASE (client use)

Released by: Date: 7/6/18 Time: 1445

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by: Date: JUL 8/18 Time: 14:45

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

OCTOBER 2015 FRONT

ALS Environmental

www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2125177-COFC

COC Number: 15 -

Report To	Contact and company name below will appear on the final report
Company:	CH2M Hill
Contact:	Tania McCarthy
Phone:	519 579 3500
ED,	Company address below will appear on the final report
Street:	72 Victoria Street South, Suite 300
City/Province:	Kitchener
Postal Code:	N2G 4Y9
Invoice To	Same as Report To ☐ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	CH2M Hill
Contact:	Accounts Payable

Project Information

ALS Account # / Quote #:	
Job #:	694757.01.CC.02
PO / AFE:	
LSD:	
ALS Lab Work Order # (lab use only)	LQ1825177 08B

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax "

Email 2 SAME AS 1st COC

Email 3 "

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax

Email 2

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#

Major/Minor Code: Routing Code:

Requisitioner:

Location:

ALS Contact: Mathy Sampler: J. Gowing

Select Service: E&P TATs with your AM - surcharges will apply

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4] ☐ 3 day [P3] ☐ 2 day [P2] ☐

EMERGENCY: 1 Business day [E1] ☐ Same Day, Weekend or Statutory holiday [E0] ☐

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Metals & Inorganics	Metals	PAH	F1-F4	BTEX	VOC	PCB	Number of Containers
13	TP18-315-5	05-07-18	1620	Soil			X					1
14	TP18-311-2	06-07-18	0838	"		X						1
15	TP18-311-6.5		0850	"		X						1
16	TP18-314-2		0900	"		X						1
17	TP18-314-6		0930	"		X						1
18	TP18-313-2		1000	"		X						1
19	TP19-313-6		1020	"		X						1
20	TP18-312-3		1050	"		X						1
21	TP18-312-6		1105	"		X						1
22 MEAN TEMP	TP18-318-2		1128	"		X	X	X	X		X	6
23	TP18-317-5		1230	"				X	X			4
24 INTE	TP18-DUP1		—	"		X						1

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human drinking water use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☒ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
			9.4		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date: 7/6/18	Time: 1440	Received by:	Date:	Time:	Received by:	Date: JULY 6/18	Time: 14:45

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

L2125177-COFC

COC Number: 15 -

Report To	Contact and company name below will appear on the final report
Company:	CH2M Hill
Contact:	Tania McCarthy
Phone:	519 579 3500
ED,	Company address below will appear on the final report
Street:	72 Victoria Street South, Suite 300
City/Province:	Kitchener
Postal Code:	N2G 4Y9
Invoice To:	Same as Report To ☐ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	CH2M Hill
Contact:	Accounts Payable

Project Information

ALS Account # / Quote #:	
Job #:	694757.01.66.02
PO / AFE:	
LSD:	
ALS Lab Work Order # (lab use only)	L2125177 08B

Report For.

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax "

Email 2 Same as 1st COC

Email 3 "

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax

Email 2

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#

Major/Minor Code: Routing Code:

Requisitioner:

Location:

ALS Contact: Mathy Sampler: J. Gowa

Confirm all E&P TATs with your AM - surcharges will apply

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

Priority (Business Days)		Emergency	
4 day [P4]	☐	1 Business day [E1]	☐
3 day [P3]	☐	Same Day, Weekend or Statutory holiday [E0]	☐
2 day [P2]	☐		

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Metals & Inorganics	Metals	PAH	F1-F4	BTEX	VOC	PCB	BTEX F1					Number of Containers
25	TP18 - DUP 2	06-07-18	—	Soil			X	X	X		X						5
26	TRIP BLANK	—	—	"								X					1

MEAN TEMP

INIT

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human drinking water use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☒ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
			9.4		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date: 7/6/18	Time: 1445	Received by:	Date:	Time:	Received by:	Date: JULY 6/18	Time: 14:45

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

CH2M HILL CANADA LIMITED
ATTN: TANIA MCCARTHY
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 23-JUL-18
Report Date: 30-JUL-18 13:30 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2134047

Project P.O. #: NOT SUBMITTED
Job Reference: 694757
C of C Numbers: 17-624784
Legal Site Desc:

Mathy Mahadeva
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2134047-1	BH18-205-1									
Sampled By:	CLIENT on 20-JUL-18 @ 09:40									
Matrix:	SOIL						#1			
Physical Tests										
	% Moisture	2.13		0.10	%	27-JUL-18				
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	26-JUL-18	16			
	Benzene	<0.0068		0.0068	ug/g	26-JUL-18	0.21			
	Bromodichloromethane	<0.050		0.050	ug/g	26-JUL-18	1.5			
	Bromoform	<0.050		0.050	ug/g	26-JUL-18	0.27			
	Bromomethane	<0.050		0.050	ug/g	26-JUL-18	0.05			
	Carbon tetrachloride	<0.050		0.050	ug/g	26-JUL-18	0.05			
	Chlorobenzene	<0.050		0.050	ug/g	26-JUL-18	2.4			
	Dibromochloromethane	<0.050		0.050	ug/g	26-JUL-18	2.3			
	Chloroform	<0.050		0.050	ug/g	26-JUL-18	0.05			
	1,2-Dibromoethane	<0.050		0.050	ug/g	26-JUL-18	0.05			
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	26-JUL-18	1.2			
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	26-JUL-18	4.8			
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	26-JUL-18	0.083			
	Dichlorodifluoromethane	<0.050		0.050	ug/g	26-JUL-18	16			
	1,1-Dichloroethane	<0.050		0.050	ug/g	26-JUL-18	0.47			
	1,2-Dichloroethane	<0.050		0.050	ug/g	26-JUL-18	0.05			
	1,1-Dichloroethylene	<0.050		0.050	ug/g	26-JUL-18	0.05			
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	26-JUL-18	1.9			
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	26-JUL-18	0.084			
	Methylene Chloride	<0.050		0.050	ug/g	26-JUL-18	0.1			
	1,2-Dichloropropane	<0.050		0.050	ug/g	26-JUL-18	0.05			
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	26-JUL-18				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	26-JUL-18				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	27-JUL-18	0.05			
	Ethylbenzene	<0.018		0.018	ug/g	26-JUL-18	1.1			
	n-Hexane	0.081		0.050	ug/g	26-JUL-18	2.8			
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	26-JUL-18	16			
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	26-JUL-18	1.7			
	MTBE	<0.050		0.050	ug/g	26-JUL-18	0.75			
	Styrene	<0.050		0.050	ug/g	26-JUL-18	0.7			
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	26-JUL-18	0.058			
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	26-JUL-18	0.05			
	Tetrachloroethylene	<0.050		0.050	ug/g	26-JUL-18	0.28			
	Toluene	<0.080		0.080	ug/g	26-JUL-18	2.3			
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	26-JUL-18	0.38			
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	26-JUL-18	0.05			
	Trichloroethylene	0.561		0.010	ug/g	26-JUL-18	*0.061			
	Trichlorofluoromethane	<0.050		0.050	ug/g	26-JUL-18	4			
	Vinyl chloride	<0.020		0.020	ug/g	26-JUL-18	0.02			
	o-Xylene	<0.020		0.020	ug/g	26-JUL-18				
	m+p-Xylenes	<0.030		0.030	ug/g	26-JUL-18				
	Xylenes (Total)	<0.050		0.050	ug/g	27-JUL-18	3.1			
	Surrogate: 4-Bromofluorobenzene	120.1		50-140	%	26-JUL-18				
	Surrogate: 1,4-Difluorobenzene	119.9		50-140	%	26-JUL-18				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Soil-Res/Park/Inst. Property Use (Coarse)

#1: T6-Soil-Res/Park/Inst. Property Use (Coarse)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2134047-2	BH18-205-2									
Sampled By:	CLIENT on 20-JUL-18 @ 09:50									
Matrix:	SOIL						#1			
Physical Tests										
	% Moisture	1.28		0.10	%	27-JUL-18				
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	26-JUL-18	16			
	Benzene	<0.0068		0.0068	ug/g	26-JUL-18	0.21			
	Bromodichloromethane	<0.050		0.050	ug/g	26-JUL-18	1.5			
	Bromoform	<0.050		0.050	ug/g	26-JUL-18	0.27			
	Bromomethane	<0.050		0.050	ug/g	26-JUL-18	0.05			
	Carbon tetrachloride	<0.050		0.050	ug/g	26-JUL-18	0.05			
	Chlorobenzene	<0.050		0.050	ug/g	26-JUL-18	2.4			
	Dibromochloromethane	<0.050		0.050	ug/g	26-JUL-18	2.3			
	Chloroform	<0.050		0.050	ug/g	26-JUL-18	0.05			
	1,2-Dibromoethane	<0.050		0.050	ug/g	26-JUL-18	0.05			
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	26-JUL-18	1.2			
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	26-JUL-18	4.8			
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	26-JUL-18	0.083			
	Dichlorodifluoromethane	<0.050		0.050	ug/g	26-JUL-18	16			
	1,1-Dichloroethane	<0.050		0.050	ug/g	26-JUL-18	0.47			
	1,2-Dichloroethane	<0.050		0.050	ug/g	26-JUL-18	0.05			
	1,1-Dichloroethylene	<0.050		0.050	ug/g	26-JUL-18	0.05			
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	26-JUL-18	1.9			
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	26-JUL-18	0.084			
	Methylene Chloride	<0.050		0.050	ug/g	26-JUL-18	0.1			
	1,2-Dichloropropane	<0.050		0.050	ug/g	26-JUL-18	0.05			
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	26-JUL-18				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	26-JUL-18				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	27-JUL-18	0.05			
	Ethylbenzene	<0.018		0.018	ug/g	26-JUL-18	1.1			
	n-Hexane	<0.050		0.050	ug/g	26-JUL-18	2.8			
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	26-JUL-18	16			
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	26-JUL-18	1.7			
	MTBE	<0.050		0.050	ug/g	26-JUL-18	0.75			
	Styrene	<0.050		0.050	ug/g	26-JUL-18	0.7			
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	26-JUL-18	0.058			
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	26-JUL-18	0.05			
	Tetrachloroethylene	<0.050		0.050	ug/g	26-JUL-18	0.28			
	Toluene	<0.080		0.080	ug/g	26-JUL-18	2.3			
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	26-JUL-18	0.38			
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	26-JUL-18	0.05			
	Trichloroethylene	0.091		0.010	ug/g	26-JUL-18	*0.061			
	Trichlorofluoromethane	<0.050		0.050	ug/g	26-JUL-18	4			
	Vinyl chloride	<0.020		0.020	ug/g	26-JUL-18	0.02			
	o-Xylene	<0.020		0.020	ug/g	26-JUL-18				
	m+p-Xylenes	<0.030		0.030	ug/g	26-JUL-18				
	Xylenes (Total)	<0.050		0.050	ug/g	27-JUL-18	3.1			
	Surrogate: 4-Bromofluorobenzene	118.7		50-140	%	26-JUL-18				
	Surrogate: 1,4-Difluorobenzene	118.8		50-140	%	26-JUL-18				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Soil-Res/Park/Inst. Property Use (Coarse)

#1: T6-Soil-Res/Park/Inst. Property Use (Coarse)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2134047-2	BH18-205-2									
Sampled By:	CLIENT on 20-JUL-18 @ 09:50									
Matrix:	SOIL						#1			
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	26-JUL-18	55			
	F1-BTEX	<5.0		5.0	ug/g	30-JUL-18	55			
	F2 (C10-C16)	<10		10	ug/g	27-JUL-18	98			
	F3 (C16-C34)	51		50	ug/g	27-JUL-18	300			
	F4 (C34-C50)	<50		50	ug/g	27-JUL-18	2800			
	Total Hydrocarbons (C6-C50)	<72		72	ug/g	30-JUL-18				
	Chrom. to baseline at nC50	YES			No Unit	27-JUL-18				
	Surrogate: 2-Bromobenzotrifluoride	94.6		60-140	%	27-JUL-18				
	Surrogate: 3,4-Dichlorotoluene	85.0		60-140	%	26-JUL-18				
L2134047-3	BH18-207-1									
Sampled By:	CLIENT on 20-JUL-18 @ 10:40									
Matrix:	SOIL						#1			
Metals										
	Antimony (Sb)	2.3		1.0	ug/g	27-JUL-18	7.5			
	Arsenic (As)	7.8		1.0	ug/g	27-JUL-18	18			
	Barium (Ba)	26.9		1.0	ug/g	27-JUL-18	390			
	Beryllium (Be)	<0.50		0.50	ug/g	27-JUL-18	4			
	Boron (B)	14.0		5.0	ug/g	27-JUL-18	120			
	Cadmium (Cd)	3.21		0.50	ug/g	27-JUL-18	*1.2			
	Chromium (Cr)	13.0		1.0	ug/g	27-JUL-18	160			
	Cobalt (Co)	2.5		1.0	ug/g	27-JUL-18	22			
	Copper (Cu)	31.8		1.0	ug/g	27-JUL-18	140			
	Lead (Pb)	207		1.0	ug/g	27-JUL-18	*120			
	Molybdenum (Mo)	1.8		1.0	ug/g	27-JUL-18	6.9			
	Nickel (Ni)	9.3		1.0	ug/g	27-JUL-18	100			
	Selenium (Se)	<1.0		1.0	ug/g	27-JUL-18	2.4			
	Silver (Ag)	<0.20		0.20	ug/g	27-JUL-18	20			
	Thallium (Tl)	<0.50		0.50	ug/g	27-JUL-18	1			
	Uranium (U)	<1.0		1.0	ug/g	27-JUL-18	23			
	Vanadium (V)	14.6		1.0	ug/g	27-JUL-18	86			
	Zinc (Zn)	7840	DLHC	40	ug/g	27-JUL-18	*340			
L2134047-4	BH18-207-2									
Sampled By:	CLIENT on 20-JUL-18 @ 11:00									
Matrix:	SOIL						#1			
Physical Tests										
	% Moisture	4.30		0.10	%	27-JUL-18				
Metals										
	Antimony (Sb)	2.4		1.0	ug/g	27-JUL-18	7.5			
	Arsenic (As)	3.2		1.0	ug/g	27-JUL-18	18			
	Barium (Ba)	9.4		1.0	ug/g	27-JUL-18	390			
	Beryllium (Be)	<0.50		0.50	ug/g	27-JUL-18	4			
	Boron (B)	7.9		5.0	ug/g	27-JUL-18	120			
	Cadmium (Cd)	3.98		0.50	ug/g	27-JUL-18	*1.2			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Soil-Res/Park/Inst. Property Use (Coarse)

#1: T6-Soil-Res/Park/Inst. Property Use (Coarse)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2134047-4	BH18-207-2									
Sampled By:	CLIENT on 20-JUL-18 @ 11:00									
Matrix:	SOIL						#1			
Metals										
	Chromium (Cr)	9.1		1.0	ug/g	27-JUL-18	160			
	Cobalt (Co)	1.1		1.0	ug/g	27-JUL-18	22			
	Copper (Cu)	44.3		1.0	ug/g	27-JUL-18	140			
	Lead (Pb)	48.5		1.0	ug/g	27-JUL-18	120			
	Molybdenum (Mo)	<1.0		1.0	ug/g	27-JUL-18	6.9			
	Nickel (Ni)	3.1		1.0	ug/g	27-JUL-18	100			
	Selenium (Se)	<1.0		1.0	ug/g	27-JUL-18	2.4			
	Silver (Ag)	<0.20		0.20	ug/g	27-JUL-18	20			
	Thallium (Tl)	<0.50		0.50	ug/g	27-JUL-18	1			
	Uranium (U)	<1.0		1.0	ug/g	27-JUL-18	23			
	Vanadium (V)	14.4		1.0	ug/g	27-JUL-18	86			
	Zinc (Zn)	37500	DLHC	800	ug/g	27-JUL-18	*340			
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	26-JUL-18	55			
	F2 (C10-C16)	<10		10	ug/g	27-JUL-18	98			
	F3 (C16-C34)	<50		50	ug/g	27-JUL-18	300			
	F4 (C34-C50)	<50		50	ug/g	27-JUL-18	2800			
	Total Hydrocarbons (C6-C50)	<72		72	ug/g	30-JUL-18				
	Chrom. to baseline at nC50	YES			No Unit	27-JUL-18				
	Surrogate: 2-Bromobenzotrifluoride	92.6		60-140	%	27-JUL-18				
	Surrogate: 3,4-Dichlorotoluene	88.3		60-140	%	26-JUL-18				
L2134047-5	DUP1 JUL 20									
Sampled By:	CLIENT on 20-JUL-18									
Matrix:	SOIL						#1			
Metals										
	Antimony (Sb)	2.6		1.0	ug/g	27-JUL-18	7.5			
	Arsenic (As)	5.8		1.0	ug/g	27-JUL-18	18			
	Barium (Ba)	26.1		1.0	ug/g	27-JUL-18	390			
	Beryllium (Be)	<0.50		0.50	ug/g	27-JUL-18	4			
	Boron (B)	14.5		5.0	ug/g	27-JUL-18	120			
	Cadmium (Cd)	2.80		0.50	ug/g	27-JUL-18	*1.2			
	Chromium (Cr)	11.5		1.0	ug/g	27-JUL-18	160			
	Cobalt (Co)	2.1		1.0	ug/g	27-JUL-18	22			
	Copper (Cu)	34.0		1.0	ug/g	27-JUL-18	140			
	Lead (Pb)	147		1.0	ug/g	27-JUL-18	*120			
	Molybdenum (Mo)	1.4		1.0	ug/g	27-JUL-18	6.9			
	Nickel (Ni)	7.0		1.0	ug/g	27-JUL-18	100			
	Selenium (Se)	<1.0		1.0	ug/g	27-JUL-18	2.4			
	Silver (Ag)	<0.20		0.20	ug/g	27-JUL-18	20			
	Thallium (Tl)	<0.50		0.50	ug/g	27-JUL-18	1			
	Uranium (U)	<1.0		1.0	ug/g	27-JUL-18	23			
	Vanadium (V)	15.2		1.0	ug/g	27-JUL-18	86			
	Zinc (Zn)	11000	DLHC	40	ug/g	27-JUL-18	*340			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Soil-Res/Park/Inst. Property Use (Coarse)

#1: T6-Soil-Res/Park/Inst. Property Use (Coarse)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2134047-6	TRIP BLANK 1									
Sampled By:	CLIENT on 20-JUL-18 @ 17:00									
Matrix:	SOIL						#1			
Physical Tests										
	% Moisture	<0.10		0.10	%	27-JUL-18				
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	26-JUL-18	16			
	Benzene	<0.0068		0.0068	ug/g	26-JUL-18	0.21			
	Bromodichloromethane	<0.050		0.050	ug/g	26-JUL-18	1.5			
	Bromoform	<0.050		0.050	ug/g	26-JUL-18	0.27			
	Bromomethane	<0.050		0.050	ug/g	26-JUL-18	0.05			
	Carbon tetrachloride	<0.050		0.050	ug/g	26-JUL-18	0.05			
	Chlorobenzene	<0.050		0.050	ug/g	26-JUL-18	2.4			
	Dibromochloromethane	<0.050		0.050	ug/g	26-JUL-18	2.3			
	Chloroform	<0.050		0.050	ug/g	26-JUL-18	0.05			
	1,2-Dibromoethane	<0.050		0.050	ug/g	26-JUL-18	0.05			
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	26-JUL-18	1.2			
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	26-JUL-18	4.8			
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	26-JUL-18	0.083			
	Dichlorodifluoromethane	<0.050		0.050	ug/g	26-JUL-18	16			
	1,1-Dichloroethane	<0.050		0.050	ug/g	26-JUL-18	0.47			
	1,2-Dichloroethane	<0.050		0.050	ug/g	26-JUL-18	0.05			
	1,1-Dichloroethylene	<0.050		0.050	ug/g	26-JUL-18	0.05			
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	26-JUL-18	1.9			
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	26-JUL-18	0.084			
	Methylene Chloride	<0.050		0.050	ug/g	26-JUL-18	0.1			
	1,2-Dichloropropane	<0.050		0.050	ug/g	26-JUL-18	0.05			
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	26-JUL-18				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	26-JUL-18				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	27-JUL-18	0.05			
	Ethylbenzene	<0.018		0.018	ug/g	26-JUL-18	1.1			
	n-Hexane	<0.050		0.050	ug/g	26-JUL-18	2.8			
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	26-JUL-18	16			
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	26-JUL-18	1.7			
	MTBE	<0.050		0.050	ug/g	26-JUL-18	0.75			
	Styrene	<0.050		0.050	ug/g	26-JUL-18	0.7			
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	26-JUL-18	0.058			
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	26-JUL-18	0.05			
	Tetrachloroethylene	<0.050		0.050	ug/g	26-JUL-18	0.28			
	Toluene	<0.080		0.080	ug/g	26-JUL-18	2.3			
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	26-JUL-18	0.38			
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	26-JUL-18	0.05			
	Trichloroethylene	<0.010		0.010	ug/g	26-JUL-18	0.061			
	Trichlorofluoromethane	<0.050		0.050	ug/g	26-JUL-18	4			
	Vinyl chloride	<0.020		0.020	ug/g	26-JUL-18	0.02			
	o-Xylene	<0.020		0.020	ug/g	26-JUL-18				
	m+p-Xylenes	<0.030		0.030	ug/g	26-JUL-18				
	Xylenes (Total)	<0.050		0.050	ug/g	27-JUL-18	3.1			
	Surrogate: 4-Bromofluorobenzene	121.2		50-140	%	26-JUL-18				
	Surrogate: 1,4-Difluorobenzene	120.6		50-140	%	26-JUL-18				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Soil-Res/Park/Inst. Property Use (Coarse)

#1: T6-Soil-Res/Park/Inst. Property Use (Coarse)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2134047-6	TRIP BLANK 1									
Sampled By:	CLIENT on 20-JUL-18 @ 17:00									
Matrix:	SOIL						#1			
Hydrocarbons										
F1 (C6-C10)		<5.0		5.0	ug/g	26-JUL-18	55			
Surrogate: 3,4-Dichlorotoluene		85.4		60-140	%	26-JUL-18				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Soil-Res/Park/Inst. Property Use (Coarse)

#1: T6-Soil-Res/Park/Inst. Property Use (Coarse)

Reference Information

Sample Parameter Qualifier key listed:

Qualifier	Description
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference***
F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Soil	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Soil	F2-F4-O.Reg 153/04 (July 2011)	CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from soil with 1:1 hexane:acetone using a rotary extractor. Extracts are treated with silica gel to remove polar organic interferences. F2, F3, & F4 are analyzed by GC-FID. F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where both F4 (C34-C50) and F4G-sg are reported for a sample, the larger of the two values is used for comparison against the relevant CCME guideline for F4.
7. F4G-sg cannot be added to the C6 to C50 hydrocarbon results to obtain an estimate of total extractable hydrocarbons.
8. This method is validated for use.
9. Data from analysis of validation and quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram, unless otherwise indicated.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)

This method uses a heated strong acid digestion with HNO3 and HCl and is intended to liberate metals that may be environmentally available. Silicate minerals are not solubilized. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. Analysis is by Collision/Reaction Cell ICPMS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

MOISTURE-WT	Soil	% Moisture	Gravimetric: Oven Dried
VOC-1,3-DCP-CALC-WT	Soil	Regulation 153 VOCs	SW8260B/SW8270C

Reference Information

VOC-511-HS-WT	Soil	VOC-O.Reg 153/04 (July 2011)	SW846 8260 (511)

Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

*** ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody numbers:

17-624784

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA		

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.

Quality Control Report

Workorder: L2134047 Report Date: 30-JUL-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT	**Soil**							
Batch R4141348								
WG2830795-4 DUP		**WG2830795-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	26-JUL-18
WG2830795-2 LCS								
F1 (C6-C10)			101.6		%		80-120	26-JUL-18
WG2830795-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	26-JUL-18
Surrogate: 3,4-Dichlorotoluene			79.4		%		60-140	26-JUL-18
WG2830795-6 MS		**L2134137-2**						
F1 (C6-C10)			108.9		%		60-140	26-JUL-18
F2-F4-511-WT	**Soil**							
Batch R4144532								
WG2832836-5 DUP		**WG2832836-1**						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	30-JUL-18
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	30-JUL-18
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	30-JUL-18
WG2832836-3 LCS								
F2 (C10-C16)			101.0		%		80-120	27-JUL-18
F3 (C16-C34)			104.6		%		80-120	27-JUL-18
F4 (C34-C50)			101.4		%		80-120	27-JUL-18
WG2832836-2 MB								
F2 (C10-C16)			<10		ug/g		10	27-JUL-18
F3 (C16-C34)			<50		ug/g		50	27-JUL-18
F4 (C34-C50)			<50		ug/g		50	27-JUL-18
Surrogate: 2-Bromobenzotrifluoride			94.5		%		60-140	27-JUL-18
WG2832836-4 MS		**WG2832836-1**						
F2 (C10-C16)			103.3		%		60-140	30-JUL-18
F3 (C16-C34)			105.5		%		60-140	30-JUL-18
F4 (C34-C50)			101.0		%		60-140	30-JUL-18
MET-200.2-CCMS-WT	**Soil**							
Batch R4147807								
WG2833495-2 CRM		**WT-CANMET-TILL1**						
Antimony (Sb)			98.8		%		70-130	27-JUL-18
Arsenic (As)			110.1		%		70-130	27-JUL-18
Barium (Ba)			117.4		%		70-130	27-JUL-18
Beryllium (Be)			102.5		%		70-130	27-JUL-18
Boron (B)			2.7		mg/kg		0-8.2	27-JUL-18

Quality Control Report

Workorder: L2134047 Report Date: 30-JUL-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R4147807								
WG2833495-2 CRM		**WT-CANMET-TILL1**						
Cadmium (Cd)			104.3		%		70-130	27-JUL-18
Chromium (Cr)			104.6		%		70-130	27-JUL-18
Cobalt (Co)			105.8		%		70-130	27-JUL-18
Copper (Cu)			107.2		%		70-130	27-JUL-18
Lead (Pb)			100.5		%		70-130	27-JUL-18
Molybdenum (Mo)			107.3		%		70-130	27-JUL-18
Nickel (Ni)			104.6		%		70-130	27-JUL-18
Selenium (Se)			0.35		mg/kg		0.11-0.51	27-JUL-18
Silver (Ag)			0.23		mg/kg		0.13-0.33	27-JUL-18
Thallium (Tl)			0.119		mg/kg		0.077-0.18	27-JUL-18
Uranium (U)			93.5		%		70-130	27-JUL-18
Vanadium (V)			105.0		%		70-130	27-JUL-18
Zinc (Zn)			105.6		%		70-130	27-JUL-18
WG2833495-6 DUP		**WG2833495-5**						
Antimony (Sb)		<0.10	<0.10	RPD-NA	ug/g	N/A	30	27-JUL-18
Arsenic (As)		1.45	1.50		ug/g	3.3	30	27-JUL-18
Barium (Ba)		19.7	20.4		ug/g	3.7	40	27-JUL-18
Beryllium (Be)		0.19	0.20		ug/g	6.3	30	27-JUL-18
Boron (B)		5.1	5.4		ug/g	5.7	30	27-JUL-18
Cadmium (Cd)		0.076	0.082		ug/g	8.1	30	27-JUL-18
Chromium (Cr)		7.63	7.89		ug/g	3.3	30	27-JUL-18
Cobalt (Co)		2.59	2.56		ug/g	1.4	30	27-JUL-18
Copper (Cu)		6.19	6.10		ug/g	1.4	30	27-JUL-18
Lead (Pb)		5.70	5.60		ug/g	1.7	40	27-JUL-18
Molybdenum (Mo)		0.18	0.17		ug/g	5.8	40	27-JUL-18
Nickel (Ni)		5.33	5.19		ug/g	2.7	30	27-JUL-18
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	27-JUL-18
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	27-JUL-18
Thallium (Tl)		<0.050	<0.050	RPD-NA	ug/g	N/A	30	27-JUL-18
Uranium (U)		0.337	0.348		ug/g	3.0	30	27-JUL-18
Vanadium (V)		14.6	15.4		ug/g	5.6	30	27-JUL-18
Zinc (Zn)		31.1	31.1		ug/g	0.1	30	27-JUL-18
WG2833495-4 LCS								

Quality Control Report

Workorder: L2134047 Report Date: 30-JUL-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R4147807								
WG2833495-4 LCS								
Antimony (Sb)			99.3		%		80-120	27-JUL-18
Arsenic (As)			107.2		%		80-120	27-JUL-18
Barium (Ba)			109.4		%		80-120	27-JUL-18
Beryllium (Be)			99.8		%		80-120	27-JUL-18
Boron (B)			90.3		%		80-120	27-JUL-18
Cadmium (Cd)			99.1		%		80-120	27-JUL-18
Chromium (Cr)			104.7		%		80-120	27-JUL-18
Cobalt (Co)			103.5		%		80-120	27-JUL-18
Copper (Cu)			103.2		%		80-120	27-JUL-18
Lead (Pb)			98.9		%		80-120	27-JUL-18
Molybdenum (Mo)			99.9		%		80-120	27-JUL-18
Nickel (Ni)			104.0		%		80-120	27-JUL-18
Selenium (Se)			105.5		%		80-120	27-JUL-18
Silver (Ag)			98.5		%		80-120	27-JUL-18
Thallium (Tl)			102.0		%		80-120	27-JUL-18
Uranium (U)			92.6		%		80-120	27-JUL-18
Vanadium (V)			107.9		%		80-120	27-JUL-18
Zinc (Zn)			98.2		%		80-120	27-JUL-18
WG2833495-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	27-JUL-18
Arsenic (As)			<0.10		mg/kg		0.1	27-JUL-18
Barium (Ba)			<0.50		mg/kg		0.5	27-JUL-18
Beryllium (Be)			<0.10		mg/kg		0.1	27-JUL-18
Boron (B)			<5.0		mg/kg		5	27-JUL-18
Cadmium (Cd)			<0.020		mg/kg		0.02	27-JUL-18
Chromium (Cr)			<0.50		mg/kg		0.5	27-JUL-18
Cobalt (Co)			<0.10		mg/kg		0.1	27-JUL-18
Copper (Cu)			<0.50		mg/kg		0.5	27-JUL-18
Lead (Pb)			<0.50		mg/kg		0.5	27-JUL-18
Molybdenum (Mo)			<0.10		mg/kg		0.1	27-JUL-18
Nickel (Ni)			<0.50		mg/kg		0.5	27-JUL-18
Selenium (Se)			<0.20		mg/kg		0.2	27-JUL-18
Silver (Ag)			<0.10		mg/kg		0.1	27-JUL-18
Thallium (Tl)			<0.050		mg/kg		0.05	27-JUL-18

Quality Control Report

Workorder: L2134047 Report Date: 30-JUL-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R4147807								
WG2833495-1 MB								
Uranium (U)			<0.050		mg/kg		0.05	27-JUL-18
Vanadium (V)			<0.20		mg/kg		0.2	27-JUL-18
Zinc (Zn)			<2.0		mg/kg		2	27-JUL-18
MOISTURE-WT	**Soil**							
Batch R4144188								
WG2833388-3 DUP		**L2134060-5**						
% Moisture		14.8	13.8		%	7.2	20	27-JUL-18
WG2833388-2 LCS								
% Moisture			99.9		%		90-110	27-JUL-18
WG2833388-1 MB								
% Moisture			<0.10		%		0.1	27-JUL-18
Batch R4144892								
WG2833286-3 DUP		**L2133598-12**						
% Moisture		17.4	17.9		%	2.5	20	27-JUL-18
WG2833286-2 LCS								
% Moisture			99.9		%		90-110	27-JUL-18
WG2833286-1 MB								
% Moisture			<0.10		%		0.1	27-JUL-18
VOC-511-HS-WT	**Soil**							
Batch R4141348								
WG2830795-4 DUP		**WG2830795-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-JUL-18
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-JUL-18
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-JUL-18
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-JUL-18
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-JUL-18
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-JUL-18
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-JUL-18
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-JUL-18
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-JUL-18
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-JUL-18
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-JUL-18
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-JUL-18
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	26-JUL-18

Quality Control Report

Workorder: L2134047 Report Date: 30-JUL-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R4141348								
WG2830795-4 DUP		**WG2830795-3**						
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	26-JUL-18
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-JUL-18
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-JUL-18
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-JUL-18
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-JUL-18
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-JUL-18
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-JUL-18
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-JUL-18
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	26-JUL-18
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-JUL-18
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-JUL-18
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	26-JUL-18
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-JUL-18
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-JUL-18
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-JUL-18
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	26-JUL-18
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	26-JUL-18
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	26-JUL-18
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-JUL-18
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-JUL-18
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-JUL-18
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	26-JUL-18
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-JUL-18
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	26-JUL-18
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	26-JUL-18
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-JUL-18
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-JUL-18
WG2830795-2 LCS								
1,1,1,2-Tetrachloroethane			101.5		%		60-130	26-JUL-18
1,1,2,2-Tetrachloroethane			103.8		%		60-130	26-JUL-18
1,1,1-Trichloroethane			98.6		%		60-130	26-JUL-18
1,1,2-Trichloroethane			105.4		%		60-130	26-JUL-18
1,1-Dichloroethane			102.4		%		60-130	26-JUL-18

Quality Control Report

Workorder: L2134047 Report Date: 30-JUL-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R4141348								
WG2830795-2 LCS								
1,1-Dichloroethylene			92.3		%		60-130	26-JUL-18
1,2-Dibromoethane			102.7		%		70-130	26-JUL-18
1,2-Dichlorobenzene			105.5		%		70-130	26-JUL-18
1,2-Dichloroethane			102.7		%		60-130	26-JUL-18
1,2-Dichloropropane			100.1		%		70-130	26-JUL-18
1,3-Dichlorobenzene			101.9		%		70-130	26-JUL-18
1,4-Dichlorobenzene			101.8		%		70-130	26-JUL-18
Acetone			96.6		%		60-140	26-JUL-18
Benzene			102.4		%		70-130	26-JUL-18
Bromodichloromethane			101.5		%		50-140	26-JUL-18
Bromoform			102.0		%		70-130	26-JUL-18
Bromomethane			77.2		%		50-140	26-JUL-18
Carbon tetrachloride			97.7		%		70-130	26-JUL-18
Chlorobenzene			105.8		%		70-130	26-JUL-18
Chloroform			101.8		%		70-130	26-JUL-18
cis-1,2-Dichloroethylene			102.7		%		70-130	26-JUL-18
cis-1,3-Dichloropropene			104.8		%		70-130	26-JUL-18
Dibromochloromethane			100.5		%		60-130	26-JUL-18
Dichlorodifluoromethane			95.6		%		50-140	26-JUL-18
Ethylbenzene			103.4		%		70-130	26-JUL-18
n-Hexane			100.7		%		70-130	26-JUL-18
Methylene Chloride			99.98		%		70-130	26-JUL-18
MTBE			103.9		%		70-130	26-JUL-18
m+p-Xylenes			105.8		%		70-130	26-JUL-18
Methyl Ethyl Ketone			100.7		%		60-140	26-JUL-18
Methyl Isobutyl Ketone			94.9		%		60-140	26-JUL-18
o-Xylene			102.0		%		70-130	26-JUL-18
Styrene			102.3		%		70-130	26-JUL-18
Tetrachloroethylene			97.4		%		60-130	26-JUL-18
Toluene			103.8		%		70-130	26-JUL-18
trans-1,2-Dichloroethylene			96.9		%		60-130	26-JUL-18
trans-1,3-Dichloropropene			102.8		%		70-130	26-JUL-18
Trichloroethylene			105.5		%		60-130	26-JUL-18

Quality Control Report

Workorder: L2134047 Report Date: 30-JUL-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R4141348								
WG2830795-2 LCS								
Trichlorofluoromethane			99.9		%		50-140	26-JUL-18
Vinyl chloride			88.4		%		60-140	26-JUL-18
WG2830795-1 MB								
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	26-JUL-18
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	26-JUL-18
1,1,1-Trichloroethane			<0.050		ug/g		0.05	26-JUL-18
1,1,2-Trichloroethane			<0.050		ug/g		0.05	26-JUL-18
1,1-Dichloroethane			<0.050		ug/g		0.05	26-JUL-18
1,1-Dichloroethylene			<0.050		ug/g		0.05	26-JUL-18
1,2-Dibromoethane			<0.050		ug/g		0.05	26-JUL-18
1,2-Dichlorobenzene			<0.050		ug/g		0.05	26-JUL-18
1,2-Dichloroethane			<0.050		ug/g		0.05	26-JUL-18
1,2-Dichloropropane			<0.050		ug/g		0.05	26-JUL-18
1,3-Dichlorobenzene			<0.050		ug/g		0.05	26-JUL-18
1,4-Dichlorobenzene			<0.050		ug/g		0.05	26-JUL-18
Acetone			<0.50		ug/g		0.5	26-JUL-18
Benzene			<0.0068		ug/g		0.0068	26-JUL-18
Bromodichloromethane			<0.050		ug/g		0.05	26-JUL-18
Bromoform			<0.050		ug/g		0.05	26-JUL-18
Bromomethane			<0.050		ug/g		0.05	26-JUL-18
Carbon tetrachloride			<0.050		ug/g		0.05	26-JUL-18
Chlorobenzene			<0.050		ug/g		0.05	26-JUL-18
Chloroform			<0.050		ug/g		0.05	26-JUL-18
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	26-JUL-18
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	26-JUL-18
Dibromochloromethane			<0.050		ug/g		0.05	26-JUL-18
Dichlorodifluoromethane			<0.050		ug/g		0.05	26-JUL-18
Ethylbenzene			<0.018		ug/g		0.018	26-JUL-18
n-Hexane			<0.050		ug/g		0.05	26-JUL-18
Methylene Chloride			<0.050		ug/g		0.05	26-JUL-18
MTBE			<0.050		ug/g		0.05	26-JUL-18
m+p-Xylenes			<0.030		ug/g		0.03	26-JUL-18
Methyl Ethyl Ketone			<0.50		ug/g		0.5	26-JUL-18
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	26-JUL-18

Quality Control Report

Workorder: L2134047 Report Date: 30-JUL-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R4141348								
WG2830795-1 MB								
o-Xylene			<0.020		ug/g		0.02	26-JUL-18
Styrene			<0.050		ug/g		0.05	26-JUL-18
Tetrachloroethylene			<0.050		ug/g		0.05	26-JUL-18
Toluene			<0.080		ug/g		0.08	26-JUL-18
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	26-JUL-18
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	26-JUL-18
Trichloroethylene			<0.010		ug/g		0.01	26-JUL-18
Trichlorofluoromethane			<0.050		ug/g		0.05	26-JUL-18
Vinyl chloride			<0.020		ug/g		0.02	26-JUL-18
Surrogate: 1,4-Difluorobenzene			107.4		%		50-140	26-JUL-18
Surrogate: 4-Bromofluorobenzene			108.8		%		50-140	26-JUL-18
WG2830795-5 MS		**L2134137-1**						
1,1,1,2-Tetrachloroethane			109.6		%		50-140	26-JUL-18
1,1,2,2-Tetrachloroethane			117.0		%		50-140	26-JUL-18
1,1,1-Trichloroethane			107.6		%		50-140	26-JUL-18
1,1,2-Trichloroethane			116.2		%		50-140	26-JUL-18
1,1-Dichloroethane			114.0		%		50-140	26-JUL-18
1,1-Dichloroethylene			101.4		%		50-140	26-JUL-18
1,2-Dibromoethane			115.2		%		50-140	26-JUL-18
1,2-Dichlorobenzene			111.5		%		50-140	26-JUL-18
1,2-Dichloroethane			118.2		%		50-140	26-JUL-18
1,2-Dichloropropane			113.3		%		50-140	26-JUL-18
1,3-Dichlorobenzene			109.0		%		50-140	26-JUL-18
1,4-Dichlorobenzene			108.5		%		50-140	26-JUL-18
Acetone			119.8		%		50-140	26-JUL-18
Benzene			111.3		%		50-140	26-JUL-18
Bromodichloromethane			114.1		%		50-140	26-JUL-18
Bromoform			115.1		%		50-140	26-JUL-18
Bromomethane			84.3		%		50-140	26-JUL-18
Carbon tetrachloride			106.3		%		50-140	26-JUL-18
Chlorobenzene			111.1		%		50-140	26-JUL-18
Chloroform			112.4		%		50-140	26-JUL-18
cis-1,2-Dichloroethylene			110.0		%		50-140	26-JUL-18
cis-1,3-Dichloropropene			111.5		%		50-140	26-JUL-18

Quality Control Report

Workorder: L2134047 Report Date: 30-JUL-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R4141348								
WG2830795-5 MS		**L2134137-1**						
Dibromochloromethane			113.1		%		50-140	26-JUL-18
Dichlorodifluoromethane			115.4		%		50-140	26-JUL-18
Ethylbenzene			106.1		%		50-140	26-JUL-18
n-Hexane			111.1		%		50-140	26-JUL-18
Methylene Chloride			111.0		%		50-140	26-JUL-18
MTBE			112.1		%		50-140	26-JUL-18
m+p-Xylenes			107.6		%		50-140	26-JUL-18
Methyl Ethyl Ketone			115.6		%		50-140	26-JUL-18
Methyl Isobutyl Ketone			113.3		%		50-140	26-JUL-18
o-Xylene			105.4		%		50-140	26-JUL-18
Styrene			105.8		%		50-140	26-JUL-18
Tetrachloroethylene			97.2		%		50-140	26-JUL-18
Toluene			108.0		%		50-140	26-JUL-18
trans-1,2-Dichloroethylene			102.8		%		50-140	26-JUL-18
trans-1,3-Dichloropropene			109.4		%		50-140	26-JUL-18
Trichloroethylene			109.5		%		50-140	26-JUL-18
Trichlorofluoromethane			110.6		%		50-140	26-JUL-18
Vinyl chloride			98.0		%		50-140	26-JUL-18

Quality Control Report

Workorder: L2134047 Report Date: 30-JUL-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9
Contact: TANIA MCCARTHY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

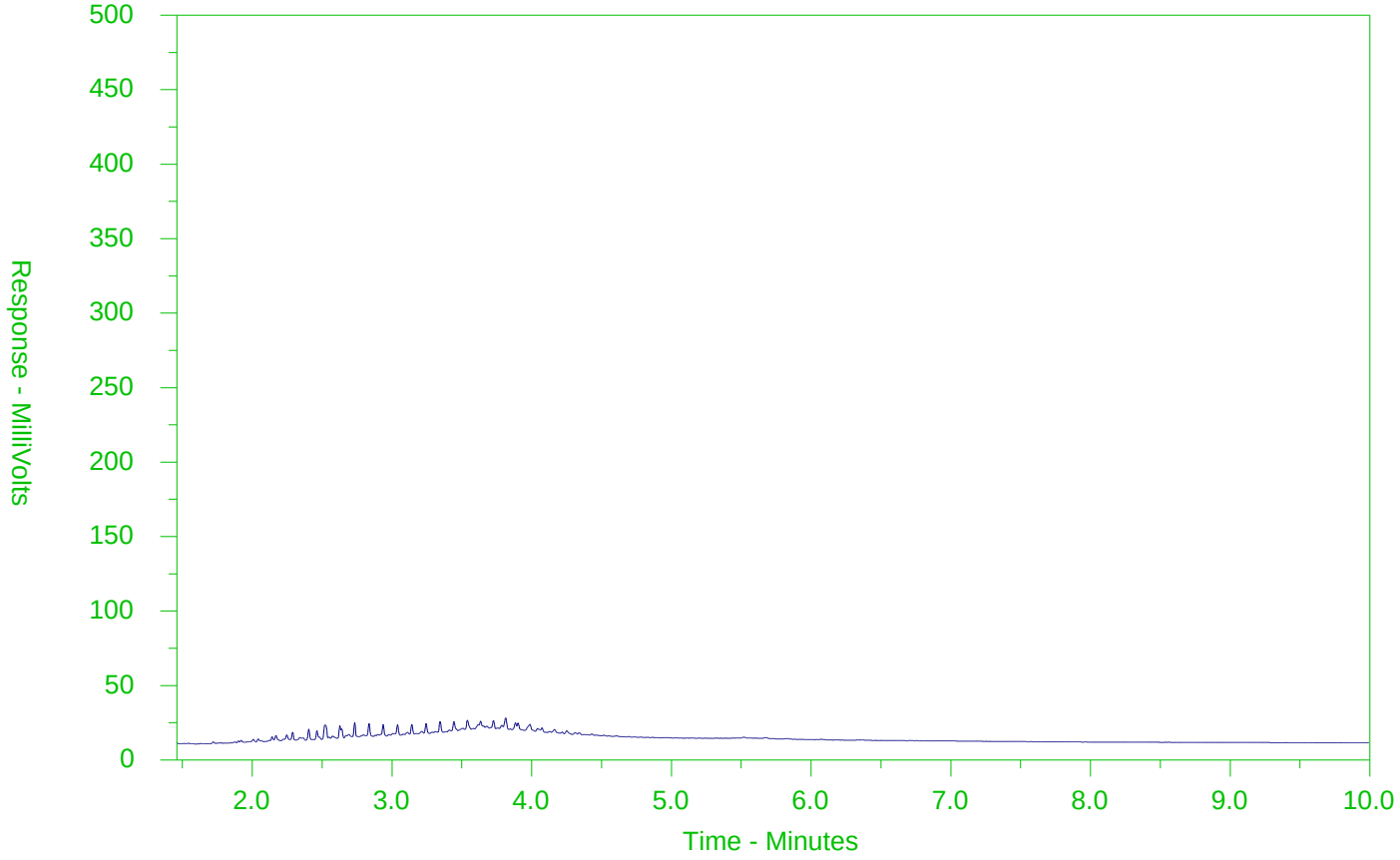
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2134047-2
Client Sample ID: BH18-205-2



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

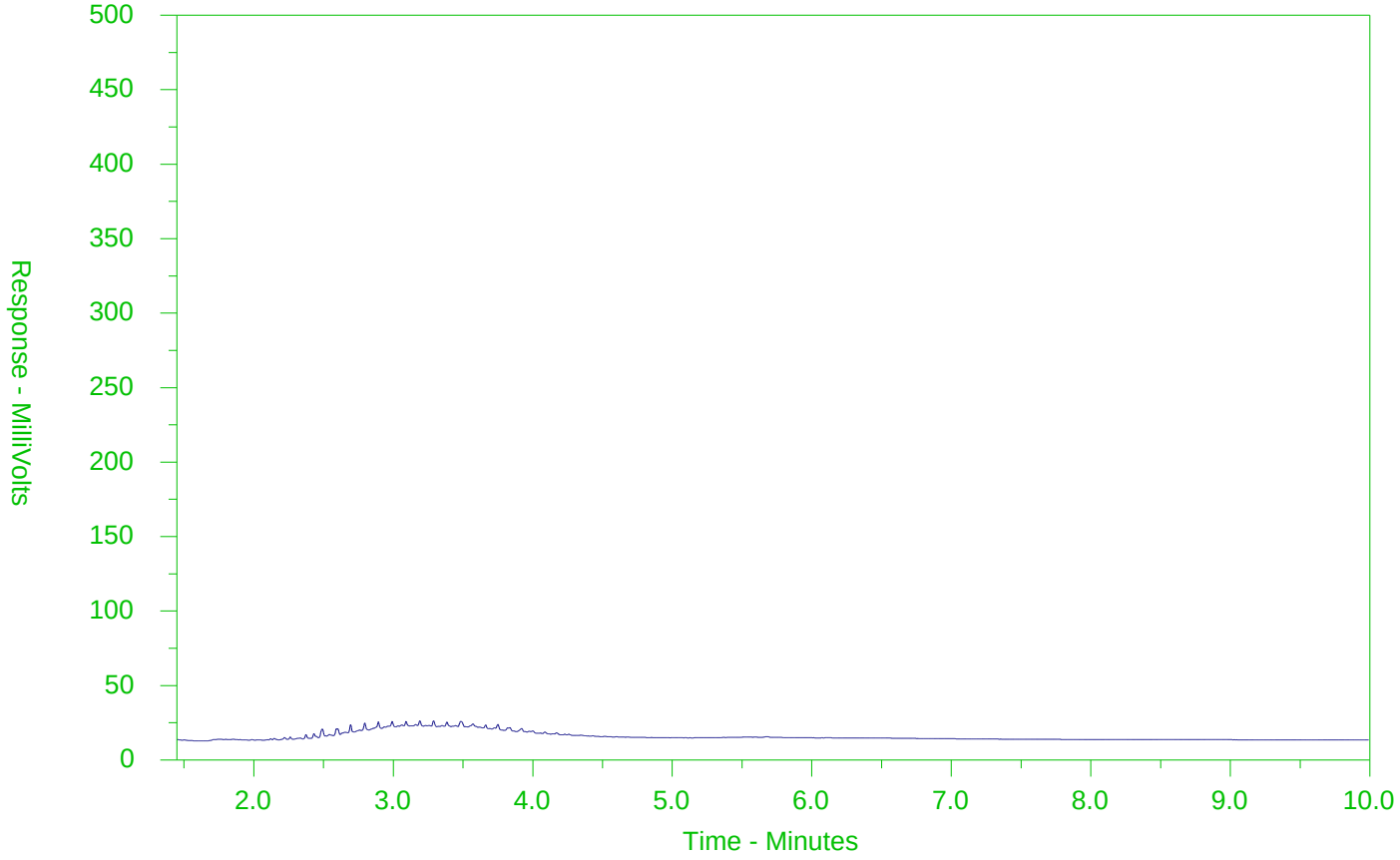
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2134047-4
Client Sample ID: BH18-207-2



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2134047-COFC

COC Number: 17 - 624784

Page of

Report To	Contact and company name below will appear on the final report
Company:	CH2M - JACOBS
Contact:	TANIA MCCARTHY
Phone:	519 579 3500
	Company address below will appear on the final report
Street:	72 VICTORIA ST S, SUITE 300
City/Province:	KITCHENER, ON
Postal Code:	N2G 4Y9

Report Format / Distribution

Select Report Format: [X] PDF [X] EXCEL [X] EDD (DIGITAL)
Quality Control (QC) Report with Report [X] YES [ ] NO
[X] Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax: Tania.mccarthy@ch2m.com
Email 2: lucas.ribeiro@ch2m.com
Email 3:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] [X] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] [ ]; 3 day [P3-25%] [ ]; 2 day [P2-50%] [ ]

EMERGENCY: 1 Business day [E-100%] [ ]; Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] [ ]

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Invoice To	Same as Report To [X] YES [ ] NO
	Copy of Invoice with Report [X] YES [ ] NO
Company:	
Contact:	

Invoice Distribution

Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax:
Email 2:

Project Information

ALS Account # / Quote #:
Job #: 694757
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#:
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2134047
ALS Contact: Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	VOC	PHC	METALS ONLY	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
1	BH18-205-1	20-JUL-2018	09:40	Soil	X					
2	BH18-205-2	20-JUL-2018	09:50	Soil	X	X				
3	BH18-207-1	20-JUL-2018	10:40	Soil			X			
4	BH18-207-2	20-JUL-2018	11:00	Soil		X	X			
5	DUP1 JUL 20	20-JUL-2018	00:00	Soil			X			
6	TRIP BLANK 1	20-JUL-2018	17:00	BLANK						

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] YES [ ] NO
Are samples for human consumption/ use? [ ] YES [ ] NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Compare to O.Reg 153/04

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] SIF Observations Yes [ ] No [ ]
Ice Packs [X] Ice Cubes [ ] Custody seal intact Yes [X] No [ ]
Cooling Initiated [ ]

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
1.6				14.7			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Lucas Ribeiro	Date: 20-JUL-2018	Time: 17:15	Received by:	Date: July 23 2018	Time: 9:00AM	Received by:	Date: July 23/18	Time: 14:30

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

CH2M HILL CANADA LIMITED
ATTN: TANIA MCCARTHY
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 26-JUL-18
Report Date: 07-AUG-18 13:38 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2136825

Project P.O. #: NOT SUBMITTED
Job Reference: 694757
C of C Numbers: 17-615353
Legal Site Desc:

Mathy Mahadeva
Account Manager

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ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2136825-1	BH18-204-1									
Sampled By:	CLIENT on 23-JUL-18 @ 09:20									
Matrix:	SOIL									
Physical Tests										
	% Moisture	4.65		0.10	%	02-AUG-18				
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	31-JUL-18	16	28	16	28
	Benzene	<0.0068		0.0068	ug/g	31-JUL-18	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	31-JUL-18	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	31-JUL-18	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	31-JUL-18	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	31-JUL-18	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	31-JUL-18	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	31-JUL-18	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	31-JUL-18	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	31-JUL-18	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	31-JUL-18	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	31-JUL-18	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	31-JUL-18	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	31-JUL-18	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	31-JUL-18	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	31-JUL-18	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	31-JUL-18	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	31-JUL-18	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	31-JUL-18	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	31-JUL-18	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	31-JUL-18	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	31-JUL-18				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	31-JUL-18				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	02-AUG-18	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	31-JUL-18	1.1	1.6	1.1	1.6
	n-Hexane	<0.15	DLS	0.15	ug/g	31-JUL-18	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	31-JUL-18	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	31-JUL-18	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	31-JUL-18	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	31-JUL-18	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	31-JUL-18	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	31-JUL-18	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	31-JUL-18	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	31-JUL-18	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	31-JUL-18	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	31-JUL-18	0.05	0.11	0.05	0.05
	Trichloroethylene	0.111		0.010	ug/g	31-JUL-18	0.55	0.61	*0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	31-JUL-18	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	31-JUL-18	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	31-JUL-18				
	m+p-Xylenes	<0.030		0.030	ug/g	31-JUL-18				
	Xylenes (Total)	<0.050		0.050	ug/g	02-AUG-18	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	106.6		50-140	%	31-JUL-18				
	Surrogate: 1,4-Difluorobenzene	113.8		50-140	%	31-JUL-18				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T6-C/F-RPI-ICC

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2136825-2	DUP1 JUL23									
Sampled By:	CLIENT on 23-JUL-18									
Matrix:	SOIL									
Physical Tests										
	% Moisture	5.38		0.10	%	02-AUG-18				
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	31-JUL-18	16	28	16	28
	Benzene	0.0084		0.0068	ug/g	31-JUL-18	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	31-JUL-18	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	31-JUL-18	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	31-JUL-18	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	31-JUL-18	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	31-JUL-18	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	31-JUL-18	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	31-JUL-18	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	31-JUL-18	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	31-JUL-18	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	31-JUL-18	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	31-JUL-18	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	31-JUL-18	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	31-JUL-18	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	31-JUL-18	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	31-JUL-18	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	31-JUL-18	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	31-JUL-18	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	31-JUL-18	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	31-JUL-18	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	31-JUL-18				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	31-JUL-18				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	02-AUG-18	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	31-JUL-18	1.1	1.6	1.1	1.6
	n-Hexane	<0.15	DLS	0.15	ug/g	31-JUL-18	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	31-JUL-18	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	31-JUL-18	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	31-JUL-18	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	31-JUL-18	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	31-JUL-18	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	31-JUL-18	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	31-JUL-18	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	31-JUL-18	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	31-JUL-18	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	31-JUL-18	0.05	0.11	0.05	0.05
	Trichloroethylene	0.068		0.010	ug/g	31-JUL-18	0.55	0.61	*0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	31-JUL-18	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	31-JUL-18	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	31-JUL-18				
	m+p-Xylenes	<0.030		0.030	ug/g	31-JUL-18				
	Xylenes (Total)	<0.050		0.050	ug/g	02-AUG-18	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	99.5		50-140	%	31-JUL-18				
	Surrogate: 1,4-Difluorobenzene	104.3		50-140	%	31-JUL-18				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T6-C/F-RPI-ICC

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)

#2: T6-Soil-Ind/Com/Commu Property Use (Fine)

#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)

#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2136825-3	BH18-204-2									
Sampled By:	CLIENT on 23-JUL-18 @ 09:30									
Matrix:	SOIL									
Physical Tests										
	% Moisture	8.09		0.10	%	02-AUG-18				
Volatile Organic Compounds										
	Acetone	<0.50		0.50	ug/g	31-JUL-18	16	28	16	28
	Benzene	0.0077		0.0068	ug/g	31-JUL-18	0.32	0.4	0.21	0.17
	Bromodichloromethane	<0.050		0.050	ug/g	31-JUL-18	1.5	1.9	1.5	1.9
	Bromoform	<0.050		0.050	ug/g	31-JUL-18	0.61	1.7	0.27	0.26
	Bromomethane	<0.050		0.050	ug/g	31-JUL-18	0.05	0.05	0.05	0.05
	Carbon tetrachloride	<0.050		0.050	ug/g	31-JUL-18	0.21	0.71	0.05	0.12
	Chlorobenzene	<0.050		0.050	ug/g	31-JUL-18	2.4	2.7	2.4	2.7
	Dibromochloromethane	<0.050		0.050	ug/g	31-JUL-18	2.3	2.9	2.3	2.9
	Chloroform	<0.050		0.050	ug/g	31-JUL-18	0.47	0.18	0.05	0.17
	1,2-Dibromoethane	<0.050		0.050	ug/g	31-JUL-18	0.05	0.05	0.05	0.05
	1,2-Dichlorobenzene	<0.050		0.050	ug/g	31-JUL-18	1.2	1.7	1.2	1.7
	1,3-Dichlorobenzene	<0.050		0.050	ug/g	31-JUL-18	9.6	12	4.8	6
	1,4-Dichlorobenzene	<0.050		0.050	ug/g	31-JUL-18	0.2	0.57	0.083	0.097
	Dichlorodifluoromethane	<0.050		0.050	ug/g	31-JUL-18	16	25	16	25
	1,1-Dichloroethane	<0.050		0.050	ug/g	31-JUL-18	0.47	0.6	0.47	0.6
	1,2-Dichloroethane	<0.050		0.050	ug/g	31-JUL-18	0.05	0.05	0.05	0.05
	1,1-Dichloroethylene	<0.050		0.050	ug/g	31-JUL-18	0.064	0.48	0.05	0.05
	cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	31-JUL-18	1.9	2.5	1.9	2.5
	trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	31-JUL-18	1.3	2.5	0.084	0.75
	Methylene Chloride	<0.050		0.050	ug/g	31-JUL-18	1.6	2	0.1	0.96
	1,2-Dichloropropane	<0.050		0.050	ug/g	31-JUL-18	0.16	0.68	0.05	0.085
	cis-1,3-Dichloropropene	<0.030		0.030	ug/g	31-JUL-18				
	trans-1,3-Dichloropropene	<0.030		0.030	ug/g	31-JUL-18				
	1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	02-AUG-18	0.059	0.081	0.05	0.081
	Ethylbenzene	<0.018		0.018	ug/g	31-JUL-18	1.1	1.6	1.1	1.6
	n-Hexane	<0.15	DLS	0.15	ug/g	31-JUL-18	46	88	2.8	34
	Methyl Ethyl Ketone	<0.50		0.50	ug/g	31-JUL-18	70	88	16	44
	Methyl Isobutyl Ketone	<0.50		0.50	ug/g	31-JUL-18	31	210	1.7	4.3
	MTBE	<0.050		0.050	ug/g	31-JUL-18	1.6	2.3	0.75	1.4
	Styrene	<0.050		0.050	ug/g	31-JUL-18	34	43	0.7	2.2
	1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	31-JUL-18	0.087	0.11	0.058	0.05
	1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	31-JUL-18	0.05	0.094	0.05	0.05
	Tetrachloroethylene	<0.050		0.050	ug/g	31-JUL-18	1.9	2.5	0.28	2.3
	Toluene	<0.080		0.080	ug/g	31-JUL-18	6.4	9	2.3	6
	1,1,1-Trichloroethane	<0.050		0.050	ug/g	31-JUL-18	6.1	12	0.38	3.4
	1,1,2-Trichloroethane	<0.050		0.050	ug/g	31-JUL-18	0.05	0.11	0.05	0.05
	Trichloroethylene	0.041		0.010	ug/g	31-JUL-18	0.55	0.61	0.061	0.52
	Trichlorofluoromethane	<0.050		0.050	ug/g	31-JUL-18	4	5.8	4	5.8
	Vinyl chloride	<0.020		0.020	ug/g	31-JUL-18	0.032	0.25	0.02	0.022
	o-Xylene	<0.020		0.020	ug/g	31-JUL-18				
	m+p-Xylenes	<0.030		0.030	ug/g	31-JUL-18				
	Xylenes (Total)	<0.050		0.050	ug/g	02-AUG-18	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	99.3		50-140	%	31-JUL-18				
	Surrogate: 1,4-Difluorobenzene	102.0		50-140	%	31-JUL-18				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T6-C/F-RPI-ICC

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2136825-4	MW18-129D-1									
Sampled By:	CLIENT on 23-JUL-18 @ 10:40									
Matrix:	SOIL						#1	#2	#3	#4
Physical Tests										
	Conductivity	0.170		0.0040	mS/cm	02-AUG-18	1.4	1.4	0.7	0.7
	% Moisture	5.13		0.10	%	02-AUG-18				
	pH	7.94		0.10	pH units	01-AUG-18				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	01-AUG-18	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	0.28		0.10	SAR	02-AUG-18	12	12	5	5
	Calcium (Ca)	6.7		1.0	mg/L	02-AUG-18				
	Magnesium (Mg)	2.0		1.0	mg/L	02-AUG-18				
	Sodium (Na)	3.2		1.0	mg/L	02-AUG-18				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	02-AUG-18	40	50	7.5	7.5
	Arsenic (As)	7.8		1.0	ug/g	02-AUG-18	18	18	18	18
	Barium (Ba)	31.4		1.0	ug/g	02-AUG-18	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	02-AUG-18	8	10	4	5
	Boron (B)	11.8		5.0	ug/g	02-AUG-18	120	120	120	120
	Boron (B), Hot Water Ext.	0.26		0.10	ug/g	02-AUG-18	2	2	1.5	1.5
	Cadmium (Cd)	1.00		0.50	ug/g	02-AUG-18	1.9	1.9	1.2	1.2
	Chromium (Cr)	12.6		1.0	ug/g	02-AUG-18	160	160	160	160
	Cobalt (Co)	4.8		1.0	ug/g	02-AUG-18	80	100	22	22
	Copper (Cu)	27.0		1.0	ug/g	02-AUG-18	230	300	140	180
	Lead (Pb)	103		1.0	ug/g	02-AUG-18	120	120	120	120
	Mercury (Hg)	0.0521		0.0050	ug/g	02-AUG-18	3.9	20	0.27	1.8
	Molybdenum (Mo)	1.0		1.0	ug/g	02-AUG-18	40	40	6.9	6.9
	Nickel (Ni)	14.1		1.0	ug/g	02-AUG-18	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	02-AUG-18	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	02-AUG-18	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	02-AUG-18	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	02-AUG-18	33	33	23	23
	Vanadium (V)	21.3		1.0	ug/g	02-AUG-18	86	86	86	86
	Zinc (Zn)	410		5.0	ug/g	02-AUG-18	*340	*340	*340	*340
Speciated Metals										
	Chromium, Hexavalent	0.21		0.20	ug/g	01-AUG-18	8	10	8	10
L2136825-5	DUP2 JUL23									
Sampled By:	CLIENT on 23-JUL-18 @ 00:01									
Matrix:	SOIL						#1	#2	#3	#4
Physical Tests										
	Conductivity	0.175		0.0040	mS/cm	02-AUG-18	1.4	1.4	0.7	0.7
	% Moisture	4.01		0.10	%	02-AUG-18				
	pH	7.98		0.10	pH units	01-AUG-18				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	01-AUG-18	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	0.30		0.10	SAR	02-AUG-18	12	12	5	5

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T6-C/F-RPI-ICC

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2136825-5	DUP2 JUL23									
Sampled By:	CLIENT on 23-JUL-18 @ 00:01									
Matrix:	SOIL									
Saturated Paste Extractables										
	Calcium (Ca)	6.9		1.0	mg/L	02-AUG-18				
	Magnesium (Mg)	2.3		1.0	mg/L	02-AUG-18				
	Sodium (Na)	3.5		1.0	mg/L	02-AUG-18				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	02-AUG-18	40	50	7.5	7.5
	Arsenic (As)	7.2		1.0	ug/g	02-AUG-18	18	18	18	18
	Barium (Ba)	27.4		1.0	ug/g	02-AUG-18	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	02-AUG-18	8	10	4	5
	Boron (B)	9.4		5.0	ug/g	02-AUG-18	120	120	120	120
	Boron (B), Hot Water Ext.	0.24		0.10	ug/g	02-AUG-18	2	2	1.5	1.5
	Cadmium (Cd)	0.96		0.50	ug/g	02-AUG-18	1.9	1.9	1.2	1.2
	Chromium (Cr)	12.3		1.0	ug/g	02-AUG-18	160	160	160	160
	Cobalt (Co)	4.5		1.0	ug/g	02-AUG-18	80	100	22	22
	Copper (Cu)	23.4		1.0	ug/g	02-AUG-18	230	300	140	180
	Lead (Pb)	97.7		1.0	ug/g	02-AUG-18	120	120	120	120
	Mercury (Hg)	0.0454		0.0050	ug/g	02-AUG-18	3.9	20	0.27	1.8
	Molybdenum (Mo)	<1.0		1.0	ug/g	02-AUG-18	40	40	6.9	6.9
	Nickel (Ni)	13.0		1.0	ug/g	02-AUG-18	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	02-AUG-18	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	02-AUG-18	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	02-AUG-18	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	02-AUG-18	33	33	23	23
	Vanadium (V)	20.0		1.0	ug/g	02-AUG-18	86	86	86	86
	Zinc (Zn)	372		5.0	ug/g	02-AUG-18	*340	*340	*340	*340
Speciated Metals										
	Chromium, Hexavalent	0.32		0.20	ug/g	01-AUG-18	8	10	8	10
L2136825-6	MW18-129D-2									
Sampled By:	CLIENT on 23-JUL-18 @ 11:00									
Matrix:	SOIL									
Physical Tests										
	% Moisture	2.44		0.10	%	02-AUG-18				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.050		0.050	ug/g	03-AUG-18	21	29	7.9	29
	Acenaphthylene	<0.050		0.050	ug/g	03-AUG-18	0.15	0.17	0.15	0.17
	Anthracene	<0.050		0.050	ug/g	03-AUG-18	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	<0.050		0.050	ug/g	03-AUG-18	0.96	0.96	0.5	0.63
	Benzo(a)pyrene	<0.050		0.050	ug/g	03-AUG-18	0.3	0.3	0.3	0.3
	Benzo(b)fluoranthene	<0.050		0.050	ug/g	03-AUG-18	0.96	0.96	0.78	0.78
	Benzo(g,h,i)perylene	<0.050		0.050	ug/g	03-AUG-18	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	<0.050		0.050	ug/g	03-AUG-18	0.96	0.96	0.78	0.78
	Chrysene	<0.050		0.050	ug/g	03-AUG-18	9.6	9.6	7	7.8
	Dibenzo(ah)anthracene	<0.050		0.050	ug/g	03-AUG-18	0.1	0.1	0.1	0.1
	Fluoranthene	<0.050		0.050	ug/g	03-AUG-18	9.6	9.6	0.69	0.69
	Fluorene	<0.050		0.050	ug/g	03-AUG-18	62	69	62	69

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T6-C/F-RPI-ICC

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2136825-6	MW18-129D-2									
Sampled By:	CLIENT on 23-JUL-18 @ 11:00									
Matrix:	SOIL									
Polycyclic Aromatic Hydrocarbons										
	Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	03-AUG-18	0.76	0.95	0.38	0.48
	1+2-Methylnaphthalenes	<0.042		0.042	ug/g	03-AUG-18	30	42	0.99	3.4
	1-Methylnaphthalene	<0.030		0.030	ug/g	03-AUG-18	30	42	0.99	3.4
	2-Methylnaphthalene	<0.030		0.030	ug/g	03-AUG-18	30	42	0.99	3.4
	Naphthalene	<0.013		0.013	ug/g	03-AUG-18	9.6	28	0.6	0.75
	Phenanthrene	<0.046		0.046	ug/g	03-AUG-18	12	16	6.2	7.8
	Pyrene	<0.050		0.050	ug/g	03-AUG-18	96	96	78	78
	Surrogate: 2-Fluorobiphenyl	104.2		50-140	%	03-AUG-18				
	Surrogate: p-Terphenyl d14	106.8		50-140	%	03-AUG-18				
L2136825-7	DUP3 JUL23									
Sampled By:	CLIENT on 23-JUL-18 @ 00:02									
Matrix:	SOIL									
Physical Tests										
	% Moisture	2.06		0.10	%	02-AUG-18				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.050		0.050	ug/g	03-AUG-18	21	29	7.9	29
	Acenaphthylene	<0.050		0.050	ug/g	03-AUG-18	0.15	0.17	0.15	0.17
	Anthracene	<0.050		0.050	ug/g	03-AUG-18	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	<0.050		0.050	ug/g	03-AUG-18	0.96	0.96	0.5	0.63
	Benzo(a)pyrene	<0.050		0.050	ug/g	03-AUG-18	0.3	0.3	0.3	0.3
	Benzo(b)fluoranthene	<0.050		0.050	ug/g	03-AUG-18	0.96	0.96	0.78	0.78
	Benzo(g,h,i)perylene	<0.050		0.050	ug/g	03-AUG-18	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	<0.050		0.050	ug/g	03-AUG-18	0.96	0.96	0.78	0.78
	Chrysene	<0.050		0.050	ug/g	03-AUG-18	9.6	9.6	7	7.8
	Dibenzo(ah)anthracene	<0.050		0.050	ug/g	03-AUG-18	0.1	0.1	0.1	0.1
	Fluoranthene	<0.050		0.050	ug/g	03-AUG-18	9.6	9.6	0.69	0.69
	Fluorene	<0.050		0.050	ug/g	03-AUG-18	62	69	62	69
	Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	03-AUG-18	0.76	0.95	0.38	0.48
	1+2-Methylnaphthalenes	<0.042		0.042	ug/g	03-AUG-18	30	42	0.99	3.4
	1-Methylnaphthalene	<0.030		0.030	ug/g	03-AUG-18	30	42	0.99	3.4
	2-Methylnaphthalene	<0.030		0.030	ug/g	03-AUG-18	30	42	0.99	3.4
	Naphthalene	<0.013		0.013	ug/g	03-AUG-18	9.6	28	0.6	0.75
	Phenanthrene	<0.046		0.046	ug/g	03-AUG-18	12	16	6.2	7.8
	Pyrene	<0.050		0.050	ug/g	03-AUG-18	96	96	78	78
	Surrogate: 2-Fluorobiphenyl	104.5		50-140	%	03-AUG-18				
	Surrogate: p-Terphenyl d14	105.7		50-140	%	03-AUG-18				
L2136825-8	MW18-129D-3									
Sampled By:	CLIENT on 23-JUL-18 @ 11:30									
Matrix:	SOIL									
Physical Tests										
	% Moisture	2.27		0.10	%	02-AUG-18				
Hydrocarbons										
	F1 (C6-C10)	6.0		5.0	ug/g	30-JUL-18	55	65	55	65

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T6-C/F-RPI-ICC

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2136825-8	MW18-129D-3									
Sampled By:	CLIENT on 23-JUL-18 @ 11:30									
Matrix:	SOIL						#1	#2	#3	#4
Hydrocarbons										
	F2 (C10-C16)	<10		10	ug/g	01-AUG-18	230	250	98	150
	F3 (C16-C34)	58		50	ug/g	01-AUG-18	1700	2500	300	1300
	F4 (C34-C50)	<50		50	ug/g	01-AUG-18	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	<72		72	ug/g	02-AUG-18				
	Chrom. to baseline at nC50	YES			No Unit	01-AUG-18				
	Surrogate: 2-Bromobenzotrifluoride	93.4		60-140	%	01-AUG-18				
	Surrogate: 3,4-Dichlorotoluene	110.0		60-140	%	30-JUL-18				
L2136825-9	BH18-206-1									
Sampled By:	CLIENT on 23-JUL-18 @ 15:10									
Matrix:	SOIL						#1	#2	#3	#4
Physical Tests										
	Conductivity	0.130		0.0040	mS/cm	02-AUG-18	1.4	1.4	0.7	0.7
	% Moisture	4.43		0.10	%	02-AUG-18				
	pH	8.46		0.10	pH units	01-AUG-18				
Cyanides										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	01-AUG-18	0.051	0.051	0.051	0.051
Saturated Paste Extractables										
	SAR	0.77		0.10	SAR	02-AUG-18	12	12	5	5
	Calcium (Ca)	4.9		1.0	mg/L	02-AUG-18				
	Magnesium (Mg)	1.0		1.0	mg/L	02-AUG-18				
	Sodium (Na)	7.2		1.0	mg/L	02-AUG-18				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	02-AUG-18	40	50	7.5	7.5
	Arsenic (As)	7.2		1.0	ug/g	02-AUG-18	18	18	18	18
	Barium (Ba)	35.7		1.0	ug/g	02-AUG-18	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	02-AUG-18	8	10	4	5
	Boron (B)	7.6		5.0	ug/g	02-AUG-18	120	120	120	120
	Boron (B), Hot Water Ext.	<0.10		0.10	ug/g	02-AUG-18	2	2	1.5	1.5
	Cadmium (Cd)	1.43		0.50	ug/g	02-AUG-18	1.9	1.9	*1.2	*1.2
	Chromium (Cr)	8.9		1.0	ug/g	02-AUG-18	160	160	160	160
	Cobalt (Co)	4.6		1.0	ug/g	02-AUG-18	80	100	22	22
	Copper (Cu)	22.8		1.0	ug/g	02-AUG-18	230	300	140	180
	Lead (Pb)	113		1.0	ug/g	02-AUG-18	120	120	120	120
	Mercury (Hg)	0.0210		0.0050	ug/g	02-AUG-18	3.9	20	0.27	1.8
	Molybdenum (Mo)	<1.0		1.0	ug/g	02-AUG-18	40	40	6.9	6.9
	Nickel (Ni)	12.3		1.0	ug/g	02-AUG-18	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	02-AUG-18	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	02-AUG-18	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	02-AUG-18	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	02-AUG-18	33	33	23	23
	Vanadium (V)	18.7		1.0	ug/g	02-AUG-18	86	86	86	86
	Zinc (Zn)	614		5.0	ug/g	02-AUG-18	*340	*340	*340	*340
Speciated Metals										
	Chromium, Hexavalent	<0.20		0.20	ug/g	01-AUG-18	8	10	8	10

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T6-C/F-RPI-ICC

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)

#2: T6-Soil-Ind/Com/Commu Property Use (Fine)

#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)

#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2136825-10	BH18-206-2									
Sampled By:	CLIENT on 23-JUL-18 @ 15:30									
Matrix:	SOIL									
Physical Tests										
	% Moisture	4.40		0.10	%	02-AUG-18				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	30-JUL-18	55	65	55	65
	F2 (C10-C16)	<10		10	ug/g	01-AUG-18	230	250	98	150
	F3 (C16-C34)	179		50	ug/g	01-AUG-18	1700	2500	300	1300
	F4 (C34-C50)	<50		50	ug/g	01-AUG-18	3300	6600	2800	5600
	F4G-SG (GHH-Silica)	<250		250	ug/g	01-AUG-18	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	179		72	ug/g	02-AUG-18				
	Chrom. to baseline at nC50	NO			No Unit	01-AUG-18				
	Surrogate: 2-Bromobenzotrifluoride	92.0		60-140	%	01-AUG-18				
	Surrogate: 3,4-Dichlorotoluene	111.5		60-140	%	30-JUL-18				
L2136825-11	BH18-208-1									
Sampled By:	CLIENT on 23-JUL-18 @ 16:30									
Matrix:	SOIL									
Physical Tests										
	% Moisture	14.4		0.10	%	02-AUG-18				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	02-AUG-18	40	50	7.5	7.5
	Arsenic (As)	10.1		1.0	ug/g	02-AUG-18	18	18	18	18
	Barium (Ba)	29.1		1.0	ug/g	02-AUG-18	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	02-AUG-18	8	10	4	5
	Boron (B)	9.8		5.0	ug/g	02-AUG-18	120	120	120	120
	Cadmium (Cd)	0.80		0.50	ug/g	02-AUG-18	1.9	1.9	1.2	1.2
	Chromium (Cr)	14.1		1.0	ug/g	02-AUG-18	160	160	160	160
	Cobalt (Co)	12.6		1.0	ug/g	02-AUG-18	80	100	22	22
	Copper (Cu)	13.6		1.0	ug/g	02-AUG-18	230	300	140	180
	Lead (Pb)	190		1.0	ug/g	02-AUG-18	*120	*120	*120	*120
	Molybdenum (Mo)	<1.0		1.0	ug/g	02-AUG-18	40	40	6.9	6.9
	Nickel (Ni)	15.1		1.0	ug/g	02-AUG-18	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	02-AUG-18	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	02-AUG-18	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	02-AUG-18	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	02-AUG-18	33	33	23	23
	Vanadium (V)	30.0		1.0	ug/g	02-AUG-18	86	86	86	86
	Zinc (Zn)	665		5.0	ug/g	02-AUG-18	*340	*340	*340	*340
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.050		0.050	ug/g	03-AUG-18	21	29	7.9	29
	Acenaphthylene	<0.050		0.050	ug/g	03-AUG-18	0.15	0.17	0.15	0.17
	Anthracene	<0.050		0.050	ug/g	03-AUG-18	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	<0.050		0.050	ug/g	03-AUG-18	0.96	0.96	0.5	0.63
	Benzo(a)pyrene	<0.050		0.050	ug/g	03-AUG-18	0.3	0.3	0.3	0.3
	Benzo(b)fluoranthene	<0.050		0.050	ug/g	03-AUG-18	0.96	0.96	0.78	0.78
	Benzo(g,h,i)perylene	<0.050		0.050	ug/g	03-AUG-18	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	<0.050		0.050	ug/g	03-AUG-18	0.96	0.96	0.78	0.78

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T6-C/F-RPI-ICC

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
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#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2136825-11	BH18-208-1									
Sampled By:	CLIENT on 23-JUL-18 @ 16:30									
Matrix:	SOIL									
Polycyclic Aromatic Hydrocarbons										
	Chrysene	<0.050		0.050	ug/g	03-AUG-18	9.6	9.6	7	7.8
	Dibenzo(ah)anthracene	<0.050		0.050	ug/g	03-AUG-18	0.1	0.1	0.1	0.1
	Fluoranthene	<0.050		0.050	ug/g	03-AUG-18	9.6	9.6	0.69	0.69
	Fluorene	<0.050		0.050	ug/g	03-AUG-18	62	69	62	69
	Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	03-AUG-18	0.76	0.95	0.38	0.48
	1+2-Methylnaphthalenes	<0.042		0.042	ug/g	03-AUG-18	30	42	0.99	3.4
	1-Methylnaphthalene	<0.030		0.030	ug/g	03-AUG-18	30	42	0.99	3.4
	2-Methylnaphthalene	<0.030		0.030	ug/g	03-AUG-18	30	42	0.99	3.4
	Naphthalene	<0.013		0.013	ug/g	03-AUG-18	9.6	28	0.6	0.75
	Phenanthrene	<0.046		0.046	ug/g	03-AUG-18	12	16	6.2	7.8
	Pyrene	<0.050		0.050	ug/g	03-AUG-18	96	96	78	78
	Surrogate: 2-Fluorobiphenyl	108.6		50-140	%	03-AUG-18				
	Surrogate: p-Terphenyl d14	113.8		50-140	%	03-AUG-18				

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T6-C/F-RPI-ICC

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

Reference Information

Sample Parameter Qualifier key listed:

Qualifier	Description
DLS	Detection Limit Adjusted: Instrument Sensitivity

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference***
B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B

A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD

The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

EC-WT	Soil	Conductivity (EC)	MOEE E3138

A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Soil	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

Reference Information

F2-F4-511-WT	Soil	F2-F4-O.Reg 153/04 (July 2011)	CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from soil with 1:1 hexane:acetone using a rotary extractor. Extracts are treated with silica gel to remove polar organic interferences. F2, F3, & F4 are analyzed by GC-FID. F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where both F4 (C34-C50) and F4G-sg are reported for a sample, the larger of the two values is used for comparison against the relevant CCME guideline for F4.
7. F4G-sg cannot be added to the C6 to C50 hydrocarbon results to obtain an estimate of total extractable hydrocarbons.
8. This method is validated for use.
9. Data from analysis of validation and quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram, unless otherwise indicated.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F4G-ADD-511-WT	Soil	F4G SG-O.Reg 153/04 (July 2011)	MOE DECPH-E3398/CCME TIER 1

F4G, gravimetric analysis, is determined if the chromatogram does not return to baseline at or before C50. A soil sample is extracted with a solvent mix, the solvent is evaporated and the weight of the residue is determined.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

HG-200.2-CVAA-WT	Soil	Mercury in Soil by CVAAS	EPA 200.2/1631E (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)

This method uses a heated strong acid digestion with HNO3 and HCl and is intended to liberate metals that may be environmentally available. Silicate minerals are not solubilized. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. Analysis is by Collision/Reaction Cell ICPMS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT	Soil	ABN-Calculated Parameters	SW846 8270
MOISTURE-WT	Soil	% Moisture	Gravimetric: Oven Dried
PAH-511-WT	Soil	PAH-O.Reg 153/04 (July 2011)	SW846 3510/8270

A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking techniqueis used to extract the sample with a mixture of methanol and toluene. The extracts are concentrated and analyzed by GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PH-WT	Soil	pH	MOEE E3137A

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C

A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

Reference Information

VOC-1,3-DCP-CALC-WT	Soil	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Soil	VOC-O.Reg 153/04 (July 2011)	SW846 8260 (511)

Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

*** ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody numbers:

17-615353

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA		

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Quality Control Report

Workorder: L2136825 Report Date: 07-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT	**Soil**							
Batch R4155587								
WG2839053-4 DUP		**L2137057-1**						
Boron (B), Hot Water Ext.		<0.10	<0.10	RPD-NA	ug/g	N/A	30	02-AUG-18
WG2839053-2 IRM		**HOTB-SAL_SOIL5**						
Boron (B), Hot Water Ext.			90.2		%		70-130	02-AUG-18
WG2839053-3 LCS								
Boron (B), Hot Water Ext.			107.9		%		70-130	02-AUG-18
WG2839053-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	02-AUG-18
CN-WAD-R511-WT	**Soil**							
Batch R4152793								
WG2837946-3 DUP		**L2137057-3**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	01-AUG-18
WG2837946-2 LCS								
Cyanide, Weak Acid Diss			89.1		%		80-120	01-AUG-18
WG2837946-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	01-AUG-18
WG2837946-4 MS		**L2137057-3**						
Cyanide, Weak Acid Diss			97.2		%		70-130	01-AUG-18
CR-CR6-IC-WT	**Soil**							
Batch R4152655								
WG2837987-4 CRM		**WT-SQC012**						
Chromium, Hexavalent			104.1		%		70-130	01-AUG-18
WG2837987-3 DUP		**L2137057-3**						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	01-AUG-18
WG2837987-2 LCS								
Chromium, Hexavalent			89.9		%		80-120	01-AUG-18
WG2837987-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	01-AUG-18
EC-WT	**Soil**							
Batch R4155312								
WG2839068-4 DUP		**WG2839068-3**						
Conductivity		0.148	0.143		mS/cm	3.8	20	02-AUG-18
WG2839492-1 LCS								
Conductivity			97.4		%		90-110	02-AUG-18
WG2839068-1 MB								
Conductivity			<0.0040		mS/cm		0.004	02-AUG-18
F1-HS-511-WT	**Soil**							

Quality Control Report

Workorder: L2136825 Report Date: 07-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT	**Soil**							
Batch R4147212								
WG2834308-4 DUP		**WG2834308-3**						
F1 (C6-C10)		227	238		ug/g	4.5	30	31-JUL-18
WG2834308-2 LCS								
F1 (C6-C10)			106.1		%		80-120	29-JUL-18
WG2834308-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	29-JUL-18
Surrogate: 3,4-Dichlorotoluene			115.8		%		60-140	29-JUL-18
WG2834308-6 MS		**L2135565-5**						
F1 (C6-C10)			N/A	E	%		60-140	31-JUL-18
F2-F4-511-WT	**Soil**							
Batch R4152921								
WG2837149-4 DUP		**WG2837149-3**						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	01-AUG-18
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	01-AUG-18
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	01-AUG-18
WG2837149-2 LCS								
F2 (C10-C16)			103.7		%		80-120	01-AUG-18
F3 (C16-C34)			107.1		%		80-120	01-AUG-18
F4 (C34-C50)			105.7		%		80-120	01-AUG-18
WG2837149-1 MB								
F2 (C10-C16)			<10		ug/g		10	01-AUG-18
F3 (C16-C34)			<50		ug/g		50	01-AUG-18
F4 (C34-C50)			<50		ug/g		50	01-AUG-18
Surrogate: 2-Bromobenzotrifluoride			90.0		%		60-140	01-AUG-18
WG2837149-5 MS		**WG2837149-3**						
F2 (C10-C16)			105.7		%		60-140	01-AUG-18
F3 (C16-C34)			109.5		%		60-140	01-AUG-18
F4 (C34-C50)			108.7		%		60-140	01-AUG-18
F4G-ADD-511-WT	**Soil**							
Batch R4155274								
WG2840010-2 LCS								
F4G-SG (GHH-Silica)			78.6		%		60-140	01-AUG-18
WG2840010-1 MB								
F4G-SG (GHH-Silica)			<250		ug/g		250	01-AUG-18
HG-200.2-CVAA-WT	**Soil**							

Quality Control Report

Workorder: L2136825 Report Date: 07-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-200.2-CVAA-WT	**Soil**							
Batch R4154007								
WG2838968-2 CRM		**WT-CANMET-TILL1**						
Mercury (Hg)			110.3		%		70-130	02-AUG-18
WG2838968-6 DUP		**WG2838968-5**						
Mercury (Hg)		<0.0050	<0.0050	RPD-NA	ug/g	N/A	40	02-AUG-18
WG2838968-3 LCS								
Mercury (Hg)			104.0		%		80-120	02-AUG-18
WG2838968-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	02-AUG-18
MET-200.2-CCMS-WT	**Soil**							
Batch R4158431								
WG2838968-2 CRM		**WT-CANMET-TILL1**						
Antimony (Sb)			99.4		%		70-130	02-AUG-18
Arsenic (As)			106.7		%		70-130	02-AUG-18
Barium (Ba)			114.6		%		70-130	02-AUG-18
Beryllium (Be)			95.3		%		70-130	02-AUG-18
Boron (B)			2.7		mg/kg		0-8.2	02-AUG-18
Cadmium (Cd)			101.7		%		70-130	02-AUG-18
Chromium (Cr)			99.4		%		70-130	02-AUG-18
Cobalt (Co)			104.0		%		70-130	02-AUG-18
Copper (Cu)			106.0		%		70-130	02-AUG-18
Lead (Pb)			109.1		%		70-130	02-AUG-18
Molybdenum (Mo)			97.2		%		70-130	02-AUG-18
Nickel (Ni)			105.8		%		70-130	02-AUG-18
Selenium (Se)			0.28		mg/kg		0.11-0.51	02-AUG-18
Silver (Ag)			0.24		mg/kg		0.13-0.33	02-AUG-18
Thallium (Tl)			0.113		mg/kg		0.077-0.18	02-AUG-18
Uranium (U)			101.1		%		70-130	02-AUG-18
Vanadium (V)			100.8		%		70-130	02-AUG-18
Zinc (Zn)			102.5		%		70-130	02-AUG-18
WG2838968-6 DUP		**WG2838968-5**						
Antimony (Sb)		<0.10	<0.10	RPD-NA	ug/g	N/A	30	02-AUG-18
Arsenic (As)		1.32	1.26		ug/g	4.9	30	02-AUG-18
Barium (Ba)		18.5	18.3		ug/g	1.0	40	02-AUG-18
Beryllium (Be)		0.14	0.14		ug/g	2.4	30	02-AUG-18
Boron (B)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	02-AUG-18

Quality Control Report

Workorder: L2136825 Report Date: 07-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R4158431								
WG2838968-6 DUP		**WG2838968-5**						
Cadmium (Cd)		0.032	0.032		ug/g	2.3	30	02-AUG-18
Chromium (Cr)		6.44	6.44		ug/g	0.1	30	02-AUG-18
Cobalt (Co)		2.16	2.10		ug/g	2.5	30	02-AUG-18
Copper (Cu)		4.50	4.32		ug/g	4.0	30	02-AUG-18
Lead (Pb)		2.43	2.49		ug/g	2.8	40	02-AUG-18
Molybdenum (Mo)		0.18	0.15		ug/g	14	40	02-AUG-18
Nickel (Ni)		4.12	4.20		ug/g	1.8	30	02-AUG-18
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	02-AUG-18
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	02-AUG-18
Thallium (Tl)		<0.050	<0.050	RPD-NA	ug/g	N/A	30	02-AUG-18
Uranium (U)		0.419	0.445		ug/g	6.0	30	02-AUG-18
Vanadium (V)		14.8	15.0		ug/g	1.3	30	02-AUG-18
Zinc (Zn)		11.9	12.5		ug/g	4.9	30	02-AUG-18
WG2838968-4 LCS								
Antimony (Sb)			117.1		%		80-120	02-AUG-18
Arsenic (As)			118.5		%		80-120	02-AUG-18
Barium (Ba)			94.4		%		80-120	02-AUG-18
Beryllium (Be)			109.8		%		80-120	02-AUG-18
Boron (B)			101.1		%		80-120	02-AUG-18
Cadmium (Cd)			104.8		%		80-120	02-AUG-18
Chromium (Cr)			116.9		%		80-120	02-AUG-18
Cobalt (Co)			117.3		%		80-120	02-AUG-18
Copper (Cu)			115.6		%		80-120	02-AUG-18
Lead (Pb)			112.0		%		80-120	02-AUG-18
Molybdenum (Mo)			111.7		%		80-120	02-AUG-18
Nickel (Ni)			118.1		%		80-120	02-AUG-18
Selenium (Se)			110.1		%		80-120	02-AUG-18
Silver (Ag)			116.1		%		80-120	02-AUG-18
Thallium (Tl)			103.8		%		80-120	02-AUG-18
Uranium (U)			113.5		%		80-120	02-AUG-18
Vanadium (V)			119.1		%		80-120	02-AUG-18
Zinc (Zn)			111.2		%		80-120	02-AUG-18
WG2838968-1 MB								
							0.1	

Quality Control Report

Workorder: L2136825 Report Date: 07-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R4158431								
WG2838968-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	02-AUG-18
Arsenic (As)			<0.10		mg/kg		0.1	02-AUG-18
Barium (Ba)			<0.50		mg/kg		0.5	02-AUG-18
Beryllium (Be)			<0.10		mg/kg		0.1	02-AUG-18
Boron (B)			<5.0		mg/kg		5	02-AUG-18
Cadmium (Cd)			<0.020		mg/kg		0.02	02-AUG-18
Chromium (Cr)			<0.50		mg/kg		0.5	02-AUG-18
Cobalt (Co)			<0.10		mg/kg		0.1	02-AUG-18
Copper (Cu)			<0.50		mg/kg		0.5	02-AUG-18
Lead (Pb)			<0.50		mg/kg		0.5	02-AUG-18
Molybdenum (Mo)			<0.10		mg/kg		0.1	02-AUG-18
Nickel (Ni)			<0.50		mg/kg		0.5	02-AUG-18
Selenium (Se)			<0.20		mg/kg		0.2	02-AUG-18
Silver (Ag)			<0.10		mg/kg		0.1	02-AUG-18
Thallium (Tl)			<0.050		mg/kg		0.05	02-AUG-18
Uranium (U)			<0.050		mg/kg		0.05	02-AUG-18
Vanadium (V)			<0.20		mg/kg		0.2	02-AUG-18
Zinc (Zn)			<2.0		mg/kg		2	02-AUG-18
MOISTURE-WT	**Soil**							
Batch R4153151								
WG2838623-3 DUP		**L2137149-9**						
% Moisture		10.6	11.4		%	6.9	20	02-AUG-18
WG2838623-2 LCS								
% Moisture			99.98		%		90-110	02-AUG-18
WG2838623-1 MB								
% Moisture			<0.10		%		0.1	02-AUG-18
PAH-511-WT	**Soil**							
Batch R4157808								
WG2836404-3 DUP		**WG2836404-5**						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	03-AUG-18
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	03-AUG-18
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-AUG-18
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-AUG-18
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-AUG-18

Quality Control Report

Workorder: L2136825 Report Date: 07-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R4157808								
WG2836404-3 DUP		**WG2836404-5**						
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-AUG-18
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-AUG-18
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-AUG-18
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-AUG-18
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-AUG-18
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-AUG-18
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-AUG-18
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-AUG-18
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-AUG-18
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-AUG-18
Naphthalene		<0.013	<0.013	RPD-NA	ug/g	N/A	40	03-AUG-18
Phenanthrene		<0.046	<0.046	RPD-NA	ug/g	N/A	40	03-AUG-18
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-AUG-18
WG2836404-2 LCS								
1-Methylnaphthalene			91.5		%		50-140	03-AUG-18
2-Methylnaphthalene			92.1		%		50-140	03-AUG-18
Acenaphthene			90.6		%		50-140	03-AUG-18
Acenaphthylene			84.3		%		50-140	03-AUG-18
Anthracene			84.7		%		50-140	03-AUG-18
Benzo(a)anthracene			89.9		%		50-140	03-AUG-18
Benzo(a)pyrene			85.9		%		50-140	03-AUG-18
Benzo(b)fluoranthene			94.7		%		50-140	03-AUG-18
Benzo(g,h,i)perylene			80.8		%		50-140	03-AUG-18
Benzo(k)fluoranthene			88.9		%		50-140	03-AUG-18
Chrysene			86.2		%		50-140	03-AUG-18
Dibenzo(ah)anthracene			81.6		%		50-140	03-AUG-18
Fluoranthene			88.6		%		50-140	03-AUG-18
Fluorene			86.5		%		50-140	03-AUG-18
Indeno(1,2,3-cd)pyrene			88.6		%		50-140	03-AUG-18
Naphthalene			89.6		%		50-140	03-AUG-18
Phenanthrene			90.3		%		50-140	03-AUG-18
Pyrene			88.9		%		50-140	03-AUG-18
WG2836404-1 MB								
							0.03	

Quality Control Report

Workorder: L2136825 Report Date: 07-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R4157808								
WG2836404-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	03-AUG-18
2-Methylnaphthalene			<0.030		ug/g		0.03	03-AUG-18
Acenaphthene			<0.050		ug/g		0.05	03-AUG-18
Acenaphthylene			<0.050		ug/g		0.05	03-AUG-18
Anthracene			<0.050		ug/g		0.05	03-AUG-18
Benzo(a)anthracene			<0.050		ug/g		0.05	03-AUG-18
Benzo(a)pyrene			<0.050		ug/g		0.05	03-AUG-18
Benzo(b)fluoranthene			<0.050		ug/g		0.05	03-AUG-18
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	03-AUG-18
Benzo(k)fluoranthene			<0.050		ug/g		0.05	03-AUG-18
Chrysene			<0.050		ug/g		0.05	03-AUG-18
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	03-AUG-18
Fluoranthene			<0.050		ug/g		0.05	03-AUG-18
Fluorene			<0.050		ug/g		0.05	03-AUG-18
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	03-AUG-18
Naphthalene			<0.013		ug/g		0.013	03-AUG-18
Phenanthrene			<0.046		ug/g		0.046	03-AUG-18
Pyrene			<0.050		ug/g		0.05	03-AUG-18
Surrogate: 2-Fluorobiphenyl			107.1		%		50-140	03-AUG-18
Surrogate: p-Terphenyl d14			106.2		%		50-140	03-AUG-18
WG2836404-4 MS		**WG2836404-5**						
1-Methylnaphthalene			89.6		%		50-140	03-AUG-18
2-Methylnaphthalene			89.1		%		50-140	03-AUG-18
Acenaphthene			88.4		%		50-140	03-AUG-18
Acenaphthylene			81.7		%		50-140	03-AUG-18
Anthracene			79.0		%		50-140	03-AUG-18
Benzo(a)anthracene			90.1		%		50-140	03-AUG-18
Benzo(a)pyrene			85.0		%		50-140	03-AUG-18
Benzo(b)fluoranthene			83.5		%		50-140	03-AUG-18
Benzo(g,h,i)perylene			76.3		%		50-140	03-AUG-18
Benzo(k)fluoranthene			83.7		%		50-140	03-AUG-18
Chrysene			82.4		%		50-140	03-AUG-18
Dibenzo(ah)anthracene			77.3		%		50-140	03-AUG-18
Fluoranthene			88.5		%		50-140	03-AUG-18

Quality Control Report

Workorder: L2136825 Report Date: 07-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R4157808								
WG2836404-4 MS		**WG2836404-5**						
Fluorene			84.8		%		50-140	03-AUG-18
Indeno(1,2,3-cd)pyrene			84.3		%		50-140	03-AUG-18
Naphthalene			87.5		%		50-140	03-AUG-18
Phenanthrene			91.4		%		50-140	03-AUG-18
Pyrene			88.3		%		50-140	03-AUG-18
PH-WT	**Soil**							
Batch R4152670								
WG2837006-1 DUP		**L2137149-12**						
pH		11.53	11.52	J	pH units	0.01	0.3	01-AUG-18
WG2838317-1 LCS								
pH			6.95		pH units		6.9-7.1	01-AUG-18
SAR-R511-WT	**Soil**							
Batch R4157473								
WG2839068-4 DUP		**WG2839068-3**						
Calcium (Ca)		2.4	2.5		mg/L	2.3	30	02-AUG-18
Sodium (Na)		18.5	18.4		mg/L	0.8	30	02-AUG-18
Magnesium (Mg)		<1.0	<1.0	RPD-NA	mg/L	N/A	30	02-AUG-18
WG2839068-2 IRM		**WT SAR2**						
Calcium (Ca)			126.8		%		70-130	02-AUG-18
Sodium (Na)			125.8		%		70-130	02-AUG-18
Magnesium (Mg)			113.4		%		70-130	02-AUG-18
WG2839068-1 MB								
Calcium (Ca)			<1.0		mg/L		1	02-AUG-18
Sodium (Na)			<1.0		mg/L		1	02-AUG-18
Magnesium (Mg)			<1.0		mg/L		1	02-AUG-18
VOC-511-HS-WT	**Soil**							
Batch R4151368								
WG2833040-4 DUP		**WG2833040-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	31-JUL-18
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	31-JUL-18
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	31-JUL-18
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	31-JUL-18
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	31-JUL-18
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	31-JUL-18

Quality Control Report

Workorder: L2136825 Report Date: 07-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R4151368								
WG2833040-4 DUP		**WG2833040-3**						
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	31-JUL-18
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	31-JUL-18
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	31-JUL-18
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	31-JUL-18
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	31-JUL-18
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	31-JUL-18
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	31-JUL-18
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	31-JUL-18
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	31-JUL-18
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	31-JUL-18
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	31-JUL-18
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	31-JUL-18
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	31-JUL-18
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	31-JUL-18
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	31-JUL-18
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	31-JUL-18
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	31-JUL-18
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	31-JUL-18
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	31-JUL-18
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	31-JUL-18
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	31-JUL-18
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	31-JUL-18
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	31-JUL-18
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	31-JUL-18
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	31-JUL-18
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	31-JUL-18
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	31-JUL-18
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	31-JUL-18
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	31-JUL-18
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	31-JUL-18
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	31-JUL-18
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	31-JUL-18
Trichlorofluoromethane		<0.050	<0.050		ug/g			31-JUL-18

Quality Control Report

Workorder: L2136825 Report Date: 07-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R4151368								
WG2833040-4 DUP		**WG2833040-3**						
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	31-JUL-18
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	31-JUL-18
WG2833040-2 LCS								
1,1,1,2-Tetrachloroethane			99.5		%		60-130	31-JUL-18
1,1,2,2-Tetrachloroethane			98.2		%		60-130	31-JUL-18
1,1,1-Trichloroethane			103.5		%		60-130	31-JUL-18
1,1,2-Trichloroethane			99.5		%		60-130	31-JUL-18
1,1-Dichloroethane			103.7		%		60-130	31-JUL-18
1,1-Dichloroethylene			97.5		%		60-130	31-JUL-18
1,2-Dibromoethane			98.9		%		70-130	31-JUL-18
1,2-Dichlorobenzene			105.8		%		70-130	31-JUL-18
1,2-Dichloroethane			101.5		%		60-130	31-JUL-18
1,2-Dichloropropane			100.2		%		70-130	31-JUL-18
1,3-Dichlorobenzene			106.6		%		70-130	31-JUL-18
1,4-Dichlorobenzene			108.1		%		70-130	31-JUL-18
Acetone			96.2		%		60-140	31-JUL-18
Benzene			105.2		%		70-130	31-JUL-18
Bromodichloromethane			104.5		%		50-140	31-JUL-18
Bromoform			99.4		%		70-130	31-JUL-18
Bromomethane			88.2		%		50-140	31-JUL-18
Carbon tetrachloride			103.8		%		70-130	31-JUL-18
Chlorobenzene			104.5		%		70-130	31-JUL-18
Chloroform			105.3		%		70-130	31-JUL-18
cis-1,2-Dichloroethylene			105.2		%		70-130	31-JUL-18
cis-1,3-Dichloropropene			107.4		%		70-130	31-JUL-18
Dibromochloromethane			99.5		%		60-130	31-JUL-18
Dichlorodifluoromethane			101.6		%		50-140	31-JUL-18
Ethylbenzene			93.9		%		70-130	31-JUL-18
n-Hexane			108.7		%		70-130	31-JUL-18
Methylene Chloride			105.4		%		70-130	31-JUL-18
MTBE			104.4		%		70-130	31-JUL-18
m+p-Xylenes			101.3		%		70-130	31-JUL-18
Methyl Ethyl Ketone			97.1		%		60-140	31-JUL-18
Methyl Isobutyl Ketone			94.7		%		60-140	31-JUL-18

Quality Control Report

Workorder: L2136825 Report Date: 07-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch	**R4151368**							
WG2833040-2	**LCS**							
o-Xylene			93.2		%		70-130	31-JUL-18
Styrene			99.96		%		70-130	31-JUL-18
Tetrachloroethylene			106.0		%		60-130	31-JUL-18
Toluene			97.3		%		70-130	31-JUL-18
trans-1,2-Dichloroethylene			103.2		%		60-130	31-JUL-18
trans-1,3-Dichloropropene			97.6		%		70-130	31-JUL-18
Trichloroethylene			111.2		%		60-130	31-JUL-18
Trichlorofluoromethane			114.4		%		50-140	31-JUL-18
Vinyl chloride			98.5		%		60-140	31-JUL-18
WG2833040-1	**MB**							
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	31-JUL-18
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	31-JUL-18
1,1,1-Trichloroethane			<0.050		ug/g		0.05	31-JUL-18
1,1,2-Trichloroethane			<0.050		ug/g		0.05	31-JUL-18
1,1-Dichloroethane			<0.050		ug/g		0.05	31-JUL-18
1,1-Dichloroethylene			<0.050		ug/g		0.05	31-JUL-18
1,2-Dibromoethane			<0.050		ug/g		0.05	31-JUL-18
1,2-Dichlorobenzene			<0.050		ug/g		0.05	31-JUL-18
1,2-Dichloroethane			<0.050		ug/g		0.05	31-JUL-18
1,2-Dichloropropane			<0.050		ug/g		0.05	31-JUL-18
1,3-Dichlorobenzene			<0.050		ug/g		0.05	31-JUL-18
1,4-Dichlorobenzene			<0.050		ug/g		0.05	31-JUL-18
Acetone			<0.50		ug/g		0.5	31-JUL-18
Benzene			<0.0068		ug/g		0.0068	31-JUL-18
Bromodichloromethane			<0.050		ug/g		0.05	31-JUL-18
Bromoform			<0.050		ug/g		0.05	31-JUL-18
Bromomethane			<0.050		ug/g		0.05	31-JUL-18
Carbon tetrachloride			<0.050		ug/g		0.05	31-JUL-18
Chlorobenzene			<0.050		ug/g		0.05	31-JUL-18
Chloroform			<0.050		ug/g		0.05	31-JUL-18
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	31-JUL-18
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	31-JUL-18
Dibromochloromethane			<0.050		ug/g		0.05	31-JUL-18
Dichlorodifluoromethane			<0.050		ug/g		0.05	31-JUL-18

Quality Control Report

Workorder: L2136825 Report Date: 07-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R4151368								
WG2833040-1 MB								
Ethylbenzene			<0.018		ug/g		0.018	31-JUL-18
n-Hexane			<0.050		ug/g		0.05	31-JUL-18
Methylene Chloride			<0.050		ug/g		0.05	31-JUL-18
MTBE			<0.050		ug/g		0.05	31-JUL-18
m+p-Xylenes			<0.030		ug/g		0.03	31-JUL-18
Methyl Ethyl Ketone			<0.50		ug/g		0.5	31-JUL-18
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	31-JUL-18
o-Xylene			<0.020		ug/g		0.02	31-JUL-18
Styrene			<0.050		ug/g		0.05	31-JUL-18
Tetrachloroethylene			<0.050		ug/g		0.05	31-JUL-18
Toluene			<0.080		ug/g		0.08	31-JUL-18
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	31-JUL-18
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	31-JUL-18
Trichloroethylene			<0.010		ug/g		0.01	31-JUL-18
Trichlorofluoromethane			<0.050		ug/g		0.05	31-JUL-18
Vinyl chloride			<0.020		ug/g		0.02	31-JUL-18
Surrogate: 1,4-Difluorobenzene			108.4		%		50-140	31-JUL-18
Surrogate: 4-Bromofluorobenzene			101.7		%		50-140	31-JUL-18
WG2833040-5 MS		**L2135948-1**						
1,1,1,2-Tetrachloroethane			106.6		%		50-140	31-JUL-18
1,1,2,2-Tetrachloroethane			103.4		%		50-140	31-JUL-18
1,1,1-Trichloroethane			106.9		%		50-140	31-JUL-18
1,1,2-Trichloroethane			107.4		%		50-140	31-JUL-18
1,1-Dichloroethane			108.2		%		50-140	31-JUL-18
1,1-Dichloroethylene			99.5		%		50-140	31-JUL-18
1,2-Dibromoethane			106.8		%		50-140	31-JUL-18
1,2-Dichlorobenzene			111.2		%		50-140	31-JUL-18
1,2-Dichloroethane			107.7		%		50-140	31-JUL-18
1,2-Dichloropropane			106.4		%		50-140	31-JUL-18
1,3-Dichlorobenzene			110.6		%		50-140	31-JUL-18
1,4-Dichlorobenzene			111.9		%		50-140	31-JUL-18
Acetone			103.9		%		50-140	31-JUL-18
Benzene			109.6		%		50-140	31-JUL-18
Bromodichloromethane			109.9		%		50-140	31-JUL-18

Quality Control Report

Workorder: L2136825 Report Date: 07-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R4151368								
WG2833040-5 MS		**L2135948-1**						
Bromoform			105.8		%		50-140	31-JUL-18
Bromomethane			89.0		%		50-140	31-JUL-18
Carbon tetrachloride			106.5		%		50-140	31-JUL-18
Chlorobenzene			110.8		%		50-140	31-JUL-18
Chloroform			110.2		%		50-140	31-JUL-18
cis-1,2-Dichloroethylene			109.9		%		50-140	31-JUL-18
cis-1,3-Dichloropropene			109.7		%		50-140	31-JUL-18
Dibromochloromethane			107.3		%		50-140	31-JUL-18
Dichlorodifluoromethane			105.3		%		50-140	31-JUL-18
Ethylbenzene			100.3		%		50-140	31-JUL-18
n-Hexane			111.2		%		50-140	31-JUL-18
Methylene Chloride			109.8		%		50-140	31-JUL-18
MTBE			110.7		%		50-140	31-JUL-18
m+p-Xylenes			106.6		%		50-140	31-JUL-18
Methyl Ethyl Ketone			105.1		%		50-140	31-JUL-18
Methyl Isobutyl Ketone			101.3		%		50-140	31-JUL-18
o-Xylene			99.8		%		50-140	31-JUL-18
Styrene			106.1		%		50-140	31-JUL-18
Tetrachloroethylene			109.7		%		50-140	31-JUL-18
Toluene			103.8		%		50-140	31-JUL-18
trans-1,2-Dichloroethylene			104.9		%		50-140	31-JUL-18
trans-1,3-Dichloropropene			101.7		%		50-140	31-JUL-18
Trichloroethylene			114.4		%		50-140	31-JUL-18
Trichlorofluoromethane			116.5		%		50-140	31-JUL-18
Vinyl chloride			100.0		%		50-140	31-JUL-18

Quality Control Report

Workorder: L2136825 Report Date: 07-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9
Contact: TANIA MCCARTHY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
E	Matrix Spike recovery outside ALS DQO due to heterogeneous analyte background in sample.
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

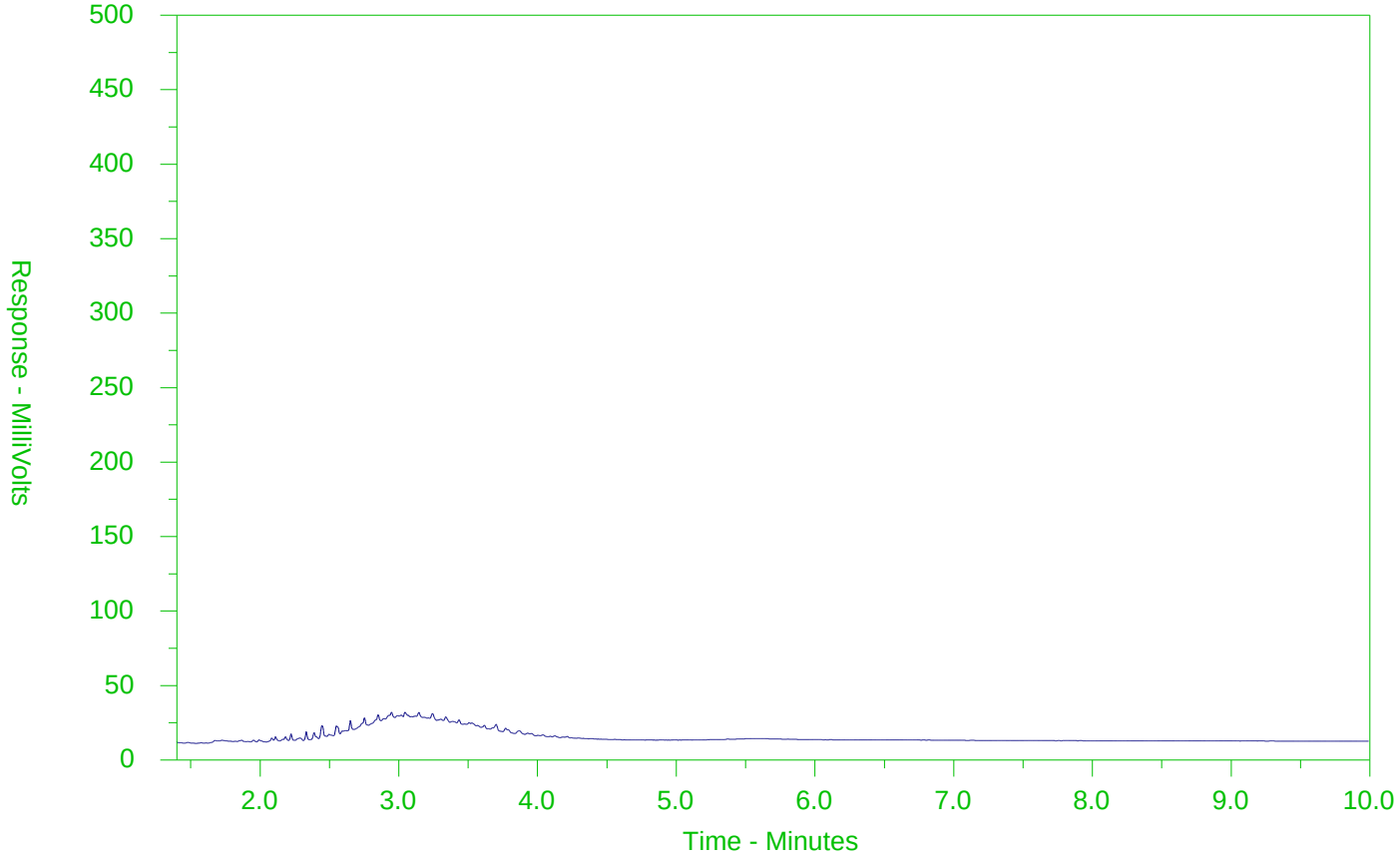
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2136825-8
Client Sample ID: MW18-129D-3



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

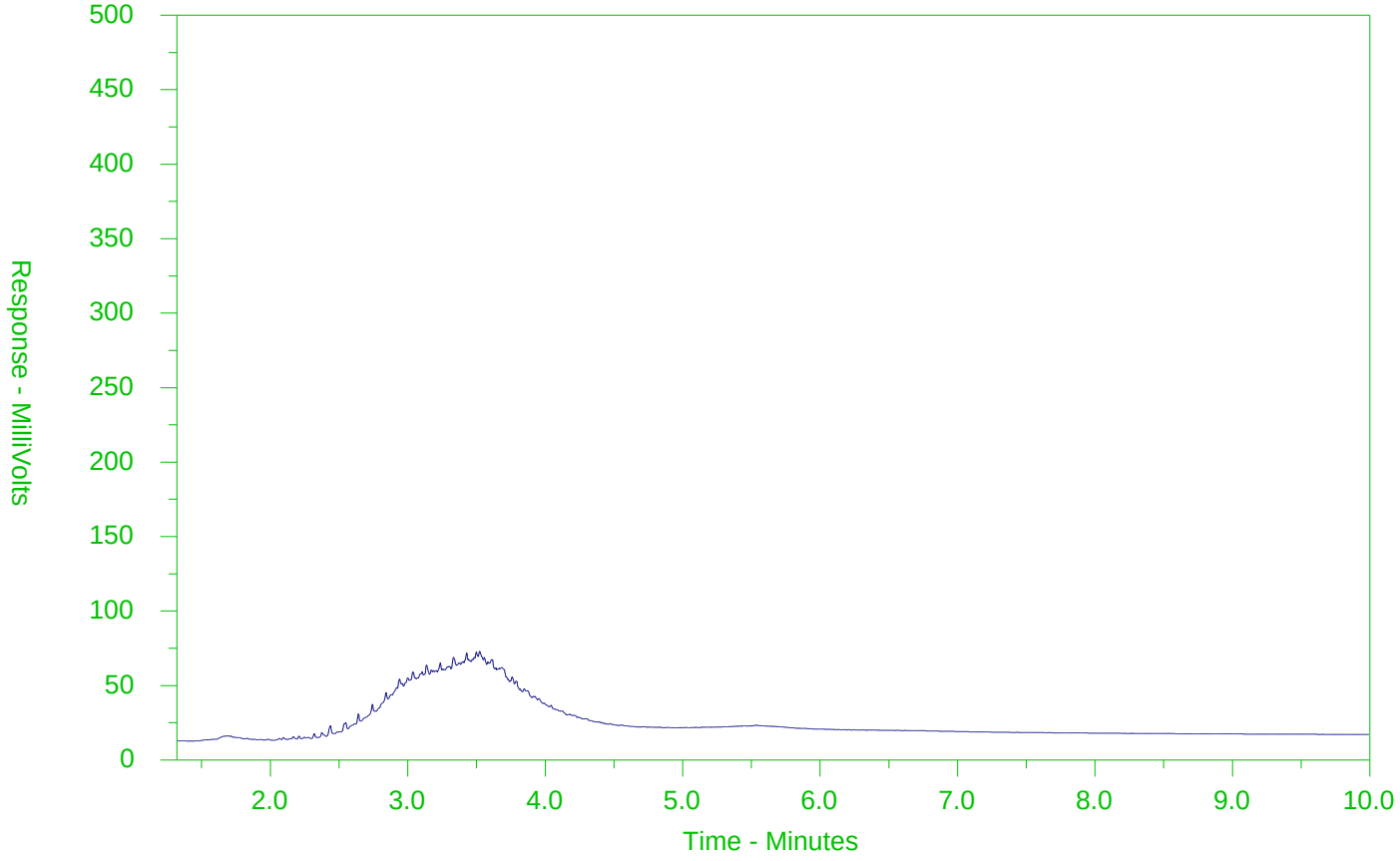
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2136825-10
Client Sample ID: BH18-206-2



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

L2136825-COFC

COC Number: 17 - 615353

Page of

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Report To	Contact and company name below will appear on the final report
Company:	CH2M - JACOBS
Contact:	TANIA MCCARTHY
Phone:	519 579 3509
	Company address below will appear on the final report
Street:	72 VICTORIA ST S. SUITE 300
City/Province:	KITCHENER ON
Postal Code:	N2G 4Y9
Invoice To	Same as Report To ☒ YES ☐ NO
	Copy of Invoice with Report ☒ YES ☐ NO
Company:	
Contact:	

Report Format / Distribution

Select Report Format: ☒ PDF ☒ EXCEL ☒ EDD (DIGITAL)

Quality Control (QC) Report with Report ☒ YES ☐ NO

☒ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: Tania.McCarthy@ch2m.com

Email 2: lucas.ribeiro@ch2m.com

Email 3:

Invoice Distribution

Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax:

Email 2:

Project Information

ALS Account # / Quote #:

Job #:

PO / AFE:

LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#:

Major/Minor Code: Routing Code:

Requisitioner:

Location:

ALS Lab Work Order # (lab use only): L2136825 AP 26C

ALS Contact: MM

Sampler:

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐; 3 day [P3-25%] ☐; 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E-100%] ☐; Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	VOC	Metals + DMHg	PAH	PHC	Metals only	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
	BH18-204-1	23-JUL-18	09:40	Soil	X							
	DUP1 JUL23	23-JUL-18	00:00	Soil	X							
	BH18-204-2	23-JUL-18	09:30	Soil	X							
	MW18-129D-1	23-JUL-18	10:40	Soil		X						
	DUP2 JUL23	23-JUL-18	00:01	Soil		X						
	MW18-129D-2	23-JUL-18	11:00	Soil			X					
	DUP3 JUL23	23-JUL-18	00:02	Soil			X					
	MW18-129D-3	23-JUL-18	11:30	Soil				X				
	BH18-206-1	23-JUL-18	15:10	Soil		X						
	BH18-206-2	23-JUL-18	15:30	Soil				X				
	BH18-208-1	23-JUL-18	16:30	Soil			X		X			

Drinking Water (DW) Samples[1] (client use):

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Compare to O. Reg. 153/04

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☒ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				2.3			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Lucas Ribeiro	Date: 26-JUL-2018	Time: 10:50	Received by: AK	Date: 7-26-18	Time: 10:50	Received by: Andrea C.	Date: July 26	Time: 15:30

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

CH2M HILL CANADA LIMITED
ATTN: TANIA MCCARTHY
72 VICTORIA ST SOUTH
SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 26-JUL-18
Report Date: 03-AUG-18 12:13 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2136911

Project P.O. #: NOT SUBMITTED
Job Reference: 694757
C of C Numbers: 17-615352
Legal Site Desc:

Mathy Mahadeva
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2136911-1	MW18-124S-1									
Sampled By:	CLIENT on 24-JUL-18 @ 08:30									
Matrix:	SOIL									
Physical Tests										
	% Moisture	7.44		0.10	%	02-AUG-18				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	31-JUL-18	40	50	7.5	7.5
	Arsenic (As)	2.7		1.0	ug/g	31-JUL-18	18	18	18	18
	Barium (Ba)	16.6		1.0	ug/g	31-JUL-18	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	31-JUL-18	8	10	4	5
	Boron (B)	<5.0		5.0	ug/g	31-JUL-18	120	120	120	120
	Cadmium (Cd)	<0.50		0.50	ug/g	31-JUL-18	1.9	1.9	1.2	1.2
	Chromium (Cr)	8.5		1.0	ug/g	31-JUL-18	160	160	160	160
	Cobalt (Co)	3.3		1.0	ug/g	31-JUL-18	80	100	22	22
	Copper (Cu)	11.0		1.0	ug/g	31-JUL-18	230	300	140	180
	Lead (Pb)	8.7		1.0	ug/g	31-JUL-18	120	120	120	120
	Molybdenum (Mo)	<1.0		1.0	ug/g	31-JUL-18	40	40	6.9	6.9
	Nickel (Ni)	5.6		1.0	ug/g	31-JUL-18	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	31-JUL-18	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	31-JUL-18	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	31-JUL-18	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	31-JUL-18	33	33	23	23
	Vanadium (V)	21.0		1.0	ug/g	31-JUL-18	86	86	86	86
	Zinc (Zn)	48.7		5.0	ug/g	31-JUL-18	340	340	340	340
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.050		0.050	ug/g	03-AUG-18	21	29	7.9	29
	Acenaphthylene	<0.050		0.050	ug/g	03-AUG-18	0.15	0.17	0.15	0.17
	Anthracene	<0.050		0.050	ug/g	03-AUG-18	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	<0.050		0.050	ug/g	03-AUG-18	0.96	0.96	0.5	0.63
	Benzo(a)pyrene	<0.050		0.050	ug/g	03-AUG-18	0.3	0.3	0.3	0.3
	Benzo(b)fluoranthene	<0.050		0.050	ug/g	03-AUG-18	0.96	0.96	0.78	0.78
	Benzo(g,h,i)perylene	<0.050		0.050	ug/g	03-AUG-18	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	<0.050		0.050	ug/g	03-AUG-18	0.96	0.96	0.78	0.78
	Chrysene	<0.050		0.050	ug/g	03-AUG-18	9.6	9.6	7	7.8
	Dibenzo(ah)anthracene	<0.050		0.050	ug/g	03-AUG-18	0.1	0.1	0.1	0.1
	Fluoranthene	<0.050		0.050	ug/g	03-AUG-18	9.6	9.6	0.69	0.69
	Fluorene	<0.050		0.050	ug/g	03-AUG-18	62	69	62	69
	Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	03-AUG-18	0.76	0.95	0.38	0.48
	1+2-Methylnaphthalenes	<0.042		0.042	ug/g	03-AUG-18	30	42	0.99	3.4
	1-Methylnaphthalene	<0.030		0.030	ug/g	03-AUG-18	30	42	0.99	3.4
	2-Methylnaphthalene	<0.030		0.030	ug/g	03-AUG-18	30	42	0.99	3.4
	Naphthalene	<0.013		0.013	ug/g	03-AUG-18	9.6	28	0.6	0.75
	Phenanthrene	<0.046		0.046	ug/g	03-AUG-18	12	16	6.2	7.8
	Pyrene	<0.050		0.050	ug/g	03-AUG-18	96	96	78	78
	Surrogate: 2-Fluorobiphenyl	105.8		50-140	%	03-AUG-18				
	Surrogate: p-Terphenyl d14	111.3		50-140	%	03-AUG-18				
L2136911-2	MW18-124S-2									
Sampled By:	CLIENT on 24-JUL-18 @ 08:45									
Matrix:	SOIL						#1	#2	#3	#4

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T6-C/F-RPI-ICC

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2136911-2	MW18-124S-2									
Sampled By:	CLIENT on 24-JUL-18 @ 08:45									
Matrix:	SOIL									
Physical Tests										
	% Moisture	8.55		0.10	%	02-AUG-18				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.50	DLM	0.50	ug/g	03-AUG-18	21	29	7.9	29
	Acenaphthylene	<0.50	DLM	0.50	ug/g	03-AUG-18	**0.15	**0.17	**0.15	**0.17
	Anthracene	<0.50	DLM	0.50	ug/g	03-AUG-18	0.67	0.74	0.67	0.74
	Benzo(a)anthracene	<0.50	DLM	0.50	ug/g	03-AUG-18	0.96	0.96	0.5	0.63
	Benzo(a)pyrene	<0.50	DLM	0.50	ug/g	03-AUG-18	**0.3	**0.3	**0.3	**0.3
	Benzo(b)fluoranthene	<0.50	DLM	0.50	ug/g	03-AUG-18	0.96	0.96	0.78	0.78
	Benzo(g,h,i)perylene	<0.50	DLM	0.50	ug/g	03-AUG-18	9.6	9.6	6.6	7.8
	Benzo(k)fluoranthene	<0.50	DLM	0.50	ug/g	03-AUG-18	0.96	0.96	0.78	0.78
	Chrysene	<0.50	DLM	0.50	ug/g	03-AUG-18	9.6	9.6	7	7.8
	Dibenzo(ah)anthracene	<0.50	DLM	0.50	ug/g	03-AUG-18	**0.1	**0.1	**0.1	**0.1
	Fluoranthene	<0.50	DLM	0.50	ug/g	03-AUG-18	9.6	9.6	0.69	0.69
	Fluorene	<0.50	DLM	0.50	ug/g	03-AUG-18	62	69	62	69
	Indeno(1,2,3-cd)pyrene	<0.50	DLM	0.50	ug/g	03-AUG-18	0.76	0.95	**0.38	**0.48
	1+2-Methylnaphthalenes	<0.42		0.42	ug/g	03-AUG-18	30	42	0.99	3.4
	1-Methylnaphthalene	<0.30	DLM	0.30	ug/g	03-AUG-18	30	42	0.99	3.4
	2-Methylnaphthalene	<0.30	DLM	0.30	ug/g	03-AUG-18	30	42	0.99	3.4
	Naphthalene	<0.13	DLM	0.13	ug/g	03-AUG-18	9.6	28	0.6	0.75
	Phenanthrene	<0.46	DLM	0.46	ug/g	03-AUG-18	12	16	6.2	7.8
	Pyrene	<0.50	DLM	0.50	ug/g	03-AUG-18	96	96	78	78
	Surrogate: 2-Fluorobiphenyl	97.6		50-140	%	03-AUG-18				
	Surrogate: p-Terphenyl d14	99.5		50-140	%	03-AUG-18				
L2136911-5	MW18-117S-1									
Sampled By:	CLIENT on 25-JUL-18 @ 14:00									
Matrix:	SOIL									
Physical Tests										
	% Moisture	4.54		0.10	%	02-AUG-18				
Volatile Organic Compounds										
	Benzene	0.0166		0.0068	ug/g	30-JUL-18	0.32	0.4	0.21	0.17
	Ethylbenzene	0.033		0.018	ug/g	30-JUL-18	1.1	1.6	1.1	1.6
	Toluene	0.101		0.080	ug/g	30-JUL-18	6.4	9	2.3	6
	o-Xylene	0.098		0.020	ug/g	30-JUL-18				
	m+p-Xylenes	0.116		0.030	ug/g	30-JUL-18				
	Xylenes (Total)	0.214		0.050	ug/g	02-AUG-18	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	105.7		50-140	%	30-JUL-18				
	Surrogate: 1,4-Difluorobenzene	108.7		50-140	%	30-JUL-18				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	30-JUL-18	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	02-AUG-18	55	65	55	65
	F2 (C10-C16)	<50	DLM	50	ug/g	31-JUL-18	230	250	98	150
	F3 (C16-C34)	670	DLM	250	ug/g	31-JUL-18	1700	2500	*300	1300
	F4 (C34-C50)	490	DLM	250	ug/g	31-JUL-18	3300	6600	2800	5600
	F4G-SG (GHH-Silica)	1330		250	ug/g	31-JUL-18	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	1160		360	ug/g	02-AUG-18				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T6-C/F-RPI-ICC

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2136911-5	MW18-117S-1									
Sampled By:	CLIENT on 25-JUL-18 @ 14:00									
Matrix:	SOIL									
Hydrocarbons										
	Chrom. to baseline at nC50	NO			No Unit	31-JUL-18				
	Surrogate: 2-Bromobenzotrifluoride	94.6		60-140	%	31-JUL-18				
	Surrogate: 3,4-Dichlorotoluene	90.7		60-140	%	30-JUL-18				
L2136911-6	MW18-117S-2									
Sampled By:	CLIENT on 25-JUL-18 @ 14:20									
Matrix:	SOIL									
Physical Tests										
	% Moisture	9.95		0.10	%	02-AUG-18				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	31-JUL-18	40	50	7.5	7.5
	Arsenic (As)	1.5		1.0	ug/g	31-JUL-18	18	18	18	18
	Barium (Ba)	27.8		1.0	ug/g	31-JUL-18	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	31-JUL-18	8	10	4	5
	Boron (B)	5.7		5.0	ug/g	31-JUL-18	120	120	120	120
	Cadmium (Cd)	<0.50		0.50	ug/g	31-JUL-18	1.9	1.9	1.2	1.2
	Chromium (Cr)	10.4		1.0	ug/g	31-JUL-18	160	160	160	160
	Cobalt (Co)	5.9		1.0	ug/g	31-JUL-18	80	100	22	22
	Copper (Cu)	14.9		1.0	ug/g	31-JUL-18	230	300	140	180
	Lead (Pb)	156		1.0	ug/g	31-JUL-18	*120	*120	*120	*120
	Molybdenum (Mo)	<1.0		1.0	ug/g	31-JUL-18	40	40	6.9	6.9
	Nickel (Ni)	15.5		1.0	ug/g	31-JUL-18	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	31-JUL-18	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	31-JUL-18	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	31-JUL-18	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	31-JUL-18	33	33	23	23
	Vanadium (V)	65.0		1.0	ug/g	31-JUL-18	86	86	86	86
	Zinc (Zn)	536		5.0	ug/g	31-JUL-18	*340	*340	*340	*340
L2136911-7	DUP 1 JUL 25									
Sampled By:	CLIENT on 25-JUL-18									
Matrix:	SOIL									
Physical Tests										
	% Moisture	8.90		0.10	%	01-AUG-18				
Volatile Organic Compounds										
	Benzene	0.0132		0.0068	ug/g	30-JUL-18	0.32	0.4	0.21	0.17
	Ethylbenzene	0.025		0.018	ug/g	30-JUL-18	1.1	1.6	1.1	1.6
	Toluene	<0.080		0.080	ug/g	30-JUL-18	6.4	9	2.3	6
	o-Xylene	0.077		0.020	ug/g	30-JUL-18				
	m+p-Xylenes	0.103		0.030	ug/g	30-JUL-18				
	Xylenes (Total)	0.179		0.050	ug/g	01-AUG-18	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	105.8		50-140	%	30-JUL-18				
	Surrogate: 1,4-Difluorobenzene	109.3		50-140	%	30-JUL-18				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	30-JUL-18	55	65	55	65

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T6-C/F-RPI-ICC

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#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2136911-7	DUP 1 JUL 25									
Sampled By:	CLIENT on 25-JUL-18									
Matrix:	SOIL									
Hydrocarbons										
	F1-BTEX	<5.0		5.0	ug/g	01-AUG-18	55	65	55	65
	F2 (C10-C16)	<50	DLM	50	ug/g	31-JUL-18	230	250	98	150
	F3 (C16-C34)	800	DLM	250	ug/g	31-JUL-18	1700	2500	*300	1300
	F4 (C34-C50)	410	DLM	250	ug/g	31-JUL-18	3300	6600	2800	5600
	F4G-SG (GHH-Silica)	980		250	ug/g	31-JUL-18	3300	6600	2800	5600
	Total Hydrocarbons (C6-C50)	1220		360	ug/g	01-AUG-18				
	Chrom. to baseline at nC50	NO			No Unit	31-JUL-18				
	Surrogate: 2-Bromobenzotrifluoride	95.4		60-140	%	31-JUL-18				
	Surrogate: 3,4-Dichlorotoluene	80.1		60-140	%	30-JUL-18				
L2136911-8	DUP 2 JUL 25									
Sampled By:	CLIENT on 25-JUL-18 @ 00:01									
Matrix:	SOIL									
Physical Tests										
	% Moisture	15.6		0.10	%	02-AUG-18				
Metals										
	Antimony (Sb)	<1.0		1.0	ug/g	31-JUL-18	40	50	7.5	7.5
	Arsenic (As)	1.5		1.0	ug/g	31-JUL-18	18	18	18	18
	Barium (Ba)	24.6		1.0	ug/g	31-JUL-18	670	670	390	390
	Beryllium (Be)	<0.50		0.50	ug/g	31-JUL-18	8	10	4	5
	Boron (B)	7.5		5.0	ug/g	31-JUL-18	120	120	120	120
	Cadmium (Cd)	<0.50		0.50	ug/g	31-JUL-18	1.9	1.9	1.2	1.2
	Chromium (Cr)	10.2		1.0	ug/g	31-JUL-18	160	160	160	160
	Cobalt (Co)	3.9		1.0	ug/g	31-JUL-18	80	100	22	22
	Copper (Cu)	11.1		1.0	ug/g	31-JUL-18	230	300	140	180
	Lead (Pb)	121		1.0	ug/g	31-JUL-18	*120	*120	*120	*120
	Molybdenum (Mo)	<1.0		1.0	ug/g	31-JUL-18	40	40	6.9	6.9
	Nickel (Ni)	11.0		1.0	ug/g	31-JUL-18	270	340	100	130
	Selenium (Se)	<1.0		1.0	ug/g	31-JUL-18	5.5	5.5	2.4	2.4
	Silver (Ag)	<0.20		0.20	ug/g	31-JUL-18	40	50	20	25
	Thallium (Tl)	<0.50		0.50	ug/g	31-JUL-18	3.3	3.3	1	1
	Uranium (U)	<1.0		1.0	ug/g	31-JUL-18	33	33	23	23
	Vanadium (V)	39.4		1.0	ug/g	31-JUL-18	86	86	86	86
	Zinc (Zn)	389		5.0	ug/g	31-JUL-18	*340	*340	*340	*340
L2136911-9	TRIP BLANK 2									
Sampled By:	CLIENT on 25-JUL-18 @ 15:00									
Matrix:	SOIL									
Physical Tests										
	% Moisture	<0.10		0.10	%	02-AUG-18				
Volatile Organic Compounds										
	Benzene	<0.0068		0.0068	ug/g	29-JUL-18	0.32	0.4	0.21	0.17
	Ethylbenzene	<0.018		0.018	ug/g	29-JUL-18	1.1	1.6	1.1	1.6
	Toluene	<0.080		0.080	ug/g	29-JUL-18	6.4	9	2.3	6
	o-Xylene	<0.020		0.020	ug/g	29-JUL-18				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T6-C/F-RPI-ICC

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3	#4
L2136911-9	TRIP BLANK 2									
Sampled By:	CLIENT on 25-JUL-18 @ 15:00									
Matrix:	SOIL									
Volatile Organic Compounds										
	m+p-Xylenes	<0.030		0.030	ug/g	29-JUL-18				
	Xylenes (Total)	<0.050		0.050	ug/g	02-AUG-18	26	30	3.1	25
	Surrogate: 4-Bromofluorobenzene	115.8		50-140	%	29-JUL-18				
	Surrogate: 1,4-Difluorobenzene	117.0		50-140	%	29-JUL-18				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	ug/g	29-JUL-18	55	65	55	65
	F1-BTEX	<5.0		5.0	ug/g	02-AUG-18	55	65	55	65
	Surrogate: 3,4-Dichlorotoluene	114.6		60-140	%	29-JUL-18				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T6-C/F-RPI-ICC

#1: T6-Soil-Ind/Com/Commu Property Use (Coarse)
#2: T6-Soil-Ind/Com/Commu Property Use (Fine)
#3: T6-Soil-Res/Park/Inst. Property Use (Coarse)
#4: T6-Soil-Res/Park/Inst. Property Use (Fine)

Reference Information

Sample Parameter Qualifier key listed:

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference***
BTX-511-HS-WT	Soil	BTEX-O.Reg 153/04 (July 2011)	SW846 8260

BTX is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Soil	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Soil	F2-F4-O.Reg 153/04 (July 2011)	CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from soil with 1:1 hexane:acetone using a rotary extractor. Extracts are treated with silica gel to remove polar organic interferences. F2, F3, & F4 are analyzed by GC-FID. F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where both F4 (C34-C50) and F4G-sg are reported for a sample, the larger of the two values is used for comparison against the relevant CCME guideline for F4.
7. F4G-sg cannot be added to the C6 to C50 hydrocarbon results to obtain an estimate of total extractable hydrocarbons.
8. This method is validated for use.
9. Data from analysis of validation and quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram, unless otherwise indicated.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F4G-ADD-511-WT	Soil	F4G SG-O.Reg 153/04 (July 2011)	MOE DECPH-E3398/CCME TIER 1

F4G, gravimetric analysis, is determined if the chromatogram does not return to baseline at or before C50. A soil sample is extracted with a solvent mix, the solvent is evaporated and the weight of the residue is determined.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

Reference Information

MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)

This method uses a heated strong acid digestion with HNO3 and HCl and is intended to liberate metals that may be environmentally available. Silicate minerals are not solubilized. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. Analysis is by Collision/Reaction Cell ICPMS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT	Soil	ABN-Calculated Parameters	SW846 8270
MOISTURE-WT	Soil	% Moisture	Gravimetric: Oven Dried
PAH-511-WT	Soil	PAH-O.Reg 153/04 (July 2011)	SW846 3510/8270

A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking techniqueis used to extract the sample with a mixture of methanol and toluene. The extracts are concentrated and analyzed by GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

*** ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody numbers:

17-615352

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA		

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Quality Control Report

Workorder: L2136911 Report Date: 03-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTX-511-HS-WT	**Soil**							
Batch R4147212								
WG2834308-4 DUP		**WG2834308-3**						
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	29-JUL-18
Ethylbenzene		0.049	0.047		ug/g	4.2	40	29-JUL-18
m+p-Xylenes		0.221	0.231		ug/g	4.3	40	29-JUL-18
o-Xylene		1.07	1.10		ug/g	2.6	40	29-JUL-18
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	29-JUL-18
WG2834308-2 LCS								
Benzene			110.8		%		70-130	29-JUL-18
Ethylbenzene			111.5		%		70-130	29-JUL-18
m+p-Xylenes			110.9		%		70-130	29-JUL-18
o-Xylene			111.5		%		70-130	29-JUL-18
Toluene			112.0		%		70-130	29-JUL-18
WG2834308-1 MB								
Benzene			<0.0068		ug/g		0.0068	29-JUL-18
Ethylbenzene			<0.018		ug/g		0.018	29-JUL-18
m+p-Xylenes			<0.030		ug/g		0.03	29-JUL-18
o-Xylene			<0.020		ug/g		0.02	29-JUL-18
Toluene			<0.080		ug/g		0.08	29-JUL-18
Surrogate: 1,4-Difluorobenzene			108.0		%		50-140	29-JUL-18
Surrogate: 4-Bromofluorobenzene			107.9		%		50-140	29-JUL-18
WG2834308-5 MS		**L2135565-3**						
Benzene			109.5		%		60-140	29-JUL-18
Ethylbenzene			110.5		%		60-140	29-JUL-18
m+p-Xylenes			105.5		%		60-140	29-JUL-18
o-Xylene			81.8		%		60-140	29-JUL-18
Toluene			112.1		%		60-140	29-JUL-18
F1-HS-511-WT	**Soil**							
Batch R4147212								
WG2834308-4 DUP		**WG2834308-3**						
F1 (C6-C10)		227	238		ug/g	4.5	30	31-JUL-18
WG2834308-2 LCS								
F1 (C6-C10)			106.1		%		80-120	29-JUL-18
WG2834308-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	29-JUL-18
Surrogate: 3,4-Dichlorotoluene			115.8		%		60-140	29-JUL-18
WG2834308-6 MS		**L2135565-5**						

Quality Control Report

Workorder: L2136911 Report Date: 03-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT	**Soil**							
Batch R4147212								
WG2834308-6 MS		**L2135565-5**						
F1 (C6-C10)			N/A	E	%		60-140	31-JUL-18
F2-F4-511-WT	**Soil**							
Batch R4151587								
WG2836073-3 DUP		**WG2836073-5**						
F2 (C10-C16)		<50	51	RPD-NA	ug/g	N/A	30	31-JUL-18
F3 (C16-C34)		800	1600	DUP-H,J	ug/g	800	500	31-JUL-18
F4 (C34-C50)		410	640	J	ug/g	230	500	31-JUL-18
WG2836073-2 LCS								
F2 (C10-C16)			99.1		%		80-120	31-JUL-18
F3 (C16-C34)			104.5		%		80-120	31-JUL-18
F4 (C34-C50)			102.7		%		80-120	31-JUL-18
WG2836073-1 MB								
F2 (C10-C16)			<10		ug/g		10	31-JUL-18
F3 (C16-C34)			<50		ug/g		50	31-JUL-18
F4 (C34-C50)			<50		ug/g		50	31-JUL-18
Surrogate: 2-Bromobenzotrifluoride			93.6		%		60-140	31-JUL-18
WG2836073-4 MS		**WG2836073-5**						
F2 (C10-C16)			107.6		%		60-140	31-JUL-18
F3 (C16-C34)			N/A	MS-B	%		-	31-JUL-18
F4 (C34-C50)			N/A	MS-B	%		-	31-JUL-18
F4G-ADD-511-WT	**Soil**							
Batch R4152356								
WG2838473-2 LCS								
F4G-SG (GHH-Silica)			64.0		%		60-140	31-JUL-18
WG2838473-1 MB								
F4G-SG (GHH-Silica)			<250		ug/g		250	31-JUL-18
MET-200.2-CCMS-WT	**Soil**							
Batch R4151664								
WG2836882-2 CRM		**WT-CANMET-TILL1**						
Antimony (Sb)			96.6		%		70-130	31-JUL-18
Arsenic (As)			100.9		%		70-130	31-JUL-18
Barium (Ba)			109.1		%		70-130	31-JUL-18
Beryllium (Be)			102.7		%		70-130	31-JUL-18
Boron (B)			3.2		mg/kg		0-8.2	31-JUL-18

Quality Control Report

Workorder: L2136911 Report Date: 03-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R4151664								
WG2836882-2 CRM		**WT-CANMET-TILL1**						
Cadmium (Cd)			100.6		%		70-130	31-JUL-18
Chromium (Cr)			100.7		%		70-130	31-JUL-18
Cobalt (Co)			100.4		%		70-130	31-JUL-18
Copper (Cu)			101.2		%		70-130	31-JUL-18
Lead (Pb)			102.0		%		70-130	31-JUL-18
Molybdenum (Mo)			103.7		%		70-130	31-JUL-18
Nickel (Ni)			99.4		%		70-130	31-JUL-18
Selenium (Se)			0.33		mg/kg		0.11-0.51	31-JUL-18
Silver (Ag)			0.23		mg/kg		0.13-0.33	31-JUL-18
Thallium (Tl)			0.130		mg/kg		0.077-0.18	31-JUL-18
Uranium (U)			94.5		%		70-130	31-JUL-18
Vanadium (V)			100.3		%		70-130	31-JUL-18
Zinc (Zn)			99.6		%		70-130	31-JUL-18
WG2836882-6 DUP		**WG2836882-5**						
Antimony (Sb)		0.12	<0.10	RPD-NA	ug/g	N/A	30	31-JUL-18
Arsenic (As)		2.16	2.12		ug/g	1.9	30	31-JUL-18
Barium (Ba)		65.3	67.2		ug/g	2.9	40	31-JUL-18
Beryllium (Be)		0.35	0.39		ug/g	9.5	30	31-JUL-18
Boron (B)		5.8	7.0		ug/g	18	30	31-JUL-18
Cadmium (Cd)		0.079	0.073		ug/g	7.0	30	31-JUL-18
Chromium (Cr)		16.9	16.9		ug/g	0.0	30	31-JUL-18
Cobalt (Co)		5.85	5.70		ug/g	2.5	30	31-JUL-18
Copper (Cu)		11.1	10.8		ug/g	3.1	30	31-JUL-18
Lead (Pb)		5.28	5.56		ug/g	5.1	40	31-JUL-18
Molybdenum (Mo)		0.25	0.26		ug/g	2.6	40	31-JUL-18
Nickel (Ni)		13.0	12.6		ug/g	3.4	30	31-JUL-18
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	31-JUL-18
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	31-JUL-18
Thallium (Tl)		0.105	0.117		ug/g	11	30	31-JUL-18
Uranium (U)		0.410	0.430		ug/g	4.7	30	31-JUL-18
Vanadium (V)		26.3	26.4		ug/g	0.5	30	31-JUL-18
Zinc (Zn)		31.8	30.6		ug/g	3.9	30	31-JUL-18
WG2836882-4 LCS								

Quality Control Report

Workorder: L2136911 Report Date: 03-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R4151664								
WG2836882-4 LCS								
Antimony (Sb)			96.8		%		80-120	31-JUL-18
Arsenic (As)			99.2		%		80-120	31-JUL-18
Barium (Ba)			98.7		%		80-120	31-JUL-18
Beryllium (Be)			89.1		%		80-120	31-JUL-18
Boron (B)			88.6		%		80-120	31-JUL-18
Cadmium (Cd)			102.3		%		80-120	31-JUL-18
Chromium (Cr)			98.4		%		80-120	31-JUL-18
Cobalt (Co)			97.6		%		80-120	31-JUL-18
Copper (Cu)			97.0		%		80-120	31-JUL-18
Lead (Pb)			102.8		%		80-120	31-JUL-18
Molybdenum (Mo)			92.8		%		80-120	31-JUL-18
Nickel (Ni)			97.5		%		80-120	31-JUL-18
Selenium (Se)			96.2		%		80-120	31-JUL-18
Silver (Ag)			99.6		%		80-120	31-JUL-18
Thallium (Tl)			100.0		%		80-120	31-JUL-18
Uranium (U)			99.8		%		80-120	31-JUL-18
Vanadium (V)			102.0		%		80-120	31-JUL-18
Zinc (Zn)			93.0		%		80-120	31-JUL-18
WG2836882-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	31-JUL-18
Arsenic (As)			<0.10		mg/kg		0.1	31-JUL-18
Barium (Ba)			<0.50		mg/kg		0.5	31-JUL-18
Beryllium (Be)			<0.10		mg/kg		0.1	31-JUL-18
Boron (B)			<5.0		mg/kg		5	31-JUL-18
Cadmium (Cd)			<0.020		mg/kg		0.02	31-JUL-18
Chromium (Cr)			<0.50		mg/kg		0.5	31-JUL-18
Cobalt (Co)			<0.10		mg/kg		0.1	31-JUL-18
Copper (Cu)			<0.50		mg/kg		0.5	31-JUL-18
Lead (Pb)			<0.50		mg/kg		0.5	31-JUL-18
Molybdenum (Mo)			<0.10		mg/kg		0.1	31-JUL-18
Nickel (Ni)			<0.50		mg/kg		0.5	31-JUL-18
Selenium (Se)			<0.20		mg/kg		0.2	31-JUL-18
Silver (Ag)			<0.10		mg/kg		0.1	31-JUL-18
Thallium (Tl)			<0.050		mg/kg		0.05	31-JUL-18

Quality Control Report

Workorder: L2136911 Report Date: 03-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R4151664								
WG2836882-1 MB								
Uranium (U)			<0.050		mg/kg		0.05	31-JUL-18
Vanadium (V)			<0.20		mg/kg		0.2	31-JUL-18
Zinc (Zn)			<2.0		mg/kg		2	31-JUL-18
MOISTURE-WT	**Soil**							
Batch R4152106								
WG2837978-3 DUP		**L2137149-1**						
% Moisture		6.56	6.69		%	2.0	20	01-AUG-18
WG2837978-2 LCS								
% Moisture			99.7		%		90-110	01-AUG-18
WG2837978-1 MB								
% Moisture			<0.10		%		0.1	01-AUG-18
Batch R4153271								
WG2838177-3 DUP		**L2138579-6**						
% Moisture		11.9	12.0		%	0.8	20	02-AUG-18
WG2838177-2 LCS								
% Moisture			102.2		%		90-110	02-AUG-18
WG2838177-1 MB								
% Moisture			<0.10		%		0.1	02-AUG-18
PAH-511-WT	**Soil**							
Batch R4157808								
WG2836404-3 DUP		**WG2836404-5**						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	03-AUG-18
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	03-AUG-18
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-AUG-18
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-AUG-18
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-AUG-18
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-AUG-18
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-AUG-18
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-AUG-18
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-AUG-18
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-AUG-18
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-AUG-18
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-AUG-18
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-AUG-18

Quality Control Report

Workorder: L2136911 Report Date: 03-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R4157808								
WG2836404-3 DUP		**WG2836404-5**						
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-AUG-18
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-AUG-18
Naphthalene		<0.013	<0.013	RPD-NA	ug/g	N/A	40	03-AUG-18
Phenanthrene		<0.046	<0.046	RPD-NA	ug/g	N/A	40	03-AUG-18
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-AUG-18
WG2836404-2 LCS								
1-Methylnaphthalene			91.5		%		50-140	03-AUG-18
2-Methylnaphthalene			92.1		%		50-140	03-AUG-18
Acenaphthene			90.6		%		50-140	03-AUG-18
Acenaphthylene			84.3		%		50-140	03-AUG-18
Anthracene			84.7		%		50-140	03-AUG-18
Benzo(a)anthracene			89.9		%		50-140	03-AUG-18
Benzo(a)pyrene			85.9		%		50-140	03-AUG-18
Benzo(b)fluoranthene			94.7		%		50-140	03-AUG-18
Benzo(g,h,i)perylene			80.8		%		50-140	03-AUG-18
Benzo(k)fluoranthene			88.9		%		50-140	03-AUG-18
Chrysene			86.2		%		50-140	03-AUG-18
Dibenzo(ah)anthracene			81.6		%		50-140	03-AUG-18
Fluoranthene			88.6		%		50-140	03-AUG-18
Fluorene			86.5		%		50-140	03-AUG-18
Indeno(1,2,3-cd)pyrene			88.6		%		50-140	03-AUG-18
Naphthalene			89.6		%		50-140	03-AUG-18
Phenanthrene			90.3		%		50-140	03-AUG-18
Pyrene			88.9		%		50-140	03-AUG-18
WG2836404-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	03-AUG-18
2-Methylnaphthalene			<0.030		ug/g		0.03	03-AUG-18
Acenaphthene			<0.050		ug/g		0.05	03-AUG-18
Acenaphthylene			<0.050		ug/g		0.05	03-AUG-18
Anthracene			<0.050		ug/g		0.05	03-AUG-18
Benzo(a)anthracene			<0.050		ug/g		0.05	03-AUG-18
Benzo(a)pyrene			<0.050		ug/g		0.05	03-AUG-18
Benzo(b)fluoranthene			<0.050		ug/g		0.05	03-AUG-18
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	03-AUG-18

Quality Control Report

Workorder: L2136911 Report Date: 03-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R4157808								
WG2836404-1 MB								
Benzo(k)fluoranthene			<0.050		ug/g		0.05	03-AUG-18
Chrysene			<0.050		ug/g		0.05	03-AUG-18
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	03-AUG-18
Fluoranthene			<0.050		ug/g		0.05	03-AUG-18
Fluorene			<0.050		ug/g		0.05	03-AUG-18
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	03-AUG-18
Naphthalene			<0.013		ug/g		0.013	03-AUG-18
Phenanthrene			<0.046		ug/g		0.046	03-AUG-18
Pyrene			<0.050		ug/g		0.05	03-AUG-18
Surrogate: 2-Fluorobiphenyl			107.1		%		50-140	03-AUG-18
Surrogate: p-Terphenyl d14			106.2		%		50-140	03-AUG-18
WG2836404-4 MS		**WG2836404-5**						
1-Methylnaphthalene			89.6		%		50-140	03-AUG-18
2-Methylnaphthalene			89.1		%		50-140	03-AUG-18
Acenaphthene			88.4		%		50-140	03-AUG-18
Acenaphthylene			81.7		%		50-140	03-AUG-18
Anthracene			79.0		%		50-140	03-AUG-18
Benzo(a)anthracene			90.1		%		50-140	03-AUG-18
Benzo(a)pyrene			85.0		%		50-140	03-AUG-18
Benzo(b)fluoranthene			83.5		%		50-140	03-AUG-18
Benzo(g,h,i)perylene			76.3		%		50-140	03-AUG-18
Benzo(k)fluoranthene			83.7		%		50-140	03-AUG-18
Chrysene			82.4		%		50-140	03-AUG-18
Dibenzo(ah)anthracene			77.3		%		50-140	03-AUG-18
Fluoranthene			88.5		%		50-140	03-AUG-18
Fluorene			84.8		%		50-140	03-AUG-18
Indeno(1,2,3-cd)pyrene			84.3		%		50-140	03-AUG-18
Naphthalene			87.5		%		50-140	03-AUG-18
Phenanthrene			91.4		%		50-140	03-AUG-18
Pyrene			88.3		%		50-140	03-AUG-18

Quality Control Report

Workorder: L2136911 Report Date: 03-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST SOUTH SUITE 300
KITCHENER ON N2G 4Y9
Contact: TANIA MCCARTHY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
DUP-H,J	Duplicate results outside ALS DQO, due to sample heterogeneity. Duplicate results and limits are expressed in terms of absolute difference.
E	Matrix Spike recovery outside ALS DQO due to heterogeneous analyte background in sample.
J	Duplicate results and limits are expressed in terms of absolute difference.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

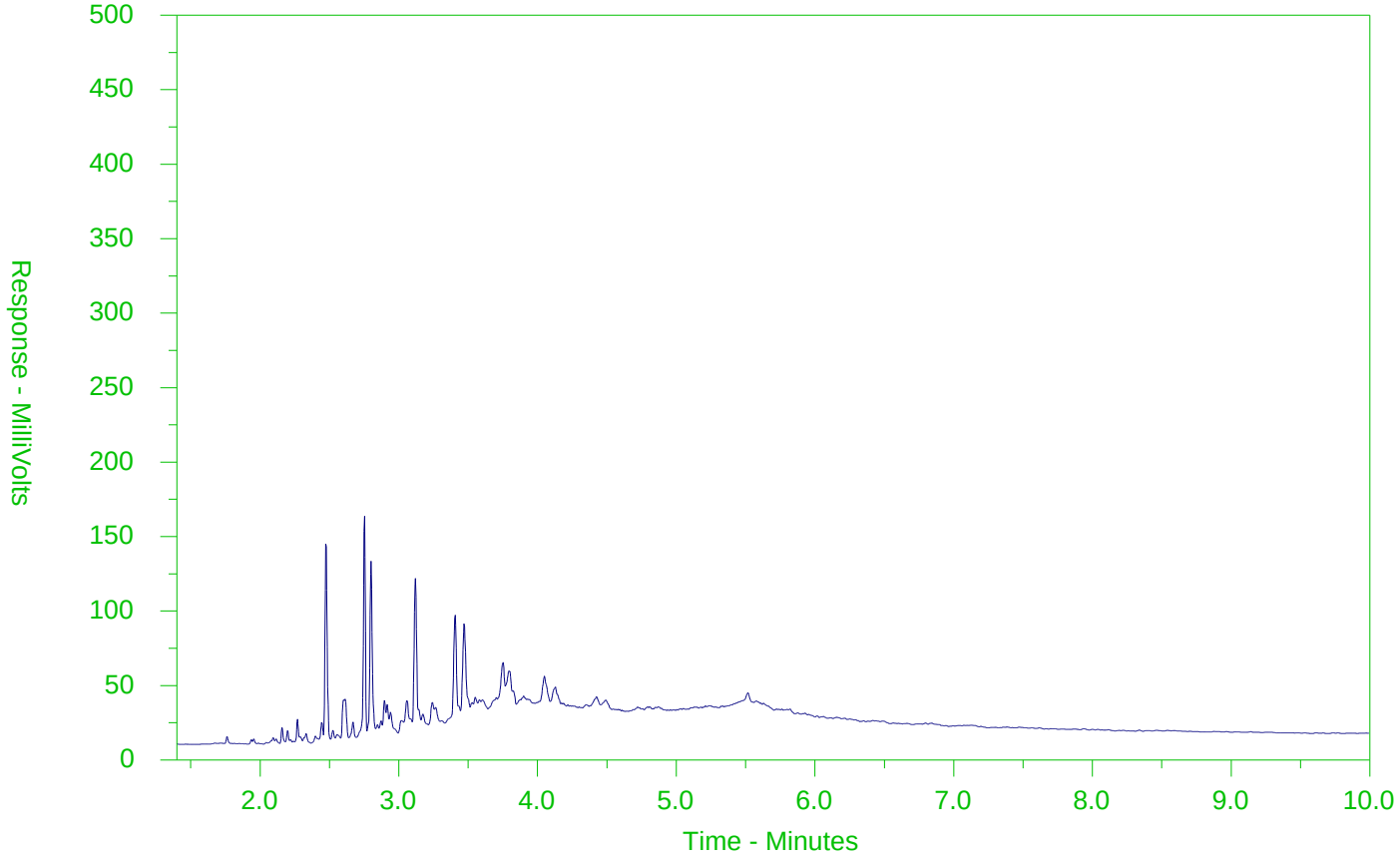
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2136911-5
Client Sample ID: MW18-117S-1



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

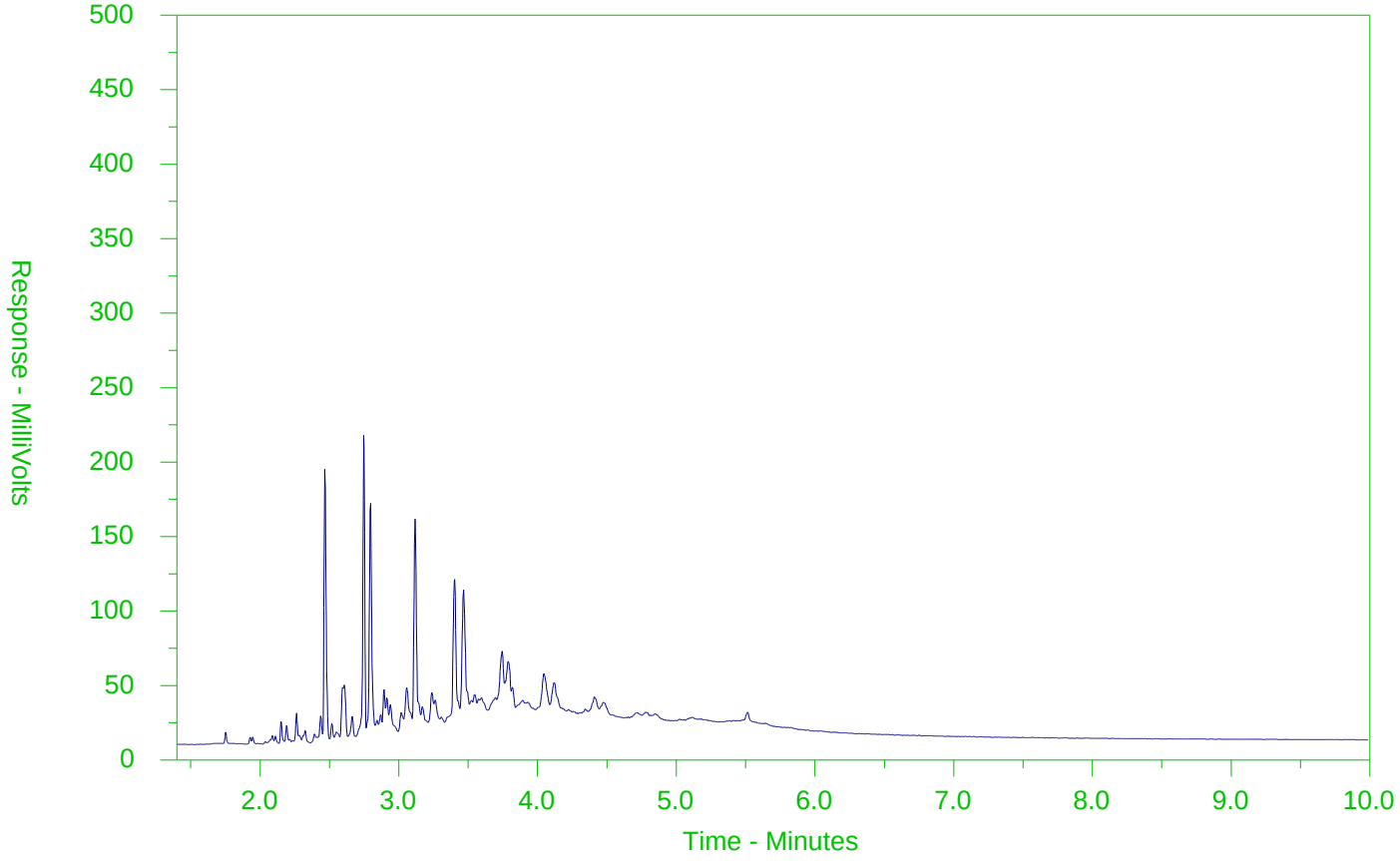
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2136911-7
Client Sample ID: DUP 1 JUL 25



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2136911-COFC

COC Number: 17 - 615352

Page of

Report To	Contact and company name below will appear on the final report	Report Format	Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)
Company:	OAZM - JACOBS	Select Report Format: [X] PDF [X] EXCEL [X] EDD (DIGITAL)	Regular [R] [ ] Standard TAT if received by 3 pm - business days - no surcharges apply
Contact:	TAMIA MCCARTHY	Quality Control (QC) Report with Report [X] YES [ ] NO	PRIORITY (Business Days): 4 day [P4-20%] [ ]; 3 day [P3-25%] [ ]; 2 day [P2-50%] [ ]
Phone:	519 579 3500	[X] Compare Results to Criteria on Report - provide details below if box checked	EMERGENCY: 1 Business day [E-100%] [ ]; Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] [ ]
	Company address below will appear on the final report	Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX	
Street:	72 VICTORIA ST. S. SUITE 300	Email 1 or Fax: Tamia.McCarthy@ch2m.com	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
City/Province:	KITCHENER-ON	Email 2: lucas.ribeiro@ch2m.com	For tests that can not be performed according to the service level selected, you will be contacted.
Postal Code:	N2G 4Y9	Email 3:	

Invoice To		Invoice Distribution	
	Same as Report To [X] YES [ ] NO	Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX	
	Copy of Invoice with Report [X] YES [ ] NO		
Company:		Email 1 or Fax	
Contact:		Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:		AFE/Cost Center:	PO#:
Job #:		Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (lab use only):	L2136911 RK 200	ALS Contact: Matthew	Sampler:

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Metals Only	PAH	PHC	BTEX	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
1	MW18-1245-1	24-JUL-18	08:30	Soil	X	X					
2	MW18-1245-2	24-JUL-18	08:45	Soil		X					
3	MW18-1145-1	25-JUL-18	10:45	Soil			X		X		
4	MW18-1145-2	25-JUL-18	10:55	Soil			X		X		
5	MW18-1175-1	25-JUL-18	14:00	Soil			X	X			
6	MW18-1175-2	25-JUL-18	14:20	Soil	X						
7	DUP 1 JUL 25	25-JUL-18	00:00	Soil			X	X			
8	DUP 2 JUL 25	25-JUL-18	00:01	Soil	X						
9	TRIP BLANK 2	25-JUL-18	15:00	Soil Blank							

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? [ ] YES [ ] NO	Compare To D. REG. 153/04
Are samples for human consumption/ use? [ ] YES [ ] NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ]		SIF Observations	Yes [ ] No [ ]
Ice Packs [ ]	Ice Cubes [X]	Custody seal intact	Yes [ ] No [ ]
Cooling Initiated [ ]			

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				2.3			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Lucas Ribeiro	Date:	Time:	Received by: RK	Date: 7-26-18	Time: 10:50	Received by: Andrea C.	Date: July 26	Time: 15:30

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JULY 2017 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

White Paper Co. 604 951-3900

CH2M HILL CANADA LIMITED
ATTN: TANIA MCCARTHY
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 01-AUG-18
Report Date: 08-AUG-18 11:31 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2139225
Project P.O. #: NOT SUBMITTED
Job Reference: 694757
C of C Numbers:
Legal Site Desc:

Mathy Mahadeva
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2139225-1	MW18-120D									
Sampled By:	CLIENT on 30-JUL-18 @ 09:55									
Matrix:	WATER						#1			
Dissolved Metals										
	Dissolved Metals Filtration Location	FIELD			No Unit	02-AUG-18				
	Antimony (Sb)-Dissolved	0.50		0.10	ug/L	02-AUG-18	6			
	Arsenic (As)-Dissolved	1.74		0.10	ug/L	02-AUG-18	25			
	Barium (Ba)-Dissolved	67.8		0.10	ug/L	02-AUG-18	1000			
	Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	02-AUG-18	4			
	Boron (B)-Dissolved	67		10	ug/L	02-AUG-18	5000			
	Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	02-AUG-18	2.1			
	Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	02-AUG-18	50			
	Cobalt (Co)-Dissolved	0.24		0.10	ug/L	02-AUG-18	3.8			
	Copper (Cu)-Dissolved	0.95		0.20	ug/L	02-AUG-18	69			
	Lead (Pb)-Dissolved	0.067		0.050	ug/L	02-AUG-18	10			
	Molybdenum (Mo)-Dissolved	5.96		0.050	ug/L	02-AUG-18	70			
	Nickel (Ni)-Dissolved	9.03		0.50	ug/L	02-AUG-18	100			
	Selenium (Se)-Dissolved	0.178		0.050	ug/L	02-AUG-18	10			
	Silver (Ag)-Dissolved	<0.050		0.050	ug/L	02-AUG-18	1.2			
	Sodium (Na)-Dissolved	183000	DLHC	500	ug/L	02-AUG-18	490000			
	Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	02-AUG-18	2			
	Uranium (U)-Dissolved	7.24		0.010	ug/L	02-AUG-18	20			
	Vanadium (V)-Dissolved	<0.50		0.50	ug/L	02-AUG-18	6.2			
	Zinc (Zn)-Dissolved	3.0		1.0	ug/L	02-AUG-18	890			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	08-AUG-18	2700			
	Benzene	<0.50		0.50	ug/L	08-AUG-18	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	08-AUG-18	16			
	Bromoform	<5.0		5.0	ug/L	08-AUG-18	5			
	Bromomethane	<0.50		0.50	ug/L	08-AUG-18	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	08-AUG-18	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	08-AUG-18	30			
	Dibromochloromethane	<2.0		2.0	ug/L	08-AUG-18	25			
	Chloroform	<1.0		1.0	ug/L	08-AUG-18	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	08-AUG-18	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	08-AUG-18	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	08-AUG-18	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	08-AUG-18	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	08-AUG-18	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	08-AUG-18	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	08-AUG-18	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	08-AUG-18	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	08-AUG-18	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	08-AUG-18	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	08-AUG-18	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	08-AUG-18	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	08-AUG-18				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	08-AUG-18				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	08-AUG-18	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	08-AUG-18	2.4			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2139225-1	MW18-120D									
Sampled By:	CLIENT on 30-JUL-18 @ 09:55									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	n-Hexane	<0.50		0.50	ug/L	08-AUG-18	5			
	Methyl Ethyl Ketone	<20		20	ug/L	08-AUG-18	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	08-AUG-18	640			
	MTBE	<2.0		2.0	ug/L	08-AUG-18	15			
	Styrene	<0.50		0.50	ug/L	08-AUG-18	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	08-AUG-18	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	08-AUG-18	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	08-AUG-18	0.5			
	Toluene	<0.50		0.50	ug/L	08-AUG-18	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	08-AUG-18	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	08-AUG-18	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	08-AUG-18	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	08-AUG-18	150			
	Vinyl chloride	<0.50		0.50	ug/L	08-AUG-18	0.5			
	o-Xylene	<0.30		0.30	ug/L	08-AUG-18				
	m+p-Xylenes	<0.40		0.40	ug/L	08-AUG-18				
	Xylenes (Total)	<0.50		0.50	ug/L	08-AUG-18	72			
	Surrogate: 4-Bromofluorobenzene	96.9		70-130	%	08-AUG-18				
	Surrogate: 1,4-Difluorobenzene	98.3		70-130	%	08-AUG-18				
L2139225-2	MW18-121D									
Sampled By:	CLIENT on 30-JUL-18 @ 11:50									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	03-AUG-18	2700			
	Benzene	<0.50		0.50	ug/L	03-AUG-18	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	03-AUG-18	16			
	Bromoform	<5.0		5.0	ug/L	03-AUG-18	5			
	Bromomethane	<0.50		0.50	ug/L	03-AUG-18	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	03-AUG-18	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	03-AUG-18	30			
	Dibromochloromethane	<2.0		2.0	ug/L	03-AUG-18	25			
	Chloroform	1.5		1.0	ug/L	03-AUG-18	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	03-AUG-18	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	03-AUG-18	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	03-AUG-18	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	03-AUG-18	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	03-AUG-18	590			
	1,1-Dichloroethane	1.82		0.50	ug/L	03-AUG-18	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	03-AUG-18	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	03-AUG-18	0.5			
	cis-1,2-Dichloroethylene	3.17		0.50	ug/L	03-AUG-18	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	03-AUG-18	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	03-AUG-18	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	03-AUG-18	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	03-AUG-18				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2139225-2	MW18-121D									
Sampled By:	CLIENT on 30-JUL-18 @ 11:50									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	03-AUG-18				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	03-AUG-18	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	03-AUG-18	2.4			
	n-Hexane	<0.50		0.50	ug/L	03-AUG-18	5			
	Methyl Ethyl Ketone	<20		20	ug/L	03-AUG-18	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	03-AUG-18	640			
	MTBE	<2.0		2.0	ug/L	03-AUG-18	15			
	Styrene	<0.50		0.50	ug/L	03-AUG-18	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	03-AUG-18	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	03-AUG-18	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	03-AUG-18	0.5			
	Toluene	0.53		0.50	ug/L	03-AUG-18	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	03-AUG-18	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	03-AUG-18	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	03-AUG-18	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	03-AUG-18	150			
	Vinyl chloride	0.67		0.50	ug/L	03-AUG-18	*0.5			
	o-Xylene	<0.30		0.30	ug/L	03-AUG-18				
	m+p-Xylenes	0.43		0.40	ug/L	03-AUG-18				
	Xylenes (Total)	<0.50		0.50	ug/L	03-AUG-18	72			
	Surrogate: 4-Bromofluorobenzene	96.9		70-130	%	03-AUG-18				
	Surrogate: 1,4-Difluorobenzene	99.2		70-130	%	03-AUG-18				
L2139225-3	MW18-107D									
Sampled By:	CLIENT on 30-JUL-18 @ 12:50									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	03-AUG-18	2700			
	Benzene	<0.50		0.50	ug/L	03-AUG-18	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	03-AUG-18	16			
	Bromoform	<5.0		5.0	ug/L	03-AUG-18	5			
	Bromomethane	<0.50		0.50	ug/L	03-AUG-18	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	03-AUG-18	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	03-AUG-18	30			
	Dibromochloromethane	<2.0		2.0	ug/L	03-AUG-18	25			
	Chloroform	1.3		1.0	ug/L	03-AUG-18	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	03-AUG-18	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	03-AUG-18	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	03-AUG-18	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	03-AUG-18	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	03-AUG-18	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	03-AUG-18	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	03-AUG-18	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	03-AUG-18	0.5			
	cis-1,2-Dichloroethylene	1.23		0.50	ug/L	03-AUG-18	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	03-AUG-18	1.6			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2139225-3	MW18-107D									
Sampled By:	CLIENT on 30-JUL-18 @ 12:50									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Methylene Chloride	<5.0		5.0	ug/L	03-AUG-18	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	03-AUG-18	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	03-AUG-18				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	03-AUG-18				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	03-AUG-18	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	03-AUG-18	2.4			
	n-Hexane	0.52		0.50	ug/L	03-AUG-18	5			
	Methyl Ethyl Ketone	<20		20	ug/L	03-AUG-18	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	03-AUG-18	640			
	MTBE	<2.0		2.0	ug/L	03-AUG-18	15			
	Styrene	<0.50		0.50	ug/L	03-AUG-18	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	03-AUG-18	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	03-AUG-18	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	03-AUG-18	0.5			
	Toluene	<0.50		0.50	ug/L	03-AUG-18	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	03-AUG-18	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	03-AUG-18	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	03-AUG-18	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	03-AUG-18	150			
	Vinyl chloride	<0.50		0.50	ug/L	03-AUG-18	0.5			
	o-Xylene	0.42		0.30	ug/L	03-AUG-18				
	m+p-Xylenes	0.57		0.40	ug/L	03-AUG-18				
	Xylenes (Total)	0.99		0.50	ug/L	03-AUG-18	72			
	Surrogate: 4-Bromofluorobenzene	96.1		70-130	%	03-AUG-18				
	Surrogate: 1,4-Difluorobenzene	99.1		70-130	%	03-AUG-18				
L2139225-4	MW18-123D									
Sampled By:	CLIENT on 30-JUL-18 @ 14:05									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	03-AUG-18	2700			
	Benzene	<0.50		0.50	ug/L	03-AUG-18	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	03-AUG-18	16			
	Bromoform	<5.0		5.0	ug/L	03-AUG-18	5			
	Bromomethane	<0.50		0.50	ug/L	03-AUG-18	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	03-AUG-18	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	03-AUG-18	30			
	Dibromochloromethane	<2.0		2.0	ug/L	03-AUG-18	25			
	Chloroform	<1.0		1.0	ug/L	03-AUG-18	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	03-AUG-18	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	03-AUG-18	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	03-AUG-18	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	03-AUG-18	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	03-AUG-18	590			
	1,1-Dichloroethane	0.89		0.50	ug/L	03-AUG-18	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	03-AUG-18	0.5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2139225-4	MW18-123D									
Sampled By:	CLIENT on 30-JUL-18 @ 14:05									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	1,1-Dichloroethylene	<0.50		0.50	ug/L	03-AUG-18	0.5			
	cis-1,2-Dichloroethylene	2.78		0.50	ug/L	03-AUG-18	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	03-AUG-18	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	03-AUG-18	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	03-AUG-18	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	03-AUG-18				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	03-AUG-18				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	03-AUG-18	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	03-AUG-18	2.4			
	n-Hexane	<0.50		0.50	ug/L	03-AUG-18	5			
	Methyl Ethyl Ketone	<20		20	ug/L	03-AUG-18	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	03-AUG-18	640			
	MTBE	<2.0		2.0	ug/L	03-AUG-18	15			
	Styrene	<0.50		0.50	ug/L	03-AUG-18	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	03-AUG-18	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	03-AUG-18	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	03-AUG-18	0.5			
	Toluene	0.84		0.50	ug/L	03-AUG-18	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	03-AUG-18	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	03-AUG-18	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	03-AUG-18	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	03-AUG-18	150			
	Vinyl chloride	<0.50		0.50	ug/L	03-AUG-18	0.5			
	o-Xylene	0.33		0.30	ug/L	03-AUG-18				
	m+p-Xylenes	0.45		0.40	ug/L	03-AUG-18				
	Xylenes (Total)	0.78		0.50	ug/L	03-AUG-18	72			
	Surrogate: 4-Bromofluorobenzene	95.6		70-130	%	03-AUG-18				
	Surrogate: 1,4-Difluorobenzene	99.3		70-130	%	03-AUG-18				
L2139225-5	MW18-128D									
Sampled By:	CLIENT on 30-JUL-18 @ 17:20									
Matrix:	WATER						#1			
Hydrocarbons										
	F1 (C6-C10)	60		25	ug/L	03-AUG-18	420			
	F2 (C10-C16)	<100		100	ug/L	02-AUG-18	150			
	F3 (C16-C34)	<250		250	ug/L	02-AUG-18	500			
	F4 (C34-C50)	<250		250	ug/L	02-AUG-18	500			
	Total Hydrocarbons (C6-C50)	<370		370	ug/L	03-AUG-18				
	Chrom. to baseline at nC50	YES			No Unit	02-AUG-18				
	Surrogate: 2-Bromobenzotrifluoride	97.8		60-140	%	02-AUG-18				
	Surrogate: 3,4-Dichlorotoluene	94.9		60-140	%	03-AUG-18				
L2139225-6	MW18-129D									
Sampled By:	CLIENT on 30-JUL-18 @ 16:55									
Matrix:	WATER						#1			
Dissolved Metals										

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2139225-6	MW18-129D									
Sampled By:	CLIENT on 30-JUL-18 @ 16:55									
Matrix:	WATER						#1			
Dissolved Metals										
Dissolved Metals Filtration Location		FIELD			No Unit	02-AUG-18				
Antimony (Sb)-Dissolved		<0.10		0.10	ug/L	02-AUG-18	6			
Arsenic (As)-Dissolved		20.7		0.10	ug/L	02-AUG-18	25			
Barium (Ba)-Dissolved		166		0.10	ug/L	02-AUG-18	1000			
Beryllium (Be)-Dissolved		<0.10		0.10	ug/L	02-AUG-18	4			
Boron (B)-Dissolved		76		10	ug/L	02-AUG-18	5000			
Cadmium (Cd)-Dissolved		<0.010		0.010	ug/L	02-AUG-18	2.1			
Chromium (Cr)-Dissolved		<0.50		0.50	ug/L	02-AUG-18	50			
Cobalt (Co)-Dissolved		0.21		0.10	ug/L	02-AUG-18	3.8			
Copper (Cu)-Dissolved		<0.20		0.20	ug/L	02-AUG-18	69			
Lead (Pb)-Dissolved		1.06		0.050	ug/L	02-AUG-18	10			
Molybdenum (Mo)-Dissolved		2.35		0.050	ug/L	02-AUG-18	70			
Nickel (Ni)-Dissolved		2.76		0.50	ug/L	02-AUG-18	100			
Selenium (Se)-Dissolved		<0.050		0.050	ug/L	02-AUG-18	10			
Silver (Ag)-Dissolved		<0.050		0.050	ug/L	02-AUG-18	1.2			
Sodium (Na)-Dissolved		35000		500	ug/L	02-AUG-18	490000			
Thallium (Tl)-Dissolved		0.032		0.010	ug/L	02-AUG-18	2			
Uranium (U)-Dissolved		2.26		0.010	ug/L	02-AUG-18	20			
Vanadium (V)-Dissolved		<0.50		0.50	ug/L	02-AUG-18	6.2			
Zinc (Zn)-Dissolved		156		1.0	ug/L	02-AUG-18	890			
Volatile Organic Compounds										
Acetone		<30		30	ug/L	03-AUG-18	2700			
Benzene		4.57		0.50	ug/L	03-AUG-18	*0.5			
Bromodichloromethane		<2.0		2.0	ug/L	03-AUG-18	16			
Bromoform		<5.0		5.0	ug/L	03-AUG-18	5			
Bromomethane		<0.50		0.50	ug/L	03-AUG-18	0.89			
Carbon tetrachloride		<0.20		0.20	ug/L	03-AUG-18	0.2			
Chlorobenzene		<0.50		0.50	ug/L	03-AUG-18	30			
Dibromochloromethane		<2.0		2.0	ug/L	03-AUG-18	25			
Chloroform		<1.0		1.0	ug/L	03-AUG-18	2			
1,2-Dibromoethane		<0.20		0.20	ug/L	03-AUG-18	0.2			
1,2-Dichlorobenzene		<0.50		0.50	ug/L	03-AUG-18	3			
1,3-Dichlorobenzene		<0.50		0.50	ug/L	03-AUG-18	59			
1,4-Dichlorobenzene		<0.50		0.50	ug/L	03-AUG-18	0.5			
Dichlorodifluoromethane		<2.0		2.0	ug/L	03-AUG-18	590			
1,1-Dichloroethane		<0.50		0.50	ug/L	03-AUG-18	5			
1,2-Dichloroethane		<0.50		0.50	ug/L	03-AUG-18	0.5			
1,1-Dichloroethylene		<0.50		0.50	ug/L	03-AUG-18	0.5			
cis-1,2-Dichloroethylene		3.52		0.50	ug/L	03-AUG-18	*1.6			
trans-1,2-Dichloroethylene		<0.50		0.50	ug/L	03-AUG-18	1.6			
Methylene Chloride		<5.0		5.0	ug/L	03-AUG-18	26			
1,2-Dichloropropane		<0.50		0.50	ug/L	03-AUG-18	0.58			
cis-1,3-Dichloropropene		<0.30		0.30	ug/L	03-AUG-18				
trans-1,3-Dichloropropene		<0.30		0.30	ug/L	03-AUG-18				
1,3-Dichloropropene (cis & trans)		<0.50		0.50	ug/L	03-AUG-18	0.5			
Ethylbenzene		<0.50		0.50	ug/L	03-AUG-18	2.4			

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T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2139225-6	MW18-129D									
Sampled By:	CLIENT on 30-JUL-18 @ 16:55									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	n-Hexane	<0.50		0.50	ug/L	03-AUG-18	5			
	Methyl Ethyl Ketone	<20		20	ug/L	03-AUG-18	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	03-AUG-18	640			
	MTBE	<2.0		2.0	ug/L	03-AUG-18	15			
	Styrene	<0.50		0.50	ug/L	03-AUG-18	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	03-AUG-18	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	03-AUG-18	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	03-AUG-18	0.5			
	Toluene	<0.50		0.50	ug/L	03-AUG-18	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	03-AUG-18	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	03-AUG-18	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	03-AUG-18	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	03-AUG-18	150			
	Vinyl chloride	4.93		0.50	ug/L	03-AUG-18	*0.5			
	o-Xylene	<0.30		0.30	ug/L	03-AUG-18				
	m+p-Xylenes	<0.40		0.40	ug/L	03-AUG-18				
	Xylenes (Total)	<0.50		0.50	ug/L	03-AUG-18	72			
	Surrogate: 4-Bromofluorobenzene	96.9		70-130	%	03-AUG-18				
	Surrogate: 1,4-Difluorobenzene	98.5		70-130	%	03-AUG-18				
L2139225-7	MW18-130D									
Sampled By:	CLIENT on 31-JUL-18 @ 09:55									
Matrix:	WATER						#1			
Dissolved Metals										
	Dissolved Metals Filtration Location	FIELD			No Unit	02-AUG-18				
	Antimony (Sb)-Dissolved	0.19		0.10	ug/L	02-AUG-18	6			
	Arsenic (As)-Dissolved	8.33		0.10	ug/L	02-AUG-18	25			
	Barium (Ba)-Dissolved	88.7		0.10	ug/L	02-AUG-18	1000			
	Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	02-AUG-18	4			
	Boron (B)-Dissolved	63		10	ug/L	02-AUG-18	5000			
	Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	02-AUG-18	2.1			
	Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	02-AUG-18	50			
	Cobalt (Co)-Dissolved	0.82		0.10	ug/L	02-AUG-18	3.8			
	Copper (Cu)-Dissolved	0.92		0.20	ug/L	02-AUG-18	69			
	Lead (Pb)-Dissolved	0.378		0.050	ug/L	02-AUG-18	10			
	Molybdenum (Mo)-Dissolved	2.73		0.050	ug/L	02-AUG-18	70			
	Nickel (Ni)-Dissolved	7.30		0.50	ug/L	02-AUG-18	100			
	Selenium (Se)-Dissolved	0.090		0.050	ug/L	02-AUG-18	10			
	Silver (Ag)-Dissolved	<0.050		0.050	ug/L	02-AUG-18	1.2			
	Sodium (Na)-Dissolved	25400		500	ug/L	02-AUG-18	490000			
	Thallium (Tl)-Dissolved	0.082		0.010	ug/L	02-AUG-18	2			
	Uranium (U)-Dissolved	4.98		0.010	ug/L	02-AUG-18	20			
	Vanadium (V)-Dissolved	<0.50		0.50	ug/L	02-AUG-18	6.2			
	Zinc (Zn)-Dissolved	803		1.0	ug/L	02-AUG-18	890			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
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T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2139225-8	MW18-132D									
Sampled By:	CLIENT on 31-JUL-18 @ 10:55									
Matrix:	WATER						#1			
Dissolved Metals										
	Dissolved Metals Filtration Location	FIELD			No Unit	02-AUG-18				
	Antimony (Sb)-Dissolved	0.22		0.10	ug/L	02-AUG-18	6			
	Arsenic (As)-Dissolved	5.13		0.10	ug/L	02-AUG-18	25			
	Barium (Ba)-Dissolved	202		0.10	ug/L	02-AUG-18	1000			
	Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	02-AUG-18	4			
	Boron (B)-Dissolved	72		10	ug/L	02-AUG-18	5000			
	Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	02-AUG-18	2.1			
	Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	02-AUG-18	50			
	Cobalt (Co)-Dissolved	0.15		0.10	ug/L	02-AUG-18	3.8			
	Copper (Cu)-Dissolved	0.86		0.20	ug/L	02-AUG-18	69			
	Lead (Pb)-Dissolved	1.16		0.050	ug/L	02-AUG-18	10			
	Molybdenum (Mo)-Dissolved	3.02		0.050	ug/L	02-AUG-18	70			
	Nickel (Ni)-Dissolved	1.79		0.50	ug/L	02-AUG-18	100			
	Selenium (Se)-Dissolved	<0.050		0.050	ug/L	02-AUG-18	10			
	Silver (Ag)-Dissolved	<0.050		0.050	ug/L	02-AUG-18	1.2			
	Sodium (Na)-Dissolved	41500		500	ug/L	02-AUG-18	490000			
	Thallium (Tl)-Dissolved	0.028		0.010	ug/L	02-AUG-18	2			
	Uranium (U)-Dissolved	3.78		0.010	ug/L	02-AUG-18	20			
	Vanadium (V)-Dissolved	<0.50		0.50	ug/L	02-AUG-18	6.2			
	Zinc (Zn)-Dissolved	212		1.0	ug/L	02-AUG-18	890			
L2139225-9	MW18-133D									
Sampled By:	CLIENT on 31-JUL-18 @ 12:20									
Matrix:	WATER						#1			
Dissolved Metals										
	Dissolved Metals Filtration Location	FIELD			No Unit	02-AUG-18				
	Antimony (Sb)-Dissolved	0.29		0.10	ug/L	02-AUG-18	6			
	Arsenic (As)-Dissolved	9.46		0.10	ug/L	02-AUG-18	25			
	Barium (Ba)-Dissolved	102		0.10	ug/L	02-AUG-18	1000			
	Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	02-AUG-18	4			
	Boron (B)-Dissolved	66		10	ug/L	02-AUG-18	5000			
	Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	02-AUG-18	2.1			
	Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	02-AUG-18	50			
	Cobalt (Co)-Dissolved	0.16		0.10	ug/L	02-AUG-18	3.8			
	Copper (Cu)-Dissolved	3.93		0.20	ug/L	02-AUG-18	69			
	Lead (Pb)-Dissolved	1.92		0.050	ug/L	02-AUG-18	10			
	Molybdenum (Mo)-Dissolved	3.81		0.050	ug/L	02-AUG-18	70			
	Nickel (Ni)-Dissolved	3.22		0.50	ug/L	02-AUG-18	100			
	Selenium (Se)-Dissolved	0.134		0.050	ug/L	02-AUG-18	10			
	Silver (Ag)-Dissolved	<0.050		0.050	ug/L	02-AUG-18	1.2			
	Sodium (Na)-Dissolved	96900		500	ug/L	02-AUG-18	490000			
	Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	02-AUG-18	2			
	Uranium (U)-Dissolved	4.08		0.010	ug/L	02-AUG-18	20			
	Vanadium (V)-Dissolved	<0.50		0.50	ug/L	02-AUG-18	6.2			
	Zinc (Zn)-Dissolved	473		1.0	ug/L	02-AUG-18	890			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2139225-10	MW18-131S									
Sampled By:	CLIENT on 31-JUL-18 @ 13:20									
Matrix:	WATER						#1			
Dissolved Metals										
	Dissolved Metals Filtration Location	FIELD			No Unit	02-AUG-18				
	Antimony (Sb)-Dissolved	0.20		0.10	ug/L	02-AUG-18	6			
	Arsenic (As)-Dissolved	0.48		0.10	ug/L	02-AUG-18	25			
	Barium (Ba)-Dissolved	38.8		0.10	ug/L	02-AUG-18	1000			
	Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	02-AUG-18	4			
	Boron (B)-Dissolved	52		10	ug/L	02-AUG-18	5000			
	Cadmium (Cd)-Dissolved	0.014		0.010	ug/L	02-AUG-18	2.1			
	Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	02-AUG-18	50			
	Cobalt (Co)-Dissolved	1.03		0.10	ug/L	02-AUG-18	3.8			
	Copper (Cu)-Dissolved	4.09		0.20	ug/L	02-AUG-18	69			
	Lead (Pb)-Dissolved	0.079		0.050	ug/L	02-AUG-18	10			
	Molybdenum (Mo)-Dissolved	1.43		0.050	ug/L	02-AUG-18	70			
	Nickel (Ni)-Dissolved	7.68		0.50	ug/L	02-AUG-18	100			
	Selenium (Se)-Dissolved	0.375		0.050	ug/L	02-AUG-18	10			
	Silver (Ag)-Dissolved	<0.050		0.050	ug/L	02-AUG-18	1.2			
	Sodium (Na)-Dissolved	13400		500	ug/L	02-AUG-18	490000			
	Thallium (Tl)-Dissolved	0.614		0.010	ug/L	02-AUG-18	2			
	Uranium (U)-Dissolved	3.41		0.010	ug/L	02-AUG-18	20			
	Vanadium (V)-Dissolved	<0.50		0.50	ug/L	02-AUG-18	6.2			
	Zinc (Zn)-Dissolved	1160	DLHC	10	ug/L	03-AUG-18	*890			
Hydrocarbons										
	F1 (C6-C10)	<25		25	ug/L	03-AUG-18	420			
	F2 (C10-C16)	<100		100	ug/L	02-AUG-18	150			
	F3 (C16-C34)	<250		250	ug/L	02-AUG-18	500			
	F4 (C34-C50)	<250		250	ug/L	02-AUG-18	500			
	Total Hydrocarbons (C6-C50)	<370		370	ug/L	03-AUG-18				
	Chrom. to baseline at nC50	YES			No Unit	02-AUG-18				
	Surrogate: 2-Bromobenzotrifluoride	93.4		60-140	%	02-AUG-18				
	Surrogate: 3,4-Dichlorotoluene	92.2		60-140	%	03-AUG-18				
L2139225-11	MW17-140D									
Sampled By:	CLIENT on 31-JUL-18 @ 13:15									
Matrix:	WATER						#1			
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.020		0.020	ug/L	03-AUG-18	4.1			
	Acenaphthylene	<0.020		0.020	ug/L	03-AUG-18	1			
	Anthracene	<0.020		0.020	ug/L	03-AUG-18	1			
	Benzo(a)anthracene	<0.020		0.020	ug/L	03-AUG-18	1			
	Benzo(a)pyrene	<0.010		0.010	ug/L	03-AUG-18	0.01			
	Benzo(b)fluoranthene	<0.020		0.020	ug/L	03-AUG-18	0.1			
	Benzo(g,h,i)perylene	<0.020		0.020	ug/L	03-AUG-18	0.2			
	Benzo(k)fluoranthene	<0.020		0.020	ug/L	03-AUG-18	0.1			
	Chrysene	<0.020		0.020	ug/L	03-AUG-18	0.1			
	Dibenzo(ah)anthracene	<0.020		0.020	ug/L	03-AUG-18	0.2			
	Fluoranthene	<0.020		0.020	ug/L	03-AUG-18	0.41			
	Fluorene	<0.020		0.020	ug/L	03-AUG-18	120			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
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T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2139225-11	MW17-140D									
Sampled By:	CLIENT on 31-JUL-18 @ 13:15									
Matrix:	WATER						#1			
Polycyclic Aromatic Hydrocarbons										
	Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	03-AUG-18	0.2			
	1+2-Methylnaphthalenes	<0.028		0.028	ug/L	07-AUG-18	3.2			
	1-Methylnaphthalene	<0.020		0.020	ug/L	03-AUG-18	3.2			
	2-Methylnaphthalene	<0.020		0.020	ug/L	03-AUG-18	3.2			
	Naphthalene	<0.050		0.050	ug/L	03-AUG-18	7			
	Phenanthrene	<0.020		0.020	ug/L	03-AUG-18	1			
	Pyrene	<0.020		0.020	ug/L	03-AUG-18	4.1			
	Surrogate: d10-Acenaphthene	100.9		60-140	%	03-AUG-18				
	Surrogate: d12-Chrysene	109.2		60-140	%	03-AUG-18				
	Surrogate: d8-Naphthalene	85.5		60-140	%	03-AUG-18				
	Surrogate: d10-Phenanthrene	106.5		60-140	%	03-AUG-18				
L2139225-12	MW17-100S									
Sampled By:	CLIENT on 31-JUL-18 @ 16:55									
Matrix:	WATER						#1			
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.020		0.020	ug/L	03-AUG-18	4.1			
	Acenaphthylene	<0.020		0.020	ug/L	03-AUG-18	1			
	Anthracene	<0.020		0.020	ug/L	03-AUG-18	1			
	Benzo(a)anthracene	<0.020		0.020	ug/L	03-AUG-18	1			
	Benzo(a)pyrene	<0.010		0.010	ug/L	03-AUG-18	0.01			
	Benzo(b)fluoranthene	<0.020		0.020	ug/L	03-AUG-18	0.1			
	Benzo(g,h,i)perylene	<0.020		0.020	ug/L	03-AUG-18	0.2			
	Benzo(k)fluoranthene	<0.020		0.020	ug/L	03-AUG-18	0.1			
	Chrysene	<0.020		0.020	ug/L	03-AUG-18	0.1			
	Dibenzo(ah)anthracene	<0.020		0.020	ug/L	03-AUG-18	0.2			
	Fluoranthene	<0.020		0.020	ug/L	03-AUG-18	0.41			
	Fluorene	<0.020		0.020	ug/L	03-AUG-18	120			
	Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	03-AUG-18	0.2			
	1+2-Methylnaphthalenes	<0.028		0.028	ug/L	07-AUG-18	3.2			
	1-Methylnaphthalene	<0.020		0.020	ug/L	03-AUG-18	3.2			
	2-Methylnaphthalene	<0.020		0.020	ug/L	03-AUG-18	3.2			
	Naphthalene	<0.050		0.050	ug/L	03-AUG-18	7			
	Phenanthrene	<0.020		0.020	ug/L	03-AUG-18	1			
	Pyrene	<0.020		0.020	ug/L	03-AUG-18	4.1			
	Surrogate: d10-Acenaphthene	98.0		60-140	%	03-AUG-18				
	Surrogate: d12-Chrysene	102.2		60-140	%	03-AUG-18				
	Surrogate: d8-Naphthalene	81.5		60-140	%	03-AUG-18				
	Surrogate: d10-Phenanthrene	102.1		60-140	%	03-AUG-18				
L2139225-13	DUP1									
Sampled By:	CLIENT on 31-JUL-18 @ 15:20									
Matrix:	WATER						#1			
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.020		0.020	ug/L	03-AUG-18	4.1			
	Acenaphthylene	<0.020		0.020	ug/L	03-AUG-18	1			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2139225-13	DUP1									
Sampled By:	CLIENT on 31-JUL-18 @ 15:20									
Matrix:	WATER						#1			
Polycyclic Aromatic Hydrocarbons										
	Anthracene	<0.020		0.020	ug/L	03-AUG-18	1			
	Benzo(a)anthracene	<0.020		0.020	ug/L	03-AUG-18	1			
	Benzo(a)pyrene	<0.010		0.010	ug/L	03-AUG-18	0.01			
	Benzo(b)fluoranthene	<0.020		0.020	ug/L	03-AUG-18	0.1			
	Benzo(g,h,i)perylene	<0.020		0.020	ug/L	03-AUG-18	0.2			
	Benzo(k)fluoranthene	<0.020		0.020	ug/L	03-AUG-18	0.1			
	Chrysene	<0.020		0.020	ug/L	03-AUG-18	0.1			
	Dibenzo(ah)anthracene	<0.020		0.020	ug/L	03-AUG-18	0.2			
	Fluoranthene	<0.020		0.020	ug/L	03-AUG-18	0.41			
	Fluorene	<0.020		0.020	ug/L	03-AUG-18	120			
	Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	03-AUG-18	0.2			
	1+2-Methylnaphthalenes	<0.028		0.028	ug/L	07-AUG-18	3.2			
	1-Methylnaphthalene	<0.020		0.020	ug/L	03-AUG-18	3.2			
	2-Methylnaphthalene	<0.020		0.020	ug/L	03-AUG-18	3.2			
	Naphthalene	<0.050		0.050	ug/L	03-AUG-18	7			
	Phenanthrene	<0.020		0.020	ug/L	03-AUG-18	1			
	Pyrene	<0.020		0.020	ug/L	03-AUG-18	4.1			
	Surrogate: d10-Acenaphthene	96.6		60-140	%	03-AUG-18				
	Surrogate: d12-Chrysene	103.7		60-140	%	03-AUG-18				
	Surrogate: d8-Naphthalene	82.0		60-140	%	03-AUG-18				
	Surrogate: d10-Phenanthrene	104.4		60-140	%	03-AUG-18				
L2139225-14	TRIP BLANK									
Sampled By:	CLIENT on 31-JUL-18									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	03-AUG-18	2700			
	Benzene	<0.50		0.50	ug/L	03-AUG-18	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	03-AUG-18	16			
	Bromoform	<5.0		5.0	ug/L	03-AUG-18	5			
	Bromomethane	<0.50		0.50	ug/L	03-AUG-18	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	03-AUG-18	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	03-AUG-18	30			
	Dibromochloromethane	<2.0		2.0	ug/L	03-AUG-18	25			
	Chloroform	<1.0		1.0	ug/L	03-AUG-18	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	03-AUG-18	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	03-AUG-18	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	03-AUG-18	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	03-AUG-18	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	03-AUG-18	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	03-AUG-18	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	03-AUG-18	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	03-AUG-18	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	03-AUG-18	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	03-AUG-18	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	03-AUG-18	26			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2139225-14	TRIP BLANK									
Sampled By:	CLIENT on 31-JUL-18									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	1,2-Dichloropropane	<0.50		0.50	ug/L	03-AUG-18	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	03-AUG-18				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	03-AUG-18				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	03-AUG-18	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	03-AUG-18	2.4			
	n-Hexane	<0.50		0.50	ug/L	03-AUG-18	5			
	Methyl Ethyl Ketone	<20		20	ug/L	03-AUG-18	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	03-AUG-18	640			
	MTBE	<2.0		2.0	ug/L	03-AUG-18	15			
	Styrene	<0.50		0.50	ug/L	03-AUG-18	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	03-AUG-18	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	03-AUG-18	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	03-AUG-18	0.5			
	Toluene	<0.50		0.50	ug/L	03-AUG-18	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	03-AUG-18	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	03-AUG-18	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	03-AUG-18	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	03-AUG-18	150			
	Vinyl chloride	<0.50		0.50	ug/L	03-AUG-18	0.5			
	o-Xylene	<0.30		0.30	ug/L	03-AUG-18				
	m+p-Xylenes	<0.40		0.40	ug/L	03-AUG-18				
	Xylenes (Total)	<0.50		0.50	ug/L	03-AUG-18	72			
	Surrogate: 4-Bromofluorobenzene	100.3		70-130	%	03-AUG-18				
	Surrogate: 1,4-Difluorobenzene	100.5		70-130	%	03-AUG-18				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

Reference Information

Sample Parameter Qualifier key listed:

Qualifier	Description
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference***
F1-F4-511-CALC-WT	Water	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-L

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Water	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Water	F2-F4-O.Reg 153/04 (July 2011)	EPA 3511/CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from water using a hexane micro-extraction technique. Instrumental analysis is by GC-FID, as per the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Tier 1 Method, CCME, 2001.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8

The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT	Water	PAH-Calculated Parameters	SW846 8270
PAH-511-WT	Water	PAH-O. Reg 153/04 (July 2011)	SW846 3510/8270

Aqueous samples, fortified with surrogates, are extracted using liquid/liquid extraction technique. The sample extracts are concentrated and then analyzed using GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

VOC-1,3-DCP-CALC-WT	Water	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Water	VOC by GCMS HS O.Reg 153/04 (July 2011)	SW846 8260

Liquid samples are analyzed by headspace GC/MSD.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

Reference Information

XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

*** ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody numbers:

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA		

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Quality Control Report

Workorder: L2139225 Report Date: 08-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT	**Water**							
Batch	**R4157627**							
WG2840050-4	**DUP**	**WG2840050-3**						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	03-AUG-18
WG2840050-1	**LCS**							
F1 (C6-C10)			104.0		%		80-120	03-AUG-18
WG2840050-2	**MB**							
F1 (C6-C10)			<25		ug/L		25	03-AUG-18
Surrogate: 3,4-Dichlorotoluene			108.8		%		60-140	03-AUG-18
WG2840050-5	**MS**	**WG2840050-3**						
F1 (C6-C10)			88.9		%		60-140	03-AUG-18
F2-F4-511-WT	**Water**							
Batch	**R4155048**							
WG2839303-2	**LCS**							
F2 (C10-C16)			97.7		%		70-130	02-AUG-18
F3 (C16-C34)			105.3		%		70-130	02-AUG-18
F4 (C34-C50)			116.4		%		70-130	02-AUG-18
WG2839303-3	**LCSD**	**WG2839303-2**						
F2 (C10-C16)		97.7	104.8		%	6.9	50	02-AUG-18
F3 (C16-C34)		105.3	106.1		%	0.7	50	02-AUG-18
F4 (C34-C50)		116.4	105.4		%	10	50	02-AUG-18
WG2839303-1	**MB**							
F2 (C10-C16)			<100		ug/L		100	02-AUG-18
F3 (C16-C34)			<250		ug/L		250	02-AUG-18
F4 (C34-C50)			<250		ug/L		250	02-AUG-18
Surrogate: 2-Bromobenzotrifluoride			83.6		%		60-140	02-AUG-18
MET-D-UG/L-MS-WT	**Water**							
Batch	**R4156627**							
WG2839302-4	**DUP**	**WG2839302-3**						
Antimony (Sb)-Dissolved		0.50	0.50		ug/L	0.3	20	02-AUG-18
Arsenic (As)-Dissolved		1.74	1.71		ug/L	1.8	20	02-AUG-18
Barium (Ba)-Dissolved		67.8	67.4		ug/L	0.5	20	02-AUG-18
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	02-AUG-18
Boron (B)-Dissolved		67	67		ug/L	0.2	20	02-AUG-18
Cadmium (Cd)-Dissolved		<0.0050	<0.0050	RPD-NA	ug/L	N/A	20	02-AUG-18
Chromium (Cr)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	02-AUG-18
Cobalt (Co)-Dissolved		0.24	0.25		ug/L	3.2	20	02-AUG-18

Quality Control Report

Workorder: L2139225 Report Date: 08-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R4156627								
WG2839302-4 DUP		**WG2839302-3**						
Copper (Cu)-Dissolved		0.95	0.91		ug/L	4.8	20	02-AUG-18
Lead (Pb)-Dissolved		0.067	0.068		ug/L	2.1	20	02-AUG-18
Molybdenum (Mo)-Dissolved		5.96	5.86		ug/L	1.6	20	02-AUG-18
Nickel (Ni)-Dissolved		9.03	9.12		ug/L	1.0	20	02-AUG-18
Selenium (Se)-Dissolved		0.178	0.196		ug/L	9.3	20	02-AUG-18
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	02-AUG-18
Sodium (Na)-Dissolved		183000	180000		ug/L	2.0	20	02-AUG-18
Thallium (Tl)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	02-AUG-18
Uranium (U)-Dissolved		7.24	7.24		ug/L	0.0	20	02-AUG-18
Vanadium (V)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	02-AUG-18
Zinc (Zn)-Dissolved		3.0	3.1		ug/L	2.7	20	02-AUG-18
WG2839302-2 LCS								
Antimony (Sb)-Dissolved			100.8		%		80-120	02-AUG-18
Arsenic (As)-Dissolved			102.0		%		80-120	02-AUG-18
Barium (Ba)-Dissolved			105.4		%		80-120	02-AUG-18
Beryllium (Be)-Dissolved			107.5		%		80-120	02-AUG-18
Boron (B)-Dissolved			101.8		%		80-120	02-AUG-18
Cadmium (Cd)-Dissolved			100.7		%		80-120	02-AUG-18
Chromium (Cr)-Dissolved			99.6		%		80-120	02-AUG-18
Cobalt (Co)-Dissolved			99.6		%		80-120	02-AUG-18
Copper (Cu)-Dissolved			99.6		%		80-120	02-AUG-18
Lead (Pb)-Dissolved			106.4		%		80-120	02-AUG-18
Molybdenum (Mo)-Dissolved			102.3		%		80-120	02-AUG-18
Nickel (Ni)-Dissolved			99.7		%		80-120	02-AUG-18
Selenium (Se)-Dissolved			96.8		%		80-120	02-AUG-18
Silver (Ag)-Dissolved			109.9		%		80-120	02-AUG-18
Sodium (Na)-Dissolved			104.2		%		80-120	02-AUG-18
Thallium (Tl)-Dissolved			102.1		%		80-120	02-AUG-18
Uranium (U)-Dissolved			109.8		%		80-120	02-AUG-18
Vanadium (V)-Dissolved			102.2		%		80-120	02-AUG-18
Zinc (Zn)-Dissolved			98.7		%		80-120	02-AUG-18
WG2839302-1 MB								
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	02-AUG-18
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	

Quality Control Report

Workorder: L2139225 Report Date: 08-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch	**R4156627**							
WG2839302-1	**MB**							
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	02-AUG-18
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	02-AUG-18
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	02-AUG-18
Boron (B)-Dissolved			<10		ug/L		10	02-AUG-18
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	02-AUG-18
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	02-AUG-18
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	02-AUG-18
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	02-AUG-18
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	02-AUG-18
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	02-AUG-18
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	02-AUG-18
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	02-AUG-18
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	02-AUG-18
Sodium (Na)-Dissolved			<50		ug/L		50	02-AUG-18
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	02-AUG-18
Uranium (U)-Dissolved			<0.010		ug/L		0.01	02-AUG-18
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	02-AUG-18
Zinc (Zn)-Dissolved			<1.0		ug/L		1	02-AUG-18
WG2839302-5	**MS**	**WG2839302-6**						
Antimony (Sb)-Dissolved			96.2		%		70-130	02-AUG-18
Arsenic (As)-Dissolved			110.0		%		70-130	02-AUG-18
Barium (Ba)-Dissolved			N/A	MS-B	%		-	02-AUG-18
Beryllium (Be)-Dissolved			104.1		%		70-130	02-AUG-18
Boron (B)-Dissolved			N/A	MS-B	%		-	02-AUG-18
Cadmium (Cd)-Dissolved			99.9		%		70-130	02-AUG-18
Chromium (Cr)-Dissolved			100.8		%		70-130	02-AUG-18
Cobalt (Co)-Dissolved			97.8		%		70-130	02-AUG-18
Copper (Cu)-Dissolved			96.6		%		70-130	02-AUG-18
Lead (Pb)-Dissolved			98.9		%		70-130	02-AUG-18
Molybdenum (Mo)-Dissolved			102.5		%		70-130	02-AUG-18
Nickel (Ni)-Dissolved			97.1		%		70-130	02-AUG-18
Selenium (Se)-Dissolved			100.9		%		70-130	02-AUG-18
Silver (Ag)-Dissolved			100.2		%		70-130	02-AUG-18
Sodium (Na)-Dissolved			N/A	MS-B	%		-	02-AUG-18

Quality Control Report

Workorder: L2139225 Report Date: 08-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R4156627								
WG2839302-5 MS		**WG2839302-6**						
Thallium (Tl)-Dissolved			100.4		%		70-130	02-AUG-18
Uranium (U)-Dissolved			N/A	MS-B	%		-	02-AUG-18
Vanadium (V)-Dissolved			104.4		%		70-130	02-AUG-18
Zinc (Zn)-Dissolved			N/A	MS-B	%		-	02-AUG-18
PAH-511-WT	**Water**							
Batch R4160001								
WG2839346-2 LCS								
1-Methylnaphthalene			90.2		%		50-140	03-AUG-18
2-Methylnaphthalene			72.8		%		50-140	03-AUG-18
Acenaphthene			89.3		%		50-140	03-AUG-18
Acenaphthylene			91.8		%		50-140	03-AUG-18
Anthracene			95.6		%		50-140	03-AUG-18
Benzo(a)anthracene			105.8		%		50-140	03-AUG-18
Benzo(a)pyrene			95.7		%		50-140	03-AUG-18
Benzo(b)fluoranthene			92.3		%		50-140	03-AUG-18
Benzo(g,h,i)perylene			98.9		%		50-140	03-AUG-18
Benzo(k)fluoranthene			96.4		%		50-140	03-AUG-18
Chrysene			113.8		%		50-140	03-AUG-18
Dibenzo(ah)anthracene			103.1		%		50-140	03-AUG-18
Fluoranthene			100.7		%		50-140	03-AUG-18
Fluorene			94.8		%		50-140	03-AUG-18
Indeno(1,2,3-cd)pyrene			111.8		%		50-140	03-AUG-18
Naphthalene			72.2		%		50-140	03-AUG-18
Phenanthrene			97.8		%		50-140	03-AUG-18
Pyrene			98.2		%		50-140	03-AUG-18
WG2839346-3 LCSD		**WG2839346-2**						
1-Methylnaphthalene		90.2	97.4		%	7.6	50	03-AUG-18
2-Methylnaphthalene		72.8	84.6		%	15	50	03-AUG-18
Acenaphthene		89.3	99.1		%	10	50	03-AUG-18
Acenaphthylene		91.8	98.1		%	6.7	50	03-AUG-18
Anthracene		95.6	97.9		%	2.4	50	03-AUG-18
Benzo(a)anthracene		105.8	112.2		%	5.9	50	03-AUG-18
Benzo(a)pyrene		95.7	98.9		%	3.3	50	03-AUG-18
Benzo(b)fluoranthene		92.3	88.1		%	4.7	50	03-AUG-18

Quality Control Report

Workorder: L2139225 Report Date: 08-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R4160001								
WG2839346-3 LCSD		**WG2839346-2**						
Benzo(g,h,i)perylene		98.9	101.8		%	2.9	50	03-AUG-18
Benzo(k)fluoranthene		96.4	104.6		%	8.1	50	03-AUG-18
Chrysene		113.8	108.7		%	4.6	50	03-AUG-18
Dibenzo(ah)anthracene		103.1	112.1		%	8.3	50	03-AUG-18
Fluoranthene		100.7	104.9		%	4.0	50	03-AUG-18
Fluorene		94.8	101.5		%	6.8	50	03-AUG-18
Indeno(1,2,3-cd)pyrene		111.8	113.8		%	1.7	50	03-AUG-18
Naphthalene		72.2	81.2		%	12	50	03-AUG-18
Phenanthrene		97.8	102.6		%	4.7	50	03-AUG-18
Pyrene		98.2	107.2		%	8.7	50	03-AUG-18
WG2839346-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	03-AUG-18
2-Methylnaphthalene			<0.020		ug/L		0.02	03-AUG-18
Acenaphthene			<0.020		ug/L		0.02	03-AUG-18
Acenaphthylene			<0.020		ug/L		0.02	03-AUG-18
Anthracene			<0.020		ug/L		0.02	03-AUG-18
Benzo(a)anthracene			<0.020		ug/L		0.02	03-AUG-18
Benzo(a)pyrene			<0.010		ug/L		0.01	03-AUG-18
Benzo(b)fluoranthene			<0.020		ug/L		0.02	03-AUG-18
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	03-AUG-18
Benzo(k)fluoranthene			<0.020		ug/L		0.02	03-AUG-18
Chrysene			<0.020		ug/L		0.02	03-AUG-18
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	03-AUG-18
Fluoranthene			<0.020		ug/L		0.02	03-AUG-18
Fluorene			<0.020		ug/L		0.02	03-AUG-18
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	03-AUG-18
Naphthalene			<0.050		ug/L		0.05	03-AUG-18
Phenanthrene			<0.020		ug/L		0.02	03-AUG-18
Pyrene			<0.020		ug/L		0.02	03-AUG-18
Surrogate: d8-Naphthalene			84.0		%		60-140	03-AUG-18
Surrogate: d10-Phenanthrene			111.4		%		60-140	03-AUG-18
Surrogate: d12-Chrysene			106.6		%		60-140	03-AUG-18
Surrogate: d10-Acenaphthene			104.9		%		60-140	03-AUG-18

Quality Control Report

Workorder: L2139225 Report Date: 08-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4153488								
WG2837157-4 DUP		**WG2837157-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-AUG-18
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-AUG-18
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-AUG-18
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-AUG-18
1,1-Dichloroethane		0.89	0.90		ug/L	1.1	30	03-AUG-18
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-AUG-18
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	03-AUG-18
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-AUG-18
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-AUG-18
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-AUG-18
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-AUG-18
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-AUG-18
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	03-AUG-18
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-AUG-18
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	03-AUG-18
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	03-AUG-18
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-AUG-18
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	03-AUG-18
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-AUG-18
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	03-AUG-18
cis-1,2-Dichloroethylene		2.78	2.76		ug/L	0.7	30	03-AUG-18
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	03-AUG-18
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	03-AUG-18
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	03-AUG-18
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-AUG-18
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-AUG-18
m+p-Xylenes		0.45	0.46		ug/L	2.2	30	03-AUG-18
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	03-AUG-18
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	03-AUG-18
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	03-AUG-18
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	03-AUG-18
o-Xylene		0.33	0.33		ug/L	0.0	30	03-AUG-18
Styrene		<0.50	<0.50		ug/L			03-AUG-18

Quality Control Report

Workorder: L2139225 Report Date: 08-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4153488								
WG2837157-4 DUP		**WG2837157-3**						
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-AUG-18
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-AUG-18
Toluene		0.84	0.84		ug/L	0.0	30	03-AUG-18
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-AUG-18
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	03-AUG-18
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-AUG-18
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	03-AUG-18
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-AUG-18
WG2837157-1 LCS								
1,1,1,2-Tetrachloroethane			104.8		%		70-130	02-AUG-18
1,1,2,2-Tetrachloroethane			87.9		%		70-130	02-AUG-18
1,1,1-Trichloroethane			107.0		%		70-130	02-AUG-18
1,1,2-Trichloroethane			95.8		%		70-130	02-AUG-18
1,1-Dichloroethane			97.8		%		70-130	02-AUG-18
1,1-Dichloroethylene			102.1		%		70-130	02-AUG-18
1,2-Dibromoethane			99.6		%		70-130	02-AUG-18
1,2-Dichlorobenzene			104.5		%		70-130	02-AUG-18
1,2-Dichloroethane			101.5		%		70-130	02-AUG-18
1,2-Dichloropropane			100.5		%		70-130	02-AUG-18
1,3-Dichlorobenzene			104.8		%		70-130	02-AUG-18
1,4-Dichlorobenzene			105.1		%		70-130	02-AUG-18
Acetone			93.4		%		60-140	02-AUG-18
Benzene			104.4		%		70-130	02-AUG-18
Bromodichloromethane			104.8		%		70-130	02-AUG-18
Bromoform			94.2		%		70-130	02-AUG-18
Bromomethane			85.0		%		60-140	02-AUG-18
Carbon tetrachloride			106.4		%		70-130	02-AUG-18
Chlorobenzene			106.8		%		70-130	02-AUG-18
Chloroform			105.4		%		70-130	02-AUG-18
cis-1,2-Dichloroethylene			103.2		%		70-130	02-AUG-18
cis-1,3-Dichloropropene			99.2		%		70-130	02-AUG-18
Dibromochloromethane			100.1		%		70-130	02-AUG-18
Dichlorodifluoromethane			111.8		%		50-140	02-AUG-18

Quality Control Report

Workorder: L2139225 Report Date: 08-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4153488								
WG2837157-1 LCS								
Ethylbenzene			102.4		%		70-130	02-AUG-18
n-Hexane			122.5		%		70-130	02-AUG-18
m+p-Xylenes			106.3		%		70-130	02-AUG-18
Methyl Ethyl Ketone			89.7		%		60-140	02-AUG-18
Methyl Isobutyl Ketone			81.2		%		60-140	02-AUG-18
Methylene Chloride			100.6		%		70-130	02-AUG-18
MTBE			106.8		%		70-130	02-AUG-18
o-Xylene			100.5		%		70-130	02-AUG-18
Styrene			104.5		%		70-130	02-AUG-18
Tetrachloroethylene			105.2		%		70-130	02-AUG-18
Toluene			104.0		%		70-130	02-AUG-18
trans-1,2-Dichloroethylene			105.3		%		70-130	02-AUG-18
trans-1,3-Dichloropropene			105.2		%		70-130	02-AUG-18
Trichloroethylene			108.5		%		70-130	02-AUG-18
Trichlorofluoromethane			114.8		%		60-140	02-AUG-18
Vinyl chloride			101.8		%		60-140	02-AUG-18
WG2837157-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	02-AUG-18
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	02-AUG-18
1,1,1-Trichloroethane			<0.50		ug/L		0.5	02-AUG-18
1,1,2-Trichloroethane			<0.50		ug/L		0.5	02-AUG-18
1,1-Dichloroethane			<0.50		ug/L		0.5	02-AUG-18
1,1-Dichloroethylene			<0.50		ug/L		0.5	02-AUG-18
1,2-Dibromoethane			<0.20		ug/L		0.2	02-AUG-18
1,2-Dichlorobenzene			<0.50		ug/L		0.5	02-AUG-18
1,2-Dichloroethane			<0.50		ug/L		0.5	02-AUG-18
1,2-Dichloropropane			<0.50		ug/L		0.5	02-AUG-18
1,3-Dichlorobenzene			<0.50		ug/L		0.5	02-AUG-18
1,4-Dichlorobenzene			<0.50		ug/L		0.5	02-AUG-18
Acetone			<30		ug/L		30	02-AUG-18
Benzene			<0.50		ug/L		0.5	02-AUG-18
Bromodichloromethane			<2.0		ug/L		2	02-AUG-18
Bromoform			<5.0		ug/L		5	02-AUG-18
Bromomethane			<0.50		ug/L		0.5	02-AUG-18

Quality Control Report

Workorder: L2139225 Report Date: 08-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch	**R4153488**							
WG2837157-2	**MB**							
Carbon tetrachloride			<0.20		ug/L		0.2	02-AUG-18
Chlorobenzene			<0.50		ug/L		0.5	02-AUG-18
Chloroform			<1.0		ug/L		1	02-AUG-18
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	02-AUG-18
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	02-AUG-18
Dibromochloromethane			<2.0		ug/L		2	02-AUG-18
Dichlorodifluoromethane			<2.0		ug/L		2	02-AUG-18
Ethylbenzene			<0.50		ug/L		0.5	02-AUG-18
n-Hexane			<0.50		ug/L		0.5	02-AUG-18
m+p-Xylenes			<0.40		ug/L		0.4	02-AUG-18
Methyl Ethyl Ketone			<20		ug/L		20	02-AUG-18
Methyl Isobutyl Ketone			<20		ug/L		20	02-AUG-18
Methylene Chloride			<5.0		ug/L		5	02-AUG-18
MTBE			<2.0		ug/L		2	02-AUG-18
o-Xylene			<0.30		ug/L		0.3	02-AUG-18
Styrene			<0.50		ug/L		0.5	02-AUG-18
Tetrachloroethylene			<0.50		ug/L		0.5	02-AUG-18
Toluene			<0.50		ug/L		0.5	02-AUG-18
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	02-AUG-18
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	02-AUG-18
Trichloroethylene			<0.50		ug/L		0.5	02-AUG-18
Trichlorofluoromethane			<5.0		ug/L		5	02-AUG-18
Vinyl chloride			<0.50		ug/L		0.5	02-AUG-18
Surrogate: 1,4-Difluorobenzene			99.0		%		70-130	02-AUG-18
Surrogate: 4-Bromofluorobenzene			98.6		%		70-130	02-AUG-18
WG2837157-5	**MS**	**WG2837157-3**						
1,1,1,2-Tetrachloroethane			105.6		%		50-140	03-AUG-18
1,1,2,2-Tetrachloroethane			99.1		%		50-140	03-AUG-18
1,1,1-Trichloroethane			106.2		%		50-140	03-AUG-18
1,1,2-Trichloroethane			101.5		%		50-140	03-AUG-18
1,1-Dichloroethane			101.0		%		50-140	03-AUG-18
1,1-Dichloroethylene			100.8		%		50-140	03-AUG-18
1,2-Dibromoethane			105.9		%		50-140	03-AUG-18
1,2-Dichlorobenzene			104.6		%		50-140	03-AUG-18

Quality Control Report

Workorder: L2139225 Report Date: 08-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4153488								
WG2837157-5 MS		**WG2837157-3**						
1,2-Dichloroethane			109.3		%		50-140	03-AUG-18
1,2-Dichloropropane			105.6		%		50-140	03-AUG-18
1,3-Dichlorobenzene			102.2		%		50-140	03-AUG-18
1,4-Dichlorobenzene			103.7		%		50-140	03-AUG-18
Acetone			102.4		%		50-140	03-AUG-18
Benzene			106.8		%		50-140	03-AUG-18
Bromodichloromethane			108.6		%		50-140	03-AUG-18
Bromoform			100.6		%		50-140	03-AUG-18
Bromomethane			83.5		%		50-140	03-AUG-18
Carbon tetrachloride			104.6		%		50-140	03-AUG-18
Chlorobenzene			107.0		%		50-140	03-AUG-18
Chloroform			108.6		%		50-140	03-AUG-18
cis-1,2-Dichloroethylene			105.5		%		50-140	03-AUG-18
cis-1,3-Dichloropropene			102.6		%		50-140	03-AUG-18
Dibromochloromethane			104.0		%		50-140	03-AUG-18
Dichlorodifluoromethane			103.6		%		50-140	03-AUG-18
Ethylbenzene			96.9		%		50-140	03-AUG-18
n-Hexane			118.9		%		50-140	03-AUG-18
m+p-Xylenes			102.0		%		50-140	03-AUG-18
Methyl Ethyl Ketone			101.9		%		50-140	03-AUG-18
Methyl Isobutyl Ketone			94.5		%		50-140	03-AUG-18
Methylene Chloride			105.3		%		50-140	03-AUG-18
MTBE			107.3		%		50-140	03-AUG-18
o-Xylene			96.6		%		50-140	03-AUG-18
Styrene			102.9		%		50-140	03-AUG-18
Tetrachloroethylene			99.5		%		50-140	03-AUG-18
Toluene			100.2		%		50-140	03-AUG-18
trans-1,2-Dichloroethylene			105.8		%		50-140	03-AUG-18
trans-1,3-Dichloropropene			105.5		%		50-140	03-AUG-18
Trichloroethylene			107.0		%		50-140	03-AUG-18
Trichlorofluoromethane			111.0		%		50-140	03-AUG-18
Vinyl chloride			98.1		%		50-140	03-AUG-18

Quality Control Report

Workorder: L2139225 Report Date: 08-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4158369								
WG2835871-4 DUP		**WG2835871-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-AUG-18
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-AUG-18
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-AUG-18
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-AUG-18
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-AUG-18
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-AUG-18
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	02-AUG-18
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-AUG-18
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-AUG-18
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-AUG-18
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-AUG-18
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-AUG-18
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	02-AUG-18
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-AUG-18
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	02-AUG-18
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	02-AUG-18
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-AUG-18
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	02-AUG-18
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-AUG-18
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	02-AUG-18
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-AUG-18
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	02-AUG-18
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	02-AUG-18
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	02-AUG-18
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-AUG-18
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-AUG-18
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	02-AUG-18
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	02-AUG-18
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	02-AUG-18
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	02-AUG-18
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	02-AUG-18
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	02-AUG-18
Styrene		<0.50	<0.50		ug/L			02-AUG-18

Quality Control Report

Workorder: L2139225 Report Date: 08-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4158369								
WG2835871-4 DUP		**WG2835871-3**						
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-AUG-18
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-AUG-18
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-AUG-18
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-AUG-18
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	02-AUG-18
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-AUG-18
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	02-AUG-18
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-AUG-18
WG2835871-1 LCS								
1,1,1,2-Tetrachloroethane			104.0		%		70-130	02-AUG-18
1,1,2,2-Tetrachloroethane			97.0		%		70-130	02-AUG-18
1,1,1-Trichloroethane			103.6		%		70-130	02-AUG-18
1,1,2-Trichloroethane			107.9		%		70-130	02-AUG-18
1,1-Dichloroethane			106.8		%		70-130	02-AUG-18
1,1-Dichloroethylene			102.4		%		70-130	02-AUG-18
1,2-Dibromoethane			104.9		%		70-130	02-AUG-18
1,2-Dichlorobenzene			100.7		%		70-130	02-AUG-18
1,2-Dichloroethane			107.5		%		70-130	02-AUG-18
1,2-Dichloropropane			103.2		%		70-130	02-AUG-18
1,3-Dichlorobenzene			99.0		%		70-130	02-AUG-18
1,4-Dichlorobenzene			97.6		%		70-130	02-AUG-18
Acetone			113.1		%		60-140	02-AUG-18
Benzene			102.9		%		70-130	02-AUG-18
Bromodichloromethane			104.1		%		70-130	02-AUG-18
Bromoform			98.8		%		70-130	02-AUG-18
Bromomethane			84.7		%		60-140	02-AUG-18
Carbon tetrachloride			103.8		%		70-130	02-AUG-18
Chlorobenzene			102.5		%		70-130	02-AUG-18
Chloroform			105.7		%		70-130	02-AUG-18
cis-1,2-Dichloroethylene			104.6		%		70-130	02-AUG-18
cis-1,3-Dichloropropene			99.0		%		70-130	02-AUG-18
Dibromochloromethane			101.6		%		70-130	02-AUG-18
Dichlorodifluoromethane			131.5		%		50-140	02-AUG-18

Quality Control Report

Workorder: L2139225 Report Date: 08-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4158369								
WG2835871-1 LCS								
Ethylbenzene			103.8		%		70-130	02-AUG-18
n-Hexane			125.7		%		70-130	02-AUG-18
m+p-Xylenes			103.1		%		70-130	02-AUG-18
Methyl Ethyl Ketone			101.5		%		60-140	02-AUG-18
Methyl Isobutyl Ketone			95.2		%		60-140	02-AUG-18
Methylene Chloride			105.2		%		70-130	02-AUG-18
MTBE			104.8		%		70-130	02-AUG-18
o-Xylene			101.2		%		70-130	02-AUG-18
Styrene			100.2		%		70-130	02-AUG-18
Tetrachloroethylene			109.4		%		70-130	02-AUG-18
Toluene			105.2		%		70-130	02-AUG-18
trans-1,2-Dichloroethylene			103.5		%		70-130	02-AUG-18
trans-1,3-Dichloropropene			103.0		%		70-130	02-AUG-18
Trichloroethylene			107.1		%		70-130	02-AUG-18
Trichlorofluoromethane			114.5		%		60-140	02-AUG-18
Vinyl chloride			104.2		%		60-140	02-AUG-18
WG2835871-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	03-AUG-18
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	03-AUG-18
1,1,1-Trichloroethane			<0.50		ug/L		0.5	03-AUG-18
1,1,2-Trichloroethane			<0.50		ug/L		0.5	03-AUG-18
1,1-Dichloroethane			<0.50		ug/L		0.5	03-AUG-18
1,1-Dichloroethylene			<0.50		ug/L		0.5	03-AUG-18
1,2-Dibromoethane			<0.20		ug/L		0.2	03-AUG-18
1,2-Dichlorobenzene			<0.50		ug/L		0.5	03-AUG-18
1,2-Dichloroethane			<0.50		ug/L		0.5	03-AUG-18
1,2-Dichloropropane			<0.50		ug/L		0.5	03-AUG-18
1,3-Dichlorobenzene			<0.50		ug/L		0.5	03-AUG-18
1,4-Dichlorobenzene			<0.50		ug/L		0.5	03-AUG-18
Acetone			<30		ug/L		30	03-AUG-18
Benzene			<0.50		ug/L		0.5	03-AUG-18
Bromodichloromethane			<2.0		ug/L		2	03-AUG-18
Bromoform			<5.0		ug/L		5	03-AUG-18
Bromomethane			<0.50		ug/L		0.5	03-AUG-18

Quality Control Report

Workorder: L2139225 Report Date: 08-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch	**R4158369**							
WG2835871-2	**MB**							
Carbon tetrachloride			<0.20		ug/L		0.2	03-AUG-18
Chlorobenzene			<0.50		ug/L		0.5	03-AUG-18
Chloroform			<1.0		ug/L		1	03-AUG-18
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	03-AUG-18
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	03-AUG-18
Dibromochloromethane			<2.0		ug/L		2	03-AUG-18
Dichlorodifluoromethane			<2.0		ug/L		2	03-AUG-18
Ethylbenzene			<0.50		ug/L		0.5	03-AUG-18
n-Hexane			<0.50		ug/L		0.5	03-AUG-18
m+p-Xylenes			<0.40		ug/L		0.4	03-AUG-18
Methyl Ethyl Ketone			<20		ug/L		20	03-AUG-18
Methyl Isobutyl Ketone			<20		ug/L		20	03-AUG-18
Methylene Chloride			<5.0		ug/L		5	03-AUG-18
MTBE			<2.0		ug/L		2	03-AUG-18
o-Xylene			<0.30		ug/L		0.3	03-AUG-18
Styrene			<0.50		ug/L		0.5	03-AUG-18
Tetrachloroethylene			<0.50		ug/L		0.5	03-AUG-18
Toluene			<0.50		ug/L		0.5	03-AUG-18
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	03-AUG-18
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	03-AUG-18
Trichloroethylene			<0.50		ug/L		0.5	03-AUG-18
Trichlorofluoromethane			<5.0		ug/L		5	03-AUG-18
Vinyl chloride			<0.50		ug/L		0.5	03-AUG-18
Surrogate: 1,4-Difluorobenzene			99.8		%		70-130	03-AUG-18
Surrogate: 4-Bromofluorobenzene			98.2		%		70-130	03-AUG-18
WG2835871-5	**MS**	**WG2835871-3**						
1,1,1,2-Tetrachloroethane			106.3		%		50-140	02-AUG-18
1,1,2,2-Tetrachloroethane			89.2		%		50-140	02-AUG-18
1,1,1-Trichloroethane			107.7		%		50-140	02-AUG-18
1,1,2-Trichloroethane			103.6		%		50-140	02-AUG-18
1,1-Dichloroethane			108.4		%		50-140	02-AUG-18
1,1-Dichloroethylene			105.4		%		50-140	02-AUG-18
1,2-Dibromoethane			99.3		%		50-140	02-AUG-18
1,2-Dichlorobenzene			103.7		%		50-140	02-AUG-18

Quality Control Report

Workorder: L2139225 Report Date: 08-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4158369								
WG2835871-5 MS		**WG2835871-3**						
1,2-Dichloroethane			103.3		%		50-140	02-AUG-18
1,2-Dichloropropane			102.6		%		50-140	02-AUG-18
1,3-Dichlorobenzene			105.9		%		50-140	02-AUG-18
1,4-Dichlorobenzene			103.3		%		50-140	02-AUG-18
Acetone			101.0		%		50-140	02-AUG-18
Benzene			104.0		%		50-140	02-AUG-18
Bromodichloromethane			103.3		%		50-140	02-AUG-18
Bromoform			92.9		%		50-140	02-AUG-18
Bromomethane			84.4		%		50-140	02-AUG-18
Carbon tetrachloride			108.5		%		50-140	02-AUG-18
Chlorobenzene			105.0		%		50-140	02-AUG-18
Chloroform			106.9		%		50-140	02-AUG-18
cis-1,2-Dichloroethylene			105.6		%		50-140	02-AUG-18
cis-1,3-Dichloropropene			101.0		%		50-140	02-AUG-18
Dibromochloromethane			99.1		%		50-140	02-AUG-18
Dichlorodifluoromethane			126.0		%		50-140	02-AUG-18
Ethylbenzene			109.0		%		50-140	02-AUG-18
n-Hexane			127.6		%		50-140	02-AUG-18
m+p-Xylenes			108.4		%		50-140	02-AUG-18
Methyl Ethyl Ketone			88.7		%		50-140	02-AUG-18
Methyl Isobutyl Ketone			85.4		%		50-140	02-AUG-18
Methylene Chloride			102.9		%		50-140	02-AUG-18
MTBE			107.9		%		50-140	02-AUG-18
o-Xylene			105.3		%		50-140	02-AUG-18
Styrene			101.3		%		50-140	02-AUG-18
Tetrachloroethylene			118.1		%		50-140	02-AUG-18
Toluene			109.9		%		50-140	02-AUG-18
trans-1,2-Dichloroethylene			108.5		%		50-140	02-AUG-18
trans-1,3-Dichloropropene			105.1		%		50-140	02-AUG-18
Trichloroethylene			112.3		%		50-140	02-AUG-18
Trichlorofluoromethane			117.3		%		50-140	02-AUG-18
Vinyl chloride			104.4		%		50-140	02-AUG-18

Quality Control Report

Workorder: L2139225 Report Date: 08-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4160750								
WG2835840-4 DUP		**WG2835840-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	08-AUG-18
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	08-AUG-18
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	08-AUG-18
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	08-AUG-18
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	08-AUG-18
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	08-AUG-18
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	08-AUG-18
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	08-AUG-18
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	08-AUG-18
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	08-AUG-18
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	08-AUG-18
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	08-AUG-18
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	08-AUG-18
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	08-AUG-18
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	08-AUG-18
Styrene		<0.50	<0.50		ug/L			08-AUG-18

Quality Control Report

Workorder: L2139225 Report Date: 08-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4160750								
WG2835840-4 DUP		**WG2835840-3**						
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	08-AUG-18
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	08-AUG-18
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
WG2835840-1 LCS								
1,1,1,2-Tetrachloroethane			96.8		%		70-130	08-AUG-18
1,1,2,2-Tetrachloroethane			90.8		%		70-130	08-AUG-18
1,1,1-Trichloroethane			99.4		%		70-130	08-AUG-18
1,1,2-Trichloroethane			94.2		%		70-130	08-AUG-18
1,1-Dichloroethane			104.9		%		70-130	08-AUG-18
1,1-Dichloroethylene			99.6		%		70-130	08-AUG-18
1,2-Dibromoethane			89.3		%		70-130	08-AUG-18
1,2-Dichlorobenzene			106.1		%		70-130	08-AUG-18
1,2-Dichloroethane			87.6		%		70-130	08-AUG-18
1,2-Dichloropropane			100.1		%		70-130	08-AUG-18
1,3-Dichlorobenzene			109.3		%		70-130	08-AUG-18
1,4-Dichlorobenzene			110.1		%		70-130	08-AUG-18
Acetone			78.8		%		60-140	08-AUG-18
Benzene			107.9		%		70-130	08-AUG-18
Bromodichloromethane			93.7		%		70-130	08-AUG-18
Bromoform			85.6		%		70-130	08-AUG-18
Bromomethane			85.3		%		60-140	08-AUG-18
Carbon tetrachloride			100.8		%		70-130	08-AUG-18
Chlorobenzene			105.2		%		70-130	08-AUG-18
Chloroform			101.6		%		70-130	08-AUG-18
cis-1,2-Dichloroethylene			104.7		%		70-130	08-AUG-18
cis-1,3-Dichloropropene			97.5		%		70-130	08-AUG-18
Dibromochloromethane			88.4		%		70-130	08-AUG-18
Dichlorodifluoromethane			110.3		%		50-140	08-AUG-18

Quality Control Report

Workorder: L2139225 Report Date: 08-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4160750								
WG2835840-1 LCS								
Ethylbenzene			104.2		%		70-130	08-AUG-18
n-Hexane			130.2	MES	%		70-130	08-AUG-18
m+p-Xylenes			106.5		%		70-130	08-AUG-18
Methyl Ethyl Ketone			80.3		%		60-140	08-AUG-18
Methyl Isobutyl Ketone			74.6		%		60-140	08-AUG-18
Methylene Chloride			100.6		%		70-130	08-AUG-18
MTBE			108.1		%		70-130	08-AUG-18
o-Xylene			99.9		%		70-130	08-AUG-18
Styrene			99.2		%		70-130	08-AUG-18
Tetrachloroethylene			107.5		%		70-130	08-AUG-18
Toluene			104.9		%		70-130	08-AUG-18
trans-1,2-Dichloroethylene			105.7		%		70-130	08-AUG-18
trans-1,3-Dichloropropene			88.8		%		70-130	08-AUG-18
Trichloroethylene			112.2		%		70-130	08-AUG-18
Trichlorofluoromethane			106.8		%		60-140	08-AUG-18
Vinyl chloride			107.3		%		60-140	08-AUG-18
WG2835840-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	08-AUG-18
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	08-AUG-18
1,1,1-Trichloroethane			<0.50		ug/L		0.5	08-AUG-18
1,1,2-Trichloroethane			<0.50		ug/L		0.5	08-AUG-18
1,1-Dichloroethane			<0.50		ug/L		0.5	08-AUG-18
1,1-Dichloroethylene			<0.50		ug/L		0.5	08-AUG-18
1,2-Dibromoethane			<0.20		ug/L		0.2	08-AUG-18
1,2-Dichlorobenzene			<0.50		ug/L		0.5	08-AUG-18
1,2-Dichloroethane			<0.50		ug/L		0.5	08-AUG-18
1,2-Dichloropropane			<0.50		ug/L		0.5	08-AUG-18
1,3-Dichlorobenzene			<0.50		ug/L		0.5	08-AUG-18
1,4-Dichlorobenzene			<0.50		ug/L		0.5	08-AUG-18
Acetone			<30		ug/L		30	08-AUG-18
Benzene			<0.50		ug/L		0.5	08-AUG-18
Bromodichloromethane			<2.0		ug/L		2	08-AUG-18
Bromoform			<5.0		ug/L		5	08-AUG-18
Bromomethane			<0.50		ug/L		0.5	08-AUG-18

Quality Control Report

Workorder: L2139225 Report Date: 08-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4160750								
WG2835840-2 MB								
Carbon tetrachloride			<0.20		ug/L		0.2	08-AUG-18
Chlorobenzene			<0.50		ug/L		0.5	08-AUG-18
Chloroform			<1.0		ug/L		1	08-AUG-18
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	08-AUG-18
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	08-AUG-18
Dibromochloromethane			<2.0		ug/L		2	08-AUG-18
Dichlorodifluoromethane			<2.0		ug/L		2	08-AUG-18
Ethylbenzene			<0.50		ug/L		0.5	08-AUG-18
n-Hexane			<0.50		ug/L		0.5	08-AUG-18
m+p-Xylenes			<0.40		ug/L		0.4	08-AUG-18
Methyl Ethyl Ketone			<20		ug/L		20	08-AUG-18
Methyl Isobutyl Ketone			<20		ug/L		20	08-AUG-18
Methylene Chloride			<5.0		ug/L		5	08-AUG-18
MTBE			<2.0		ug/L		2	08-AUG-18
o-Xylene			<0.30		ug/L		0.3	08-AUG-18
Styrene			<0.50		ug/L		0.5	08-AUG-18
Tetrachloroethylene			<0.50		ug/L		0.5	08-AUG-18
Toluene			<0.50		ug/L		0.5	08-AUG-18
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	08-AUG-18
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	08-AUG-18
Trichloroethylene			<0.50		ug/L		0.5	08-AUG-18
Trichlorofluoromethane			<5.0		ug/L		5	08-AUG-18
Vinyl chloride			<0.50		ug/L		0.5	08-AUG-18
Surrogate: 1,4-Difluorobenzene			99.2		%		70-130	08-AUG-18
Surrogate: 4-Bromofluorobenzene			96.5		%		70-130	08-AUG-18
WG2835840-5 MS		**WG2835840-3**						
1,1,1,2-Tetrachloroethane			98.6		%		50-140	08-AUG-18
1,1,2,2-Tetrachloroethane			98.5		%		50-140	08-AUG-18
1,1,1-Trichloroethane			98.1		%		50-140	08-AUG-18
1,1,2-Trichloroethane			102.4		%		50-140	08-AUG-18
1,1-Dichloroethane			106.4		%		50-140	08-AUG-18
1,1-Dichloroethylene			95.5		%		50-140	08-AUG-18
1,2-Dibromoethane			97.6		%		50-140	08-AUG-18
1,2-Dichlorobenzene			106.1		%		50-140	08-AUG-18

Quality Control Report

Workorder: L2139225 Report Date: 08-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4160750								
WG2835840-5 MS		**WG2835840-3**						
1,2-Dichloroethane			94.5		%		50-140	08-AUG-18
1,2-Dichloropropane			105.5		%		50-140	08-AUG-18
1,3-Dichlorobenzene			104.1		%		50-140	08-AUG-18
1,4-Dichlorobenzene			104.9		%		50-140	08-AUG-18
Acetone			93.0		%		50-140	08-AUG-18
Benzene			109.0		%		50-140	08-AUG-18
Bromodichloromethane			98.0		%		50-140	08-AUG-18
Bromoform			91.4		%		50-140	08-AUG-18
Bromomethane			81.2		%		50-140	08-AUG-18
Carbon tetrachloride			97.8		%		50-140	08-AUG-18
Chlorobenzene			105.3		%		50-140	08-AUG-18
Chloroform			104.5		%		50-140	08-AUG-18
cis-1,2-Dichloroethylene			105.8		%		50-140	08-AUG-18
cis-1,3-Dichloropropene			96.6		%		50-140	08-AUG-18
Dibromochloromethane			93.6		%		50-140	08-AUG-18
Dichlorodifluoromethane			101.1		%		50-140	08-AUG-18
Ethylbenzene			100.2		%		50-140	08-AUG-18
n-Hexane			122.6		%		50-140	08-AUG-18
m+p-Xylenes			100.7		%		50-140	08-AUG-18
Methyl Ethyl Ketone			97.2		%		50-140	08-AUG-18
Methyl Isobutyl Ketone			84.8		%		50-140	08-AUG-18
Methylene Chloride			104.7		%		50-140	08-AUG-18
MTBE			109.2		%		50-140	08-AUG-18
o-Xylene			97.6		%		50-140	08-AUG-18
Styrene			97.7		%		50-140	08-AUG-18
Tetrachloroethylene			99.7		%		50-140	08-AUG-18
Toluene			103.2		%		50-140	08-AUG-18
trans-1,2-Dichloroethylene			100.3		%		50-140	08-AUG-18
trans-1,3-Dichloropropene			87.5		%		50-140	08-AUG-18
Trichloroethylene			108.8		%		50-140	08-AUG-18
Trichlorofluoromethane			102.0		%		50-140	08-AUG-18
Vinyl chloride			100.8		%		50-140	08-AUG-18

Quality Control Report

Workorder: L2139225 Report Date: 08-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9
Contact: TANIA MCCARTHY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

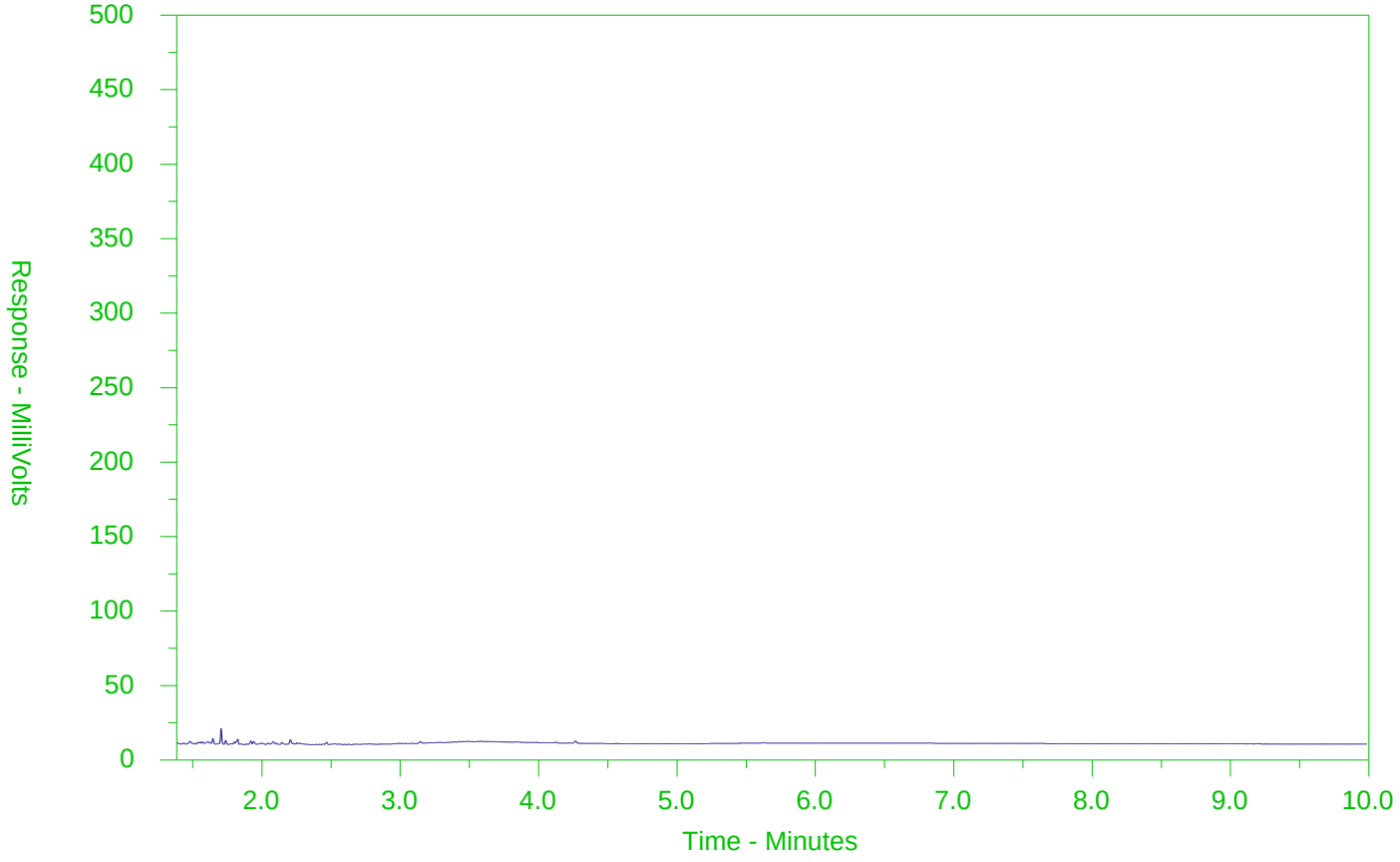
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2139225-5
Client Sample ID: MW18-128D



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

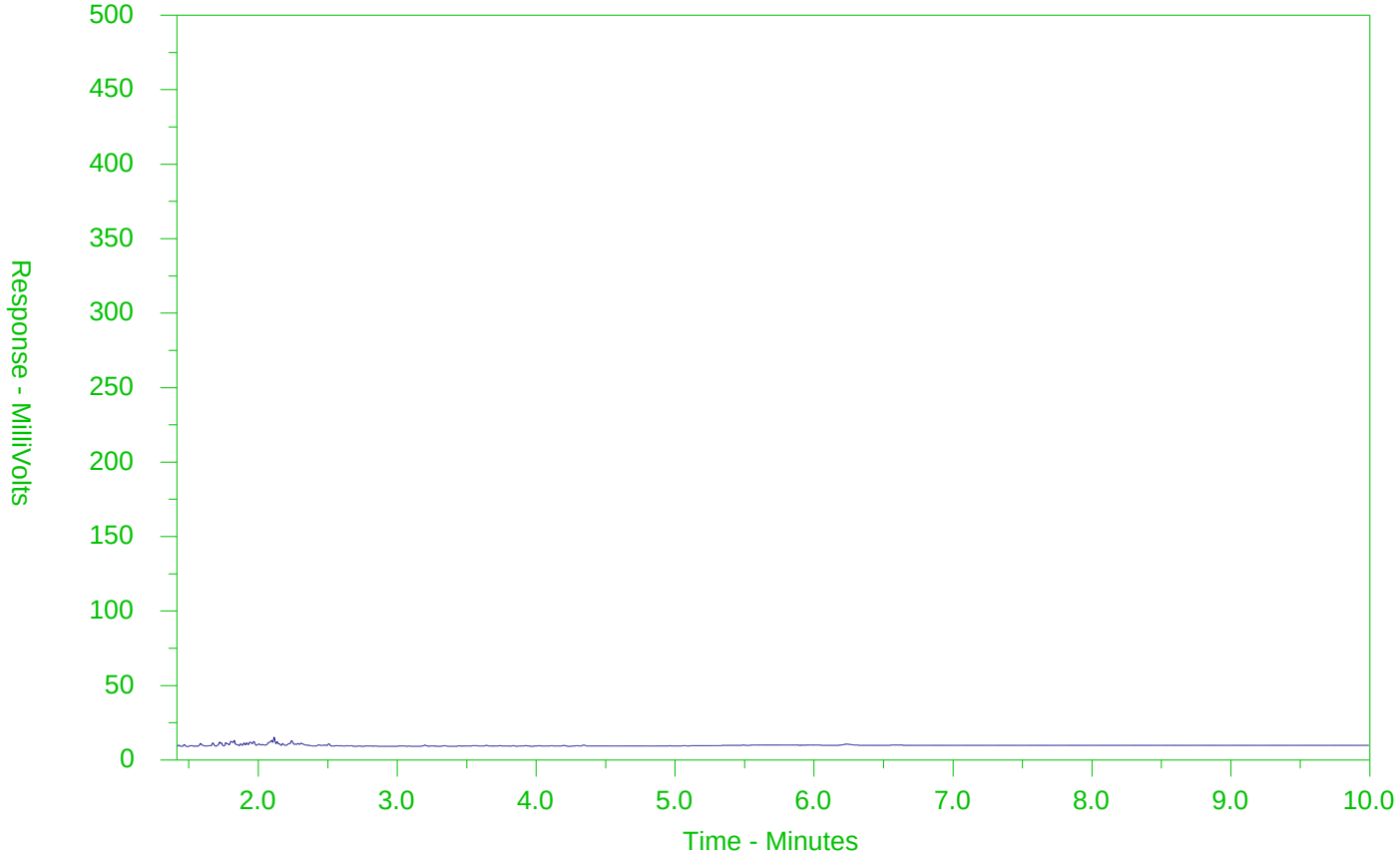
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2139225-10
Client Sample ID: MW18-131S



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2139225-COFC

COC Number: 15 -

Report To	Contact and company name below will appear on the final report
Company:	CH2M Hill
Contact:	Tania McCarthy
Phone:	519 579 3500
Company address below will appear on the final report	
Street:	72 Victoria Street South, Suite 300
City/Province:	Kitchener
Postal Code:	N2G 4Y9
Invoice To	Same as Report To ☐ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	CH2M Hill
Contact:	Accounts Payable

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax Tania.McCarthy@jacobs.com

Email 2 Ed.Taves@jacobs.com

Email 3 amy.casey@jacobs.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax Accounts Payable

Email 2

Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
4 day [P4]	☐	1 Business day [E1]	☐
3 day [P3]	☐	Same Day, Weekend or Statutory holiday [E0]	☐
2 day [P2]	☐		

Date and Time Required for all E&P TATs: ( )

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q68850

Job #: 694757

PO / AFE:

LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#

Major/Minor Code: Routing Code:

Requisitioner: ( )

Location:

ALS Lab Work Order # (lab use only): L2139225

ALS Contact: Mathy Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	F1-F4-511-P-WT	MET.HYD-R511-WT	MET-R511-D-MS-WT	PAH-511-WT * lab filter for B(a)P	PCB-511-WT	VOC-511-HS-WT	VOC-R511,F1-F4-P-WT	BAP-LABFILTER-511-WT B(					Number of Containers
1*	MW18-120D	30-007-18	09:55	W			X			X							3
2	MW18-121D	↓	11:50	W						X							2
3	MW18-107D		12:50	W						X							2
4	MW18-123D		14:05	W						X							2
5	MW18-128D		~~15:30~~ 17:20	W	X												4
6	MW18-129D	↓	16:55	W			X			X							3
7	MW18-130D	31-007-18	09:55	W			X										1
8	*MW18-132D		10:55	W			X										1
9	MW18-133D		12:20	W			X										1
10	MW18-131S		13:20	W	X		X										5
11	MW17-140D		13:15	W				X									
12	MW17-100S		16:55	W				X									

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human drinking water use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

* Please lab filter for B(a)P on all PAH samples.

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
			8-1		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Amy - A. Casey	Date: 31/07/18	Time:	Received by:	Date:	Time:	Received by:	Date: Aug 01/18	Time: 8:00

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

uc batch 398

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

L2139225-COFC

COC Number: 15 -

Report To	Contact and company name below will appear on the final report
Company:	CH2M Hill
Contact:	Tania McCarthy
Phone:	519 579 3500
	Company address below will appear on the final report
Street:	72 Victoria Street South, Suite 300
City/Province:	Kitchener
Postal Code:	N2G 4Y9
Invoice To	Same as Report To ☐ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	CH2M Hill
Contact:	Accounts Payable

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax Tania.McCarthy@jacobs.com

Email 2 Ed.Taves@jacobs.com

Email 3 amy.casey@jacobs.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax Accounts Payable

Email 2

Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
4 day [P4]	☐	1 Business day [E1]	☐
3 day [P3]	☐	Same Day, Weekend or Statutory holiday [E0]	☐
2 day [P2]	☐		

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #:	Q68850
Job #:	694757
PO / AFE:	
LSD:	
ALS Lab Work Order # (lab use only)	L2139225

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	
ALS Contact: Mathy	Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	F1-F4-511-P-WT	MET,HYD-R511-WT	MET-R511-D-MS-WT	PAH-511-WT * lab filter for B(a)P	PCB-511-WT	VOC-511-HS-WT	VOC-R511,F1-F4-P-WT		BAP-LABFILTER-511-WT B(					Number of Containers
13	DUP1	31-OCT-18	15:20	W				X										
14	TRIP BLANK			W						X								

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human drinking water use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

* Please lab filter for B(a)P for all PAH samples.

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
			8		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Amy Casey	Date: 07/31/18	Time:	Received by:	Date:	Time:	Received by:	Date: Aug 01/18	Time: 8:00

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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OCTOBER 2015 FRONT

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1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

CH2M HILL CANADA LIMITED
ATTN: TANIA MCCARTHY
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 01-AUG-18
Report Date: 10-AUG-18 13:45 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2140486

Project P.O. #: NOT SUBMITTED
Job Reference: 694757
C of C Numbers: 17-626955
Legal Site Desc:

Mathy Mahadeva
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2140486-1 MW18-122D-1 Sampled By: CLIENT on 26-JUL-18 @ 13:30 Matrix: SOIL							
Physical Tests							
Conductivity	0.117		0.0040	mS/cm		08-AUG-18	R4161151
% Moisture	6.64		0.10	%	08-AUG-18	09-AUG-18	R4161124
pH	6.98		0.10	pH units		08-AUG-18	R4160971
Cyanides							
Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	08-AUG-18	09-AUG-18	R4162110
Saturated Paste Extractables							
SAR	0.64		0.10	SAR		08-AUG-18	R4161040
Calcium (Ca)	4.0		1.0	mg/L		08-AUG-18	R4161040
Magnesium (Mg)	1.1		1.0	mg/L		08-AUG-18	R4161040
Sodium (Na)	5.6		1.0	mg/L		08-AUG-18	R4161040
Metals							
Antimony (Sb)	<1.0		1.0	ug/g	07-AUG-18	08-AUG-18	R4162617
Arsenic (As)	3.7		1.0	ug/g	07-AUG-18	08-AUG-18	R4162617
Barium (Ba)	25.3		1.0	ug/g	07-AUG-18	08-AUG-18	R4162617
Beryllium (Be)	<0.50		0.50	ug/g	07-AUG-18	08-AUG-18	R4162617
Boron (B)	<5.0		5.0	ug/g	07-AUG-18	08-AUG-18	R4162617
Boron (B), Hot Water Ext.	0.25		0.10	ug/g	08-AUG-18	08-AUG-18	R4162729
Cadmium (Cd)	<0.50		0.50	ug/g	07-AUG-18	08-AUG-18	R4162617
Chromium (Cr)	7.4		1.0	ug/g	07-AUG-18	08-AUG-18	R4162617
Cobalt (Co)	2.7		1.0	ug/g	07-AUG-18	08-AUG-18	R4162617
Copper (Cu)	6.9		1.0	ug/g	07-AUG-18	08-AUG-18	R4162617
Lead (Pb)	18.7		1.0	ug/g	07-AUG-18	08-AUG-18	R4162617
Mercury (Hg)	0.0092		0.0050	ug/g	07-AUG-18	08-AUG-18	R4160880
Molybdenum (Mo)	<1.0		1.0	ug/g	07-AUG-18	08-AUG-18	R4162617
Nickel (Ni)	6.1		1.0	ug/g	07-AUG-18	08-AUG-18	R4162617
Selenium (Se)	<1.0		1.0	ug/g	07-AUG-18	08-AUG-18	R4162617
Silver (Ag)	<0.20		0.20	ug/g	07-AUG-18	08-AUG-18	R4162617
Thallium (Tl)	<0.50		0.50	ug/g	07-AUG-18	08-AUG-18	R4162617
Uranium (U)	<1.0		1.0	ug/g	07-AUG-18	08-AUG-18	R4162617
Vanadium (V)	13.1		1.0	ug/g	07-AUG-18	08-AUG-18	R4162617
Zinc (Zn)	44.1		5.0	ug/g	07-AUG-18	08-AUG-18	R4162617
Speciated Metals							
Chromium, Hexavalent	<0.20		0.20	ug/g	07-AUG-18	08-AUG-18	R4160920
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.050		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Acenaphthylene	<0.050		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Anthracene	<0.050		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Benzo(a)anthracene	<0.050		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Benzo(a)pyrene	<0.050		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Benzo(b)fluoranthene	<0.050		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Benzo(g,h,i)perylene	<0.050		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Benzo(k)fluoranthene	<0.050		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2140486-1 MW18-122D-1 Sampled By: CLIENT on 26-JUL-18 @ 13:30 Matrix: SOIL							
Polycyclic Aromatic Hydrocarbons							
Chrysene	0.055		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Dibenzo(ah)anthracene	<0.050		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Fluoranthene	0.060		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Fluorene	<0.050		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
1+2-Methylnaphthalenes	0.160		0.042	ug/g		09-AUG-18	
1-Methylnaphthalene	0.070		0.030	ug/g	03-AUG-18	08-AUG-18	R4160819
2-Methylnaphthalene	0.091		0.030	ug/g	03-AUG-18	08-AUG-18	R4160819
Naphthalene	0.073		0.013	ug/g	03-AUG-18	08-AUG-18	R4160819
Phenanthrene	0.074		0.046	ug/g	03-AUG-18	08-AUG-18	R4160819
Pyrene	<0.050		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Surrogate: 2-Fluorobiphenyl	88.9		50-140	%	03-AUG-18	08-AUG-18	R4160819
Surrogate: p-Terphenyl d14	94.9		50-140	%	03-AUG-18	08-AUG-18	R4160819
L2140486-2 MW18-121S-1 Sampled By: CLIENT on 27-JUL-18 @ 10:25 Matrix: SOIL							
Metals							
Antimony (Sb)	<1.0		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Arsenic (As)	8.0		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Barium (Ba)	58.3		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Beryllium (Be)	<0.50		0.50	ug/g	08-AUG-18	08-AUG-18	R4162646
Boron (B)	9.6		5.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Cadmium (Cd)	0.99		0.50	ug/g	08-AUG-18	08-AUG-18	R4162646
Chromium (Cr)	10.3		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Cobalt (Co)	5.3		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Copper (Cu)	15.1		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Lead (Pb)	82.7		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Molybdenum (Mo)	1.0		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Nickel (Ni)	11.6		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Selenium (Se)	<1.0		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Silver (Ag)	<0.20		0.20	ug/g	08-AUG-18	08-AUG-18	R4162646
Thallium (Tl)	<0.50		0.50	ug/g	08-AUG-18	08-AUG-18	R4162646
Uranium (U)	<1.0		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Vanadium (V)	20.8		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Zinc (Zn)	403		5.0	ug/g	08-AUG-18	08-AUG-18	R4162646
L2140486-3 MW18-125S-1 Sampled By: CLIENT on 31-JUL-18 @ 11:05 Matrix: SOIL							
Physical Tests							
% Moisture	19.9		0.10	%	08-AUG-18	09-AUG-18	R4161124
Polychlorinated Biphenyls							
Aroclor 1242	<0.010		0.010	ug/g	09-AUG-18	09-AUG-18	R4162178

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2140486-3 MW18-125S-1 Sampled By: CLIENT on 31-JUL-18 @ 11:05 Matrix: SOIL							
Polychlorinated Biphenyls							
Aroclor 1248	<0.010		0.010	ug/g	09-AUG-18	09-AUG-18	R4162178
Aroclor 1254	<0.010		0.010	ug/g	09-AUG-18	09-AUG-18	R4162178
Aroclor 1260	<0.010		0.010	ug/g	09-AUG-18	09-AUG-18	R4162178
Total PCBs	<0.020		0.020	ug/g	09-AUG-18	09-AUG-18	R4162178
Surrogate: d14-Terphenyl	79.2		60-140	%	09-AUG-18	09-AUG-18	R4162178
L2140486-4 MW18-125S-2 Sampled By: CLIENT on 31-JUL-18 @ 11:15 Matrix: SOIL							
Physical Tests							
% Moisture	4.10		0.10	%	08-AUG-18	09-AUG-18	R4161124
Metals							
Antimony (Sb)	<1.0		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Arsenic (As)	2.3		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Barium (Ba)	18.0		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Beryllium (Be)	<0.50		0.50	ug/g	08-AUG-18	08-AUG-18	R4162646
Boron (B)	7.1		5.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Cadmium (Cd)	<0.50		0.50	ug/g	08-AUG-18	08-AUG-18	R4162646
Chromium (Cr)	7.6		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Cobalt (Co)	1.7		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Copper (Cu)	6.5		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Lead (Pb)	95.2		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Molybdenum (Mo)	<1.0		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Nickel (Ni)	4.9		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Selenium (Se)	<1.0		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Silver (Ag)	<0.20		0.20	ug/g	08-AUG-18	08-AUG-18	R4162646
Thallium (Tl)	<0.50		0.50	ug/g	08-AUG-18	08-AUG-18	R4162646
Uranium (U)	<1.0		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Vanadium (V)	9.2		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Zinc (Zn)	175		5.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	03-AUG-18	08-AUG-18	R4161033
F2 (C10-C16)	<10		10	ug/g	03-AUG-18	07-AUG-18	R4161901
F3 (C16-C34)	53		50	ug/g	03-AUG-18	07-AUG-18	R4161901
F4 (C34-C50)	<50		50	ug/g	03-AUG-18	07-AUG-18	R4161901
Total Hydrocarbons (C6-C50)	<72		72	ug/g		10-AUG-18	
Chrom. to baseline at nC50	YES				03-AUG-18	07-AUG-18	R4161901
Surrogate: 2-Bromobenzotrifluoride	98.2		60-140	%	03-AUG-18	07-AUG-18	R4161901
Surrogate: 3,4-Dichlorotoluene	96.7		60-140	%	03-AUG-18	08-AUG-18	R4161033
L2140486-5 MW18-125S-3 Sampled By: CLIENT on 31-JUL-18 @ 11:30 Matrix: SOIL							
Physical Tests							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2140486-5 MW18-125S-3 Sampled By: CLIENT on 31-JUL-18 @ 11:30 Matrix: SOIL							
Physical Tests							
% Moisture	9.19		0.10	%	08-AUG-18	09-AUG-18	R4161124
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.050		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Acenaphthylene	<0.050		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Anthracene	<0.050		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Benzo(a)anthracene	<0.050		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Benzo(a)pyrene	<0.050		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Benzo(b)fluoranthene	<0.050		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Benzo(g,h,i)perylene	<0.050		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Benzo(k)fluoranthene	<0.050		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Chrysene	<0.050		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Dibenzo(ah)anthracene	<0.050		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Fluoranthene	<0.050		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Fluorene	<0.050		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
1+2-Methylnaphthalenes	<0.042		0.042	ug/g		09-AUG-18	
1-Methylnaphthalene	<0.030		0.030	ug/g	03-AUG-18	08-AUG-18	R4160819
2-Methylnaphthalene	<0.030		0.030	ug/g	03-AUG-18	08-AUG-18	R4160819
Naphthalene	<0.013		0.013	ug/g	03-AUG-18	08-AUG-18	R4160819
Phenanthrene	<0.046		0.046	ug/g	03-AUG-18	08-AUG-18	R4160819
Pyrene	<0.050		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Surrogate: 2-Fluorobiphenyl	90.3		50-140	%	03-AUG-18	08-AUG-18	R4160819
Surrogate: p-Terphenyl d14	98.6		50-140	%	03-AUG-18	08-AUG-18	R4160819
Polychlorinated Biphenyls							
Aroclor 1242	<0.010		0.010	ug/g	09-AUG-18	09-AUG-18	R4162178
Aroclor 1248	<0.010		0.010	ug/g	09-AUG-18	09-AUG-18	R4162178
Aroclor 1254	<0.010		0.010	ug/g	09-AUG-18	09-AUG-18	R4162178
Aroclor 1260	<0.010		0.010	ug/g	09-AUG-18	09-AUG-18	R4162178
Total PCBs	<0.020		0.020	ug/g	09-AUG-18	09-AUG-18	R4162178
Surrogate: d14-Terphenyl	80.6		60-140	%	09-AUG-18	09-AUG-18	R4162178
L2140486-6 MW18-126D-1 Sampled By: CLIENT on 31-JUL-18 @ 14:20 Matrix: SOIL							
Physical Tests							
% Moisture	5.81		0.10	%	08-AUG-18	09-AUG-18	R4161717
Metals							
Antimony (Sb)	<1.0		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Arsenic (As)	3.6		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Barium (Ba)	31.3		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Beryllium (Be)	<0.50		0.50	ug/g	08-AUG-18	08-AUG-18	R4162646
Boron (B)	5.2		5.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Cadmium (Cd)	<0.50		0.50	ug/g	08-AUG-18	08-AUG-18	R4162646

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2140486-6 MW18-126D-1 Sampled By: CLIENT on 31-JUL-18 @ 14:20 Matrix: SOIL							
Metals							
Chromium (Cr)	10.1		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Cobalt (Co)	2.5		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Copper (Cu)	8.6		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Lead (Pb)	28.6		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Molybdenum (Mo)	<1.0		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Nickel (Ni)	7.6		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Selenium (Se)	<1.0		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Silver (Ag)	<0.20		0.20	ug/g	08-AUG-18	08-AUG-18	R4162646
Thallium (Tl)	<0.50		0.50	ug/g	08-AUG-18	08-AUG-18	R4162646
Uranium (U)	<1.0		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Vanadium (V)	14.2		1.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Zinc (Zn)	71.5		5.0	ug/g	08-AUG-18	08-AUG-18	R4162646
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.050		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Acenaphthylene	<0.050		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Anthracene	<0.050		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Benzo(a)anthracene	0.182		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Benzo(a)pyrene	0.230		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Benzo(b)fluoranthene	0.385		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Benzo(g,h,i)perylene	0.193		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Benzo(k)fluoranthene	0.221		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Chrysene	0.295		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Dibenzo(ah)anthracene	0.073		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Fluoranthene	0.238		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Fluorene	<0.050		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Indeno(1,2,3-cd)pyrene	0.181		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
1+2-Methylnaphthalenes	0.600		0.042	ug/g		09-AUG-18	
1-Methylnaphthalene	0.262		0.030	ug/g	03-AUG-18	08-AUG-18	R4160819
2-Methylnaphthalene	0.338		0.030	ug/g	03-AUG-18	08-AUG-18	R4160819
Naphthalene	0.276		0.013	ug/g	03-AUG-18	08-AUG-18	R4160819
Phenanthrene	0.224		0.046	ug/g	03-AUG-18	08-AUG-18	R4160819
Pyrene	0.210		0.050	ug/g	03-AUG-18	08-AUG-18	R4160819
Surrogate: 2-Fluorobiphenyl	88.1		50-140	%	03-AUG-18	08-AUG-18	R4160819
Surrogate: p-Terphenyl d14	94.0		50-140	%	03-AUG-18	08-AUG-18	R4160819
L2140486-7 MW18-126D-2 Sampled By: CLIENT on 31-JUL-18 @ 14:30 Matrix: SOIL							
Physical Tests							
% Moisture	5.74		0.10	%	07-AUG-18	08-AUG-18	R4160643
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	03-AUG-18	07-AUG-18	R4159969
Benzene	0.0205		0.0068	ug/g	03-AUG-18	07-AUG-18	R4159969

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2140486-7 MW18-126D-2 Sampled By: CLIENT on 31-JUL-18 @ 14:30 Matrix: SOIL							
Volatile Organic Compounds							
Bromodichloromethane	<0.050		0.050	ug/g	03-AUG-18	07-AUG-18	R4159969
Bromoform	<0.050		0.050	ug/g	03-AUG-18	07-AUG-18	R4159969
Bromomethane	<0.050		0.050	ug/g	03-AUG-18	07-AUG-18	R4159969
Carbon tetrachloride	<0.050		0.050	ug/g	03-AUG-18	07-AUG-18	R4159969
Chlorobenzene	<0.050		0.050	ug/g	03-AUG-18	07-AUG-18	R4159969
Dibromochloromethane	<0.050		0.050	ug/g	03-AUG-18	07-AUG-18	R4159969
Chloroform	<0.050		0.050	ug/g	03-AUG-18	07-AUG-18	R4159969
1,2-Dibromoethane	<0.050		0.050	ug/g	03-AUG-18	07-AUG-18	R4159969
1,2-Dichlorobenzene	<0.050		0.050	ug/g	03-AUG-18	07-AUG-18	R4159969
1,3-Dichlorobenzene	<0.050		0.050	ug/g	03-AUG-18	07-AUG-18	R4159969
1,4-Dichlorobenzene	<0.050		0.050	ug/g	03-AUG-18	07-AUG-18	R4159969
Dichlorodifluoromethane	<0.050		0.050	ug/g	03-AUG-18	07-AUG-18	R4159969
1,1-Dichloroethane	<0.050		0.050	ug/g	03-AUG-18	07-AUG-18	R4159969
1,2-Dichloroethane	<0.050		0.050	ug/g	03-AUG-18	07-AUG-18	R4159969
1,1-Dichloroethylene	<0.050		0.050	ug/g	03-AUG-18	07-AUG-18	R4159969
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	03-AUG-18	07-AUG-18	R4159969
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	03-AUG-18	07-AUG-18	R4159969
Methylene Chloride	<0.050		0.050	ug/g	03-AUG-18	07-AUG-18	R4159969
1,2-Dichloropropane	<0.050		0.050	ug/g	03-AUG-18	07-AUG-18	R4159969
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	03-AUG-18	07-AUG-18	R4159969
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	03-AUG-18	07-AUG-18	R4159969
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		08-AUG-18	
Ethylbenzene	0.033		0.018	ug/g	03-AUG-18	07-AUG-18	R4159969
n-Hexane	<0.17	RRR	0.17	ug/g	03-AUG-18	07-AUG-18	R4159969
Methyl Ethyl Ketone	<0.50		0.50	ug/g	03-AUG-18	07-AUG-18	R4159969
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	03-AUG-18	07-AUG-18	R4159969
MTBE	<0.050		0.050	ug/g	03-AUG-18	07-AUG-18	R4159969
Styrene	<0.050		0.050	ug/g	03-AUG-18	07-AUG-18	R4159969
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	03-AUG-18	07-AUG-18	R4159969
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	03-AUG-18	07-AUG-18	R4159969
Tetrachloroethylene	<0.050		0.050	ug/g	03-AUG-18	07-AUG-18	R4159969
Toluene	0.116		0.080	ug/g	03-AUG-18	07-AUG-18	R4159969
1,1,1-Trichloroethane	<0.050		0.050	ug/g	03-AUG-18	07-AUG-18	R4159969
1,1,2-Trichloroethane	<0.050		0.050	ug/g	03-AUG-18	07-AUG-18	R4159969
Trichloroethylene	0.017		0.010	ug/g	03-AUG-18	07-AUG-18	R4159969
Trichlorofluoromethane	<0.050		0.050	ug/g	03-AUG-18	07-AUG-18	R4159969
Vinyl chloride	<0.020		0.020	ug/g	03-AUG-18	07-AUG-18	R4159969
o-Xylene	0.112		0.020	ug/g	03-AUG-18	07-AUG-18	R4159969
m+p-Xylenes	0.114		0.030	ug/g	03-AUG-18	07-AUG-18	R4159969
Xylenes (Total)	0.225		0.050	ug/g		08-AUG-18	
Surrogate: 4-Bromofluorobenzene	120.6		50-140	%	03-AUG-18	07-AUG-18	R4159969

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2140486-7 MW18-126D-2 Sampled By: CLIENT on 31-JUL-18 @ 14:30 Matrix: SOIL							
Volatile Organic Compounds							
Surrogate: 1,4-Difluorobenzene	125.1		50-140	%	03-AUG-18	07-AUG-18	R4159969
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	03-AUG-18	07-AUG-18	R4159969
F1-BTEX	<5.0		5.0	ug/g		09-AUG-18	
F2 (C10-C16)	<10		10	ug/g	03-AUG-18	07-AUG-18	R4161901
F3 (C16-C34)	60		50	ug/g	03-AUG-18	07-AUG-18	R4161901
F4 (C34-C50)	<50		50	ug/g	03-AUG-18	07-AUG-18	R4161901
Total Hydrocarbons (C6-C50)	<72		72	ug/g		09-AUG-18	
Chrom. to baseline at nC50	YES				03-AUG-18	07-AUG-18	R4161901
Surrogate: 2-Bromobenzotrifluoride	111.2		60-140	%	03-AUG-18	07-AUG-18	R4161901
Surrogate: 3,4-Dichlorotoluene	107.9		60-140	%	03-AUG-18	07-AUG-18	R4159969
Report Remarks : RL raised due to instrument sensitivity.							
L2140486-8 MW18-126D-3 Sampled By: CLIENT on 31-JUL-18 @ 14:40 Matrix: SOIL							
Physical Tests							
% Moisture	3.26		0.10	%	07-AUG-18	08-AUG-18	R4160643
Polychlorinated Biphenyls							
Aroclor 1242	<0.010		0.010	ug/g	10-AUG-18	10-AUG-18	R4162178
Aroclor 1248	<0.010		0.010	ug/g	10-AUG-18	10-AUG-18	R4162178
Aroclor 1254	<0.010		0.010	ug/g	10-AUG-18	10-AUG-18	R4162178
Aroclor 1260	<0.010		0.010	ug/g	10-AUG-18	10-AUG-18	R4162178
Total PCBs	<0.020		0.020	ug/g	10-AUG-18	10-AUG-18	R4162178
Surrogate: d14-Terphenyl	76.5		60-140	%	10-AUG-18	10-AUG-18	R4162178
L2140486-9 DUP JULY 31 Sampled By: CLIENT on 31-JUL-18 Matrix: SOIL							
Physical Tests							
% Moisture	18.6		0.10	%	07-AUG-18	08-AUG-18	R4160643
Polychlorinated Biphenyls							
Aroclor 1242	<0.010		0.010	ug/g	10-AUG-18	10-AUG-18	R4162178
Aroclor 1248	<0.010		0.010	ug/g	10-AUG-18	10-AUG-18	R4162178
Aroclor 1254	<0.010		0.010	ug/g	10-AUG-18	10-AUG-18	R4162178
Aroclor 1260	<0.010		0.010	ug/g	10-AUG-18	10-AUG-18	R4162178
Total PCBs	<0.020		0.020	ug/g	10-AUG-18	10-AUG-18	R4162178
Surrogate: d14-Terphenyl	85.7		60-140	%	10-AUG-18	10-AUG-18	R4162178

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier key listed:

Qualifier	Description
RRR	Refer to Report Remarks for issues regarding this analysis

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B

A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD

The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

EC-WT	Soil	Conductivity (EC)	MOEE E3138

A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Soil	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Soil	F2-F4-O.Reg 153/04 (July 2011)	CCME Tier 1

Reference Information

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from soil with 1:1 hexane:acetone using a rotary extractor. Extracts are treated with silica gel to remove polar organic interferences. F2, F3, & F4 are analyzed by GC-FID. F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where both F4 (C34-C50) and F4G-sg are reported for a sample, the larger of the two values is used for comparison against the relevant CCME guideline for F4.
7. F4G-sg cannot be added to the C6 to C50 hydrocarbon results to obtain an estimate of total extractable hydrocarbons.
8. This method is validated for use.
9. Data from analysis of validation and quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram, unless otherwise indicated.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

HG-200.2-CVAA-WT Soil Mercury in Soil by CVAAS EPA 200.2/1631E (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-200.2-CCMS-WT Soil Metals in Soil by CRC ICPMS EPA 200.2/6020A (mod)

This method uses a heated strong acid digestion with HNO3 and HCl and is intended to liberate metals that may be environmentally available. Silicate minerals are not solubilized. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. Analysis is by Collision/Reaction Cell ICPMS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT Soil ABN-Calculated Parameters SW846 8270

MOISTURE-WT Soil % Moisture Gravimetric: Oven Dried

PAH-511-WT Soil PAH-O.Reg 153/04 (July 2011) SW846 3510/8270

A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking techniqueis used to extract the sample with a mixture of methanol and toluene. The extracts are concentrated and analyzed by GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PCB-511-WT Soil PCB-O.Reg 153/04 (July 2011) SW846 3510/8082

An aliquot of a solid sample is extracted with a solvent, extract is cleaned up and analyzed on the GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

PH-WT Soil pH MOEE E3137A

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

SAR-R511-WT Soil SAR-O.Reg 153/04 (July 2011) SW846 6010C

A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

VOC-1,3-DCP-CALC-WT Soil Regulation 153 VOCs SW8260B/SW8270C

Reference Information

VOC-511-HS-WT	Soil	VOC-O.Reg 153/04 (July 2011)	SW846 8260 (511)

Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

17-626955

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2140486 Report Date: 10-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT	**Soil**							
Batch R4162729								
WG2843168-4 DUP		**L2140662-3**						
Boron (B), Hot Water Ext.		0.22	0.21		ug/g	4.2	30	08-AUG-18
WG2843168-2 IRM		**HOTB-SAL_SOIL5**						
Boron (B), Hot Water Ext.			79.3		%		70-130	10-AUG-18
WG2843168-3 LCS								
Boron (B), Hot Water Ext.			109.4		%		70-130	10-AUG-18
WG2843168-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	08-AUG-18
CN-WAD-R511-WT	**Soil**							
Batch R4162110								
WG2843783-3 DUP		**L2140651-2**						
Cyanide, Weak Acid Diss		0.079	<0.050	RPD-NA	ug/g	N/A	35	09-AUG-18
WG2843783-2 LCS								
Cyanide, Weak Acid Diss			91.2		%		80-120	09-AUG-18
WG2843783-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	09-AUG-18
WG2843783-4 MS		**L2140651-2**						
Cyanide, Weak Acid Diss			99.5		%		70-130	09-AUG-18
CR-CR6-IC-WT	**Soil**							
Batch R4160920								
WG2842635-4 CRM		**WT-SQC012**						
Chromium, Hexavalent			92.1		%		70-130	08-AUG-18
WG2842635-3 DUP		**L2140225-1**						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	08-AUG-18
WG2842635-2 LCS								
Chromium, Hexavalent			87.0		%		80-120	08-AUG-18
WG2842635-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	08-AUG-18
EC-WT	**Soil**							
Batch R4161151								
WG2843172-4 DUP		**WG2843172-3**						
Conductivity		0.379	0.391		mS/cm	3.1	20	08-AUG-18
WG2843402-1 LCS								
Conductivity			97.6		%		90-110	08-AUG-18
WG2843172-1 MB								
Conductivity			<0.0040		mS/cm		0.004	08-AUG-18
F1-HS-511-WT	**Soil**							

Quality Control Report

Workorder: L2140486 Report Date: 10-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT	**Soil**							
Batch R4159969								
WG2840561-4 DUP		**WG2840561-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	07-AUG-18
WG2840561-2 LCS								
F1 (C6-C10)			105.9		%		80-120	07-AUG-18
WG2840561-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	07-AUG-18
Surrogate: 3,4-Dichlorotoluene			107.1		%		60-140	07-AUG-18
WG2840561-6 MS		**L2140662-3**						
F1 (C6-C10)			105.8		%		60-140	07-AUG-18
Batch R4161033								
WG2840727-4 DUP		**WG2840727-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	08-AUG-18
WG2840727-2 LCS								
F1 (C6-C10)			103.6		%		80-120	08-AUG-18
WG2840727-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	08-AUG-18
Surrogate: 3,4-Dichlorotoluene			87.2		%		60-140	08-AUG-18
WG2840727-6 MS		**L2140792-4**						
F1 (C6-C10)			110.1		%		60-140	08-AUG-18
F2-F4-511-WT	**Soil**							
Batch R4161901								
WG2841068-5 DUP		**WG2841068-1**						
F2 (C10-C16)		11	<10	RPD-NA	ug/g	N/A	30	07-AUG-18
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	07-AUG-18
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	07-AUG-18
WG2841068-3 LCS								
F2 (C10-C16)			107.6		%		80-120	07-AUG-18
F3 (C16-C34)			108.8		%		80-120	07-AUG-18
F4 (C34-C50)			107.6		%		80-120	07-AUG-18
WG2841068-2 MB								
F2 (C10-C16)			<10		ug/g		10	07-AUG-18
F3 (C16-C34)			<50		ug/g		50	07-AUG-18
F4 (C34-C50)			<50		ug/g		50	07-AUG-18
Surrogate: 2-Bromobenzotrifluoride			106.5		%		60-140	07-AUG-18
WG2841068-4 MS		**WG2841068-1**						
F2 (C10-C16)			108.5		%		60-140	07-AUG-18
F3 (C16-C34)			114.9		%		60-140	07-AUG-18

Quality Control Report

Workorder: L2140486 Report Date: 10-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-511-WT	**Soil**							
Batch R4161901								
WG2841068-4 MS		**WG2841068-1**						
F4 (C34-C50)			115.1		%		60-140	07-AUG-18
HG-200.2-CVAA-WT	**Soil**							
Batch R4160880								
WG2842896-2 CRM		**WT-CANMET-TILL1**						
Mercury (Hg)			116.3		%		70-130	08-AUG-18
WG2842896-6 DUP		**WG2842896-5**						
Mercury (Hg)		0.0289	0.0299		ug/g	3.3	40	08-AUG-18
WG2842896-3 LCS								
Mercury (Hg)			114.5		%		80-120	08-AUG-18
WG2842896-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	08-AUG-18
MET-200.2-CCMS-WT	**Soil**							
Batch R4162617								
WG2842896-2 CRM		**WT-CANMET-TILL1**						
Antimony (Sb)			101.7		%		70-130	08-AUG-18
Arsenic (As)			110.8		%		70-130	08-AUG-18
Barium (Ba)			119.6		%		70-130	08-AUG-18
Beryllium (Be)			107.9		%		70-130	08-AUG-18
Boron (B)			3.2		mg/kg		0-8.2	08-AUG-18
Cadmium (Cd)			100.1		%		70-130	08-AUG-18
Chromium (Cr)			103.8		%		70-130	08-AUG-18
Cobalt (Co)			102.1		%		70-130	08-AUG-18
Copper (Cu)			103.8		%		70-130	08-AUG-18
Lead (Pb)			105.9		%		70-130	08-AUG-18
Molybdenum (Mo)			109.0		%		70-130	08-AUG-18
Nickel (Ni)			102.9		%		70-130	08-AUG-18
Selenium (Se)			0.34		mg/kg		0.11-0.51	08-AUG-18
Silver (Ag)			0.23		mg/kg		0.13-0.33	08-AUG-18
Thallium (Tl)			0.122		mg/kg		0.077-0.18	08-AUG-18
Uranium (U)			101.3		%		70-130	08-AUG-18
Vanadium (V)			104.0		%		70-130	08-AUG-18
Zinc (Zn)			105.3		%		70-130	08-AUG-18
WG2842896-6 DUP		**WG2842896-5**						
Antimony (Sb)		0.33	0.35		ug/g	4.2	30	08-AUG-18

Quality Control Report

Workorder: L2140486 Report Date: 10-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R4162617								
WG2842896-6 DUP		**WG2842896-5**						
Arsenic (As)		6.67	7.41		ug/g	11	30	08-AUG-18
Barium (Ba)		117	127		ug/g	8.6	40	08-AUG-18
Beryllium (Be)		0.67	0.86		ug/g	24	30	08-AUG-18
Boron (B)		19.1	25.1		ug/g	27	30	08-AUG-18
Cadmium (Cd)		0.154	0.173		ug/g	12	30	08-AUG-18
Chromium (Cr)		28.3	31.1		ug/g	9.4	30	08-AUG-18
Cobalt (Co)		10.7	11.5		ug/g	6.7	30	08-AUG-18
Copper (Cu)		19.4	21.0		ug/g	8.0	30	08-AUG-18
Lead (Pb)		9.75	11.1		ug/g	13	40	08-AUG-18
Molybdenum (Mo)		2.51	3.25		ug/g	26	40	08-AUG-18
Nickel (Ni)		28.3	31.4		ug/g	10	30	08-AUG-18
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	08-AUG-18
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	08-AUG-18
Thallium (Tl)		0.227	0.255		ug/g	12	30	08-AUG-18
Uranium (U)		1.31	1.53		ug/g	16	30	08-AUG-18
Vanadium (V)		37.7	41.6		ug/g	9.7	30	08-AUG-18
Zinc (Zn)		49.8	54.7		ug/g	9.5	30	08-AUG-18
WG2842896-4 LCS								
Antimony (Sb)			102.9		%		80-120	08-AUG-18
Arsenic (As)			99.4		%		80-120	08-AUG-18
Barium (Ba)			111.3		%		80-120	08-AUG-18
Beryllium (Be)			94.4		%		80-120	08-AUG-18
Boron (B)			86.2		%		80-120	08-AUG-18
Cadmium (Cd)			93.8		%		80-120	08-AUG-18
Chromium (Cr)			94.8		%		80-120	08-AUG-18
Cobalt (Co)			92.8		%		80-120	08-AUG-18
Copper (Cu)			91.6		%		80-120	08-AUG-18
Lead (Pb)			95.0		%		80-120	08-AUG-18
Molybdenum (Mo)			96.3		%		80-120	08-AUG-18
Nickel (Ni)			93.1		%		80-120	08-AUG-18
Selenium (Se)			96.9		%		80-120	08-AUG-18
Silver (Ag)			95.3		%		80-120	08-AUG-18
Thallium (Tl)			94.9		%		80-120	08-AUG-18

Quality Control Report

Workorder: L2140486 Report Date: 10-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R4162617								
WG2842896-4 LCS								
Uranium (U)			93.3		%		80-120	08-AUG-18
Vanadium (V)			97.1		%		80-120	08-AUG-18
Zinc (Zn)			89.9		%		80-120	08-AUG-18
WG2842896-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	08-AUG-18
Arsenic (As)			<0.10		mg/kg		0.1	08-AUG-18
Barium (Ba)			<0.50		mg/kg		0.5	08-AUG-18
Beryllium (Be)			<0.10		mg/kg		0.1	08-AUG-18
Boron (B)			<5.0		mg/kg		5	08-AUG-18
Cadmium (Cd)			<0.020		mg/kg		0.02	08-AUG-18
Chromium (Cr)			<0.50		mg/kg		0.5	08-AUG-18
Cobalt (Co)			<0.10		mg/kg		0.1	08-AUG-18
Copper (Cu)			<0.50		mg/kg		0.5	08-AUG-18
Lead (Pb)			<0.50		mg/kg		0.5	08-AUG-18
Molybdenum (Mo)			<0.10		mg/kg		0.1	08-AUG-18
Nickel (Ni)			<0.50		mg/kg		0.5	08-AUG-18
Selenium (Se)			<0.20		mg/kg		0.2	08-AUG-18
Silver (Ag)			<0.10		mg/kg		0.1	08-AUG-18
Thallium (Tl)			<0.050		mg/kg		0.05	08-AUG-18
Uranium (U)			<0.050		mg/kg		0.05	08-AUG-18
Vanadium (V)			<0.20		mg/kg		0.2	08-AUG-18
Zinc (Zn)			<2.0		mg/kg		2	08-AUG-18
Batch R4162646								
WG2843152-2 CRM		**WT-CANMET-TILL1**						
Antimony (Sb)			93.1		%		70-130	08-AUG-18
Arsenic (As)			100.8		%		70-130	08-AUG-18
Barium (Ba)			104.4		%		70-130	08-AUG-18
Beryllium (Be)			108.2		%		70-130	08-AUG-18
Boron (B)			3.2		mg/kg		0-8.2	08-AUG-18
Cadmium (Cd)			93.3		%		70-130	08-AUG-18
Chromium (Cr)			97.5		%		70-130	08-AUG-18
Cobalt (Co)			98.7		%		70-130	08-AUG-18
Copper (Cu)			98.4		%		70-130	08-AUG-18
Lead (Pb)			98.2		%		70-130	08-AUG-18

Quality Control Report

Workorder: L2140486 Report Date: 10-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R4162646								
WG2843152-2 CRM		**WT-CANMET-TILL1**						
Molybdenum (Mo)			106.1		%		70-130	08-AUG-18
Nickel (Ni)			98.6		%		70-130	08-AUG-18
Selenium (Se)			0.31		mg/kg		0.11-0.51	08-AUG-18
Silver (Ag)			0.21		mg/kg		0.13-0.33	08-AUG-18
Thallium (Tl)			0.118		mg/kg		0.077-0.18	08-AUG-18
Uranium (U)			99.2		%		70-130	08-AUG-18
Vanadium (V)			97.8		%		70-130	08-AUG-18
Zinc (Zn)			96.8		%		70-130	08-AUG-18
WG2843152-6 DUP		**WG2843152-5**						
Antimony (Sb)		0.12	0.12		ug/g	0.5	30	08-AUG-18
Arsenic (As)		3.25	3.46		ug/g	6.4	30	08-AUG-18
Barium (Ba)		54.8	56.0		ug/g	2.2	40	08-AUG-18
Beryllium (Be)		0.29	0.30		ug/g	5.4	30	08-AUG-18
Boron (B)		6.0	5.8		ug/g	3.6	30	08-AUG-18
Cadmium (Cd)		0.094	0.088		ug/g	6.5	30	08-AUG-18
Chromium (Cr)		12.5	13.0		ug/g	3.9	30	08-AUG-18
Cobalt (Co)		4.89	5.07		ug/g	3.6	30	08-AUG-18
Copper (Cu)		21.0	22.2		ug/g	5.8	30	08-AUG-18
Lead (Pb)		10.9	11.5		ug/g	5.0	40	08-AUG-18
Molybdenum (Mo)		0.37	0.39		ug/g	5.3	40	08-AUG-18
Nickel (Ni)		10.1	10.6		ug/g	4.8	30	08-AUG-18
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	08-AUG-18
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	08-AUG-18
Thallium (Tl)		0.085	0.084		ug/g	1.3	30	08-AUG-18
Uranium (U)		0.455	0.422		ug/g	7.6	30	08-AUG-18
Vanadium (V)		20.1	20.7		ug/g	3.2	30	08-AUG-18
Zinc (Zn)		39.8	41.6		ug/g	4.4	30	08-AUG-18
WG2843152-4 LCS								
Antimony (Sb)			98.5		%		80-120	08-AUG-18
Arsenic (As)			95.7		%		80-120	08-AUG-18
Barium (Ba)			97.7		%		80-120	08-AUG-18
Beryllium (Be)			95.0		%		80-120	08-AUG-18
Boron (B)			92.2		%		80-120	08-AUG-18

Quality Control Report

Workorder: L2140486 Report Date: 10-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R4162646								
WG2843152-4 LCS								
Cadmium (Cd)			92.9		%		80-120	08-AUG-18
Chromium (Cr)			95.7		%		80-120	08-AUG-18
Cobalt (Co)			94.6		%		80-120	08-AUG-18
Copper (Cu)			93.2		%		80-120	08-AUG-18
Lead (Pb)			98.6		%		80-120	08-AUG-18
Molybdenum (Mo)			97.9		%		80-120	08-AUG-18
Nickel (Ni)			94.1		%		80-120	08-AUG-18
Selenium (Se)			96.5		%		80-120	08-AUG-18
Silver (Ag)			91.3		%		80-120	08-AUG-18
Thallium (Tl)			93.3		%		80-120	08-AUG-18
Uranium (U)			94.6		%		80-120	08-AUG-18
Vanadium (V)			97.3		%		80-120	08-AUG-18
Zinc (Zn)			86.2		%		80-120	08-AUG-18
WG2843152-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	08-AUG-18
Arsenic (As)			<0.10		mg/kg		0.1	08-AUG-18
Barium (Ba)			<0.50		mg/kg		0.5	08-AUG-18
Beryllium (Be)			<0.10		mg/kg		0.1	08-AUG-18
Boron (B)			<5.0		mg/kg		5	08-AUG-18
Cadmium (Cd)			<0.020		mg/kg		0.02	08-AUG-18
Chromium (Cr)			<0.50		mg/kg		0.5	08-AUG-18
Cobalt (Co)			<0.10		mg/kg		0.1	08-AUG-18
Copper (Cu)			<0.50		mg/kg		0.5	08-AUG-18
Lead (Pb)			<0.50		mg/kg		0.5	08-AUG-18
Molybdenum (Mo)			<0.10		mg/kg		0.1	08-AUG-18
Nickel (Ni)			<0.50		mg/kg		0.5	08-AUG-18
Selenium (Se)			<0.20		mg/kg		0.2	08-AUG-18
Silver (Ag)			<0.10		mg/kg		0.1	08-AUG-18
Thallium (Tl)			<0.050		mg/kg		0.05	08-AUG-18
Uranium (U)			<0.050		mg/kg		0.05	08-AUG-18
Vanadium (V)			<0.20		mg/kg		0.2	08-AUG-18
Zinc (Zn)			<2.0		mg/kg		2	08-AUG-18
MOISTURE-WT	**Soil**							

Quality Control Report

Workorder: L2140486 Report Date: 10-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MOISTURE-WT	**Soil**							
Batch R4160643								
WG2842487-3 DUP		**L2140486-7**						
% Moisture		5.74	6.83		%	17	20	08-AUG-18
WG2842487-2 LCS								
% Moisture			97.9		%		90-110	08-AUG-18
WG2842487-1 MB								
% Moisture			<0.10		%		0.1	08-AUG-18
Batch R4161124								
WG2843444-3 DUP		**L2139996-1**						
% Moisture		3.53	3.63		%	2.8	20	09-AUG-18
WG2843444-2 LCS								
% Moisture			99.9		%		90-110	09-AUG-18
WG2843444-1 MB								
% Moisture			<0.10		%		0.1	09-AUG-18
Batch R4161717								
WG2843270-3 DUP		**L2140812-2**						
% Moisture		11.8	11.3		%	3.8	20	09-AUG-18
WG2843270-2 LCS								
% Moisture			99.8		%		90-110	09-AUG-18
WG2843270-1 MB								
% Moisture			<0.10		%		0.1	09-AUG-18
PAH-511-WT	**Soil**							
Batch R4160819								
WG2840890-4 DUP		**WG2840890-3**						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	08-AUG-18
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	08-AUG-18
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-AUG-18
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-AUG-18
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-AUG-18
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-AUG-18
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-AUG-18
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-AUG-18
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-AUG-18
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-AUG-18
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-AUG-18
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-AUG-18
Fluoranthene		0.056	<0.050	RPD-NA	ug/g	N/A	40	08-AUG-18

Quality Control Report

Workorder: L2140486 Report Date: 10-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R4160819								
WG2840890-4 DUP		**WG2840890-3**						
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-AUG-18
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-AUG-18
Naphthalene		<0.013	<0.013	RPD-NA	ug/g	N/A	40	08-AUG-18
Phenanthrene		<0.046	<0.046	RPD-NA	ug/g	N/A	40	08-AUG-18
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-AUG-18
WG2840890-2 LCS								
1-Methylnaphthalene			91.5		%		50-140	08-AUG-18
2-Methylnaphthalene			91.8		%		50-140	08-AUG-18
Acenaphthene			91.8		%		50-140	08-AUG-18
Acenaphthylene			86.2		%		50-140	08-AUG-18
Anthracene			86.0		%		50-140	08-AUG-18
Benzo(a)anthracene			86.2		%		50-140	08-AUG-18
Benzo(a)pyrene			90.0		%		50-140	08-AUG-18
Benzo(b)fluoranthene			86.7		%		50-140	08-AUG-18
Benzo(g,h,i)perylene			76.7		%		50-140	08-AUG-18
Benzo(k)fluoranthene			98.6		%		50-140	08-AUG-18
Chrysene			90.0		%		50-140	08-AUG-18
Dibenzo(ah)anthracene			80.0		%		50-140	08-AUG-18
Fluoranthene			88.7		%		50-140	08-AUG-18
Fluorene			87.9		%		50-140	08-AUG-18
Indeno(1,2,3-cd)pyrene			77.7		%		50-140	08-AUG-18
Naphthalene			90.2		%		50-140	08-AUG-18
Phenanthrene			91.2		%		50-140	08-AUG-18
Pyrene			89.4		%		50-140	08-AUG-18
WG2840890-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	08-AUG-18
2-Methylnaphthalene			<0.030		ug/g		0.03	08-AUG-18
Acenaphthene			<0.050		ug/g		0.05	08-AUG-18
Acenaphthylene			<0.050		ug/g		0.05	08-AUG-18
Anthracene			<0.050		ug/g		0.05	08-AUG-18
Benzo(a)anthracene			<0.050		ug/g		0.05	08-AUG-18
Benzo(a)pyrene			<0.050		ug/g		0.05	08-AUG-18
Benzo(b)fluoranthene			<0.050		ug/g		0.05	08-AUG-18
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	08-AUG-18

Quality Control Report

Workorder: L2140486 Report Date: 10-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R4160819								
WG2840890-1 MB								
Benzo(k)fluoranthene			<0.050		ug/g		0.05	08-AUG-18
Chrysene			<0.050		ug/g		0.05	08-AUG-18
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	08-AUG-18
Fluoranthene			<0.050		ug/g		0.05	08-AUG-18
Fluorene			<0.050		ug/g		0.05	08-AUG-18
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	08-AUG-18
Naphthalene			<0.013		ug/g		0.013	08-AUG-18
Phenanthrene			<0.046		ug/g		0.046	08-AUG-18
Pyrene			<0.050		ug/g		0.05	08-AUG-18
Surrogate: 2-Fluorobiphenyl			92.5		%		50-140	08-AUG-18
Surrogate: p-Terphenyl d14			96.1		%		50-140	08-AUG-18
WG2840890-5 MS		**WG2840890-3**						
1-Methylnaphthalene			74.3		%		50-140	08-AUG-18
2-Methylnaphthalene			74.0		%		50-140	08-AUG-18
Acenaphthene			74.2		%		50-140	08-AUG-18
Acenaphthylene			70.3		%		50-140	08-AUG-18
Anthracene			71.8		%		50-140	08-AUG-18
Benzo(a)anthracene			69.7		%		50-140	08-AUG-18
Benzo(a)pyrene			71.8		%		50-140	08-AUG-18
Benzo(b)fluoranthene			70.2		%		50-140	08-AUG-18
Benzo(g,h,i)perylene			65.6		%		50-140	08-AUG-18
Benzo(k)fluoranthene			70.3		%		50-140	08-AUG-18
Chrysene			72.3		%		50-140	08-AUG-18
Dibenzo(ah)anthracene			65.9		%		50-140	08-AUG-18
Fluoranthene			67.5		%		50-140	08-AUG-18
Fluorene			71.4		%		50-140	08-AUG-18
Indeno(1,2,3-cd)pyrene			66.2		%		50-140	08-AUG-18
Naphthalene			71.7		%		50-140	08-AUG-18
Phenanthrene			66.9		%		50-140	08-AUG-18
Pyrene			67.6		%		50-140	08-AUG-18
PCB-511-WT	**Soil**							

Quality Control Report

Workorder: L2140486 Report Date: 10-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PCB-511-WT	**Soil**							
Batch R4162178								
WG2840890-4 DUP		**WG2840890-3**						
Aroclor 1242		<0.010	<0.010	RPD-NA	ug/g	N/A	40	09-AUG-18
Aroclor 1248		<0.010	<0.010	RPD-NA	ug/g	N/A	40	09-AUG-18
Aroclor 1254		<0.010	<0.010	RPD-NA	ug/g	N/A	40	09-AUG-18
Aroclor 1260		<0.010	<0.010	RPD-NA	ug/g	N/A	40	09-AUG-18
WG2840890-2 LCS								
Aroclor 1242			83.8		%		60-140	09-AUG-18
Aroclor 1248			76.3		%		60-140	09-AUG-18
Aroclor 1254			95.2		%		60-140	09-AUG-18
Aroclor 1260			91.7		%		60-140	09-AUG-18
WG2840890-1 MB								
Aroclor 1242			<0.010		ug/g		0.01	09-AUG-18
Aroclor 1248			<0.010		ug/g		0.01	09-AUG-18
Aroclor 1254			<0.010		ug/g		0.01	09-AUG-18
Aroclor 1260			<0.010		ug/g		0.01	09-AUG-18
Surrogate: d14-Terphenyl			88.4		%		60-140	09-AUG-18
WG2840890-5 MS		**WG2840890-3**						
Aroclor 1242			74.3		%		60-140	09-AUG-18
Aroclor 1254			93.1		%		60-140	09-AUG-18
Aroclor 1260			90.9		%		60-140	09-AUG-18
PH-WT	**Soil**							
Batch R4160971								
WG2842315-1 DUP		**L2140812-4**						
pH		7.96	8.01	J	pH units	0.05	0.3	08-AUG-18
WG2843413-1 LCS								
pH			6.99		pH units		6.9-7.1	08-AUG-18
SAR-R511-WT	**Soil**							
Batch R4161040								
WG2843172-4 DUP		**WG2843172-3**						
Calcium (Ca)		<1.0	1.1	RPD-NA	mg/L	N/A	30	08-AUG-18
Sodium (Na)		75.5	74.5		mg/L	1.3	30	08-AUG-18
Magnesium (Mg)		<1.0	<1.0	RPD-NA	mg/L	N/A	30	08-AUG-18
WG2843172-2 IRM		**WT SAR2**						
Calcium (Ca)			96.3		%		70-130	08-AUG-18
Sodium (Na)			99.1		%		70-130	08-AUG-18
Magnesium (Mg)			93.7		%		70-130	08-AUG-18

Quality Control Report

Workorder: L2140486 Report Date: 10-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SAR-R511-WT	**Soil**							
Batch R4161040								
WG2843172-1 MB								
Calcium (Ca)			<1.0		mg/L		1	08-AUG-18
Sodium (Na)			<1.0		mg/L		1	08-AUG-18
Magnesium (Mg)			<1.0		mg/L		1	08-AUG-18
VOC-511-HS-WT	**Soil**							
Batch R4159969								
WG2840561-4 DUP		**WG2840561-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-AUG-18
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-AUG-18
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-AUG-18
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-AUG-18
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-AUG-18
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-AUG-18
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-AUG-18
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-AUG-18
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-AUG-18
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-AUG-18
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-AUG-18
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-AUG-18
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	07-AUG-18
Benzene		0.0700	0.0697		ug/g	0.4	40	07-AUG-18
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-AUG-18
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-AUG-18
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-AUG-18
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-AUG-18
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-AUG-18
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-AUG-18
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-AUG-18
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	07-AUG-18
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-AUG-18
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-AUG-18
Ethylbenzene		0.057	0.056		ug/g	1.4	40	07-AUG-18
n-Hexane		<0.080	<0.080	RPD-NA	ug/g	N/A	40	07-AUG-18
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-AUG-18

Quality Control Report

Workorder: L2140486 Report Date: 10-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R4159969								
WG2840561-4 DUP		**WG2840561-3**						
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-AUG-18
m+p-Xylenes		0.178	0.177		ug/g	0.3	40	07-AUG-18
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	07-AUG-18
Methyl Isobutyl Ketone		0.63	0.69		ug/g	9.3	40	07-AUG-18
o-Xylene		0.088	0.089		ug/g	0.3	40	07-AUG-18
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-AUG-18
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-AUG-18
Toluene		0.191	0.191		ug/g	0.3	40	07-AUG-18
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-AUG-18
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	07-AUG-18
Trichloroethylene		0.014	0.013		ug/g	7.7	40	07-AUG-18
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-AUG-18
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-AUG-18
WG2840561-2 LCS								
1,1,1,2-Tetrachloroethane			105.4		%		60-130	07-AUG-18
1,1,2,2-Tetrachloroethane			105.1		%		60-130	07-AUG-18
1,1,1-Trichloroethane			102.9		%		60-130	07-AUG-18
1,1,2-Trichloroethane			108.5		%		60-130	07-AUG-18
1,1-Dichloroethane			107.6		%		60-130	07-AUG-18
1,1-Dichloroethylene			94.2		%		60-130	07-AUG-18
1,2-Dibromoethane			108.7		%		70-130	07-AUG-18
1,2-Dichlorobenzene			106.8		%		70-130	07-AUG-18
1,2-Dichloroethane			107.7		%		60-130	07-AUG-18
1,2-Dichloropropane			107.5		%		70-130	07-AUG-18
1,3-Dichlorobenzene			104.7		%		70-130	07-AUG-18
1,4-Dichlorobenzene			105.5		%		70-130	07-AUG-18
Acetone			109.9		%		60-140	07-AUG-18
Benzene			107.2		%		70-130	07-AUG-18
Bromodichloromethane			109.3		%		50-140	07-AUG-18
Bromoform			105.7		%		70-130	07-AUG-18
Bromomethane			84.2		%		50-140	07-AUG-18
Carbon tetrachloride			102.3		%		70-130	07-AUG-18
Chlorobenzene			106.1		%		70-130	07-AUG-18

Quality Control Report

Workorder: L2140486 Report Date: 10-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R4159969								
WG2840561-2 LCS								
Chloroform			107.6		%		70-130	07-AUG-18
cis-1,2-Dichloroethylene			106.2		%		70-130	07-AUG-18
cis-1,3-Dichloropropene			109.7		%		70-130	07-AUG-18
Dibromochloromethane			106.7		%		60-130	07-AUG-18
Dichlorodifluoromethane			86.9		%		50-140	07-AUG-18
Ethylbenzene			99.5		%		70-130	07-AUG-18
n-Hexane			106.6		%		70-130	07-AUG-18
Methylene Chloride			107.2		%		70-130	07-AUG-18
MTBE			107.3		%		70-130	07-AUG-18
m+p-Xylenes			100.8		%		70-130	07-AUG-18
Methyl Ethyl Ketone			113.7		%		60-140	07-AUG-18
Methyl Isobutyl Ketone			110.1		%		60-140	07-AUG-18
o-Xylene			98.8		%		70-130	07-AUG-18
Styrene			99.8		%		70-130	07-AUG-18
Tetrachloroethylene			104.7		%		60-130	07-AUG-18
Toluene			102.0		%		70-130	07-AUG-18
trans-1,2-Dichloroethylene			102.5		%		60-130	07-AUG-18
trans-1,3-Dichloropropene			108.0		%		70-130	07-AUG-18
Trichloroethylene			109.9		%		60-130	07-AUG-18
Trichlorofluoromethane			106.4		%		50-140	07-AUG-18
Vinyl chloride			93.6		%		60-140	07-AUG-18
WG2840561-1 MB								
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	07-AUG-18
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	07-AUG-18
1,1,1-Trichloroethane			<0.050		ug/g		0.05	07-AUG-18
1,1,2-Trichloroethane			<0.050		ug/g		0.05	07-AUG-18
1,1-Dichloroethane			<0.050		ug/g		0.05	07-AUG-18
1,1-Dichloroethylene			<0.050		ug/g		0.05	07-AUG-18
1,2-Dibromoethane			<0.050		ug/g		0.05	07-AUG-18
1,2-Dichlorobenzene			<0.050		ug/g		0.05	07-AUG-18
1,2-Dichloroethane			<0.050		ug/g		0.05	07-AUG-18
1,2-Dichloropropane			<0.050		ug/g		0.05	07-AUG-18
1,3-Dichlorobenzene			<0.050		ug/g		0.05	07-AUG-18
1,4-Dichlorobenzene			<0.050		ug/g		0.05	07-AUG-18

Quality Control Report

Workorder: L2140486 Report Date: 10-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R4159969								
WG2840561-1 MB								
Acetone			<0.50		ug/g		0.5	07-AUG-18
Benzene			<0.0068		ug/g		0.0068	07-AUG-18
Bromodichloromethane			<0.050		ug/g		0.05	07-AUG-18
Bromoform			<0.050		ug/g		0.05	07-AUG-18
Bromomethane			<0.050		ug/g		0.05	07-AUG-18
Carbon tetrachloride			<0.050		ug/g		0.05	07-AUG-18
Chlorobenzene			<0.050		ug/g		0.05	07-AUG-18
Chloroform			<0.050		ug/g		0.05	07-AUG-18
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	07-AUG-18
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	07-AUG-18
Dibromochloromethane			<0.050		ug/g		0.05	07-AUG-18
Dichlorodifluoromethane			<0.050		ug/g		0.05	07-AUG-18
Ethylbenzene			<0.018		ug/g		0.018	07-AUG-18
n-Hexane			<0.050		ug/g		0.05	07-AUG-18
Methylene Chloride			<0.050		ug/g		0.05	07-AUG-18
MTBE			<0.050		ug/g		0.05	07-AUG-18
m+p-Xylenes			<0.030		ug/g		0.03	07-AUG-18
Methyl Ethyl Ketone			<0.50		ug/g		0.5	07-AUG-18
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	07-AUG-18
o-Xylene			<0.020		ug/g		0.02	07-AUG-18
Styrene			<0.050		ug/g		0.05	07-AUG-18
Tetrachloroethylene			<0.050		ug/g		0.05	07-AUG-18
Toluene			<0.080		ug/g		0.08	07-AUG-18
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	07-AUG-18
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	07-AUG-18
Trichloroethylene			<0.010		ug/g		0.01	07-AUG-18
Trichlorofluoromethane			<0.050		ug/g		0.05	07-AUG-18
Vinyl chloride			<0.020		ug/g		0.02	07-AUG-18
Surrogate: 1,4-Difluorobenzene			113.3		%		50-140	07-AUG-18
Surrogate: 4-Bromofluorobenzene			111.0		%		50-140	07-AUG-18
WG2840561-5 MS		**L2140662-1**						
1,1,1,2-Tetrachloroethane			105.8		%		50-140	07-AUG-18
1,1,2,2-Tetrachloroethane			101.9		%		50-140	07-AUG-18
1,1,1-Trichloroethane			102.9		%		50-140	07-AUG-18

Quality Control Report

Workorder: L2140486 Report Date: 10-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R4159969								
WG2840561-5 MS		**L2140662-1**						
1,1,2-Trichloroethane			107.8		%		50-140	07-AUG-18
1,1-Dichloroethane			107.0		%		50-140	07-AUG-18
1,1-Dichloroethylene			94.9		%		50-140	07-AUG-18
1,2-Dibromoethane			106.7		%		50-140	07-AUG-18
1,2-Dichlorobenzene			105.6		%		50-140	07-AUG-18
1,2-Dichloroethane			103.8		%		50-140	07-AUG-18
1,2-Dichloropropane			105.3		%		50-140	07-AUG-18
1,3-Dichlorobenzene			103.2		%		50-140	07-AUG-18
1,4-Dichlorobenzene			103.4		%		50-140	07-AUG-18
Acetone			104.0		%		50-140	07-AUG-18
Benzene			107.9		%		50-140	07-AUG-18
Bromodichloromethane			106.2		%		50-140	07-AUG-18
Bromoform			104.1		%		50-140	07-AUG-18
Bromomethane			81.8		%		50-140	07-AUG-18
Carbon tetrachloride			102.5		%		50-140	07-AUG-18
Chlorobenzene			105.5		%		50-140	07-AUG-18
Chloroform			106.1		%		50-140	07-AUG-18
cis-1,2-Dichloroethylene			105.3		%		50-140	07-AUG-18
cis-1,3-Dichloropropene			100.8		%		50-140	07-AUG-18
Dibromochloromethane			105.9		%		50-140	07-AUG-18
Dichlorodifluoromethane			93.9		%		50-140	07-AUG-18
Ethylbenzene			105.7		%		50-140	07-AUG-18
n-Hexane			111.3		%		50-140	07-AUG-18
Methylene Chloride			106.4		%		50-140	07-AUG-18
MTBE			107.4		%		50-140	07-AUG-18
m+p-Xylenes			109.2		%		50-140	07-AUG-18
Methyl Ethyl Ketone			106.6		%		50-140	07-AUG-18
Methyl Isobutyl Ketone			81.0		%		50-140	07-AUG-18
o-Xylene			109.3		%		50-140	07-AUG-18
Styrene			99.4		%		50-140	07-AUG-18
Tetrachloroethylene			105.3		%		50-140	07-AUG-18
Toluene			110.6		%		50-140	07-AUG-18
trans-1,2-Dichloroethylene			101.0		%		50-140	07-AUG-18

Quality Control Report

Workorder: L2140486 Report Date: 10-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R4159969								
WG2840561-5 MS		**L2140662-1**						
trans-1,3-Dichloropropene			100.0		%		50-140	07-AUG-18
Trichloroethylene			108.8		%		50-140	07-AUG-18
Trichlorofluoromethane			109.0		%		50-140	07-AUG-18
Vinyl chloride			95.5		%		50-140	07-AUG-18

Quality Control Report

Workorder: L2140486 Report Date: 10-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9
Contact: TANIA MCCARTHY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

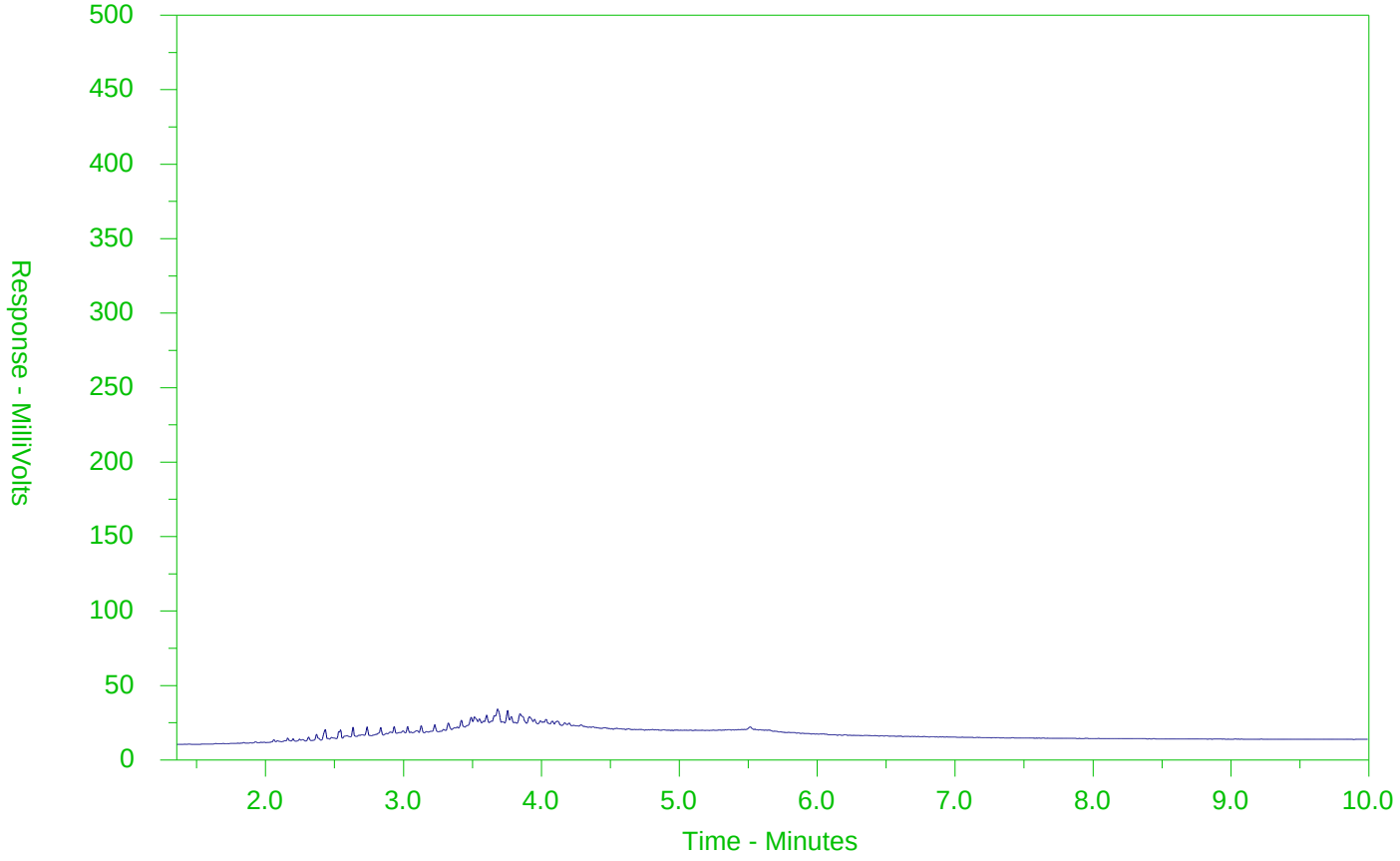
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2140486-4
Client Sample ID: MW18-125S-2



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

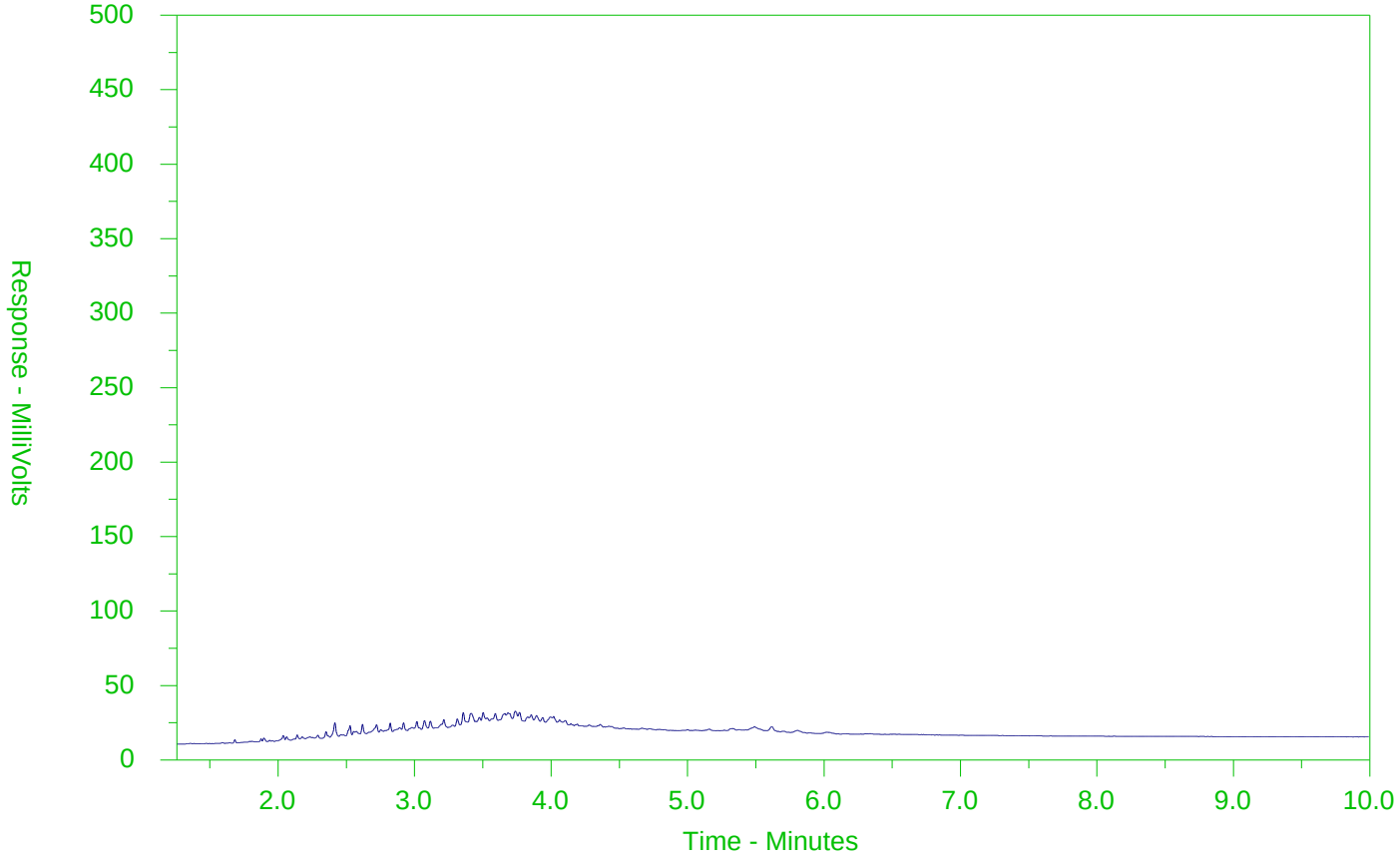
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2140486-7
Client Sample ID: MW18-126D-2



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2140486-COFC

COC Number: 17 - 626955

Page of

Report To	Contact and company name below will appear on the final report
Company:	CH2M JACOBS
Contact:	TANIA MCCARTHY
Phone:	519 579 3550
Company address below will appear on the final report	
Street:	72 Victoria St. S. Suite 300
City/Province:	KITCHENER - ON
Postal Code:	N2G 4Y9
Invoice To	Same as Report To [X] YES [ ] NO
	Copy of Invoice with Report [X] YES [ ] NO
Company:	
Contact:	

Report Format / Distribution

Select Report Format: [X] PDF [X] EXCEL [X] EDD (DIGITAL)
Quality Control (QC) Report with Report [X] YES [ ] NO
[X] Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax: Tania.mccarthy@ch2m.com
Email 2: lucas.ribeiro@ch2m.com
Email 3:

Invoice Distribution

Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax:
Email 2:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] [X] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] [ ]; 3 day [P3-25%] [ ]; 2 day [P2-50%] [ ]
EMERGENCY: 1 Business day [E-100%] [ ]; Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] [ ]

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #:
Job #:
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2140486
ALS Contact:
Sa

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

24H
Int. ANALG.
18 ONLY.
PCB
PHC
VOC

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
1	MW18-122D-1	26-JUL-18			2
2	MW18-121S-1	27-JUL-18			1
3	MW18-125S-1	31-JUL-18			1
4	MW18-125S-2	31-JUL-18			4
5	MW18-125S-3	31-JUL-18			2
6	MW18-127D-1	31-JUL-18			2
7	MW18-127D-2	31-JUL-18			6
8	MW18-127D-3	31-JUL-18			1
9	DUP JUL 31	31-JUL-18			1
10	TRIP BLANK JUL 31				

Vials don't match Bottles 126

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] YES [ ] NO
Are samples for human consumption/ use? [ ] YES [ ] NO

Special Instructions / Specify Criteria to add on report by clicki (electronic COC only)

Compare O. Reg. 153/04

DITION AS RECEIVED (lab use only)

Ice Packs [ ] Ice Cubes [X] Custody seal intact Yes [ ] No [ ]
Cooling Initiated [ ]
SIF Observations Yes [ ] No [ ]

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
5.6				9.6			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Lucas Ribeiro	Date: 2018-AUG-01	Time:	Received by: BF	Date: Aug 1, 2018	Time: 16:25	Received by: AC	Date: Aug 1	Time: 16:30

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION
WHITE - LABORATORY COPY YELLOW - CLIENT COPY
JULY 2017 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

CH2M HILL CANADA LIMITED
ATTN: TANIA MCCARTHY
CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 02-AUG-18
Report Date: 10-AUG-18 13:42 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2140617
Project P.O. #: NOT SUBMITTED
Job Reference: 694757
C of C Numbers:
Legal Site Desc:

Mathy Mahadeva
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2140617-1	TCLP									
Sampled By:	CLIENT on 01-AUG-18 @ 11:00									
Matrix:	SOIL						#1			
Sample Preparation										
	Initial pH	9.64		0.10	pH units	04-AUG-18				
	Final pH	5.25		0.10	pH units	04-AUG-18				
Physical Tests										
	Air Velocity Of Fume Hood	0.70		0.10	m/sec	09-AUG-18				
	Burning Rate	N/A		0.010	mm/sec	09-AUG-18				
	Ignitability-Class	NON FLAMMABLE			No Unit	09-AUG-18				
	Samp Comment	BROWN SOIL			No Unit	09-AUG-18				
	Temperature Of Test Material	21.0		1.0	Deg. C	09-AUG-18				
	Time To Ignition	N/A		1.0	sec	09-AUG-18				
TCLP Extractables										
	Acenaphthene	<0.0050		0.0050	mg/L	09-AUG-18				
	Acenaphthylene	<0.0050		0.0050	mg/L	09-AUG-18				
	Anthracene	<0.0050		0.0050	mg/L	09-AUG-18				
	Aroclor 1242	<0.00020		0.00020	mg/L	09-AUG-18				
	Aroclor 1248	<0.00020		0.00020	mg/L	09-AUG-18				
	Aroclor 1254	<0.00020		0.00020	mg/L	09-AUG-18				
	Aroclor 1260	<0.00020		0.00020	mg/L	09-AUG-18				
	Benzo(a)anthracene	<0.0050		0.0050	mg/L	09-AUG-18				
	Benzo(a)pyrene	<0.0010		0.0010	mg/L	09-AUG-18	0.001			
	Benzo(b)fluoranthene	<0.0050		0.0050	mg/L	09-AUG-18				
	Benzo(g,h,i)perylene	<0.0050		0.0050	mg/L	09-AUG-18				
	Surrogate: 2-Bromobenzotrifluoride	84.1		50-150	%	08-AUG-18				
	Chrom. to baseline at nC50	YES			No Unit	08-AUG-18				
	Cyanide, Weak Acid Diss	<0.10		0.10	mg/L	08-AUG-18	20			
	Fluoride (F)	<10		10	mg/L	05-AUG-18	150.0			
	Nitrate and Nitrite as N	<4.0		4.0	mg/L	05-AUG-18	1000			
	Nitrate-N	<2.0		2.0	mg/L	05-AUG-18				
	Nitrite-N	<2.0		2.0	mg/L	05-AUG-18				
	Total PCBs	<0.00040		0.00040	mg/L	09-AUG-18	0.3			
	Surrogate: 2-Fluorobiphenyl	49.9		40-160	%	09-AUG-18				
TCLP Metals										
	Arsenic (As)	<0.050		0.050	mg/L	07-AUG-18	2.5			
	Barium (Ba)	0.50		0.50	mg/L	07-AUG-18	100			
	Boron (B)	<2.5		2.5	mg/L	07-AUG-18	500			
	Cadmium (Cd)	0.0146		0.0050	mg/L	07-AUG-18	0.5			
	Chromium (Cr)	<0.050		0.050	mg/L	07-AUG-18	5.0			
	Lead (Pb)	0.197		0.050	mg/L	07-AUG-18	5.0			
	Mercury (Hg)	<0.00010		0.00010	mg/L	07-AUG-18	0.1			
	Selenium (Se)	<0.025		0.025	mg/L	07-AUG-18	1.0			
	Silver (Ag)	<0.0050		0.0050	mg/L	07-AUG-18	5.0			
	Uranium (U)	<0.25		0.25	mg/L	07-AUG-18	10			
TCLP VOCs										
	1,1-Dichloroethylene	<0.025		0.025	mg/L	08-AUG-18	1.4			
	1,2-Dichlorobenzene	<0.025		0.025	mg/L	08-AUG-18	20.0			
	1,2-Dichloroethane	<0.025		0.025	mg/L	08-AUG-18	0.5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Ministry of the Environment, General Waste Control Regulation No. 347/90

#1: Ontario Ministry of the Environment, General Waste Control Regulation No. 347/90

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2140617-1	TCLP									
Sampled By:	CLIENT on 01-AUG-18 @ 11:00									
Matrix:	SOIL						#1			
TCLP VOCs										
	1,4-Dichlorobenzene	<0.025		0.025	mg/L	08-AUG-18	0.5			
	Benzene	<0.025		0.025	mg/L	08-AUG-18	0.5			
	Carbon tetrachloride	<0.025		0.025	mg/L	08-AUG-18	0.5			
	Chlorobenzene	<0.025		0.025	mg/L	08-AUG-18	8			
	Chloroform	<0.10		0.10	mg/L	08-AUG-18	10			
	Dichloromethane	<0.50		0.50	mg/L	08-AUG-18	5.0			
	Methyl Ethyl Ketone	<1.0		1.0	mg/L	08-AUG-18	200.0			
	Tetrachloroethylene	<0.025		0.025	mg/L	08-AUG-18	3			
	Trichloroethylene	<0.025		0.025	mg/L	08-AUG-18	5			
	Vinyl chloride	<0.050		0.050	mg/L	08-AUG-18	0.2			
	Surrogate: 4-Bromofluorobenzene	98.2		70-130	%	08-AUG-18				
Volatile Organic Compounds										
	Surrogate: 1,4-Difluorobenzene	100.9		70-130	%	08-AUG-18				
Hydrocarbons										
	F1 (C6-C10)	<5.0		5.0	mg/L	08-AUG-18				
	F1-BTEX	<5.0		5.0	mg/L	08-AUG-18				
	F2 (C10-C16)	<0.10		0.10	mg/L	08-AUG-18				
	F3 (C16-C34)	<0.25		0.25	mg/L	08-AUG-18				
	F4 (C34-C50)	<0.25		0.25	mg/L	08-AUG-18				
	Total Hydrocarbons (C6-C50)	<5.0		5.0	mg/L	08-AUG-18				
Polycyclic Aromatic Hydrocarbons										
	Benzo(k)fluoranthene	<0.0050		0.0050	mg/L	09-AUG-18				
	Chrysene	<0.0050		0.0050	mg/L	09-AUG-18				
	Dibenzo(ah)anthracene	<0.0050		0.0050	mg/L	09-AUG-18				
	Fluoranthene	<0.0050		0.0050	mg/L	09-AUG-18				
	Fluorene	<0.0050		0.0050	mg/L	09-AUG-18				
	Indeno(1,2,3-cd)pyrene	<0.0050		0.0050	mg/L	09-AUG-18				
	Naphthalene	<0.0050		0.0050	mg/L	09-AUG-18				
	Phenanthrene	<0.0050		0.0050	mg/L	09-AUG-18				
	Pyrene	<0.0050		0.0050	mg/L	09-AUG-18				
	Quinoline	<0.0050		0.0050	mg/L	09-AUG-18				
	Surrogate: d10-Acenaphthene	100.0		50-150	%	09-AUG-18				
	Surrogate: d12-Chrysene	90.6		50-150	%	09-AUG-18				
	Surrogate: d8-Naphthalene	106.8		50-150	%	09-AUG-18				
	Surrogate: d10-Phenanthrene	105.7		50-150	%	09-AUG-18				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Ministry of the Environment, General Waste Control Regulation No. 347/90

#1: Ontario Ministry of the Environment, General Waste Control Regulation No. 347/90

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference***
CN-TCLP-WT	Waste	Cyanide for O. Reg 347	APHA 4500CN C E
ETL-TVH,TEH-TCLP-WT	Waste	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001
F-TCLP-WT	Waste	Fluoride (F) for O. Reg 347	APHA 4110 B-Ion Chromatography
F1-TCLP-WT	Waste	O. Reg 347 TCLP leachable F1	SW846 8260
F2-F4-TCLP-WT	Waste	O. Reg 347 TCLP leachable F2-F4	MOE DECPH-E3398/CCME TIER 1
HG-TCLP-WT	Waste	Mercury (CVAA) for O.Reg 347	SW846 7470A
IGNITABILITY-WT	Waste	O. Reg 347 Ignitability	EPA SW846, Method 1030, 1996

Preliminary Screening Test:
Prepare a sample "as received" 250 mm long by 20 mm wide by 10 mm high. Apply the tip of the flame to the end of the sample strip.
If the sample is non-metallic, hold the flame tip on the sample until the sample ignites or for a maximum of 2 minutes. If combustion occurs, begin timing with a stop watch and note whether the sample propagates up to the 200 mm mark within the 2 minute test period.
If the sample is metal or metal alloy powder, hold the flame tip on the sample until the sample ignites or for a maximum of 5 minutes. If combusiton occurs, begin timing with a stop watch and note whether the sample propagates up to the 200 mm mark within the 20 minute test period.
Note: If the waste propagates burning of 200 mm of the test strip within 2 minutes (20 minutes for metals), the material must be evaluated by the burning rate test.
Burning Rate Test:
Refer to section 7.2 of EPA Method 1030. Samples that have a burning rate of greater than 2.2 mm/s are considered to have a positive result for ignitability according to DOT regulations. For metallic samples , the burning rate must be greater than 0.17 mm/s.

LEACH-TCLP-WT	Waste	Leachate Procedure for Reg 347	EPA 1311

Inorganic and Semi-Volatile Organic contaminants are leached from waste samples in strict accordance with US EPA Method 1311, "Toxicity Characteristic Leaching Procedure" (TCLP). Test results are reported in leachate concentration units (normally mg/L).

MET-TCLP-WT	Waste	O.Reg 347 TCLP Leachable Metals	EPA 200.8
N2N3-TCLP-WT	Waste	Nitrate/Nitrite-N for O. Reg 347	APHA 4110 B-Ion Chromatography
PAH-TCLP-WT	Waste	PAH for O. Reg 347	SW846 8270 (PAH)

Samples are leached according to TCLP protocol and then the aqueous leachate is extracted and the resulting extracts are analyzed on GC/MSD. Depending on the analytical GC/MS column used benzo(j)fluoranthene may chromatographically co-elute with benzo(b)fluoranthene or benzo(k)fluoranthene.

PCB-TCLP-WT	Waste	PCBs for O. Reg 347	SW846 8270
VOC-TCLP-WT	Waste	VOC for O. Reg 347	SW846 8260

A sample of waste is leached in a zero headspace extractor at 30–2 rpm for 18–2.0 hours with the appropriate leaching solution. After tumbling the leachate is analyzed directly by headspace technology, followed by GC/MS using internal standard quantitation.

*** ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody numbers:

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA		

Reference Information

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Quality Control Report

Workorder: L2140617 Report Date: 10-AUG-18

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-TCLP-WT	**Waste**							
Batch R4160894								
WG2843452-3 DUP		**L2139951-13**						
Cyanide, Weak Acid Diss		<0.10	<0.10	RPD-NA	mg/L	N/A	50	08-AUG-18
WG2843452-2 LCS								
Cyanide, Weak Acid Diss			96.0		%		70-130	08-AUG-18
WG2843452-1 MB								
Cyanide, Weak Acid Diss			<0.10		mg/L		0.1	08-AUG-18
WG2843452-4 MS		**L2139951-13**						
Cyanide, Weak Acid Diss			95.7		%		50-140	08-AUG-18
F-TCLP-WT	**Waste**							
Batch R4160318								
WG2842860-3 DUP		**L2140826-1**						
Fluoride (F)		<10	<10	RPD-NA	mg/L	N/A	30	05-AUG-18
WG2842860-2 LCS								
Fluoride (F)			91.5		%		70-130	05-AUG-18
WG2842860-1 MB								
Fluoride (F)			<10		mg/L		10	05-AUG-18
WG2842860-4 MS		**L2140826-1**						
Fluoride (F)			86.5		%		50-150	05-AUG-18
F2-F4-TCLP-WT	**Waste**							
Batch R4161129								
WG2842211-1 MB								
Surrogate: 2-Bromobenzotrifluoride			80.9		%		50-150	08-AUG-18
HG-TCLP-WT	**Waste**							
Batch R4160065								
WG2842205-3 DUP		**L2138741-1**						
Mercury (Hg)		<0.00010	<0.00010	RPD-NA	mg/L	N/A	50	07-AUG-18
WG2842205-2 LCS								
Mercury (Hg)			100.0		%		70-130	07-AUG-18
WG2842205-1 MB								
Mercury (Hg)			<0.00010		mg/L		0.0001	07-AUG-18
WG2842205-4 MS		**L2138741-1**						
Mercury (Hg)			91.6		%		50-140	07-AUG-18
MET-TCLP-WT	**Waste**							

Quality Control Report

Workorder: L2140617 Report Date: 10-AUG-18

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-TCLP-WT	**Waste**							
Batch R4160193								
WG2842144-4 DUP		**WG2842144-3**						
Silver (Ag)		<0.0050	<0.0050	RPD-NA	mg/L	N/A	40	07-AUG-18
Arsenic (As)		<0.050	<0.050	RPD-NA	mg/L	N/A	40	07-AUG-18
Boron (B)		<2.5	<2.5	RPD-NA	mg/L	N/A	40	07-AUG-18
Barium (Ba)		<0.50	<0.50	RPD-NA	mg/L	N/A	40	07-AUG-18
Cadmium (Cd)		<0.0050	<0.0050	RPD-NA	mg/L	N/A	40	07-AUG-18
Chromium (Cr)		<0.050	<0.050	RPD-NA	mg/L	N/A	40	07-AUG-18
Lead (Pb)		<0.050	<0.050	RPD-NA	mg/L	N/A	40	07-AUG-18
Selenium (Se)		<0.025	<0.025	RPD-NA	mg/L	N/A	40	07-AUG-18
Uranium (U)		<0.25	<0.25	RPD-NA	mg/L	N/A	40	07-AUG-18
WG2842144-2 LCS								
Silver (Ag)			96.3		%		70-130	07-AUG-18
Arsenic (As)			103.6		%		70-130	07-AUG-18
Boron (B)			96.2		%		70-130	07-AUG-18
Barium (Ba)			109.9		%		70-130	07-AUG-18
Cadmium (Cd)			104.0		%		70-130	07-AUG-18
Chromium (Cr)			101.3		%		70-130	07-AUG-18
Lead (Pb)			102.0		%		70-130	07-AUG-18
Selenium (Se)			100.6		%		70-130	07-AUG-18
Uranium (U)			102.1		%		70-130	07-AUG-18
WG2842144-1 MB								
Silver (Ag)			<0.0050		mg/L		0.005	07-AUG-18
Arsenic (As)			<0.050		mg/L		0.05	07-AUG-18
Boron (B)			<2.5		mg/L		2.5	07-AUG-18
Barium (Ba)			<0.50		mg/L		0.5	07-AUG-18
Cadmium (Cd)			<0.0050		mg/L		0.005	07-AUG-18
Chromium (Cr)			<0.050		mg/L		0.05	07-AUG-18
Lead (Pb)			<0.050		mg/L		0.05	07-AUG-18
Selenium (Se)			<0.025		mg/L		0.025	07-AUG-18
Uranium (U)			<0.25		mg/L		0.25	07-AUG-18
WG2842144-5 MS		**WG2842144-3**						
Silver (Ag)			109.4		%		50-150	07-AUG-18
Arsenic (As)			100.3		%		50-150	07-AUG-18
Boron (B)			92.2		%		50-150	07-AUG-18
Barium (Ba)			102.8		%		50-150	07-AUG-18

Quality Control Report

Workorder: L2140617 Report Date: 10-AUG-18

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-TCLP-WT	**Waste**							
Batch R4160193								
WG2842144-5 MS		**WG2842144-3**						
Cadmium (Cd)			98.4		%		50-150	07-AUG-18
Chromium (Cr)			94.8		%		50-150	07-AUG-18
Lead (Pb)			97.9		%		50-150	07-AUG-18
Selenium (Se)			98.3		%		50-150	07-AUG-18
Uranium (U)			97.1		%		50-150	07-AUG-18
N2N3-TCLP-WT	**Waste**							
Batch R4160318								
WG2842860-3 DUP		**L2140826-1**						
Nitrate-N		<2.0	<2.0	RPD-NA	mg/L	N/A	30	05-AUG-18
Nitrite-N		<2.0	<2.0	RPD-NA	mg/L	N/A	30	05-AUG-18
WG2842860-2 LCS								
Nitrate-N			98.6		%		70-130	05-AUG-18
Nitrite-N			98.0		%		70-130	05-AUG-18
WG2842860-1 MB								
Nitrate-N			<2.0		mg/L		2	05-AUG-18
Nitrite-N			<2.0		mg/L		2	05-AUG-18
WG2842860-4 MS		**L2140826-1**						
Nitrate-N			101.1		%		50-150	05-AUG-18
Nitrite-N			99.5		%		50-150	05-AUG-18
PAH-TCLP-WT	**Waste**							
Batch R4162253								
WG2842211-5 DUP		**WG2842211-3**						
Acenaphthene		<0.0050	<0.0050	RPD-NA	mg/L	N/A	50	09-AUG-18
Acenaphthylene		<0.0050	<0.0050	RPD-NA	mg/L	N/A	50	09-AUG-18
Anthracene		<0.0050	<0.0050	RPD-NA	mg/L	N/A	50	09-AUG-18
Benzo(a)anthracene		<0.0050	<0.0050	RPD-NA	mg/L	N/A	50	09-AUG-18
Benzo(a)pyrene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	09-AUG-18
Benzo(b)fluoranthene		<0.0050	<0.0050	RPD-NA	mg/L	N/A	50	09-AUG-18
Benzo(g,h,i)perylene		<0.0050	<0.0050	RPD-NA	mg/L	N/A	50	09-AUG-18
Benzo(k)fluoranthene		<0.0050	<0.0050	RPD-NA	mg/L	N/A	50	09-AUG-18
Chrysene		<0.0050	<0.0050	RPD-NA	mg/L	N/A	50	09-AUG-18
Dibenzo(ah)anthracene		<0.0050	<0.0050	RPD-NA	mg/L	N/A	50	09-AUG-18
Fluoranthene		<0.0050	<0.0050	RPD-NA	mg/L	N/A	50	09-AUG-18
Fluorene		<0.0050	<0.0050	RPD-NA	mg/L	N/A	50	09-AUG-18

Quality Control Report

Workorder: L2140617 Report Date: 10-AUG-18

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-TCLP-WT	**Waste**							
Batch R4162253								
WG2842211-5 DUP		**WG2842211-3**						
Indeno(1,2,3-cd)pyrene		<0.0050	<0.0050	RPD-NA	mg/L	N/A	50	09-AUG-18
Naphthalene		<0.0050	<0.0050	RPD-NA	mg/L	N/A	50	09-AUG-18
Phenanthrene		<0.0050	<0.0050	RPD-NA	mg/L	N/A	50	09-AUG-18
Pyrene		<0.0050	<0.0050	RPD-NA	mg/L	N/A	50	09-AUG-18
Quinoline		<0.0050	<0.0050	RPD-NA	mg/L	N/A	50	09-AUG-18
WG2842211-2 LCS								
Acenaphthene			92.1		%		50-130	09-AUG-18
Acenaphthylene			93.9		%		50-130	09-AUG-18
Anthracene			107.8		%		50-130	09-AUG-18
Benzo(a)anthracene			120.2		%		50-140	09-AUG-18
Benzo(a)pyrene			100.3		%		60-140	09-AUG-18
Benzo(b)fluoranthene			112.2		%		50-140	09-AUG-18
Benzo(g,h,i)perylene			106.8		%		50-140	09-AUG-18
Benzo(k)fluoranthene			106.2		%		50-150	09-AUG-18
Chrysene			108.3		%		50-140	09-AUG-18
Dibenzo(ah)anthracene			104.3		%		50-140	09-AUG-18
Fluoranthene			103.6		%		50-150	09-AUG-18
Fluorene			106.4		%		50-150	09-AUG-18
Indeno(1,2,3-cd)pyrene			112.8		%		50-140	09-AUG-18
Naphthalene			90.0		%		50-130	09-AUG-18
Phenanthrene			107.2		%		50-130	09-AUG-18
Pyrene			103.5		%		50-140	09-AUG-18
Quinoline			104.2		%		50-150	09-AUG-18
WG2842211-1 MB								
Acenaphthene			<0.0050		mg/L		0.005	09-AUG-18
Acenaphthylene			<0.0050		mg/L		0.005	09-AUG-18
Anthracene			<0.0050		mg/L		0.005	09-AUG-18
Benzo(a)anthracene			<0.0050		mg/L		0.005	09-AUG-18
Benzo(a)pyrene			<0.0010		mg/L		0.001	09-AUG-18
Benzo(b)fluoranthene			<0.0050		mg/L		0.005	09-AUG-18
Benzo(g,h,i)perylene			<0.0050		mg/L		0.005	09-AUG-18
Benzo(k)fluoranthene			<0.0050		mg/L		0.005	09-AUG-18
Chrysene			<0.0050		mg/L		0.005	09-AUG-18
Dibenzo(ah)anthracene			<0.0050		mg/L		0.005	09-AUG-18

Quality Control Report

Workorder: L2140617 Report Date: 10-AUG-18

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-TCLP-WT	**Waste**							
Batch R4162253								
WG2842211-1 MB								
Fluoranthene			<0.0050		mg/L		0.005	09-AUG-18
Fluorene			<0.0050		mg/L		0.005	09-AUG-18
Indeno(1,2,3-cd)pyrene			<0.0050		mg/L		0.005	09-AUG-18
Naphthalene			<0.0050		mg/L		0.005	09-AUG-18
Phenanthrene			<0.0050		mg/L		0.005	09-AUG-18
Pyrene			<0.0050		mg/L		0.005	09-AUG-18
Quinoline			<0.0050		mg/L		0.005	09-AUG-18
Surrogate: d8-Naphthalene			99.2		%		50-150	09-AUG-18
Surrogate: d10-Phenanthrene			98.3		%		50-150	09-AUG-18
Surrogate: d12-Chrysene			61.4		%		50-150	09-AUG-18
Surrogate: d10-Acenaphthene			94.4		%		50-150	09-AUG-18
WG2842211-4 MS		**WG2842211-3**						
Acenaphthene			93.2		%		50-150	09-AUG-18
Acenaphthylene			94.1		%		50-150	09-AUG-18
Anthracene			154.7	MES	%		50-150	09-AUG-18
Benzo(a)anthracene			128.5		%		50-150	09-AUG-18
Benzo(a)pyrene			95.3		%		50-150	09-AUG-18
Benzo(b)fluoranthene			107.6		%		50-150	09-AUG-18
Benzo(g,h,i)perylene			101.1		%		50-150	09-AUG-18
Benzo(k)fluoranthene			101.3		%		50-150	09-AUG-18
Chrysene			120.7		%		50-150	09-AUG-18
Dibenzo(ah)anthracene			98.3		%		50-150	09-AUG-18
Fluoranthene			104.4		%		50-150	09-AUG-18
Fluorene			104.4		%		50-150	09-AUG-18
Indeno(1,2,3-cd)pyrene			107.8		%		50-150	09-AUG-18
Naphthalene			128.4		%		50-150	09-AUG-18
Phenanthrene			147.2		%		50-150	09-AUG-18
Pyrene			104.4		%		50-150	09-AUG-18
Quinoline			111.6		%		50-150	09-AUG-18
PCB-TCLP-WT	**Waste**							
Batch R4162100								
WG2841820-5 DUP		**WG2841820-3**						
Aroclor 1242		<0.00040	<0.00040	RPD-NA	mg/L	N/A	50	09-AUG-18
Aroclor 1248		<0.00040	<0.00040	RPD-NA	mg/L	N/A	50	09-AUG-18

Quality Control Report

Workorder: L2140617 Report Date: 10-AUG-18

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PCB-TCLP-WT	**Waste**							
Batch R4162100								
WG2841820-5 DUP		**WG2841820-3**						
Aroclor 1254		<0.00040	<0.00040	RPD-NA	mg/L	N/A	50	09-AUG-18
Aroclor 1260		<0.00040	<0.00040	RPD-NA	mg/L	N/A	50	09-AUG-18
WG2841820-2 LCS								
Aroclor 1242			56.4	LCS-L	%		65-130	09-AUG-18
Aroclor 1248			62.1	LCS-L	%		65-130	09-AUG-18
Aroclor 1254			80.2		%		65-130	09-AUG-18
Aroclor 1260			104.2		%		65-130	09-AUG-18
WG2841820-1 MB								
Aroclor 1242			<0.00020		mg/L		0.0002	09-AUG-18
Aroclor 1248			<0.00020		mg/L		0.0002	09-AUG-18
Aroclor 1254			<0.00020		mg/L		0.0002	09-AUG-18
Aroclor 1260			<0.00020		mg/L		0.0002	09-AUG-18
Surrogate: 2-Fluorobiphenyl			47.4		%		40-160	09-AUG-18
WG2841820-4 MS		**WG2841820-3**						
Aroclor 1242			57.0		%		50-150	09-AUG-18
Aroclor 1254			77.2		%		50-150	09-AUG-18
Aroclor 1260			101.7		%		50-150	09-AUG-18
VOC-TCLP-WT	**Waste**							
Batch R4160059								
WG2835839-1 LCS								
1,1-Dichloroethylene			95.3		%		70-130	07-AUG-18
1,2-Dichlorobenzene			103.8		%		70-130	07-AUG-18
1,2-Dichloroethane			115.3		%		70-130	07-AUG-18
1,4-Dichlorobenzene			102.8		%		70-130	07-AUG-18
Benzene			105.1		%		70-130	07-AUG-18
Carbon tetrachloride			99.1		%		60-140	07-AUG-18
Chlorobenzene			104.5		%		70-130	07-AUG-18
Chloroform			106.2		%		70-130	07-AUG-18
Dichloromethane			109.1		%		70-130	07-AUG-18
Methyl Ethyl Ketone			110.6		%		50-150	07-AUG-18
Tetrachloroethylene			99.6		%		70-130	07-AUG-18
Trichloroethylene			105.3		%		70-130	07-AUG-18
Vinyl chloride			95.3		%		60-130	07-AUG-18
WG2835839-2 MB								

Quality Control Report

Workorder: L2140617 Report Date: 10-AUG-18

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-TCLP-WT	**Waste**							
Batch	**R4160059**							
WG2835839-2	**MB**							
1,1-Dichloroethylene			<0.025		mg/L		0.025	07-AUG-18
1,2-Dichlorobenzene			<0.025		mg/L		0.025	07-AUG-18
1,2-Dichloroethane			<0.025		mg/L		0.025	07-AUG-18
1,4-Dichlorobenzene			<0.025		mg/L		0.025	07-AUG-18
Benzene			<0.025		mg/L		0.025	07-AUG-18
Carbon tetrachloride			<0.025		mg/L		0.025	07-AUG-18
Chlorobenzene			<0.025		mg/L		0.025	07-AUG-18
Chloroform			<0.10		mg/L		0.1	07-AUG-18
Dichloromethane			<0.50		mg/L		0.5	07-AUG-18
Methyl Ethyl Ketone			<1.0		mg/L		1	07-AUG-18
Tetrachloroethylene			<0.025		mg/L		0.025	07-AUG-18
Trichloroethylene			<0.025		mg/L		0.025	07-AUG-18
Vinyl chloride			<0.050		mg/L		0.05	07-AUG-18
Surrogate: 1,4-Difluorobenzene			99.4		%		70-130	07-AUG-18
Surrogate: 4-Bromofluorobenzene			97.7		%		70-130	07-AUG-18
WG2835839-4	**MS**	**WG2835839-3**						
1,1-Dichloroethylene			89.0		%		50-140	08-AUG-18
1,2-Dichlorobenzene			104.8		%		50-140	08-AUG-18
1,2-Dichloroethane			115.7		%		50-140	08-AUG-18
1,4-Dichlorobenzene			104.9		%		50-140	08-AUG-18
Benzene			104.3		%		50-140	08-AUG-18
Carbon tetrachloride			96.0		%		50-140	08-AUG-18
Chlorobenzene			104.4		%		50-140	08-AUG-18
Chloroform			106.4		%		50-140	08-AUG-18
Dichloromethane			107.7		%		50-140	08-AUG-18
Methyl Ethyl Ketone			109.6		%		50-140	08-AUG-18
Tetrachloroethylene			97.1		%		50-140	08-AUG-18
Trichloroethylene			105.6		%		50-140	08-AUG-18
Vinyl chloride			85.5		%		50-140	08-AUG-18

Quality Control Report

Workorder: L2140617 Report Date: 10-AUG-18

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9
Contact: TANIA MCCARTHY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
LCS-L	Lab Control Sample recovery was below ALS DQO. Reference Material and/or Matrix Spike results were acceptable. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

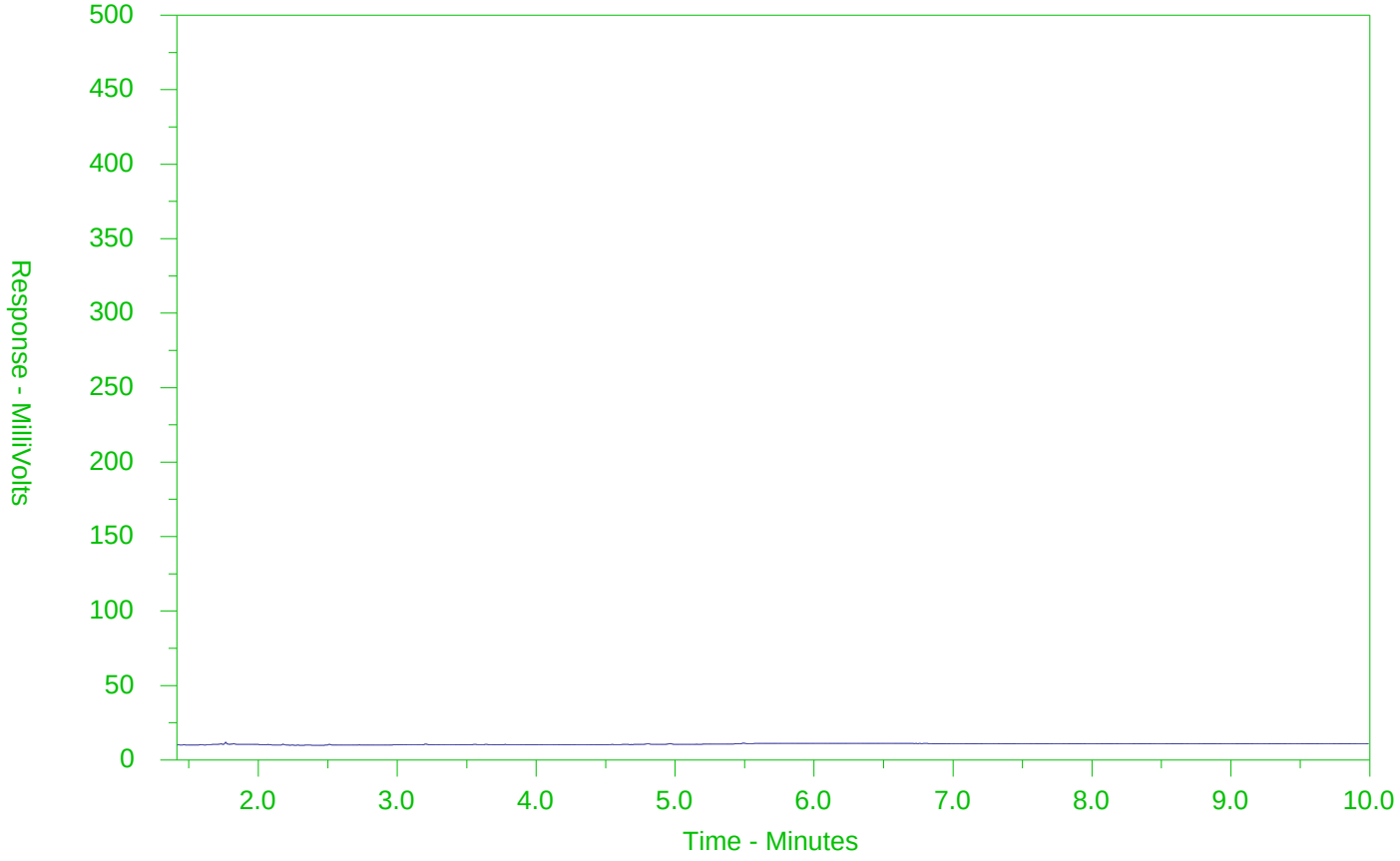
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2140617-1
Client Sample ID: TCLP



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2140617-COFC

COC Number: 17 - 624787

Page of

Report To	Contact and company name below will appear on the final report
Company:	CH2M JACOBS
Contact:	TANIA MCCARTHY
Phone:	519 579 3508
	Company address below will appear on the final report
Street:	72 VICTORIA ST. S. Suite 300
City/Province:	KITCHENER ON
Postal Code:	N2G 4Y9
Invoice To	Same as Report To ☒ YES ☐ NO
	Copy of Invoice with Report ☒ YES ☐ NO
Company:	
Contact:	

Report Format / L

Select Report Format: ☒ PDF ☒ EXCEL ☒ EDD (DIGITAL)
Quality Control (QC) Report with Report ☒ YES ☐ NO
☒ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: Tania.McCarthy@CH2M.com
Email 2: lucas.ribeiro@ch2m.com
Email 3:

Invoice Distribution

Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax:
Email 2:

Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
4 day [P4-20%]	☐	1 Business day [E-100%]	☐
3 day [P3-25%]	☐	Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)]	☐
2 day [P2-50%]	☐		

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: 699757
Job #:
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#:
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2140617
ALS Contact: Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Metals + Conventionals	PAHs	PHCs	VOCs	PCBs	Reactivity	Samples on Hold	Sample is hazardous (please provide further details)	Number of Containers
	TCLP	01-AUG-18	11:00	Soil	X	X	X	X	X	X			5

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO
Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

O. Reg 347
O. Reg 558

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☒ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
5.6				9.6			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Lucas Ribeiro	Date: 2018-AUG-01	Time:	Received by: BF	Date: Aug 1, 2018	Time: 16:25	Received by: AC	Date: Aug 1	Time: 16:30

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY JULY 2017 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**

CH2M HILL CANADA LIMITED
ATTN: TANIA MCCARTHY
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 03-AUG-18
Report Date: 14-AUG-18 12:51 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2141576
Project P.O. #: NOT SUBMITTED
Job Reference: 694757
C of C Numbers:
Legal Site Desc:

Mathy Mahadeva
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2141576-1 MW18-117S Sampled By: CLIENT on 02-AUG-18 @ 10:15 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					09-AUG-18	R4161541
Antimony (Sb)-Dissolved	1.03		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Arsenic (As)-Dissolved	1.14		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Barium (Ba)-Dissolved	39.5		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Boron (B)-Dissolved	52		10	ug/L	09-AUG-18	09-AUG-18	R4162571
Cadmium (Cd)-Dissolved	0.223		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Cobalt (Co)-Dissolved	0.26		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Copper (Cu)-Dissolved	1.69		0.20	ug/L	09-AUG-18	09-AUG-18	R4162571
Lead (Pb)-Dissolved	0.332		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Molybdenum (Mo)-Dissolved	1.74		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Nickel (Ni)-Dissolved	3.27		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Selenium (Se)-Dissolved	0.926		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Sodium (Na)-Dissolved	5180		500	ug/L	09-AUG-18	09-AUG-18	R4162571
Thallium (Tl)-Dissolved	0.077		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Uranium (U)-Dissolved	2.07		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Zinc (Zn)-Dissolved	338		1.0	ug/L	09-AUG-18	09-AUG-18	R4162571
L2141576-2 MW18-112D Sampled By: CLIENT on 02-AUG-18 @ 11:50 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					09-AUG-18	R4161541
Antimony (Sb)-Dissolved	0.67		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Arsenic (As)-Dissolved	32.7		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Barium (Ba)-Dissolved	109		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Boron (B)-Dissolved	53		10	ug/L	09-AUG-18	09-AUG-18	R4162571
Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Copper (Cu)-Dissolved	1.56		0.20	ug/L	09-AUG-18	09-AUG-18	R4162571
Lead (Pb)-Dissolved	0.239		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Molybdenum (Mo)-Dissolved	5.50		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Nickel (Ni)-Dissolved	1.39		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Selenium (Se)-Dissolved	0.169		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Uranium (U)-Dissolved	2.09		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2141576-2 MW18-112D Sampled By: CLIENT on 02-AUG-18 @ 11:50 Matrix: WATER							
Dissolved Metals							
Zinc (Zn)-Dissolved	5.8		1.0	ug/L	09-AUG-18	09-AUG-18	R4162571
L2141576-3 MW18-112S Sampled By: CLIENT on 02-AUG-18 @ 11:51 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					09-AUG-18	R4161541
Antimony (Sb)-Dissolved	0.51		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Arsenic (As)-Dissolved	42.5		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Barium (Ba)-Dissolved	60.5		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Boron (B)-Dissolved	43		10	ug/L	09-AUG-18	09-AUG-18	R4162571
Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Cobalt (Co)-Dissolved	0.26		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Copper (Cu)-Dissolved	0.42		0.20	ug/L	09-AUG-18	09-AUG-18	R4162571
Lead (Pb)-Dissolved	1.04		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Molybdenum (Mo)-Dissolved	2.18		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Nickel (Ni)-Dissolved	1.51		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Selenium (Se)-Dissolved	0.255		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Uranium (U)-Dissolved	2.85		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Vanadium (V)-Dissolved	1.32		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Zinc (Zn)-Dissolved	13.5		1.0	ug/L	09-AUG-18	09-AUG-18	R4162571
L2141576-4 MW18-114S Sampled By: CLIENT on 02-AUG-18 @ 13:45 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					09-AUG-18	R4161541
Antimony (Sb)-Dissolved	0.29		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Arsenic (As)-Dissolved	13.7		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Barium (Ba)-Dissolved	62.2		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Boron (B)-Dissolved	53		10	ug/L	09-AUG-18	09-AUG-18	R4162571
Cadmium (Cd)-Dissolved	0.291		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Cobalt (Co)-Dissolved	0.74		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Copper (Cu)-Dissolved	1.10		0.20	ug/L	09-AUG-18	09-AUG-18	R4162571
Lead (Pb)-Dissolved	0.127		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Molybdenum (Mo)-Dissolved	4.23		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Nickel (Ni)-Dissolved	2.01		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Selenium (Se)-Dissolved	0.323		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2141576-4 MW18-114S Sampled By: CLIENT on 02-AUG-18 @ 13:45 Matrix: WATER							
Dissolved Metals							
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Thallium (Tl)-Dissolved	0.042		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Uranium (U)-Dissolved	3.14		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Vanadium (V)-Dissolved	0.65		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Zinc (Zn)-Dissolved	163		1.0	ug/L	09-AUG-18	09-AUG-18	R4162571
L2141576-5 MW18-118S Sampled By: CLIENT on 02-AUG-18 @ 13:50 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					09-AUG-18	R4161541
Antimony (Sb)-Dissolved	0.30		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Arsenic (As)-Dissolved	18.0		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Barium (Ba)-Dissolved	41.0		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Boron (B)-Dissolved	67		10	ug/L	09-AUG-18	09-AUG-18	R4162571
Cadmium (Cd)-Dissolved	0.011		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Cobalt (Co)-Dissolved	0.76		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Copper (Cu)-Dissolved	0.55		0.20	ug/L	09-AUG-18	09-AUG-18	R4162571
Lead (Pb)-Dissolved	0.061		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Molybdenum (Mo)-Dissolved	2.07		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Nickel (Ni)-Dissolved	5.27		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Selenium (Se)-Dissolved	0.262		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Sodium (Na)-Dissolved	58200		500	ug/L	09-AUG-18	09-AUG-18	R4162571
Thallium (Tl)-Dissolved	0.019		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Uranium (U)-Dissolved	1.93		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Zinc (Zn)-Dissolved	154		1.0	ug/L	09-AUG-18	09-AUG-18	R4162571
Volatile Organic Compounds							
Acetone	<30		30	ug/L		09-AUG-18	R4161624
Benzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Bromodichloromethane	<2.0		2.0	ug/L		09-AUG-18	R4161624
Bromoform	<5.0		5.0	ug/L		09-AUG-18	R4161624
Bromomethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
Carbon tetrachloride	<0.20		0.20	ug/L		09-AUG-18	R4161624
Chlorobenzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Dibromochloromethane	<2.0		2.0	ug/L		09-AUG-18	R4161624
Chloroform	<1.0		1.0	ug/L		09-AUG-18	R4161624
1,2-Dibromoethane	<0.20		0.20	ug/L		09-AUG-18	R4161624
1,2-Dichlorobenzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,3-Dichlorobenzene	<0.50		0.50	ug/L		09-AUG-18	R4161624

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2141576-5 MW18-118S Sampled By: CLIENT on 02-AUG-18 @ 13:50 Matrix: WATER							
Volatile Organic Compounds							
1,4-Dichlorobenzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Dichlorodifluoromethane	<2.0		2.0	ug/L		09-AUG-18	R4161624
1,1-Dichloroethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,2-Dichloroethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,1-Dichloroethylene	<0.50		0.50	ug/L		09-AUG-18	R4161624
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		09-AUG-18	R4161624
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Methylene Chloride	<5.0		5.0	ug/L		09-AUG-18	R4161624
1,2-Dichloropropane	<0.50		0.50	ug/L		09-AUG-18	R4161624
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		09-AUG-18	R4161624
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		09-AUG-18	R4161624
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		09-AUG-18	
Ethylbenzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
n-Hexane	<0.50		0.50	ug/L		09-AUG-18	R4161624
Methyl Ethyl Ketone	<20		20	ug/L		09-AUG-18	R4161624
Methyl Isobutyl Ketone	<20		20	ug/L		09-AUG-18	R4161624
MTBE	<2.0		2.0	ug/L		09-AUG-18	R4161624
Styrene	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
Tetrachloroethylene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Toluene	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,1,1-Trichloroethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,1,2-Trichloroethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
Trichloroethylene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Trichlorofluoromethane	<5.0		5.0	ug/L		09-AUG-18	R4161624
Vinyl chloride	<0.50		0.50	ug/L		09-AUG-18	R4161624
o-Xylene	<0.30		0.30	ug/L		09-AUG-18	R4161624
m+p-Xylenes	<0.40		0.40	ug/L		09-AUG-18	R4161624
Xylenes (Total)	<0.50		0.50	ug/L		09-AUG-18	
Surrogate: 4-Bromofluorobenzene	97.8		70-130	%		09-AUG-18	R4161624
Surrogate: 1,4-Difluorobenzene	100.1		70-130	%		09-AUG-18	R4161624
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Acenaphthylene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Anthracene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Benzo(a)anthracene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Benzo(a)pyrene	<0.010		0.010	ug/L	08-AUG-18	13-AUG-18	R4167489
Benzo(b)fluoranthene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Benzo(k)fluoranthene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2141576-5 MW18-118S Sampled By: CLIENT on 02-AUG-18 @ 13:50 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Chrysene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Fluoranthene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Fluorene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		13-AUG-18	
1-Methylnaphthalene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
2-Methylnaphthalene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Naphthalene	<0.050		0.050	ug/L	08-AUG-18	13-AUG-18	R4167489
Phenanthrene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Pyrene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Surrogate: d10-Acenaphthene	95.7		60-140	%	08-AUG-18	13-AUG-18	R4167489
Surrogate: d12-Chrysene	106.2		60-140	%	08-AUG-18	13-AUG-18	R4167489
Surrogate: d8-Naphthalene	97.6		60-140	%	08-AUG-18	13-AUG-18	R4167489
Surrogate: d10-Phenanthrene	100.9		60-140	%	08-AUG-18	13-AUG-18	R4167489
L2141576-6 MW18-115S Sampled By: CLIENT on 02-AUG-18 @ 15:10 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					09-AUG-18	R4161541
Antimony (Sb)-Dissolved	0.28		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Arsenic (As)-Dissolved	6.74		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Barium (Ba)-Dissolved	38.8		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Boron (B)-Dissolved	62		10	ug/L	09-AUG-18	09-AUG-18	R4162571
Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Cobalt (Co)-Dissolved	1.10		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Copper (Cu)-Dissolved	0.48		0.20	ug/L	09-AUG-18	09-AUG-18	R4162571
Lead (Pb)-Dissolved	0.552		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Molybdenum (Mo)-Dissolved	2.03		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Nickel (Ni)-Dissolved	7.18		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Selenium (Se)-Dissolved	0.107		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Thallium (Tl)-Dissolved	0.016		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Uranium (U)-Dissolved	2.64		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Zinc (Zn)-Dissolved	505		1.0	ug/L	09-AUG-18	09-AUG-18	R4162571
L2141576-7 MW18-124S Sampled By: CLIENT on 02-AUG-18 @ 15:15 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2141576-7 MW18-124S Sampled By: CLIENT on 02-AUG-18 @ 15:15 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Acenaphthylene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Anthracene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Benzo(a)anthracene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Benzo(a)pyrene	<0.010		0.010	ug/L	08-AUG-18	13-AUG-18	R4167489
Benzo(b)fluoranthene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Benzo(k)fluoranthene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Chrysene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Fluoranthene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Fluorene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		13-AUG-18	
1-Methylnaphthalene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
2-Methylnaphthalene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Naphthalene	<0.050		0.050	ug/L	08-AUG-18	13-AUG-18	R4167489
Phenanthrene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Pyrene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Surrogate: d10-Acenaphthene	93.9		60-140	%	08-AUG-18	13-AUG-18	R4167489
Surrogate: d12-Chrysene	104.3		60-140	%	08-AUG-18	13-AUG-18	R4167489
Surrogate: d8-Naphthalene	96.0		60-140	%	08-AUG-18	13-AUG-18	R4167489
Surrogate: d10-Phenanthrene	96.5		60-140	%	08-AUG-18	13-AUG-18	R4167489
L2141576-8 MW18-126D Sampled By: CLIENT on 02-AUG-18 @ 16:50 Matrix: WATER							
Volatile Organic Compounds							
Acetone	<30		30	ug/L		09-AUG-18	R4161624
Benzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Bromodichloromethane	<2.0		2.0	ug/L		09-AUG-18	R4161624
Bromoform	<5.0		5.0	ug/L		09-AUG-18	R4161624
Bromomethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
Carbon tetrachloride	<0.20		0.20	ug/L		09-AUG-18	R4161624
Chlorobenzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Dibromochloromethane	<2.0		2.0	ug/L		09-AUG-18	R4161624
Chloroform	<1.0		1.0	ug/L		09-AUG-18	R4161624
1,2-Dibromoethane	<0.20		0.20	ug/L		09-AUG-18	R4161624
1,2-Dichlorobenzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,3-Dichlorobenzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,4-Dichlorobenzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Dichlorodifluoromethane	<2.0		2.0	ug/L		09-AUG-18	R4161624
1,1-Dichloroethane	<0.50		0.50	ug/L		09-AUG-18	R4161624

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2141576-8 MW18-126D Sampled By: CLIENT on 02-AUG-18 @ 16:50 Matrix: WATER							
Volatile Organic Compounds							
1,2-Dichloroethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,1-Dichloroethylene	<0.50		0.50	ug/L		09-AUG-18	R4161624
cis-1,2-Dichloroethylene	1.34		0.50	ug/L		09-AUG-18	R4161624
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Methylene Chloride	<5.0		5.0	ug/L		09-AUG-18	R4161624
1,2-Dichloropropane	<0.50		0.50	ug/L		09-AUG-18	R4161624
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		09-AUG-18	R4161624
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		09-AUG-18	R4161624
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		10-AUG-18	
Ethylbenzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
n-Hexane	<0.50		0.50	ug/L		09-AUG-18	R4161624
Methyl Ethyl Ketone	<20		20	ug/L		09-AUG-18	R4161624
Methyl Isobutyl Ketone	<20		20	ug/L		09-AUG-18	R4161624
MTBE	<2.0		2.0	ug/L		09-AUG-18	R4161624
Styrene	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
Tetrachloroethylene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Toluene	0.79		0.50	ug/L		09-AUG-18	R4161624
1,1,1-Trichloroethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,1,2-Trichloroethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
Trichloroethylene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Trichlorofluoromethane	<5.0		5.0	ug/L		09-AUG-18	R4161624
Vinyl chloride	1.03		0.50	ug/L		10-AUG-18	R4162513
o-Xylene	<0.30		0.30	ug/L		09-AUG-18	R4161624
m+p-Xylenes	<0.40		0.40	ug/L		09-AUG-18	R4161624
Xylenes (Total)	<0.50		0.50	ug/L		10-AUG-18	
Surrogate: 4-Bromofluorobenzene	97.7		70-130	%		09-AUG-18	R4161624
Surrogate: 1,4-Difluorobenzene	100.3		70-130	%		09-AUG-18	R4161624
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		09-AUG-18	R4161624
F1-BTEX	<25		25	ug/L		10-AUG-18	
F2 (C10-C16)	<100		100	ug/L	08-AUG-18	08-AUG-18	R4161842
F3 (C16-C34)	<250		250	ug/L	08-AUG-18	08-AUG-18	R4161842
F4 (C34-C50)	<250		250	ug/L	08-AUG-18	08-AUG-18	R4161842
Total Hydrocarbons (C6-C50)	<370		370	ug/L		10-AUG-18	
Chrom. to baseline at nC50	YES				08-AUG-18	08-AUG-18	R4161842
Surrogate: 2-Bromobenzotrifluoride	82.5		60-140	%	08-AUG-18	08-AUG-18	R4161842
Surrogate: 3,4-Dichlorotoluene	87.8		60-140	%		09-AUG-18	R4161624
L2141576-9 MW18-125S Sampled By: CLIENT on 02-AUG-18 @ 17:15 Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2141576-9 MW18-125S Sampled By: CLIENT on 02-AUG-18 @ 17:15 Matrix: WATER							
Volatile Organic Compounds							
Acetone	<30		30	ug/L		09-AUG-18	R4161624
Benzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Bromodichloromethane	<2.0		2.0	ug/L		09-AUG-18	R4161624
Bromoform	<5.0		5.0	ug/L		09-AUG-18	R4161624
Bromomethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
Carbon tetrachloride	<0.20		0.20	ug/L		09-AUG-18	R4161624
Chlorobenzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Dibromochloromethane	<2.0		2.0	ug/L		09-AUG-18	R4161624
Chloroform	<1.0		1.0	ug/L		09-AUG-18	R4161624
1,2-Dibromoethane	<0.20		0.20	ug/L		09-AUG-18	R4161624
1,2-Dichlorobenzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,3-Dichlorobenzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,4-Dichlorobenzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Dichlorodifluoromethane	<2.0		2.0	ug/L		09-AUG-18	R4161624
1,1-Dichloroethane	0.69		0.50	ug/L		09-AUG-18	R4161624
1,2-Dichloroethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,1-Dichloroethylene	<0.50		0.50	ug/L		09-AUG-18	R4161624
cis-1,2-Dichloroethylene	0.75		0.50	ug/L		09-AUG-18	R4161624
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Methylene Chloride	<5.0		5.0	ug/L		09-AUG-18	R4161624
1,2-Dichloropropane	<0.50		0.50	ug/L		09-AUG-18	R4161624
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		09-AUG-18	R4161624
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		09-AUG-18	R4161624
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		10-AUG-18	
Ethylbenzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
n-Hexane	<0.55	DLS	0.55	ug/L		09-AUG-18	R4161624
Methyl Ethyl Ketone	<20		20	ug/L		09-AUG-18	R4161624
Methyl Isobutyl Ketone	<20		20	ug/L		09-AUG-18	R4161624
MTBE	<2.0		2.0	ug/L		09-AUG-18	R4161624
Styrene	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
Tetrachloroethylene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Toluene	0.66		0.50	ug/L		09-AUG-18	R4161624
1,1,1-Trichloroethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,1,2-Trichloroethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
Trichloroethylene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Trichlorofluoromethane	<5.0		5.0	ug/L		09-AUG-18	R4161624
Vinyl chloride	0.71		0.50	ug/L		10-AUG-18	R4162513
o-Xylene	<0.30		0.30	ug/L		09-AUG-18	R4161624
m+p-Xylenes	<0.40		0.40	ug/L		09-AUG-18	R4161624

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2141576-9 MW18-125S Sampled By: CLIENT on 02-AUG-18 @ 17:15 Matrix: WATER							
Volatile Organic Compounds							
Xylenes (Total)	<0.50		0.50	ug/L		10-AUG-18	
Surrogate: 4-Bromofluorobenzene	98.3		70-130	%		09-AUG-18	R4161624
Surrogate: 1,4-Difluorobenzene	100.1		70-130	%		09-AUG-18	R4161624
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		09-AUG-18	R4161624
F1-BTEX	<25		25	ug/L		13-AUG-18	
F2 (C10-C16)	<100		100	ug/L	08-AUG-18	08-AUG-18	R4161842
F2-Naphth	<100		100	ug/L		13-AUG-18	
F3 (C16-C34)	<250		250	ug/L	08-AUG-18	08-AUG-18	R4161842
F3-PAH	<250		250	ug/L		13-AUG-18	
F4 (C34-C50)	<250		250	ug/L	08-AUG-18	08-AUG-18	R4161842
Total Hydrocarbons (C6-C50)	<370		370	ug/L		13-AUG-18	
Chrom. to baseline at nC50	YES				08-AUG-18	08-AUG-18	R4161842
Surrogate: 2-Bromobenzotrifluoride	83.2		60-140	%	08-AUG-18	08-AUG-18	R4161842
Surrogate: 3,4-Dichlorotoluene	85.3		60-140	%		09-AUG-18	R4161624
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	0.041	R	0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Acenaphthylene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Anthracene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Benzo(a)anthracene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Benzo(a)pyrene	<0.010		0.010	ug/L	08-AUG-18	13-AUG-18	R4167489
Benzo(b)fluoranthene	<2.00	DLQ	2.0	ug/L	08-AUG-18	13-AUG-18	R4167489
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Benzo(k)fluoranthene	<2.00	DLQ	2.0	ug/L	08-AUG-18	13-AUG-18	R4167489
Chrysene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Fluoranthene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Fluorene	0.029		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		13-AUG-18	
1-Methylnaphthalene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
2-Methylnaphthalene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Naphthalene	<0.050		0.050	ug/L	08-AUG-18	13-AUG-18	R4167489
Phenanthrene	0.021		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Pyrene	<0.020		0.020	ug/L	08-AUG-18	13-AUG-18	R4167489
Surrogate: d10-Acenaphthene	96.0		60-140	%	08-AUG-18	13-AUG-18	R4167489
Surrogate: d12-Chrysene	113.4		60-140	%	08-AUG-18	13-AUG-18	R4167489
Surrogate: d8-Naphthalene	98.3		60-140	%	08-AUG-18	13-AUG-18	R4167489
Surrogate: d10-Phenanthrene	103.7		60-140	%	08-AUG-18	13-AUG-18	R4167489
Polychlorinated Biphenyls							
Aroclor 1242	0.037	PRAR	0.020	ug/L	14-AUG-18	14-AUG-18	R4166831
Aroclor 1248	<0.020		0.020	ug/L	14-AUG-18	14-AUG-18	R4166831

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2141576-9 MW18-125S Sampled By: CLIENT on 02-AUG-18 @ 17:15 Matrix: WATER							
Polychlorinated Biphenyls							
Aroclor 1254	<0.020		0.020	ug/L	14-AUG-18	14-AUG-18	R4166831
Aroclor 1260	<0.020		0.020	ug/L	14-AUG-18	14-AUG-18	R4166831
Total PCBs	<0.040		0.040	ug/L	14-AUG-18	14-AUG-18	R4166831
Surrogate: 2-fluorobiphenyl	76.6		50-150	%	14-AUG-18	14-AUG-18	R4166831
L2141576-10 MW18-121S Sampled By: CLIENT on 03-AUG-18 @ 09:30 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					09-AUG-18	R4161541
Antimony (Sb)-Dissolved	0.54		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Arsenic (As)-Dissolved	3.24		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Barium (Ba)-Dissolved	116		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Boron (B)-Dissolved	98		10	ug/L	09-AUG-18	09-AUG-18	R4162571
Cadmium (Cd)-Dissolved	0.139		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Cobalt (Co)-Dissolved	0.41		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Copper (Cu)-Dissolved	1.01		0.20	ug/L	09-AUG-18	09-AUG-18	R4162571
Lead (Pb)-Dissolved	0.156		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Molybdenum (Mo)-Dissolved	1.50		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Nickel (Ni)-Dissolved	2.83		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Selenium (Se)-Dissolved	0.656		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Sodium (Na)-Dissolved	5800		500	ug/L	09-AUG-18	09-AUG-18	R4162571
Thallium (Tl)-Dissolved	0.294		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Uranium (U)-Dissolved	1.87		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Zinc (Zn)-Dissolved	217		1.0	ug/L	09-AUG-18	09-AUG-18	R4162571
Volatile Organic Compounds							
Acetone	<30		30	ug/L		09-AUG-18	R4161624
Benzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Bromodichloromethane	<2.0		2.0	ug/L		09-AUG-18	R4161624
Bromoform	<5.0		5.0	ug/L		09-AUG-18	R4161624
Bromomethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
Carbon tetrachloride	<0.20		0.20	ug/L		09-AUG-18	R4161624
Chlorobenzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Dibromochloromethane	<2.0		2.0	ug/L		09-AUG-18	R4161624
Chloroform	<1.0		1.0	ug/L		09-AUG-18	R4161624
1,2-Dibromoethane	<0.20		0.20	ug/L		09-AUG-18	R4161624
1,2-Dichlorobenzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,3-Dichlorobenzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,4-Dichlorobenzene	<0.50		0.50	ug/L		09-AUG-18	R4161624

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2141576-10 MW18-121S Sampled By: CLIENT on 03-AUG-18 @ 09:30 Matrix: WATER							
Volatile Organic Compounds							
Dichlorodifluoromethane	<2.0		2.0	ug/L		09-AUG-18	R4161624
1,1-Dichloroethane	3.75		0.50	ug/L		09-AUG-18	R4161624
1,2-Dichloroethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,1-Dichloroethylene	<0.50		0.50	ug/L		09-AUG-18	R4161624
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		09-AUG-18	R4161624
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Methylene Chloride	<5.0		5.0	ug/L		09-AUG-18	R4161624
1,2-Dichloropropane	<0.50		0.50	ug/L		09-AUG-18	R4161624
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		09-AUG-18	R4161624
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		09-AUG-18	R4161624
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		09-AUG-18	
Ethylbenzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
n-Hexane	<0.50		0.50	ug/L		09-AUG-18	R4161624
Methyl Ethyl Ketone	<20		20	ug/L		09-AUG-18	R4161624
Methyl Isobutyl Ketone	<20		20	ug/L		09-AUG-18	R4161624
MTBE	<2.0		2.0	ug/L		09-AUG-18	R4161624
Styrene	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
Tetrachloroethylene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Toluene	0.62		0.50	ug/L		09-AUG-18	R4161624
1,1,1-Trichloroethane	3.64		0.50	ug/L		09-AUG-18	R4161624
1,1,2-Trichloroethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
Trichloroethylene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Trichlorofluoromethane	<5.0		5.0	ug/L		09-AUG-18	R4161624
Vinyl chloride	<0.50		0.50	ug/L		09-AUG-18	R4161624
o-Xylene	<0.30		0.30	ug/L		09-AUG-18	R4161624
m+p-Xylenes	0.45		0.40	ug/L		09-AUG-18	R4161624
Xylenes (Total)	<0.50		0.50	ug/L		09-AUG-18	
Surrogate: 4-Bromofluorobenzene	97.9		70-130	%		09-AUG-18	R4161624
Surrogate: 1,4-Difluorobenzene	100.2		70-130	%		09-AUG-18	R4161624
L2141576-11 MW18-122D Sampled By: CLIENT on 03-AUG-18 @ 10:00 Matrix: WATER							
Volatile Organic Compounds							
Acetone	<30		30	ug/L		09-AUG-18	R4161624
Benzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Bromodichloromethane	<2.0		2.0	ug/L		09-AUG-18	R4161624
Bromoform	<5.0		5.0	ug/L		09-AUG-18	R4161624
Bromomethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
Carbon tetrachloride	<0.20		0.20	ug/L		09-AUG-18	R4161624
Chlorobenzene	<0.50		0.50	ug/L		09-AUG-18	R4161624

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2141576-11 MW18-122D Sampled By: CLIENT on 03-AUG-18 @ 10:00 Matrix: WATER							
Volatile Organic Compounds							
Dibromochloromethane	<2.0		2.0	ug/L		09-AUG-18	R4161624
Chloroform	<1.0		1.0	ug/L		09-AUG-18	R4161624
1,2-Dibromoethane	<0.20		0.20	ug/L		09-AUG-18	R4161624
1,2-Dichlorobenzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,3-Dichlorobenzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,4-Dichlorobenzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Dichlorodifluoromethane	<2.0		2.0	ug/L		09-AUG-18	R4161624
1,1-Dichloroethane	6.43		0.50	ug/L		09-AUG-18	R4161624
1,2-Dichloroethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,1-Dichloroethylene	<0.50		0.50	ug/L		09-AUG-18	R4161624
cis-1,2-Dichloroethylene	1.72		0.50	ug/L		09-AUG-18	R4161624
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Methylene Chloride	<5.0		5.0	ug/L		09-AUG-18	R4161624
1,2-Dichloropropane	<0.50		0.50	ug/L		09-AUG-18	R4161624
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		09-AUG-18	R4161624
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		09-AUG-18	R4161624
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		09-AUG-18	
Ethylbenzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
n-Hexane	<0.50		0.50	ug/L		09-AUG-18	R4161624
Methyl Ethyl Ketone	<20		20	ug/L		09-AUG-18	R4161624
Methyl Isobutyl Ketone	<20		20	ug/L		09-AUG-18	R4161624
MTBE	<2.0		2.0	ug/L		09-AUG-18	R4161624
Styrene	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
Tetrachloroethylene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Toluene	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,1,1-Trichloroethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,1,2-Trichloroethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
Trichloroethylene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Trichlorofluoromethane	<5.0		5.0	ug/L		09-AUG-18	R4161624
Vinyl chloride	<0.50		0.50	ug/L		09-AUG-18	R4161624
o-Xylene	<0.30		0.30	ug/L		09-AUG-18	R4161624
m+p-Xylenes	<0.40		0.40	ug/L		09-AUG-18	R4161624
Xylenes (Total)	<0.50		0.50	ug/L		09-AUG-18	
Surrogate: 4-Bromofluorobenzene	96.8		70-130	%		09-AUG-18	R4161624
Surrogate: 1,4-Difluorobenzene	100.1		70-130	%		09-AUG-18	R4161624
L2141576-12 MW18-127S Sampled By: CLIENT on 03-AUG-18 @ 11:05 Matrix: WATER							
Volatile Organic Compounds							
Acetone	<30		30	ug/L		09-AUG-18	R4161624

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2141576-12 MW18-127S Sampled By: CLIENT on 03-AUG-18 @ 11:05 Matrix: WATER							
Volatile Organic Compounds							
Benzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Bromodichloromethane	<2.0		2.0	ug/L		09-AUG-18	R4161624
Bromoform	<5.0		5.0	ug/L		09-AUG-18	R4161624
Bromomethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
Carbon tetrachloride	<0.20		0.20	ug/L		09-AUG-18	R4161624
Chlorobenzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Dibromochloromethane	<2.0		2.0	ug/L		09-AUG-18	R4161624
Chloroform	<1.0		1.0	ug/L		09-AUG-18	R4161624
1,2-Dibromoethane	<0.20		0.20	ug/L		09-AUG-18	R4161624
1,2-Dichlorobenzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,3-Dichlorobenzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,4-Dichlorobenzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Dichlorodifluoromethane	<2.0		2.0	ug/L		09-AUG-18	R4161624
1,1-Dichloroethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,2-Dichloroethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,1-Dichloroethylene	<0.50		0.50	ug/L		09-AUG-18	R4161624
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		09-AUG-18	R4161624
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Methylene Chloride	<5.0		5.0	ug/L		09-AUG-18	R4161624
1,2-Dichloropropane	<0.50		0.50	ug/L		09-AUG-18	R4161624
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		09-AUG-18	R4161624
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		09-AUG-18	R4161624
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		09-AUG-18	
Ethylbenzene	<0.50		0.50	ug/L		09-AUG-18	R4161624
n-Hexane	<0.50		0.50	ug/L		09-AUG-18	R4161624
Methyl Ethyl Ketone	<20		20	ug/L		09-AUG-18	R4161624
Methyl Isobutyl Ketone	<20		20	ug/L		09-AUG-18	R4161624
MTBE	<2.0		2.0	ug/L		09-AUG-18	R4161624
Styrene	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
Tetrachloroethylene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Toluene	0.57		0.50	ug/L		09-AUG-18	R4161624
1,1,1-Trichloroethane	0.62		0.50	ug/L		09-AUG-18	R4161624
1,1,2-Trichloroethane	<0.50		0.50	ug/L		09-AUG-18	R4161624
Trichloroethylene	<0.50		0.50	ug/L		09-AUG-18	R4161624
Trichlorofluoromethane	<5.0		5.0	ug/L		09-AUG-18	R4161624
Vinyl chloride	<0.50		0.50	ug/L		09-AUG-18	R4161624
o-Xylene	<0.30		0.30	ug/L		09-AUG-18	R4161624
m+p-Xylenes	0.42		0.40	ug/L		09-AUG-18	R4161624
Xylenes (Total)	<0.50		0.50	ug/L		09-AUG-18	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2141576-12 MW18-127S Sampled By: CLIENT on 03-AUG-18 @ 11:05 Matrix: WATER							
Volatile Organic Compounds							
Surrogate: 4-Bromofluorobenzene	98.1		70-130	%		09-AUG-18	R4161624
Surrogate: 1,4-Difluorobenzene	100.2		70-130	%		09-AUG-18	R4161624
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		09-AUG-18	R4161624
F1-BTEX	<25		25	ug/L		09-AUG-18	
F2 (C10-C16)	<100		100	ug/L	08-AUG-18	08-AUG-18	R4161842
F3 (C16-C34)	<250		250	ug/L	08-AUG-18	08-AUG-18	R4161842
F4 (C34-C50)	<250		250	ug/L	08-AUG-18	08-AUG-18	R4161842
Total Hydrocarbons (C6-C50)	<370		370	ug/L		09-AUG-18	
Chrom. to baseline at nC50	YES				08-AUG-18	08-AUG-18	R4161842
Surrogate: 2-Bromobenzotrifluoride	79.5		60-140	%	08-AUG-18	08-AUG-18	R4161842
Surrogate: 3,4-Dichlorotoluene	88.2		60-140	%		09-AUG-18	R4161624
L2141576-13 MW18-119S Sampled By: CLIENT on 03-AUG-18 @ 11:45 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					09-AUG-18	R4161541
Antimony (Sb)-Dissolved	1.73		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Arsenic (As)-Dissolved	1.05		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Barium (Ba)-Dissolved	50.5		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Boron (B)-Dissolved	90		10	ug/L	09-AUG-18	09-AUG-18	R4162571
Cadmium (Cd)-Dissolved	0.185		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Cobalt (Co)-Dissolved	0.12		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Copper (Cu)-Dissolved	1.09		0.20	ug/L	09-AUG-18	09-AUG-18	R4162571
Lead (Pb)-Dissolved	0.075		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Molybdenum (Mo)-Dissolved	2.80		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Nickel (Ni)-Dissolved	1.91		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Selenium (Se)-Dissolved	0.412		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Sodium (Na)-Dissolved	7730		500	ug/L	09-AUG-18	09-AUG-18	R4162571
Thallium (Tl)-Dissolved	0.159		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Uranium (U)-Dissolved	2.83		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Zinc (Zn)-Dissolved	214		1.0	ug/L	09-AUG-18	09-AUG-18	R4162571
Volatile Organic Compounds							
Acetone	<30		30	ug/L		08-AUG-18	R4160842
Benzene	<0.50		0.50	ug/L		08-AUG-18	R4160842
Bromodichloromethane	<2.0		2.0	ug/L		08-AUG-18	R4160842
Bromoform	<5.0		5.0	ug/L		08-AUG-18	R4160842
Bromomethane	<0.50		0.50	ug/L		08-AUG-18	R4160842

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2141576-13 MW18-119S Sampled By: CLIENT on 03-AUG-18 @ 11:45 Matrix: WATER							
Volatile Organic Compounds							
Carbon tetrachloride	<0.20		0.20	ug/L		08-AUG-18	R4160842
Chlorobenzene	<0.50		0.50	ug/L		08-AUG-18	R4160842
Dibromochloromethane	<2.0		2.0	ug/L		08-AUG-18	R4160842
Chloroform	1.1		1.0	ug/L		08-AUG-18	R4160842
1,2-Dibromoethane	<0.20		0.20	ug/L		08-AUG-18	R4160842
1,2-Dichlorobenzene	<0.50		0.50	ug/L		08-AUG-18	R4160842
1,3-Dichlorobenzene	<0.50		0.50	ug/L		08-AUG-18	R4160842
1,4-Dichlorobenzene	<0.50		0.50	ug/L		08-AUG-18	R4160842
Dichlorodifluoromethane	<2.0		2.0	ug/L		08-AUG-18	R4160842
1,1-Dichloroethane	16.1		0.50	ug/L		08-AUG-18	R4160842
1,2-Dichloroethane	<0.50		0.50	ug/L		08-AUG-18	R4160842
1,1-Dichloroethylene	0.77		0.50	ug/L		08-AUG-18	R4160842
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		08-AUG-18	R4160842
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		08-AUG-18	R4160842
Methylene Chloride	<5.0		5.0	ug/L		08-AUG-18	R4160842
1,2-Dichloropropane	<0.50		0.50	ug/L		08-AUG-18	R4160842
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		08-AUG-18	R4160842
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		08-AUG-18	R4160842
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		10-AUG-18	
Ethylbenzene	<0.50		0.50	ug/L		08-AUG-18	R4160842
n-Hexane	<0.50	VTHS	0.50	ug/L		10-AUG-18	R4162501
Methyl Ethyl Ketone	<20		20	ug/L		08-AUG-18	R4160842
Methyl Isobutyl Ketone	<20		20	ug/L		08-AUG-18	R4160842
MTBE	<2.0		2.0	ug/L		08-AUG-18	R4160842
Styrene	<0.50		0.50	ug/L		08-AUG-18	R4160842
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		08-AUG-18	R4160842
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		08-AUG-18	R4160842
Tetrachloroethylene	<0.50		0.50	ug/L		08-AUG-18	R4160842
Toluene	<0.50		0.50	ug/L		08-AUG-18	R4160842
1,1,1-Trichloroethane	19.2		0.50	ug/L		08-AUG-18	R4160842
1,1,2-Trichloroethane	<0.50		0.50	ug/L		08-AUG-18	R4160842
Trichloroethylene	<0.50		0.50	ug/L		08-AUG-18	R4160842
Trichlorofluoromethane	<5.0		5.0	ug/L		08-AUG-18	R4160842
Vinyl chloride	<0.50		0.50	ug/L		08-AUG-18	R4160842
o-Xylene	<0.30		0.30	ug/L		08-AUG-18	R4160842
m+p-Xylenes	<0.40		0.40	ug/L		08-AUG-18	R4160842
Xylenes (Total)	<0.50		0.50	ug/L		10-AUG-18	
Surrogate: 4-Bromofluorobenzene	95.0		70-130	%		08-AUG-18	R4160842
Surrogate: 1,4-Difluorobenzene	101.4		70-130	%		08-AUG-18	R4160842
L2141576-14 MW18-123S Sampled By: CLIENT on 03-AUG-18 @ 12:40 Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2141576-14 MW18-123S Sampled By: CLIENT on 03-AUG-18 @ 12:40 Matrix: WATER							
Volatile Organic Compounds							
Acetone	<30		30	ug/L		08-AUG-18	R4160842
Benzene	<0.50		0.50	ug/L		08-AUG-18	R4160842
Bromodichloromethane	<2.0		2.0	ug/L		08-AUG-18	R4160842
Bromoform	<5.0		5.0	ug/L		08-AUG-18	R4160842
Bromomethane	<0.50		0.50	ug/L		08-AUG-18	R4160842
Carbon tetrachloride	<0.20		0.20	ug/L		08-AUG-18	R4160842
Chlorobenzene	<0.50		0.50	ug/L		08-AUG-18	R4160842
Dibromochloromethane	<2.0		2.0	ug/L		08-AUG-18	R4160842
Chloroform	<1.0		1.0	ug/L		08-AUG-18	R4160842
1,2-Dibromoethane	<0.20		0.20	ug/L		08-AUG-18	R4160842
1,2-Dichlorobenzene	<0.50		0.50	ug/L		08-AUG-18	R4160842
1,3-Dichlorobenzene	<0.50		0.50	ug/L		08-AUG-18	R4160842
1,4-Dichlorobenzene	<0.50		0.50	ug/L		08-AUG-18	R4160842
Dichlorodifluoromethane	<2.0		2.0	ug/L		08-AUG-18	R4160842
1,1-Dichloroethane	<0.50		0.50	ug/L		08-AUG-18	R4160842
1,2-Dichloroethane	<0.50		0.50	ug/L		08-AUG-18	R4160842
1,1-Dichloroethylene	<0.50		0.50	ug/L		08-AUG-18	R4160842
cis-1,2-Dichloroethylene	3.43		0.50	ug/L		08-AUG-18	R4160842
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		08-AUG-18	R4160842
Methylene Chloride	<5.0		5.0	ug/L		08-AUG-18	R4160842
1,2-Dichloropropane	<0.50		0.50	ug/L		08-AUG-18	R4160842
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		08-AUG-18	R4160842
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		08-AUG-18	R4160842
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		10-AUG-18	
Ethylbenzene	<0.50		0.50	ug/L		08-AUG-18	R4160842
n-Hexane	<0.50	VTHS	0.50	ug/L		10-AUG-18	R4162501
Methyl Ethyl Ketone	<20		20	ug/L		08-AUG-18	R4160842
Methyl Isobutyl Ketone	<20		20	ug/L		08-AUG-18	R4160842
MTBE	<2.0		2.0	ug/L		08-AUG-18	R4160842
Styrene	<0.50		0.50	ug/L		08-AUG-18	R4160842
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		08-AUG-18	R4160842
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		08-AUG-18	R4160842
Tetrachloroethylene	<0.50		0.50	ug/L		08-AUG-18	R4160842
Toluene	<0.50		0.50	ug/L		08-AUG-18	R4160842
1,1,1-Trichloroethane	<0.50		0.50	ug/L		08-AUG-18	R4160842
1,1,2-Trichloroethane	<0.50		0.50	ug/L		08-AUG-18	R4160842
Trichloroethylene	2.64		0.50	ug/L		08-AUG-18	R4160842
Trichlorofluoromethane	<5.0		5.0	ug/L		08-AUG-18	R4160842
Vinyl chloride	<0.50		0.50	ug/L		08-AUG-18	R4160842
o-Xylene	<0.30		0.30	ug/L		08-AUG-18	R4160842
m+p-Xylenes	<0.40		0.40	ug/L		08-AUG-18	R4160842

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2141576-14 MW18-123S Sampled By: CLIENT on 03-AUG-18 @ 12:40 Matrix: WATER							
Volatile Organic Compounds							
Xylenes (Total)	<0.50		0.50	ug/L		10-AUG-18	
Surrogate: 4-Bromofluorobenzene	98.0		70-130	%		08-AUG-18	R4160842
Surrogate: 1,4-Difluorobenzene	101.6		70-130	%		08-AUG-18	R4160842
L2141576-15 MW18-116D Sampled By: CLIENT on 03-AUG-18 @ 13:55 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					09-AUG-18	R4161541
Antimony (Sb)-Dissolved	0.57		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Arsenic (As)-Dissolved	1.19		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Barium (Ba)-Dissolved	50.3		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Boron (B)-Dissolved	54		10	ug/L	09-AUG-18	09-AUG-18	R4162571
Cadmium (Cd)-Dissolved	0.360		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Cobalt (Co)-Dissolved	0.63		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Copper (Cu)-Dissolved	2.07		0.20	ug/L	09-AUG-18	09-AUG-18	R4162571
Lead (Pb)-Dissolved	2.00		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Molybdenum (Mo)-Dissolved	4.52		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Nickel (Ni)-Dissolved	5.67		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Selenium (Se)-Dissolved	0.778		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Sodium (Na)-Dissolved	138000	DLHC	500	ug/L	09-AUG-18	09-AUG-18	R4162571
Thallium (Tl)-Dissolved	0.043		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Uranium (U)-Dissolved	7.03		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Zinc (Zn)-Dissolved	734		1.0	ug/L	09-AUG-18	09-AUG-18	R4162571
Volatile Organic Compounds							
Acetone	<30		30	ug/L		08-AUG-18	R4160842
Benzene	<0.50		0.50	ug/L		08-AUG-18	R4160842
Bromodichloromethane	<2.0		2.0	ug/L		08-AUG-18	R4160842
Bromoform	<5.0		5.0	ug/L		08-AUG-18	R4160842
Bromomethane	<0.50		0.50	ug/L		08-AUG-18	R4160842
Carbon tetrachloride	<0.20		0.20	ug/L		08-AUG-18	R4160842
Chlorobenzene	<0.50		0.50	ug/L		08-AUG-18	R4160842
Dibromochloromethane	<2.0		2.0	ug/L		08-AUG-18	R4160842
Chloroform	<1.0		1.0	ug/L		08-AUG-18	R4160842
1,2-Dibromoethane	<0.20		0.20	ug/L		08-AUG-18	R4160842
1,2-Dichlorobenzene	<0.50		0.50	ug/L		08-AUG-18	R4160842
1,3-Dichlorobenzene	<0.50		0.50	ug/L		08-AUG-18	R4160842
1,4-Dichlorobenzene	<0.50		0.50	ug/L		08-AUG-18	R4160842
Dichlorodifluoromethane	<2.0		2.0	ug/L		08-AUG-18	R4160842

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2141576-15 MW18-116D Sampled By: CLIENT on 03-AUG-18 @ 13:55 Matrix: WATER							
Volatile Organic Compounds							
1,1-Dichloroethane	1.60		0.50	ug/L		08-AUG-18	R4160842
1,2-Dichloroethane	<0.50		0.50	ug/L		08-AUG-18	R4160842
1,1-Dichloroethylene	<0.50		0.50	ug/L		08-AUG-18	R4160842
cis-1,2-Dichloroethylene	0.71		0.50	ug/L		08-AUG-18	R4160842
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		08-AUG-18	R4160842
Methylene Chloride	<5.0		5.0	ug/L		08-AUG-18	R4160842
1,2-Dichloropropane	<0.50		0.50	ug/L		08-AUG-18	R4160842
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		08-AUG-18	R4160842
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		08-AUG-18	R4160842
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		10-AUG-18	
Ethylbenzene	<0.50		0.50	ug/L		08-AUG-18	R4160842
n-Hexane	<0.50	VTHS	0.50	ug/L		10-AUG-18	R4162501
Methyl Ethyl Ketone	<20		20	ug/L		08-AUG-18	R4160842
Methyl Isobutyl Ketone	<20		20	ug/L		08-AUG-18	R4160842
MTBE	<2.0		2.0	ug/L		08-AUG-18	R4160842
Styrene	<0.50		0.50	ug/L		08-AUG-18	R4160842
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		08-AUG-18	R4160842
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		08-AUG-18	R4160842
Tetrachloroethylene	<0.50		0.50	ug/L		08-AUG-18	R4160842
Toluene	<0.50		0.50	ug/L		08-AUG-18	R4160842
1,1,1-Trichloroethane	0.82		0.50	ug/L		08-AUG-18	R4160842
1,1,2-Trichloroethane	<0.50		0.50	ug/L		08-AUG-18	R4160842
Trichloroethylene	0.85		0.50	ug/L		08-AUG-18	R4160842
Trichlorofluoromethane	<5.0		5.0	ug/L		08-AUG-18	R4160842
Vinyl chloride	<0.50		0.50	ug/L		08-AUG-18	R4160842
o-Xylene	<0.30		0.30	ug/L		08-AUG-18	R4160842
m+p-Xylenes	<0.40		0.40	ug/L		08-AUG-18	R4160842
Xylenes (Total)	<0.50		0.50	ug/L		10-AUG-18	
Surrogate: 4-Bromofluorobenzene	97.8		70-130	%		08-AUG-18	R4160842
Surrogate: 1,4-Difluorobenzene	101.5		70-130	%		08-AUG-18	R4160842
L2141576-16 MW18-116S Sampled By: CLIENT on 03-AUG-18 @ 13:50 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					09-AUG-18	R4161541
Antimony (Sb)-Dissolved	0.84		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Arsenic (As)-Dissolved	0.55		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Barium (Ba)-Dissolved	40.8		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Boron (B)-Dissolved	55		10	ug/L	09-AUG-18	09-AUG-18	R4162571
Cadmium (Cd)-Dissolved	0.635		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2141576-16 MW18-116S Sampled By: CLIENT on 03-AUG-18 @ 13:50 Matrix: WATER							
Dissolved Metals							
Cobalt (Co)-Dissolved	0.14		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Copper (Cu)-Dissolved	12.5		0.20	ug/L	09-AUG-18	09-AUG-18	R4162571
Lead (Pb)-Dissolved	0.159		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Molybdenum (Mo)-Dissolved	3.42		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Nickel (Ni)-Dissolved	5.33		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Selenium (Se)-Dissolved	0.536		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Sodium (Na)-Dissolved	110000	DLHC	500	ug/L	09-AUG-18	09-AUG-18	R4162571
Thallium (Tl)-Dissolved	0.233		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Uranium (U)-Dissolved	5.50		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Zinc (Zn)-Dissolved	436		1.0	ug/L	09-AUG-18	09-AUG-18	R4162571
Volatile Organic Compounds							
Acetone	<30		30	ug/L		13-AUG-18	R4166494
Benzene	<0.50		0.50	ug/L		13-AUG-18	R4166494
Bromodichloromethane	<2.0		2.0	ug/L		13-AUG-18	R4166494
Bromoform	<5.0		5.0	ug/L		13-AUG-18	R4166494
Bromomethane	<0.50		0.50	ug/L		13-AUG-18	R4166494
Carbon tetrachloride	<0.20		0.20	ug/L		13-AUG-18	R4166494
Chlorobenzene	<0.50		0.50	ug/L		13-AUG-18	R4166494
Dibromochloromethane	<2.0		2.0	ug/L		13-AUG-18	R4166494
Chloroform	<1.0		1.0	ug/L		13-AUG-18	R4166494
1,2-Dibromoethane	<0.20		0.20	ug/L		13-AUG-18	R4166494
1,2-Dichlorobenzene	<0.50		0.50	ug/L		13-AUG-18	R4166494
1,3-Dichlorobenzene	<0.50		0.50	ug/L		13-AUG-18	R4166494
1,4-Dichlorobenzene	<0.50		0.50	ug/L		13-AUG-18	R4166494
Dichlorodifluoromethane	<2.0		2.0	ug/L		13-AUG-18	R4166494
1,1-Dichloroethane	0.52		0.50	ug/L		13-AUG-18	R4166494
1,2-Dichloroethane	<0.50		0.50	ug/L		13-AUG-18	R4166494
1,1-Dichloroethylene	<0.50		0.50	ug/L		13-AUG-18	R4166494
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		13-AUG-18	R4166494
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		13-AUG-18	R4166494
Methylene Chloride	<5.0		5.0	ug/L		13-AUG-18	R4166494
1,2-Dichloropropane	<0.50		0.50	ug/L		13-AUG-18	R4166494
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		13-AUG-18	R4166494
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		13-AUG-18	R4166494
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		13-AUG-18	
Ethylbenzene	<0.50		0.50	ug/L		13-AUG-18	R4166494
n-Hexane	<0.50		0.50	ug/L		13-AUG-18	R4166494
Methyl Ethyl Ketone	<20		20	ug/L		13-AUG-18	R4166494
Methyl Isobutyl Ketone	<20		20	ug/L		13-AUG-18	R4166494

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2141576-16 MW18-116S Sampled By: CLIENT on 03-AUG-18 @ 13:50 Matrix: WATER							
Volatile Organic Compounds							
MTBE	<2.0		2.0	ug/L		13-AUG-18	R4166494
Styrene	<0.50		0.50	ug/L		13-AUG-18	R4166494
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		13-AUG-18	R4166494
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		13-AUG-18	R4166494
Tetrachloroethylene	<0.50		0.50	ug/L		13-AUG-18	R4166494
Toluene	<0.50		0.50	ug/L		13-AUG-18	R4166494
1,1,1-Trichloroethane	1.07		0.50	ug/L		13-AUG-18	R4166494
1,1,2-Trichloroethane	<0.50		0.50	ug/L		13-AUG-18	R4166494
Trichloroethylene	<0.50		0.50	ug/L		13-AUG-18	R4166494
Trichlorofluoromethane	<5.0		5.0	ug/L		13-AUG-18	R4166494
Vinyl chloride	<0.50		0.50	ug/L		13-AUG-18	R4166494
o-Xylene	<0.30		0.30	ug/L		13-AUG-18	R4166494
m+p-Xylenes	<0.40		0.40	ug/L		13-AUG-18	R4166494
Xylenes (Total)	<0.50		0.50	ug/L		13-AUG-18	
Surrogate: 4-Bromofluorobenzene	99.2		70-130	%		13-AUG-18	R4166494
Surrogate: 1,4-Difluorobenzene	100.5		70-130	%		13-AUG-18	R4166494
L2141576-17 MW18-113S Sampled By: CLIENT on 03-AUG-18 @ 15:40 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					09-AUG-18	R4161541
Antimony (Sb)-Dissolved	3.07		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Arsenic (As)-Dissolved	16.4		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Barium (Ba)-Dissolved	52.5		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Boron (B)-Dissolved	64		10	ug/L	09-AUG-18	09-AUG-18	R4162571
Cadmium (Cd)-Dissolved	0.041		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Cobalt (Co)-Dissolved	0.51		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Copper (Cu)-Dissolved	0.48		0.20	ug/L	09-AUG-18	09-AUG-18	R4162571
Lead (Pb)-Dissolved	3.78		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Molybdenum (Mo)-Dissolved	4.46		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Nickel (Ni)-Dissolved	8.58		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Selenium (Se)-Dissolved	0.273		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Sodium (Na)-Dissolved	135000	DLHC	500	ug/L	09-AUG-18	09-AUG-18	R4162571
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Uranium (U)-Dissolved	11.8		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Zinc (Zn)-Dissolved	515		1.0	ug/L	09-AUG-18	09-AUG-18	R4162571
L2141576-18 DUP2 Sampled By: CLIENT on 02-AUG-18 @ 16:55							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2141576-18 DUP2 Sampled By: CLIENT on 02-AUG-18 @ 16:55 Matrix: WATER							
Volatile Organic Compounds							
Acetone	<30		30	ug/L		08-AUG-18	R4160842
Benzene	<0.50		0.50	ug/L		08-AUG-18	R4160842
Bromodichloromethane	<2.0		2.0	ug/L		08-AUG-18	R4160842
Bromoform	<5.0		5.0	ug/L		08-AUG-18	R4160842
Bromomethane	<0.50		0.50	ug/L		08-AUG-18	R4160842
Carbon tetrachloride	<0.20		0.20	ug/L		08-AUG-18	R4160842
Chlorobenzene	<0.50		0.50	ug/L		08-AUG-18	R4160842
Dibromochloromethane	<2.0		2.0	ug/L		08-AUG-18	R4160842
Chloroform	<1.0		1.0	ug/L		08-AUG-18	R4160842
1,2-Dibromoethane	<0.20		0.20	ug/L		08-AUG-18	R4160842
1,2-Dichlorobenzene	<0.50		0.50	ug/L		08-AUG-18	R4160842
1,3-Dichlorobenzene	<0.50		0.50	ug/L		08-AUG-18	R4160842
1,4-Dichlorobenzene	<0.50		0.50	ug/L		08-AUG-18	R4160842
Dichlorodifluoromethane	<2.0		2.0	ug/L		08-AUG-18	R4160842
1,1-Dichloroethane	<0.50		0.50	ug/L		08-AUG-18	R4160842
1,2-Dichloroethane	<0.50		0.50	ug/L		08-AUG-18	R4160842
1,1-Dichloroethylene	<0.50		0.50	ug/L		08-AUG-18	R4160842
cis-1,2-Dichloroethylene	1.37		0.50	ug/L		08-AUG-18	R4160842
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		08-AUG-18	R4160842
Methylene Chloride	<5.0		5.0	ug/L		08-AUG-18	R4160842
1,2-Dichloropropane	<0.50		0.50	ug/L		08-AUG-18	R4160842
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		08-AUG-18	R4160842
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		08-AUG-18	R4160842
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		08-AUG-18	
Ethylbenzene	<0.50		0.50	ug/L		08-AUG-18	R4160842
n-Hexane	<0.50		0.50	ug/L		08-AUG-18	R4160842
Methyl Ethyl Ketone	<20		20	ug/L		08-AUG-18	R4160842
Methyl Isobutyl Ketone	<20		20	ug/L		08-AUG-18	R4160842
MTBE	<2.0		2.0	ug/L		08-AUG-18	R4160842
Styrene	<0.50		0.50	ug/L		08-AUG-18	R4160842
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		08-AUG-18	R4160842
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		08-AUG-18	R4160842
Tetrachloroethylene	<0.50		0.50	ug/L		08-AUG-18	R4160842
Toluene	0.54		0.50	ug/L		08-AUG-18	R4160842
1,1,1-Trichloroethane	<0.50		0.50	ug/L		08-AUG-18	R4160842
1,1,2-Trichloroethane	<0.50		0.50	ug/L		08-AUG-18	R4160842
Trichloroethylene	<0.50		0.50	ug/L		08-AUG-18	R4160842
Trichlorofluoromethane	<5.0		5.0	ug/L		08-AUG-18	R4160842
Vinyl chloride	0.99		0.50	ug/L		08-AUG-18	R4160842
o-Xylene	<0.30		0.30	ug/L		08-AUG-18	R4160842
m+p-Xylenes	<0.40		0.40	ug/L		08-AUG-18	R4160842

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2141576-18 DUP2 Sampled By: CLIENT on 02-AUG-18 @ 16:55 Matrix: WATER							
Volatile Organic Compounds							
Xylenes (Total)	<0.50		0.50	ug/L		08-AUG-18	
Surrogate: 4-Bromofluorobenzene	100.2		70-130	%		08-AUG-18	R4160842
Surrogate: 1,4-Difluorobenzene	101.8		70-130	%		08-AUG-18	R4160842
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		08-AUG-18	R4160842
F1-BTEX	<25		25	ug/L		09-AUG-18	
F2 (C10-C16)	<100		100	ug/L	08-AUG-18	08-AUG-18	R4161842
F3 (C16-C34)	<250		250	ug/L	08-AUG-18	08-AUG-18	R4161842
F4 (C34-C50)	<250		250	ug/L	08-AUG-18	08-AUG-18	R4161842
Total Hydrocarbons (C6-C50)	<370		370	ug/L		09-AUG-18	
Chrom. to baseline at nC50	YES				08-AUG-18	08-AUG-18	R4161842
Surrogate: 2-Bromobenzotrifluoride	74.1		60-140	%	08-AUG-18	08-AUG-18	R4161842
Surrogate: 3,4-Dichlorotoluene	82.3		60-140	%		08-AUG-18	R4160842
L2141576-19 DUP3 Sampled By: CLIENT on 03-AUG-18 @ 15:45 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					09-AUG-18	R4161541
Antimony (Sb)-Dissolved	3.04		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Arsenic (As)-Dissolved	15.9		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Barium (Ba)-Dissolved	50.4		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Boron (B)-Dissolved	63		10	ug/L	09-AUG-18	09-AUG-18	R4162571
Cadmium (Cd)-Dissolved	0.041		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Cobalt (Co)-Dissolved	0.49		0.10	ug/L	09-AUG-18	09-AUG-18	R4162571
Copper (Cu)-Dissolved	1.04		0.20	ug/L	09-AUG-18	09-AUG-18	R4162571
Lead (Pb)-Dissolved	2.65		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Molybdenum (Mo)-Dissolved	4.29		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Nickel (Ni)-Dissolved	8.34		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Selenium (Se)-Dissolved	0.262		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	09-AUG-18	09-AUG-18	R4162571
Sodium (Na)-Dissolved	127000	DLHC	500	ug/L	09-AUG-18	09-AUG-18	R4162571
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Uranium (U)-Dissolved	11.2		0.010	ug/L	09-AUG-18	09-AUG-18	R4162571
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	09-AUG-18	09-AUG-18	R4162571
Zinc (Zn)-Dissolved	509		1.0	ug/L	09-AUG-18	09-AUG-18	R4162571

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Laboratory Control Sample	Dichlorodifluoromethane	LCS-H	L2141576-10, -11, -12, -5, -8, -9
Laboratory Control Sample	n-Hexane	MES	L2141576-16
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L2141576-1, -10, -13, -15, -16, -17, -19, -2, -3, -4, -5, -6
Matrix Spike	Boron (B)-Dissolved	MS-B	L2141576-1, -10, -13, -15, -16, -17, -19, -2, -3, -4, -5, -6
Matrix Spike	Molybdenum (Mo)-Dissolved	MS-B	L2141576-1, -10, -13, -15, -16, -17, -19, -2, -3, -4, -5, -6
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L2141576-1, -10, -13, -15, -16, -17, -19, -2, -3, -4, -5, -6

Sample Parameter Qualifier key listed:

Qualifier	Description
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
DLQ	Detection Limit raised due to co-eluting interference. GCMS qualifier ion ratio did not meet acceptance criteria.
DLS	Detection Limit Adjusted: Instrument Sensitivity
LCS-H	Lab Control Sample recovery was above ALS DQO. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
PRAR	PCB Pattern Most Closely Resembles Aroclor Reported
R	The ion abundance ratio(s) did not meet the acceptance criteria. Value is an estimated maximum.
VTHS	Volatile test was conducted on sample with headspace. Results may be biased low.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
F1-F4-511-CALC-WT	Water	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-L

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Water	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Water	F2-F4-O.Reg 153/04 (July 2011)	EPA 3511/CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from water using a hexane micro-extraction technique. Instrumental analysis is by GC-FID, as per the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Tier 1 Method, CCME, 2001.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8

The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG

Reference Information

must be reported).

METHYLNAPS-CALC-WT	Water	PAH-Calculated Parameters	SW846 8270

PAH-511-WT	Water	PAH-O. Reg 153/04 (July 2011)	SW846 3510/8270

Aqueous samples, fortified with surrogates, are extracted using liquid/liquid extraction technique. The sample extracts are concentrated and then analyzed using GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PCB-511-WT	Water	PCB-O. Reg 153/04 (July 2011)	SW846 3510/8082

Aqueous samples are extracted, then concentrated, reconstituted, and analyzed by GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

VOC-1,3-DCP-CALC-WT	Water	Regulation 153 VOCs	SW8260B/SW8270C

VOC-511-HS-WT	Water	VOC by GCMS HS O.Reg 153/04 (July 2011)	SW846 8260

Liquid samples are analyzed by headspace GC/MSD.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2141576 Report Date: 14-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT	**Water**							
Batch R4160842								
WG2842149-4 DUP		**WG2842149-3**						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	08-AUG-18
WG2842149-1 LCS								
F1 (C6-C10)			116.7		%		80-120	08-AUG-18
WG2842149-2 MB								
F1 (C6-C10)			<25		ug/L		25	08-AUG-18
Surrogate: 3,4-Dichlorotoluene			93.1		%		60-140	08-AUG-18
WG2842149-5 MS		**WG2842149-3**						
F1 (C6-C10)			102.3		%		60-140	08-AUG-18
Batch R4161624								
WG2842526-4 DUP		**WG2842526-3**						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	09-AUG-18
WG2842526-1 LCS								
F1 (C6-C10)			102.8		%		80-120	09-AUG-18
WG2842526-2 MB								
F1 (C6-C10)			<25		ug/L		25	09-AUG-18
Surrogate: 3,4-Dichlorotoluene			98.3		%		60-140	09-AUG-18
WG2842526-5 MS		**WG2842526-3**						
F1 (C6-C10)			97.5		%		60-140	09-AUG-18
F2-F4-511-WT	**Water**							
Batch R4161842								
WG2843301-2 LCS								
F2 (C10-C16)			89.7		%		70-130	08-AUG-18
F3 (C16-C34)			102.2		%		70-130	08-AUG-18
F4 (C34-C50)			93.9		%		70-130	08-AUG-18
WG2843301-3 LCSD		**WG2843301-2**						
F2 (C10-C16)		89.7	95.3		%	6.0	50	08-AUG-18
F3 (C16-C34)		102.2	103.1		%	0.9	50	08-AUG-18
F4 (C34-C50)		93.9	86.4		%	8.3	50	08-AUG-18
WG2843301-1 MB								
F2 (C10-C16)			<100		ug/L		100	08-AUG-18
F3 (C16-C34)			<250		ug/L		250	08-AUG-18
F4 (C34-C50)			<250		ug/L		250	08-AUG-18
Surrogate: 2-Bromobenzotrifluoride			92.2		%		60-140	08-AUG-18
MET-D-UG/L-MS-WT	**Water**							

Quality Control Report

Workorder: L2141576 Report Date: 14-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch	**R4162571**							
WG2844499-4	**DUP**	**WG2844499-3**						
Antimony (Sb)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	09-AUG-18
Arsenic (As)-Dissolved		1.6	1.5		ug/L	7.9	20	09-AUG-18
Barium (Ba)-Dissolved		187	192		ug/L	2.5	20	09-AUG-18
Beryllium (Be)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	09-AUG-18
Boron (B)-Dissolved		2060	2020		ug/L	1.8	20	09-AUG-18
Cadmium (Cd)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	09-AUG-18
Chromium (Cr)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	09-AUG-18
Cobalt (Co)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	09-AUG-18
Copper (Cu)-Dissolved		7.8	5.5	J	ug/L	2.3	4	09-AUG-18
Lead (Pb)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	09-AUG-18
Molybdenum (Mo)-Dissolved		47.6	46.6		ug/L	2.2	20	09-AUG-18
Nickel (Ni)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	09-AUG-18
Selenium (Se)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	09-AUG-18
Silver (Ag)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	09-AUG-18
Sodium (Na)-Dissolved		473000	487000		ug/L	2.7	20	09-AUG-18
Thallium (Tl)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	09-AUG-18
Uranium (U)-Dissolved		2.14	2.08		ug/L	3.2	20	09-AUG-18
Vanadium (V)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	09-AUG-18
Zinc (Zn)-Dissolved		11	<10	RPD-NA	ug/L	N/A	20	10-AUG-18
WG2844499-2	**LCS**							
Antimony (Sb)-Dissolved			93.8		%		80-120	09-AUG-18
Arsenic (As)-Dissolved			91.5		%		80-120	09-AUG-18
Barium (Ba)-Dissolved			95.6		%		80-120	09-AUG-18
Beryllium (Be)-Dissolved			97.4		%		80-120	09-AUG-18
Boron (B)-Dissolved			89.5		%		80-120	09-AUG-18
Cadmium (Cd)-Dissolved			93.7		%		80-120	09-AUG-18
Chromium (Cr)-Dissolved			89.6		%		80-120	09-AUG-18
Cobalt (Co)-Dissolved			90.4		%		80-120	09-AUG-18
Copper (Cu)-Dissolved			90.6		%		80-120	09-AUG-18
Lead (Pb)-Dissolved			111.2		%		80-120	09-AUG-18
Molybdenum (Mo)-Dissolved			103.5		%		80-120	09-AUG-18
Nickel (Ni)-Dissolved			90.0		%		80-120	09-AUG-18
Selenium (Se)-Dissolved			93.2		%		80-120	09-AUG-18

Quality Control Report

Workorder: L2141576 Report Date: 14-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch	**R4162571**							
WG2844499-2	**LCS**							
Silver (Ag)-Dissolved			103.6		%		80-120	09-AUG-18
Sodium (Na)-Dissolved			86.8		%		80-120	09-AUG-18
Thallium (Tl)-Dissolved			102.2		%		80-120	09-AUG-18
Uranium (U)-Dissolved			113.3		%		80-120	09-AUG-18
Vanadium (V)-Dissolved			92.1		%		80-120	09-AUG-18
Zinc (Zn)-Dissolved			86.8		%		80-120	09-AUG-18
WG2844499-1	**MB**							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	09-AUG-18
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	09-AUG-18
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	09-AUG-18
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	09-AUG-18
Boron (B)-Dissolved			<10		ug/L		10	09-AUG-18
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	09-AUG-18
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	09-AUG-18
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	09-AUG-18
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	09-AUG-18
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	09-AUG-18
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	09-AUG-18
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	09-AUG-18
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	09-AUG-18
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	09-AUG-18
Sodium (Na)-Dissolved			<50		ug/L		50	09-AUG-18
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	09-AUG-18
Uranium (U)-Dissolved			<0.010		ug/L		0.01	09-AUG-18
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	09-AUG-18
Zinc (Zn)-Dissolved			<1.0		ug/L		1	09-AUG-18
WG2844499-5	**MS**	**WG2844499-6**						
Antimony (Sb)-Dissolved			90.3		%		70-130	09-AUG-18
Arsenic (As)-Dissolved			98.2		%		70-130	09-AUG-18
Barium (Ba)-Dissolved			N/A	MS-B	%		-	09-AUG-18
Beryllium (Be)-Dissolved			95.1		%		70-130	09-AUG-18
Boron (B)-Dissolved			N/A	MS-B	%		-	09-AUG-18
Cadmium (Cd)-Dissolved			96.3		%		70-130	09-AUG-18
Chromium (Cr)-Dissolved			92.7		%		70-130	09-AUG-18

Quality Control Report

Workorder: L2141576 Report Date: 14-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R4162571								
WG2844499-5 MS		**WG2844499-6**						
Cobalt (Co)-Dissolved			92.2		%		70-130	09-AUG-18
Copper (Cu)-Dissolved			77.8		%		70-130	09-AUG-18
Lead (Pb)-Dissolved			103.0		%		70-130	09-AUG-18
Molybdenum (Mo)-Dissolved			N/A	MS-B	%		-	09-AUG-18
Nickel (Ni)-Dissolved			90.0		%		70-130	09-AUG-18
Selenium (Se)-Dissolved			96.2		%		70-130	09-AUG-18
Silver (Ag)-Dissolved			87.2		%		70-130	09-AUG-18
Sodium (Na)-Dissolved			N/A	MS-B	%		-	09-AUG-18
Thallium (Tl)-Dissolved			94.6		%		70-130	09-AUG-18
Uranium (U)-Dissolved			90.4		%		70-130	09-AUG-18
Vanadium (V)-Dissolved			96.8		%		70-130	09-AUG-18
Zinc (Zn)-Dissolved			80.0		%		70-130	09-AUG-18
PAH-511-WT	**Water**							
Batch R4167489								
WG2843301-2 LCS								
1-Methylnaphthalene			88.2		%		50-140	13-AUG-18
2-Methylnaphthalene			94.6		%		50-140	13-AUG-18
Acenaphthene			92.2		%		50-140	13-AUG-18
Acenaphthylene			93.7		%		50-140	13-AUG-18
Anthracene			108.5		%		50-140	13-AUG-18
Benzo(a)anthracene			131.9		%		50-140	13-AUG-18
Benzo(a)pyrene			101.6		%		50-140	13-AUG-18
Benzo(b)fluoranthene			100.4		%		50-140	13-AUG-18
Benzo(g,h,i)perylene			107.1		%		50-140	13-AUG-18
Benzo(k)fluoranthene			97.0		%		50-140	13-AUG-18
Chrysene			112.5		%		50-140	13-AUG-18
Dibenzo(ah)anthracene			110.3		%		50-140	13-AUG-18
Fluoranthene			106.2		%		50-140	13-AUG-18
Fluorene			97.8		%		50-140	13-AUG-18
Indeno(1,2,3-cd)pyrene			108.7		%		50-140	13-AUG-18
Naphthalene			97.3		%		50-140	13-AUG-18
Phenanthrene			102.8		%		50-140	13-AUG-18
Pyrene			105.8		%		50-140	13-AUG-18
WG2843301-3 LCSD		**WG2843301-2**						

Quality Control Report

Workorder: L2141576 Report Date: 14-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R4167489								
WG2843301-3 LCSD		**WG2843301-2**						
1-Methylnaphthalene		88.2	99.0		%	12	50	13-AUG-18
2-Methylnaphthalene		94.6	100.8		%	6.3	50	13-AUG-18
Acenaphthene		92.2	96.6		%	4.7	50	13-AUG-18
Acenaphthylene		93.7	98.2		%	4.8	50	13-AUG-18
Anthracene		108.5	113.0		%	4.0	50	13-AUG-18
Benzo(a)anthracene		131.9	137.5		%	4.2	50	13-AUG-18
Benzo(a)pyrene		101.6	105.4		%	3.6	50	13-AUG-18
Benzo(b)fluoranthene		100.4	102.6		%	2.1	50	13-AUG-18
Benzo(g,h,i)perylene		107.1	110.1		%	2.7	50	13-AUG-18
Benzo(k)fluoranthene		97.0	99.8		%	2.8	50	13-AUG-18
Chrysene		112.5	116.7		%	3.7	50	13-AUG-18
Dibenzo(ah)anthracene		110.3	117.0		%	5.9	50	13-AUG-18
Fluoranthene		106.2	110.6		%	4.0	50	13-AUG-18
Fluorene		97.8	101.2		%	3.4	50	13-AUG-18
Indeno(1,2,3-cd)pyrene		108.7	112.9		%	3.8	50	13-AUG-18
Naphthalene		97.3	104.2		%	6.9	50	13-AUG-18
Phenanthrene		102.8	105.9		%	3.0	50	13-AUG-18
Pyrene		105.8	110.2		%	4.1	50	13-AUG-18
WG2843301-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	13-AUG-18
2-Methylnaphthalene			<0.020		ug/L		0.02	13-AUG-18
Acenaphthene			<0.020		ug/L		0.02	13-AUG-18
Acenaphthylene			<0.020		ug/L		0.02	13-AUG-18
Anthracene			<0.020		ug/L		0.02	13-AUG-18
Benzo(a)anthracene			<0.020		ug/L		0.02	13-AUG-18
Benzo(a)pyrene			<0.010		ug/L		0.01	13-AUG-18
Benzo(b)fluoranthene			<0.020		ug/L		0.02	13-AUG-18
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	13-AUG-18
Benzo(k)fluoranthene			<0.020		ug/L		0.02	13-AUG-18
Chrysene			<0.020		ug/L		0.02	13-AUG-18
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	13-AUG-18
Fluoranthene			<0.020		ug/L		0.02	13-AUG-18
Fluorene			<0.020		ug/L		0.02	13-AUG-18

Quality Control Report

Workorder: L2141576 Report Date: 14-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R4167489								
WG2843301-1 MB								
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	13-AUG-18
Naphthalene			<0.050		ug/L		0.05	13-AUG-18
Phenanthrene			<0.020		ug/L		0.02	13-AUG-18
Pyrene			<0.020		ug/L		0.02	13-AUG-18
Surrogate: d8-Naphthalene			112.3		%		60-140	13-AUG-18
Surrogate: d10-Phenanthrene			111.9		%		60-140	13-AUG-18
Surrogate: d12-Chrysene			118.5		%		60-140	13-AUG-18
Surrogate: d10-Acenaphthene			108.5		%		60-140	13-AUG-18
PCB-511-WT	**Water**							
Batch R4166831								
WG2846007-2 LCS								
Aroclor 1242			85.6		%		60-140	13-AUG-18
Aroclor 1248			96.1		%		60-140	13-AUG-18
Aroclor 1254			98.7		%		60-140	13-AUG-18
Aroclor 1260			112.4		%		60-140	13-AUG-18
WG2846007-3 LCSD		**WG2846007-2**						
Aroclor 1242		85.6	73.6		%	15	50	13-AUG-18
Aroclor 1248		96.1	96.1		%	0.0	50	13-AUG-18
Aroclor 1254		98.7	84.1		%	16	50	13-AUG-18
Aroclor 1260		112.4	96.8		%	15	50	13-AUG-18
WG2846007-1 MB								
Aroclor 1242			<0.020		ug/L		0.02	13-AUG-18
Aroclor 1248			<0.020		ug/L		0.02	13-AUG-18
Aroclor 1254			<0.020		ug/L		0.02	13-AUG-18
Aroclor 1260			<0.020		ug/L		0.02	13-AUG-18
Surrogate: 2-fluorobiphenyl			90.4		%		50-150	13-AUG-18
VOC-511-HS-WT	**Water**							
Batch R4160842								
WG2842149-4 DUP		**WG2842149-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18

Quality Control Report

Workorder: L2141576 Report Date: 14-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4160842								
WG2842149-4 DUP		**WG2842149-3**						
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	08-AUG-18
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	08-AUG-18
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	08-AUG-18
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	08-AUG-18
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	08-AUG-18
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	08-AUG-18
cis-1,2-Dichloroethylene		1.37	1.38		ug/L	0.7	30	08-AUG-18
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	08-AUG-18
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	08-AUG-18
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	08-AUG-18
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	08-AUG-18
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	08-AUG-18
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	08-AUG-18
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	08-AUG-18
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	08-AUG-18
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	08-AUG-18
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
Toluene		0.54	0.52		ug/L	3.8	30	08-AUG-18
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	08-AUG-18
Trichloroethylene		<0.50	<0.50		ug/L			08-AUG-18

Quality Control Report

Workorder: L2141576 Report Date: 14-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4160842								
WG2842149-4 DUP		**WG2842149-3**						
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-AUG-18
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	08-AUG-18
Vinyl chloride		0.99	0.92		ug/L	7.3	30	08-AUG-18
WG2842149-1 LCS								
1,1,1,2-Tetrachloroethane			103.2		%		70-130	08-AUG-18
1,1,2,2-Tetrachloroethane			100.9		%		70-130	08-AUG-18
1,1,1-Trichloroethane			108.2		%		70-130	08-AUG-18
1,1,2-Trichloroethane			100.5		%		70-130	08-AUG-18
1,1-Dichloroethane			105.2		%		70-130	08-AUG-18
1,1-Dichloroethylene			96.9		%		70-130	08-AUG-18
1,2-Dibromoethane			101.4		%		70-130	08-AUG-18
1,2-Dichlorobenzene			103.8		%		70-130	08-AUG-18
1,2-Dichloroethane			112.1		%		70-130	08-AUG-18
1,2-Dichloropropane			96.8		%		70-130	08-AUG-18
1,3-Dichlorobenzene			103.6		%		70-130	08-AUG-18
1,4-Dichlorobenzene			106.7		%		70-130	08-AUG-18
Acetone			104.0		%		60-140	08-AUG-18
Benzene			103.2		%		70-130	08-AUG-18
Bromodichloromethane			107.2		%		70-130	08-AUG-18
Bromoform			104.3		%		70-130	08-AUG-18
Bromomethane			86.9		%		60-140	08-AUG-18
Carbon tetrachloride			109.4		%		70-130	08-AUG-18
Chlorobenzene			102.0		%		70-130	08-AUG-18
Chloroform			109.0		%		70-130	08-AUG-18
cis-1,2-Dichloroethylene			106.4		%		70-130	08-AUG-18
cis-1,3-Dichloropropene			110.3		%		70-130	08-AUG-18
Dibromochloromethane			104.5		%		70-130	08-AUG-18
Dichlorodifluoromethane			117.9		%		50-140	08-AUG-18
Ethylbenzene			97.0		%		70-130	08-AUG-18
n-Hexane			113.3		%		70-130	08-AUG-18
m+p-Xylenes			101.6		%		70-130	08-AUG-18
Methyl Ethyl Ketone			91.3		%		60-140	08-AUG-18
Methyl Isobutyl Ketone			92.3		%		60-140	08-AUG-18
Methylene Chloride			108.0				70-130	

Quality Control Report

Workorder: L2141576 Report Date: 14-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4160842								
WG2842149-1 LCS								
Methylene Chloride			108.0		%		70-130	08-AUG-18
MTBE			105.4		%		70-130	08-AUG-18
o-Xylene			98.2		%		70-130	08-AUG-18
Styrene			101.4		%		70-130	08-AUG-18
Tetrachloroethylene			104.0		%		70-130	08-AUG-18
Toluene			91.0		%		70-130	08-AUG-18
trans-1,2-Dichloroethylene			105.2		%		70-130	08-AUG-18
trans-1,3-Dichloropropene			99.7		%		70-130	08-AUG-18
Trichloroethylene			113.8		%		70-130	08-AUG-18
Trichlorofluoromethane			117.6		%		60-140	08-AUG-18
Vinyl chloride			93.5		%		60-140	08-AUG-18
WG2842149-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	08-AUG-18
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	08-AUG-18
1,1,1-Trichloroethane			<0.50		ug/L		0.5	08-AUG-18
1,1,2-Trichloroethane			<0.50		ug/L		0.5	08-AUG-18
1,1-Dichloroethane			<0.50		ug/L		0.5	08-AUG-18
1,1-Dichloroethylene			<0.50		ug/L		0.5	08-AUG-18
1,2-Dibromoethane			<0.20		ug/L		0.2	08-AUG-18
1,2-Dichlorobenzene			<0.50		ug/L		0.5	08-AUG-18
1,2-Dichloroethane			<0.50		ug/L		0.5	08-AUG-18
1,2-Dichloropropane			<0.50		ug/L		0.5	08-AUG-18
1,3-Dichlorobenzene			<0.50		ug/L		0.5	08-AUG-18
1,4-Dichlorobenzene			<0.50		ug/L		0.5	08-AUG-18
Acetone			<30		ug/L		30	08-AUG-18
Benzene			<0.50		ug/L		0.5	08-AUG-18
Bromodichloromethane			<2.0		ug/L		2	08-AUG-18
Bromoform			<5.0		ug/L		5	08-AUG-18
Bromomethane			<0.50		ug/L		0.5	08-AUG-18
Carbon tetrachloride			<0.20		ug/L		0.2	08-AUG-18
Chlorobenzene			<0.50		ug/L		0.5	08-AUG-18
Chloroform			<1.0		ug/L		1	08-AUG-18
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	08-AUG-18
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	08-AUG-18

Quality Control Report

Workorder: L2141576 Report Date: 14-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4160842								
WG2842149-2 MB								
Dibromochloromethane			<2.0		ug/L		2	08-AUG-18
Dichlorodifluoromethane			<2.0		ug/L		2	08-AUG-18
Ethylbenzene			<0.50		ug/L		0.5	08-AUG-18
n-Hexane			<0.50		ug/L		0.5	08-AUG-18
m+p-Xylenes			<0.40		ug/L		0.4	08-AUG-18
Methyl Ethyl Ketone			<20		ug/L		20	08-AUG-18
Methyl Isobutyl Ketone			<20		ug/L		20	08-AUG-18
Methylene Chloride			<5.0		ug/L		5	08-AUG-18
MTBE			<2.0		ug/L		2	08-AUG-18
o-Xylene			<0.30		ug/L		0.3	08-AUG-18
Styrene			<0.50		ug/L		0.5	08-AUG-18
Tetrachloroethylene			<0.50		ug/L		0.5	08-AUG-18
Toluene			<0.50		ug/L		0.5	08-AUG-18
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	08-AUG-18
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	08-AUG-18
Trichloroethylene			<0.50		ug/L		0.5	08-AUG-18
Trichlorofluoromethane			<5.0		ug/L		5	08-AUG-18
Vinyl chloride			<0.50		ug/L		0.5	08-AUG-18
Surrogate: 1,4-Difluorobenzene			101.4		%		70-130	08-AUG-18
Surrogate: 4-Bromofluorobenzene			92.5		%		70-130	08-AUG-18
WG2842149-5 MS		**WG2842149-3**						
1,1,1,2-Tetrachloroethane			104.7		%		50-140	08-AUG-18
1,1,2,2-Tetrachloroethane			95.7		%		50-140	08-AUG-18
1,1,1-Trichloroethane			112.5		%		50-140	08-AUG-18
1,1,2-Trichloroethane			98.0		%		50-140	08-AUG-18
1,1-Dichloroethane			107.0		%		50-140	08-AUG-18
1,1-Dichloroethylene			97.5		%		50-140	08-AUG-18
1,2-Dibromoethane			97.1		%		50-140	08-AUG-18
1,2-Dichlorobenzene			103.3		%		50-140	08-AUG-18
1,2-Dichloroethane			110.2		%		50-140	08-AUG-18
1,2-Dichloropropane			95.9		%		50-140	08-AUG-18
1,3-Dichlorobenzene			103.7		%		50-140	08-AUG-18
1,4-Dichlorobenzene			106.6		%		50-140	08-AUG-18
Acetone			97.5		%		50-140	08-AUG-18

Quality Control Report

Workorder: L2141576 Report Date: 14-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4160842								
WG2842149-5 MS		**WG2842149-3**						
Benzene			104.4		%		50-140	08-AUG-18
Bromodichloromethane			108.3		%		50-140	08-AUG-18
Bromoform			101.5		%		50-140	08-AUG-18
Bromomethane			85.7		%		50-140	08-AUG-18
Carbon tetrachloride			114.3		%		50-140	08-AUG-18
Chlorobenzene			102.8		%		50-140	08-AUG-18
Chloroform			111.4		%		50-140	08-AUG-18
cis-1,2-Dichloroethylene			106.4		%		50-140	08-AUG-18
cis-1,3-Dichloropropene			108.1		%		50-140	08-AUG-18
Dibromochloromethane			103.7		%		50-140	08-AUG-18
Dichlorodifluoromethane			109.4		%		50-140	08-AUG-18
Ethylbenzene			96.4		%		50-140	08-AUG-18
n-Hexane			111.2		%		50-140	08-AUG-18
m+p-Xylenes			101.8		%		50-140	08-AUG-18
Methyl Ethyl Ketone			84.7		%		50-140	08-AUG-18
Methyl Isobutyl Ketone			82.3		%		50-140	08-AUG-18
Methylene Chloride			107.3		%		50-140	08-AUG-18
MTBE			105.7		%		50-140	08-AUG-18
o-Xylene			97.5		%		50-140	08-AUG-18
Styrene			98.7		%		50-140	08-AUG-18
Tetrachloroethylene			105.2		%		50-140	08-AUG-18
Toluene			90.1		%		50-140	08-AUG-18
trans-1,2-Dichloroethylene			104.8		%		50-140	08-AUG-18
trans-1,3-Dichloropropene			94.8		%		50-140	08-AUG-18
Trichloroethylene			116.0		%		50-140	08-AUG-18
Trichlorofluoromethane			119.1		%		50-140	08-AUG-18
Vinyl chloride			89.1		%		50-140	08-AUG-18
Batch R4161624								
WG2842526-4 DUP		**WG2842526-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-AUG-18
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-AUG-18
1,1,1-Trichloroethane		0.62	0.58		ug/L	6.7	30	09-AUG-18
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-AUG-18
1,1-Dichloroethane		<0.50	<0.50					

Quality Control Report

Workorder: L2141576 Report Date: 14-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4161624								
WG2842526-4 DUP		**WG2842526-3**						
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-AUG-18
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-AUG-18
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	09-AUG-18
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-AUG-18
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-AUG-18
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-AUG-18
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-AUG-18
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-AUG-18
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	09-AUG-18
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-AUG-18
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	09-AUG-18
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	09-AUG-18
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-AUG-18
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	09-AUG-18
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-AUG-18
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	09-AUG-18
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-AUG-18
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	09-AUG-18
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	09-AUG-18
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	09-AUG-18
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-AUG-18
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-AUG-18
m+p-Xylenes		0.42	0.43		ug/L	2.4	30	09-AUG-18
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	09-AUG-18
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	09-AUG-18
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	09-AUG-18
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	09-AUG-18
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	09-AUG-18
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-AUG-18
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-AUG-18
Toluene		0.57	0.56		ug/L	1.8	30	09-AUG-18
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-AUG-18
trans-1,3-Dichloropropene		<0.30	<0.30		ug/L			09-AUG-18

Quality Control Report

Workorder: L2141576 Report Date: 14-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4161624								
WG2842526-4 DUP		**WG2842526-3**						
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	09-AUG-18
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-AUG-18
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	09-AUG-18
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-AUG-18
WG2842526-1 LCS								
1,1,1,2-Tetrachloroethane			103.6		%		70-130	09-AUG-18
1,1,2,2-Tetrachloroethane			102.5		%		70-130	09-AUG-18
1,1,1-Trichloroethane			107.7		%		70-130	09-AUG-18
1,1,2-Trichloroethane			104.8		%		70-130	09-AUG-18
1,1-Dichloroethane			107.9		%		70-130	09-AUG-18
1,1-Dichloroethylene			108.4		%		70-130	09-AUG-18
1,2-Dibromoethane			104.4		%		70-130	09-AUG-18
1,2-Dichlorobenzene			106.7		%		70-130	09-AUG-18
1,2-Dichloroethane			107.6		%		70-130	09-AUG-18
1,2-Dichloropropane			107.5		%		70-130	09-AUG-18
1,3-Dichlorobenzene			104.3		%		70-130	09-AUG-18
1,4-Dichlorobenzene			105.5		%		70-130	09-AUG-18
Acetone			107.0		%		60-140	09-AUG-18
Benzene			109.4		%		70-130	09-AUG-18
Bromodichloromethane			108.0		%		70-130	09-AUG-18
Bromoform			99.5		%		70-130	09-AUG-18
Bromomethane			94.9		%		60-140	09-AUG-18
Carbon tetrachloride			106.8		%		70-130	09-AUG-18
Chlorobenzene			106.8		%		70-130	09-AUG-18
Chloroform			107.6		%		70-130	09-AUG-18
cis-1,2-Dichloroethylene			107.4		%		70-130	09-AUG-18
cis-1,3-Dichloropropene			107.0		%		70-130	09-AUG-18
Dibromochloromethane			102.7		%		70-130	09-AUG-18
Dichlorodifluoromethane			211.6	LCS-H	%		50-140	09-AUG-18
Ethylbenzene			107.0		%		70-130	09-AUG-18
n-Hexane			125.8		%		70-130	09-AUG-18
m+p-Xylenes			106.0		%		70-130	09-AUG-18
Methyl Ethyl Ketone			103.6		%		60-140	09-AUG-18
Methyl Isobutyl Ketone			105.8				60-140	

Quality Control Report

Workorder: L2141576 Report Date: 14-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4161624								
WG2842526-1 LCS								
Methyl Isobutyl Ketone			105.8		%		60-140	09-AUG-18
Methylene Chloride			107.4		%		70-130	09-AUG-18
MTBE			108.4		%		70-130	09-AUG-18
o-Xylene			104.6		%		70-130	09-AUG-18
Styrene			106.5		%		70-130	09-AUG-18
Tetrachloroethylene			105.1		%		70-130	09-AUG-18
Toluene			106.5		%		70-130	09-AUG-18
trans-1,2-Dichloroethylene			108.5		%		70-130	09-AUG-18
trans-1,3-Dichloropropene			106.0		%		70-130	09-AUG-18
Trichloroethylene			110.7		%		70-130	09-AUG-18
Trichlorofluoromethane			125.9		%		60-140	09-AUG-18
Vinyl chloride			124.2		%		60-140	09-AUG-18
WG2842526-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	09-AUG-18
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	09-AUG-18
1,1,1-Trichloroethane			<0.50		ug/L		0.5	09-AUG-18
1,1,2-Trichloroethane			<0.50		ug/L		0.5	09-AUG-18
1,1-Dichloroethane			<0.50		ug/L		0.5	09-AUG-18
1,1-Dichloroethylene			<0.50		ug/L		0.5	09-AUG-18
1,2-Dibromoethane			<0.20		ug/L		0.2	09-AUG-18
1,2-Dichlorobenzene			<0.50		ug/L		0.5	09-AUG-18
1,2-Dichloroethane			<0.50		ug/L		0.5	09-AUG-18
1,2-Dichloropropane			<0.50		ug/L		0.5	09-AUG-18
1,3-Dichlorobenzene			<0.50		ug/L		0.5	09-AUG-18
1,4-Dichlorobenzene			<0.50		ug/L		0.5	09-AUG-18
Acetone			<30		ug/L		30	09-AUG-18
Benzene			<0.50		ug/L		0.5	09-AUG-18
Bromodichloromethane			<2.0		ug/L		2	09-AUG-18
Bromoform			<5.0		ug/L		5	09-AUG-18
Bromomethane			<0.50		ug/L		0.5	09-AUG-18
Carbon tetrachloride			<0.20		ug/L		0.2	09-AUG-18
Chlorobenzene			<0.50		ug/L		0.5	09-AUG-18
Chloroform			<1.0		ug/L		1	09-AUG-18
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	09-AUG-18

Quality Control Report

Workorder: L2141576 Report Date: 14-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4161624								
WG2842526-2 MB								
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	09-AUG-18
Dibromochloromethane			<2.0		ug/L		2	09-AUG-18
Dichlorodifluoromethane			<2.0		ug/L		2	09-AUG-18
Ethylbenzene			<0.50		ug/L		0.5	09-AUG-18
n-Hexane			<0.50		ug/L		0.5	09-AUG-18
m+p-Xylenes			<0.40		ug/L		0.4	09-AUG-18
Methyl Ethyl Ketone			<20		ug/L		20	09-AUG-18
Methyl Isobutyl Ketone			<20		ug/L		20	09-AUG-18
Methylene Chloride			<5.0		ug/L		5	09-AUG-18
MTBE			<2.0		ug/L		2	09-AUG-18
o-Xylene			<0.30		ug/L		0.3	09-AUG-18
Styrene			<0.50		ug/L		0.5	09-AUG-18
Tetrachloroethylene			<0.50		ug/L		0.5	09-AUG-18
Toluene			<0.50		ug/L		0.5	09-AUG-18
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	09-AUG-18
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	09-AUG-18
Trichloroethylene			<0.50		ug/L		0.5	09-AUG-18
Trichlorofluoromethane			<5.0		ug/L		5	09-AUG-18
Vinyl chloride			<0.50		ug/L		0.5	09-AUG-18
Surrogate: 1,4-Difluorobenzene			99.4		%		70-130	09-AUG-18
Surrogate: 4-Bromofluorobenzene			98.4		%		70-130	09-AUG-18
WG2842526-5 MS		**WG2842526-3**						
1,1,1,2-Tetrachloroethane			101.7		%		50-140	09-AUG-18
1,1,2,2-Tetrachloroethane			94.2		%		50-140	09-AUG-18
1,1,1-Trichloroethane			108.2		%		50-140	09-AUG-18
1,1,2-Trichloroethane			98.2		%		50-140	09-AUG-18
1,1-Dichloroethane			106.0		%		50-140	09-AUG-18
1,1-Dichloroethylene			106.3		%		50-140	09-AUG-18
1,2-Dibromoethane			94.4		%		50-140	09-AUG-18
1,2-Dichlorobenzene			105.9		%		50-140	09-AUG-18
1,2-Dichloroethane			98.4		%		50-140	09-AUG-18
1,2-Dichloropropane			103.0		%		50-140	09-AUG-18
1,3-Dichlorobenzene			107.2		%		50-140	09-AUG-18
1,4-Dichlorobenzene			107.2		%		50-140	09-AUG-18

Quality Control Report

Workorder: L2141576 Report Date: 14-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4161624								
WG2842526-5 MS		**WG2842526-3**						
Acetone			91.4		%		50-140	09-AUG-18
Benzene			107.8		%		50-140	09-AUG-18
Bromodichloromethane			102.7		%		50-140	09-AUG-18
Bromoform			90.4		%		50-140	09-AUG-18
Bromomethane			82.3		%		50-140	09-AUG-18
Carbon tetrachloride			107.7		%		50-140	09-AUG-18
Chlorobenzene			106.7		%		50-140	09-AUG-18
Chloroform			105.8		%		50-140	09-AUG-18
cis-1,2-Dichloroethylene			105.4		%		50-140	09-AUG-18
cis-1,3-Dichloropropene			97.0		%		50-140	09-AUG-18
Dibromochloromethane			96.0		%		50-140	09-AUG-18
Dichlorodifluoromethane			122.8		%		50-140	09-AUG-18
Ethylbenzene			110.6		%		50-140	09-AUG-18
n-Hexane			133.7		%		50-140	09-AUG-18
m+p-Xylenes			110.5		%		50-140	09-AUG-18
Methyl Ethyl Ketone			85.6		%		50-140	09-AUG-18
Methyl Isobutyl Ketone			88.1		%		50-140	09-AUG-18
Methylene Chloride			101.2		%		50-140	09-AUG-18
MTBE			110.3		%		50-140	09-AUG-18
o-Xylene			107.2		%		50-140	09-AUG-18
Styrene			105.6		%		50-140	09-AUG-18
Tetrachloroethylene			110.2		%		50-140	09-AUG-18
Toluene			110.2		%		50-140	09-AUG-18
trans-1,2-Dichloroethylene			107.6		%		50-140	09-AUG-18
trans-1,3-Dichloropropene			93.4		%		50-140	09-AUG-18
Trichloroethylene			111.8		%		50-140	09-AUG-18
Trichlorofluoromethane			118.5		%		50-140	09-AUG-18
Vinyl chloride			105.9		%		50-140	09-AUG-18
Batch R4162501								
WG2841271-1 LCS								
n-Hexane			80.0		%		70-130	09-AUG-18
WG2841271-2 MB								
n-Hexane			<0.50		ug/L		0.5	10-AUG-18

Quality Control Report

Workorder: L2141576 Report Date: 14-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4162513								
WG2842152-1 LCS								
Vinyl chloride			107.6		%		60-140	10-AUG-18
WG2842152-2 MB								
Vinyl chloride			<0.50		ug/L		0.5	10-AUG-18
Batch R4166494								
WG2843292-4 DUP		**WG2843292-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-AUG-18
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-AUG-18
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-AUG-18
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-AUG-18
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-AUG-18
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-AUG-18
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	13-AUG-18
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-AUG-18
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-AUG-18
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-AUG-18
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-AUG-18
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-AUG-18
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	13-AUG-18
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-AUG-18
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	13-AUG-18
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	13-AUG-18
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-AUG-18
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	13-AUG-18
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-AUG-18
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	13-AUG-18
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-AUG-18
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	13-AUG-18
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	13-AUG-18
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	13-AUG-18
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-AUG-18
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-AUG-18
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	13-AUG-18
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	13-AUG-18

Quality Control Report

Workorder: L2141576 Report Date: 14-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4166494								
WG2843292-4 DUP		**WG2843292-3**						
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	13-AUG-18
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	13-AUG-18
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	13-AUG-18
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	13-AUG-18
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-AUG-18
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-AUG-18
Toluene		0.62	0.60		ug/L	3.3	30	13-AUG-18
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-AUG-18
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	13-AUG-18
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-AUG-18
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	13-AUG-18
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-AUG-18
WG2843292-1 LCS								
1,1,1,2-Tetrachloroethane			100.6		%		70-130	13-AUG-18
1,1,2,2-Tetrachloroethane			96.1		%		70-130	13-AUG-18
1,1,1-Trichloroethane			104.5		%		70-130	13-AUG-18
1,1,2-Trichloroethane			101.1		%		70-130	13-AUG-18
1,1-Dichloroethane			108.3		%		70-130	13-AUG-18
1,1-Dichloroethylene			103.9		%		70-130	13-AUG-18
1,2-Dibromoethane			99.5		%		70-130	13-AUG-18
1,2-Dichlorobenzene			105.6		%		70-130	13-AUG-18
1,2-Dichloroethane			102.4		%		70-130	13-AUG-18
1,2-Dichloropropane			101.4		%		70-130	13-AUG-18
1,3-Dichlorobenzene			107.2		%		70-130	13-AUG-18
1,4-Dichlorobenzene			108.1		%		70-130	13-AUG-18
Acetone			101.1		%		60-140	13-AUG-18
Benzene			106.5		%		70-130	13-AUG-18
Bromodichloromethane			102.6		%		70-130	13-AUG-18
Bromoform			95.4		%		70-130	13-AUG-18
Bromomethane			87.9		%		60-140	13-AUG-18
Carbon tetrachloride			105.7		%		70-130	13-AUG-18
Chlorobenzene			107.0		%		70-130	13-AUG-18
Chloroform			105.4		%		70-130	13-AUG-18

Quality Control Report

Workorder: L2141576 Report Date: 14-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4166494								
WG2843292-1 LCS								
cis-1,2-Dichloroethylene			105.2		%		70-130	13-AUG-18
cis-1,3-Dichloropropene			106.0		%		70-130	13-AUG-18
Dibromochloromethane			99.6		%		70-130	13-AUG-18
Dichlorodifluoromethane			122.5		%		50-140	13-AUG-18
Ethylbenzene			104.6		%		70-130	13-AUG-18
n-Hexane			130.3	MES	%		70-130	13-AUG-18
m+p-Xylenes			105.2		%		70-130	13-AUG-18
Methyl Ethyl Ketone			95.2		%		60-140	13-AUG-18
Methyl Isobutyl Ketone			86.6		%		60-140	13-AUG-18
Methylene Chloride			106.0		%		70-130	13-AUG-18
MTBE			109.8		%		70-130	13-AUG-18
o-Xylene			102.6		%		70-130	13-AUG-18
Styrene			102.2		%		70-130	13-AUG-18
Tetrachloroethylene			111.2		%		70-130	13-AUG-18
Toluene			104.0		%		70-130	13-AUG-18
trans-1,2-Dichloroethylene			108.8		%		70-130	13-AUG-18
trans-1,3-Dichloropropene			103.1		%		70-130	13-AUG-18
Trichloroethylene			110.7		%		70-130	13-AUG-18
Trichlorofluoromethane			117.3		%		60-140	13-AUG-18
Vinyl chloride			105.1		%		60-140	13-AUG-18
WG2843292-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	13-AUG-18
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	13-AUG-18
1,1,1-Trichloroethane			<0.50		ug/L		0.5	13-AUG-18
1,1,2-Trichloroethane			<0.50		ug/L		0.5	13-AUG-18
1,1-Dichloroethane			<0.50		ug/L		0.5	13-AUG-18
1,1-Dichloroethylene			<0.50		ug/L		0.5	13-AUG-18
1,2-Dibromoethane			<0.20		ug/L		0.2	13-AUG-18
1,2-Dichlorobenzene			<0.50		ug/L		0.5	13-AUG-18
1,2-Dichloroethane			<0.50		ug/L		0.5	13-AUG-18
1,2-Dichloropropane			<0.50		ug/L		0.5	13-AUG-18
1,3-Dichlorobenzene			<0.50		ug/L		0.5	13-AUG-18
1,4-Dichlorobenzene			<0.50		ug/L		0.5	13-AUG-18
Acetone			<30		ug/L		30	13-AUG-18

Quality Control Report

Workorder: L2141576 Report Date: 14-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4166494								
WG2843292-2 MB								
Benzene			<0.50		ug/L		0.5	13-AUG-18
Bromodichloromethane			<2.0		ug/L		2	13-AUG-18
Bromoform			<5.0		ug/L		5	13-AUG-18
Bromomethane			<0.50		ug/L		0.5	13-AUG-18
Carbon tetrachloride			<0.20		ug/L		0.2	13-AUG-18
Chlorobenzene			<0.50		ug/L		0.5	13-AUG-18
Chloroform			<1.0		ug/L		1	13-AUG-18
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	13-AUG-18
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	13-AUG-18
Dibromochloromethane			<2.0		ug/L		2	13-AUG-18
Dichlorodifluoromethane			<2.0		ug/L		2	13-AUG-18
Ethylbenzene			<0.50		ug/L		0.5	13-AUG-18
n-Hexane			<0.50		ug/L		0.5	13-AUG-18
m+p-Xylenes			<0.40		ug/L		0.4	13-AUG-18
Methyl Ethyl Ketone			<20		ug/L		20	13-AUG-18
Methyl Isobutyl Ketone			<20		ug/L		20	13-AUG-18
Methylene Chloride			<5.0		ug/L		5	13-AUG-18
MTBE			<2.0		ug/L		2	13-AUG-18
o-Xylene			<0.30		ug/L		0.3	13-AUG-18
Styrene			<0.50		ug/L		0.5	13-AUG-18
Tetrachloroethylene			<0.50		ug/L		0.5	13-AUG-18
Toluene			<0.50		ug/L		0.5	13-AUG-18
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	13-AUG-18
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	13-AUG-18
Trichloroethylene			<0.50		ug/L		0.5	13-AUG-18
Trichlorofluoromethane			<5.0		ug/L		5	13-AUG-18
Vinyl chloride			<0.50		ug/L		0.5	13-AUG-18
Surrogate: 1,4-Difluorobenzene			100.8		%		70-130	13-AUG-18
Surrogate: 4-Bromofluorobenzene			98.2		%		70-130	13-AUG-18
WG2843292-5 MS		**WG2843292-3**						
1,1,1,2-Tetrachloroethane			102.2		%		50-140	13-AUG-18
1,1,2,2-Tetrachloroethane			105.2		%		50-140	13-AUG-18
1,1,1-Trichloroethane			101.2		%		50-140	13-AUG-18
1,1,2-Trichloroethane			108.2		%		50-140	13-AUG-18

Quality Control Report

Workorder: L2141576 Report Date: 14-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4166494								
WG2843292-5 MS		**WG2843292-3**						
1,1-Dichloroethane			108.5		%		50-140	13-AUG-18
1,1-Dichloroethylene			97.6		%		50-140	13-AUG-18
1,2-Dibromoethane			107.8		%		50-140	13-AUG-18
1,2-Dichlorobenzene			105.6		%		50-140	13-AUG-18
1,2-Dichloroethane			109.3		%		50-140	13-AUG-18
1,2-Dichloropropane			105.9		%		50-140	13-AUG-18
1,3-Dichlorobenzene			103.9		%		50-140	13-AUG-18
1,4-Dichlorobenzene			105.4		%		50-140	13-AUG-18
Acetone			104.7		%		50-140	13-AUG-18
Benzene			107.3		%		50-140	13-AUG-18
Bromodichloromethane			107.5		%		50-140	13-AUG-18
Bromoform			102.7		%		50-140	13-AUG-18
Bromomethane			86.2		%		50-140	13-AUG-18
Carbon tetrachloride			101.1		%		50-140	13-AUG-18
Chlorobenzene			107.0		%		50-140	13-AUG-18
Chloroform			107.1		%		50-140	13-AUG-18
cis-1,2-Dichloroethylene			107.0		%		50-140	13-AUG-18
cis-1,3-Dichloropropene			117.2		%		50-140	13-AUG-18
Dibromochloromethane			104.4		%		50-140	13-AUG-18
Dichlorodifluoromethane			101.5		%		50-140	13-AUG-18
Ethylbenzene			101.0		%		50-140	13-AUG-18
n-Hexane			120.3		%		50-140	13-AUG-18
m+p-Xylenes			101.7		%		50-140	13-AUG-18
Methyl Ethyl Ketone			110.4		%		50-140	13-AUG-18
Methyl Isobutyl Ketone			97.0		%		50-140	13-AUG-18
Methylene Chloride			108.6		%		50-140	13-AUG-18
MTBE			109.8		%		50-140	13-AUG-18
o-Xylene			101.1		%		50-140	13-AUG-18
Styrene			102.3		%		50-140	13-AUG-18
Tetrachloroethylene			104.5		%		50-140	13-AUG-18
Toluene			101.6		%		50-140	13-AUG-18
trans-1,2-Dichloroethylene			105.0		%		50-140	13-AUG-18
trans-1,3-Dichloropropene			112.3		%		50-140	13-AUG-18

Quality Control Report

Workorder: L2141576 Report Date: 14-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: TANIA MCCARTHY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4166494								
WG2843292-5 MS		**WG2843292-3**						
Trichloroethylene			108.6		%		50-140	13-AUG-18
Trichlorofluoromethane			107.9		%		50-140	13-AUG-18
Vinyl chloride			95.2		%		50-140	13-AUG-18

Quality Control Report

Workorder: L2141576 Report Date: 14-AUG-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9
Contact: TANIA MCCARTHY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
LCS-H	Lab Control Sample recovery was above ALS DQO. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

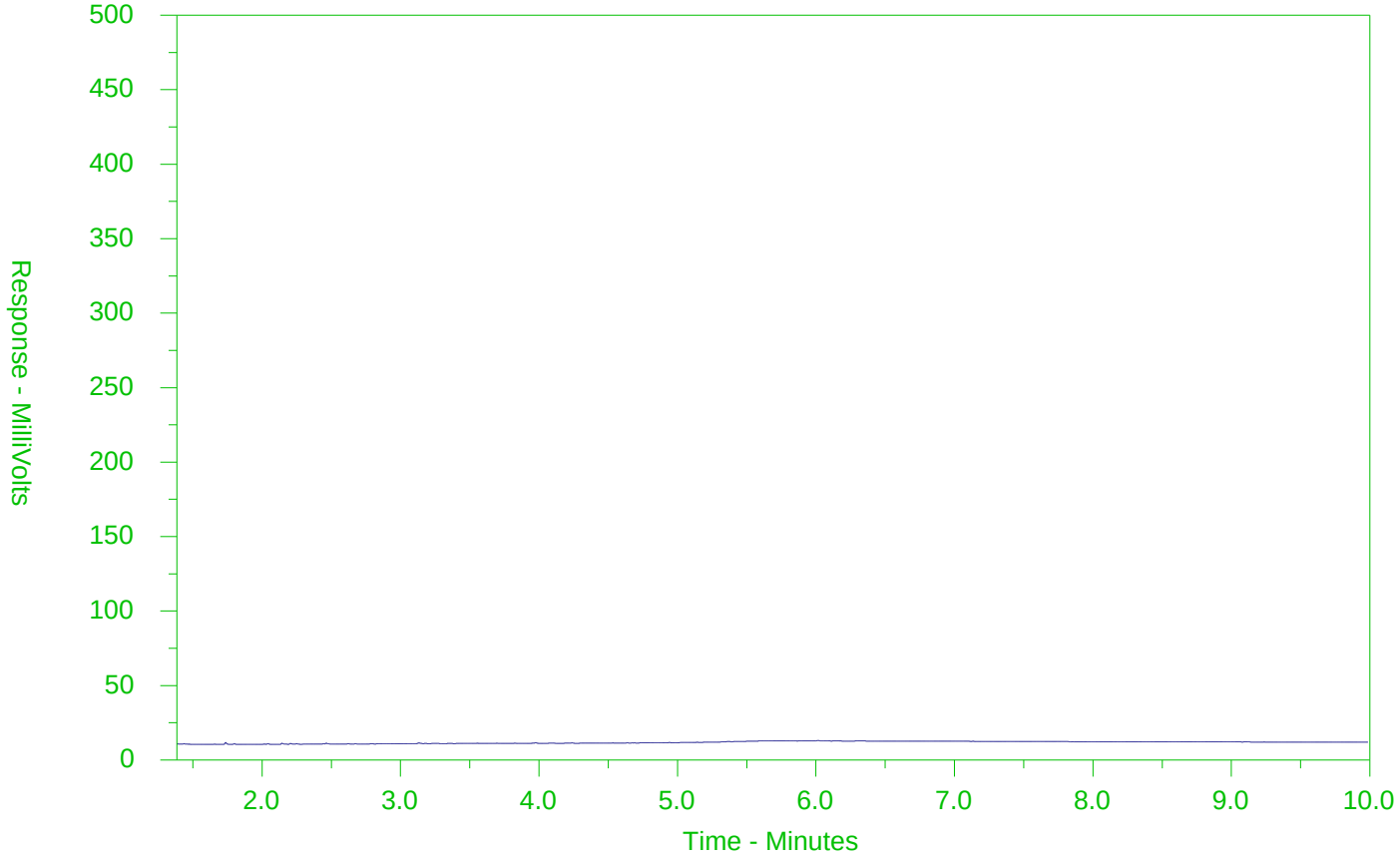
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2141576-8
Client Sample ID: MW18-126D



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

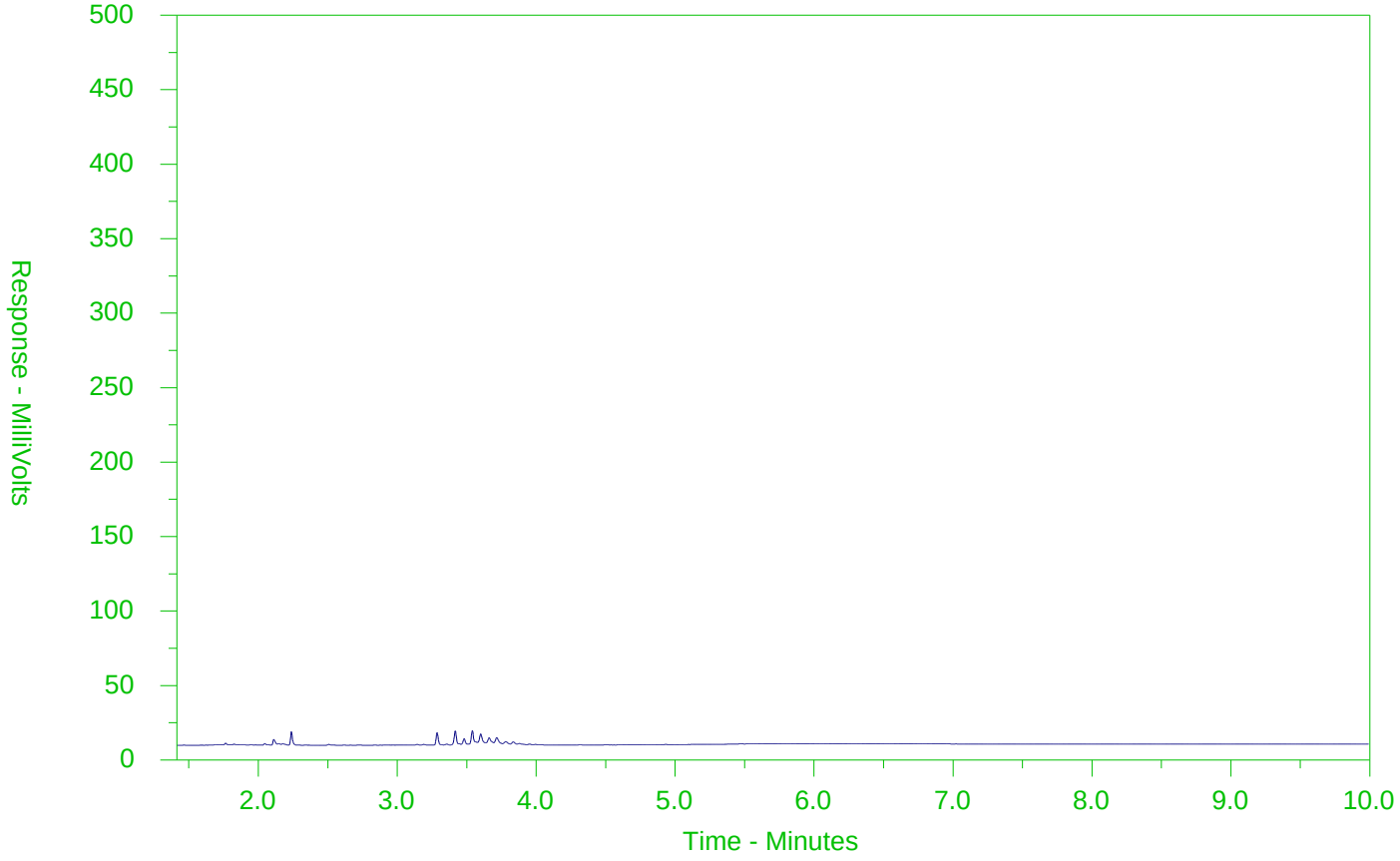
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2141576-9
Client Sample ID: MW18-125S



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

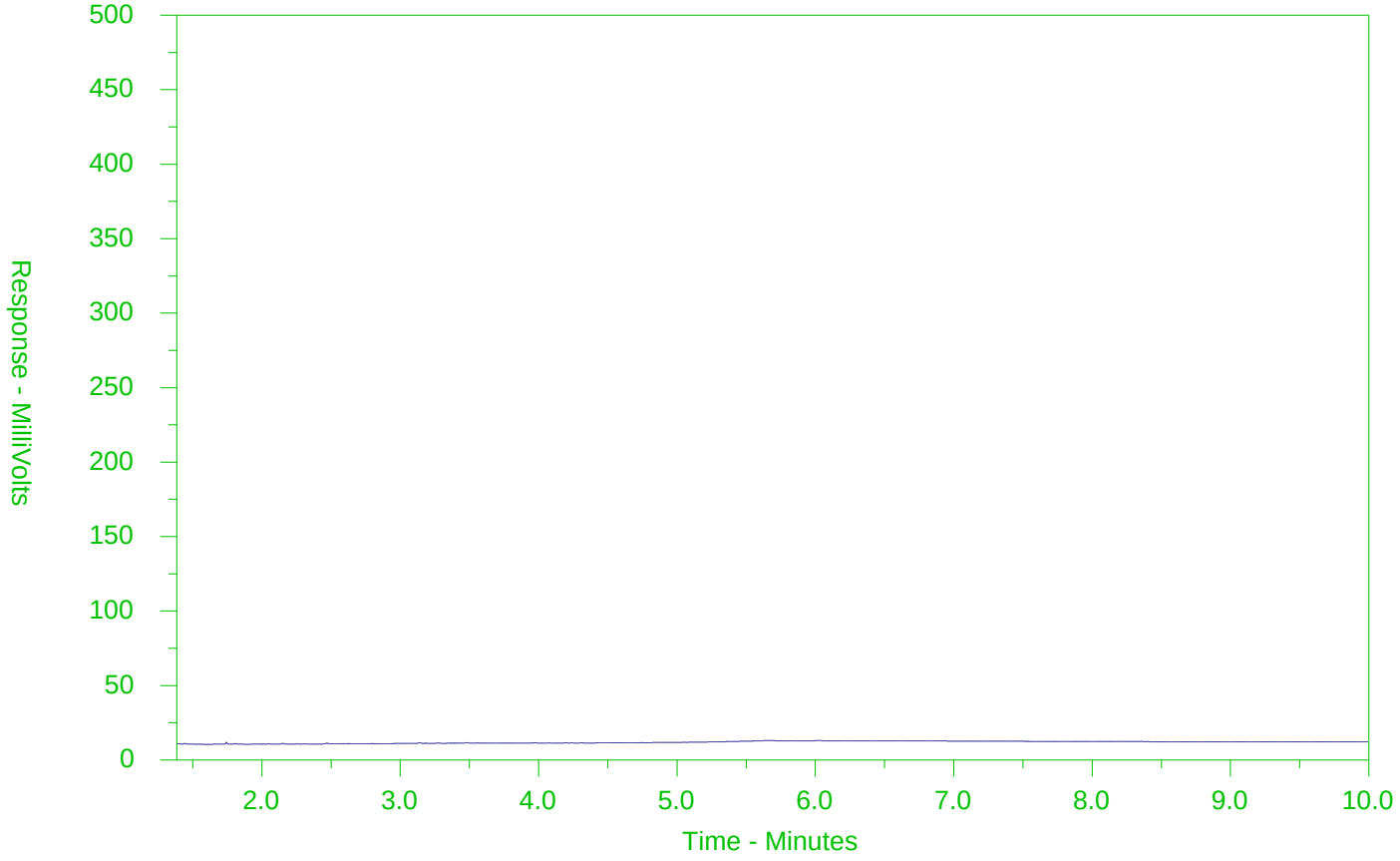
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2141576-12
Client Sample ID: MW18-127S



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

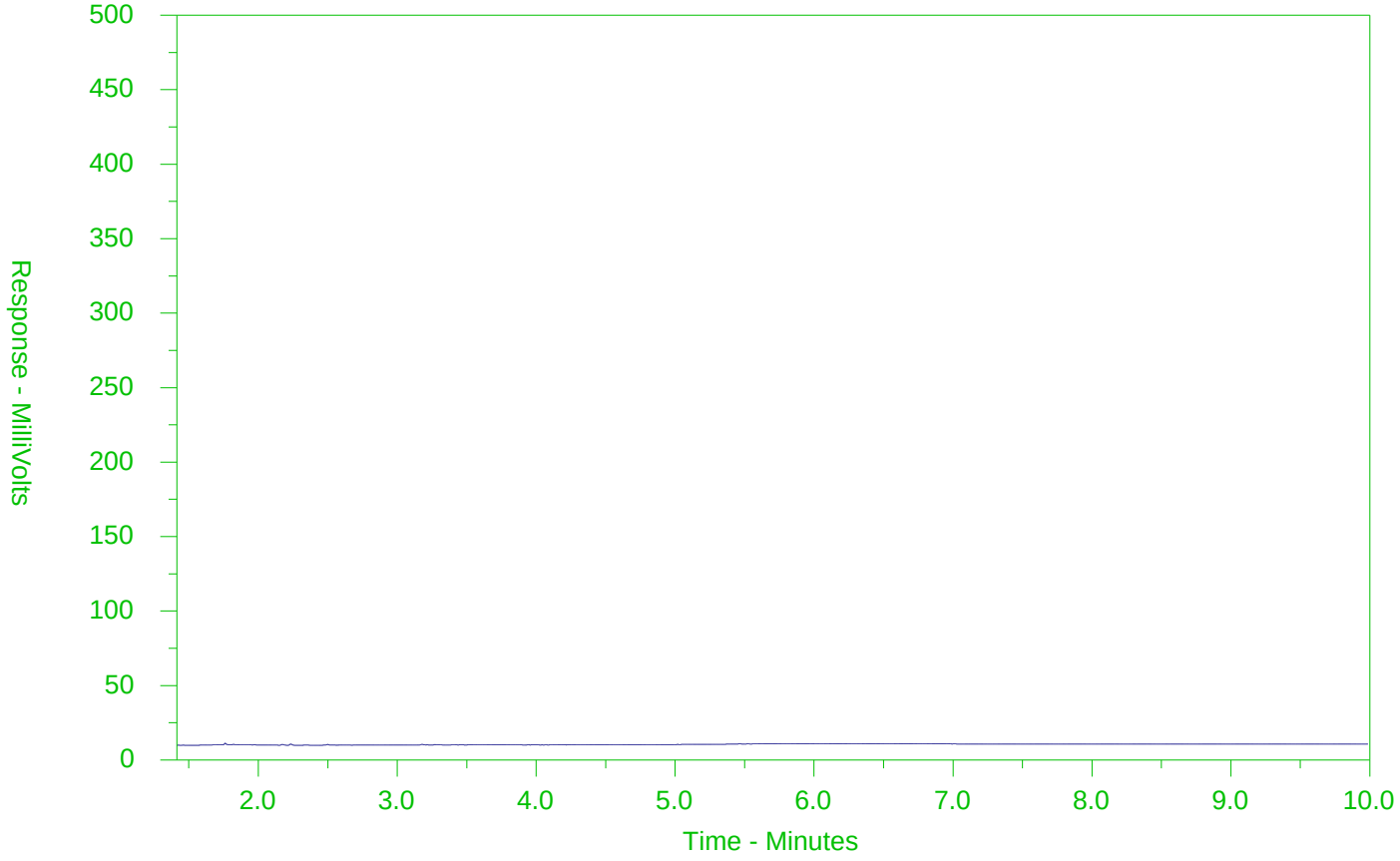
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2141576-18
Client Sample ID: DUP2



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2141576-COFC

COC Number: 15 -

Report To	Contact and company name below will appear on the final report
Company:	CH2M Hill
Contact:	Tania McCarthy
Phone:	519 579 3500
	Company address below will appear on the final report
Street:	72 Victoria Street South, Suite 300
City/Province:	Kitchener
Postal Code:	N2G 4Y9
Invoice To	Same as Report To ☐ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	CH2M Hill
Contact:	Accounts Payable

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: Tania.McCarthy@jacobs.com

Email 2: Ed.Taves@jacobs.com

Email 3: amy.casey@jacobs.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: Accounts Payable

Email 2:

Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
4 day [P4]	☐	1 Business day [E1]	☐
3 day [P3]	☐	Same Day, Weekend or Statutory holiday [E0]	☐
2 day [P2]	☐		

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #:	Q68850
Job #:	694757
PO / AFE:	
LSD:	04B
ALS Lab Work Order # (lab use only)	L2141576

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	
ALS Contact: Mathy	Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	F1-F4-511-P-WT	MET,HYD-R511-WT	MET-R511-D-MS-WT	PAH-511-WT	PCB-511-WT	VOC-511-HS-WT	VOC-R511,F1-F4-P-WT		BAP-LABFILTER-511-WT B(					Number of Containers
1	MW18-~~130D~~ 1175	02-008-18	10:15	W			X											
2	MW18-112D		11:50			X												
3	MW18-112S		11:51			X												
4	MW18-114S		13:45			X												
5	MW18-118S		13:50				X	X		X								
6	MW18-115S		15:10			X												
7	MW18-124S		15:15					X										
8	MW18-126D		16:50		X					X								
9	MW18-125S		17:15		X			X	X	X								
10	MW18-121S	03-008-18	09:30				X			X								
11	MW18-122D		10:00							X								
12	MW18-127S		11:05		X					X								

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human drinking water use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C	
			3.1°C	

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: A.Casey	Date: 8/3/18	Time:	Received by:	Date:	Time:	Received by:	Date: 03-Aug-18	Time: 16:50

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

ALS Environmental

www.alsglobal.com

Chain of Custody (C
Request F

Canada Toll Free: 1 8

L2141576-COFC

COC Number: 15 -

Report To	Contact and company name below will appear on the final report
Company:	CH2M Hill
Contact:	Tania McCarthy
Phone:	519 579 3500
	Company address below will appear on the final report
Street:	72 Victoria Street South, Suite 300
City/Province:	Kitchener
Postal Code:	N2G 4Y9
Invoice To	Same as Report To ☐ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	CH2M Hill
Contact:	Accounts Payable

Select Report For
Quality Control (QC)
☐ Compare Results to Cr
Select Distribution:
Email 1 or Fax Tania.M
Email 2
Email 3 amy.casey@jacobs.com
Select Invoice Distribution
Email 1 or Fax ☐ EMAIL ☐ MAIL ☐ FAX
Email 2 Accounts Payable

E&P TATs with your AM - surcharges will apply
Regular TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
4 day [P4]	☐	1 Business day [E1]	☐
3 day [P3]	☐	Same Day, Weekend or Statutory holiday [E0]	☐
2 day [P2]	☐		

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q68850
Job #: 694757
PO / AFE: WS - 04B
LSD:
ALS Lab Work Order # (lab use only): L2141576

Oil and Gas Required Fields (client use)

AFE Center:
Minor Code:
Requisitioner:
Location:
PO#
Routing Code:

ALS Contact: Mathy
Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	F1-F4-511-P-WT	MET_HYD-R511-WT	MET-R511-D-MS-WT	PAH-511-WT	PCB-511-WT	VOC-511-HS-WT	VOC-R511,F1-F4-P-WT	BAP-LABFILTER-511-WT B(	Number of Containers
13	MW18-119S	03-008-18	11:45	W						X			
14	MW18-123S		12:40							X			
15	MW18-116		13:55							X			
16	MW18-116S		13:50				X						
17	MW18-113S		15:40				X						
18	DUP2												
19	DUP3	03-008-18	16:55		X					X			
		03-008-18	15:45										

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human drinking water use? ☐ YES ☐ NO

Special Instructions / Specify (e.g. ... on the drop-down list below

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
	3.1 °C

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Amy Casey	Date: 3/8/18	Time:	Received by:	Date:	Time:	Received by:	Date: 03-Aug-18	Time: 16:50

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

OCTOBER 2015 FRONT

CH2M HILL CANADA LIMITED
ATTN: MICHAEL SHIRY
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 17-OCT-18
Report Date: 26-OCT-18 14:49 (MT)
Version: FINAL REV. 2

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2182846

Project P.O. #: NOT SUBMITTED
Job Reference: 694757
C of C Numbers: 17-728110
Legal Site Desc:

Comments: 26-OCT-18:
BAP lab filter added to first sample. Results included.

Mathy Mahadeva
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2182846-1	OW25									
Sampled By:	M.S. & V.P. on 17-OCT-18 @ 15:5									
Matrix:	WATER						#1			
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.020		0.020	ug/L	22-OCT-18	4.1			
	Acenaphthylene	<0.020		0.020	ug/L	22-OCT-18	1			
	Anthracene	<0.020		0.020	ug/L	22-OCT-18	1			
	Benzo(a)anthracene	<0.020		0.020	ug/L	22-OCT-18	1			
	Benzo(a)pyrene	0.034		0.010	ug/L	22-OCT-18	*0.01			
	Benzo(b)fluoranthene	<0.020		0.020	ug/L	22-OCT-18	0.1			
	Benzo(g,h,i)perylene	<0.020		0.020	ug/L	22-OCT-18	0.2			
	Benzo(k)fluoranthene	<0.020		0.020	ug/L	22-OCT-18	0.1			
	Chrysene	<0.020		0.020	ug/L	22-OCT-18	0.1			
	Dibenzo(ah)anthracene	<0.020		0.020	ug/L	22-OCT-18	0.2			
	Fluoranthene	<0.020		0.020	ug/L	22-OCT-18	0.41			
	Fluorene	<0.020		0.020	ug/L	22-OCT-18	120			
	Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	22-OCT-18	0.2			
	1+2-Methylnaphthalenes	<0.028		0.028	ug/L	22-OCT-18	3.2			
	1-Methylnaphthalene	<0.020		0.020	ug/L	22-OCT-18	3.2			
	2-Methylnaphthalene	<0.020		0.020	ug/L	22-OCT-18	3.2			
	Naphthalene	<0.050		0.050	ug/L	22-OCT-18	7			
	Phenanthrene	<0.020		0.020	ug/L	22-OCT-18	1			
	Pyrene	<0.020		0.020	ug/L	22-OCT-18	4.1			
	Surrogate: d10-Acenaphthene	88.3		60-140	%	22-OCT-18				
	Surrogate: d12-Chrysene	97.5		60-140	%	22-OCT-18				
	Surrogate: d8-Naphthalene	77.6		60-140	%	22-OCT-18				
	Surrogate: d10-Phenanthrene	94.4		60-140	%	22-OCT-18				
Semi-Volatile Organics										
	Benzo(a)pyrene-lab filtered	<0.015	DLM	0.015	ug/L	25-OCT-18	**0.01			
	Surrogate: d12-Chrysene	89.2		60-140	%	25-OCT-18				
L2182846-2	OW31-S									
Sampled By:	M.S. & V.P. on 17-OCT-18 @ 10:0									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	64		30	ug/L	22-OCT-18	2700			
	Benzene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	22-OCT-18	16			
	Bromoform	<5.0		5.0	ug/L	22-OCT-18	5			
	Bromomethane	<0.50		0.50	ug/L	22-OCT-18	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	22-OCT-18	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	22-OCT-18	30			
	Dibromochloromethane	<2.0		2.0	ug/L	22-OCT-18	25			
	Chloroform	<1.0		1.0	ug/L	22-OCT-18	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	22-OCT-18	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	22-OCT-18	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	22-OCT-18	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	22-OCT-18	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	22-OCT-18	5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2182846-2	OW31-S									
Sampled By:	M.S. & V.P. on 17-OCT-18 @ 10:0									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	1,2-Dichloroethane	<0.50		0.50	ug/L	22-OCT-18	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	cis-1,2-Dichloroethylene	1.69		0.50	ug/L	22-OCT-18	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	22-OCT-18	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	22-OCT-18	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	22-OCT-18	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	22-OCT-18				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	22-OCT-18				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	22-OCT-18	2.4			
	n-Hexane	<0.50		0.50	ug/L	22-OCT-18	5			
	Methyl Ethyl Ketone	<20		20	ug/L	22-OCT-18	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	22-OCT-18	640			
	MTBE	<2.0		2.0	ug/L	22-OCT-18	15			
	Styrene	<0.50		0.50	ug/L	22-OCT-18	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	22-OCT-18	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Toluene	38.5		0.50	ug/L	22-OCT-18	*24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	22-OCT-18	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	22-OCT-18	150			
	Vinyl chloride	<0.50		0.50	ug/L	22-OCT-18	0.5			
	o-Xylene	<0.30		0.30	ug/L	22-OCT-18				
	m+p-Xylenes	<0.40		0.40	ug/L	22-OCT-18				
	Xylenes (Total)	<0.50		0.50	ug/L	22-OCT-18	72			
	Surrogate: 4-Bromofluorobenzene	97.9		70-130	%	22-OCT-18				
	Surrogate: 1,4-Difluorobenzene	99.1		70-130	%	22-OCT-18				
L2182846-3	OW31-M									
Sampled By:	M.S. & V.P. on 17-OCT-18 @ 14:0									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	22-OCT-18	2700			
	Benzene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	22-OCT-18	16			
	Bromoform	<5.0		5.0	ug/L	22-OCT-18	5			
	Bromomethane	<0.50		0.50	ug/L	22-OCT-18	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	22-OCT-18	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	22-OCT-18	30			
	Dibromochloromethane	<2.0		2.0	ug/L	22-OCT-18	25			
	Chloroform	<1.0		1.0	ug/L	22-OCT-18	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	22-OCT-18	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	22-OCT-18	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	22-OCT-18	59			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2182846-3	OW31-M									
Sampled By:	M.S. & V.P. on 17-OCT-18 @ 14:0									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	22-OCT-18	590			
	1,1-Dichloroethane	0.57		0.50	ug/L	22-OCT-18	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	22-OCT-18	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	cis-1,2-Dichloroethylene	1.89		0.50	ug/L	22-OCT-18	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	22-OCT-18	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	22-OCT-18	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	22-OCT-18	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	22-OCT-18				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	22-OCT-18				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	22-OCT-18	2.4			
	n-Hexane	<0.50		0.50	ug/L	22-OCT-18	5			
	Methyl Ethyl Ketone	<20		20	ug/L	22-OCT-18	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	22-OCT-18	640			
	MTBE	<2.0		2.0	ug/L	22-OCT-18	15			
	Styrene	<0.50		0.50	ug/L	22-OCT-18	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	22-OCT-18	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Toluene	1.39		0.50	ug/L	22-OCT-18	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	22-OCT-18	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	22-OCT-18	150			
	Vinyl chloride	<0.50		0.50	ug/L	22-OCT-18	0.5			
	o-Xylene	<0.30		0.30	ug/L	22-OCT-18				
	m+p-Xylenes	<0.40		0.40	ug/L	22-OCT-18				
	Xylenes (Total)	<0.50		0.50	ug/L	22-OCT-18	72			
	Surrogate: 4-Bromofluorobenzene	99.0		70-130	%	22-OCT-18				
	Surrogate: 1,4-Difluorobenzene	99.4		70-130	%	22-OCT-18				
L2182846-4	OW31-E									
Sampled By:	M.S. & V.P. on 17-OCT-18 @ 17:1									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	22-OCT-18	2700			
	Benzene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	22-OCT-18	16			
	Bromoform	<5.0		5.0	ug/L	22-OCT-18	5			
	Bromomethane	<0.50		0.50	ug/L	22-OCT-18	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	22-OCT-18	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	22-OCT-18	30			
	Dibromochloromethane	<2.0		2.0	ug/L	22-OCT-18	25			
	Chloroform	<1.0		1.0	ug/L	22-OCT-18	2			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

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Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2182846-4	OW31-E									
Sampled By:	M.S. & V.P. on 17-OCT-18 @ 17:1									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	1,2-Dibromoethane	<0.20		0.20	ug/L	22-OCT-18	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	22-OCT-18	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	22-OCT-18	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	22-OCT-18	590			
	1,1-Dichloroethane	0.58		0.50	ug/L	22-OCT-18	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	22-OCT-18	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	cis-1,2-Dichloroethylene	2.01		0.50	ug/L	22-OCT-18	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	22-OCT-18	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	22-OCT-18	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	22-OCT-18	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	22-OCT-18				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	22-OCT-18				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	22-OCT-18	2.4			
	n-Hexane	<0.50		0.50	ug/L	22-OCT-18	5			
	Methyl Ethyl Ketone	<20		20	ug/L	22-OCT-18	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	22-OCT-18	640			
	MTBE	<2.0		2.0	ug/L	22-OCT-18	15			
	Styrene	<0.50		0.50	ug/L	22-OCT-18	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	22-OCT-18	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Toluene	0.79		0.50	ug/L	22-OCT-18	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	22-OCT-18	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	22-OCT-18	150			
	Vinyl chloride	<0.50		0.50	ug/L	22-OCT-18	0.5			
	o-Xylene	<0.30		0.30	ug/L	22-OCT-18				
	m+p-Xylenes	<0.40		0.40	ug/L	22-OCT-18				
	Xylenes (Total)	<0.50		0.50	ug/L	22-OCT-18	72			
	Surrogate: 4-Bromofluorobenzene	98.5		70-130	%	22-OCT-18				
	Surrogate: 1,4-Difluorobenzene	98.8		70-130	%	22-OCT-18				
L2182846-5	MW18-128D									
Sampled By:	M.S. & V.P. on 17-OCT-18 @ 13:0									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	22-OCT-18	2700			
	Benzene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	22-OCT-18	16			
	Bromoform	<5.0		5.0	ug/L	22-OCT-18	5			
	Bromomethane	<0.50		0.50	ug/L	22-OCT-18	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	22-OCT-18	0.2			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

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Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2182846-5	MW18-128D									
Sampled By:	M.S. & V.P. on 17-OCT-18 @ 13:0									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Chlorobenzene	<0.50		0.50	ug/L	22-OCT-18	30			
	Dibromochloromethane	<2.0		2.0	ug/L	22-OCT-18	25			
	Chloroform	<1.0		1.0	ug/L	22-OCT-18	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	22-OCT-18	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	22-OCT-18	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	22-OCT-18	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	22-OCT-18	590			
	1,1-Dichloroethane	1.13		0.50	ug/L	22-OCT-18	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	22-OCT-18	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	cis-1,2-Dichloroethylene	3.80		0.50	ug/L	22-OCT-18	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	22-OCT-18	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	22-OCT-18	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	22-OCT-18	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	22-OCT-18				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	22-OCT-18				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	22-OCT-18	2.4			
	n-Hexane	0.72		0.50	ug/L	22-OCT-18	5			
	Methyl Ethyl Ketone	<20		20	ug/L	22-OCT-18	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	22-OCT-18	640			
	MTBE	<2.0		2.0	ug/L	22-OCT-18	15			
	Styrene	<0.50		0.50	ug/L	22-OCT-18	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	22-OCT-18	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Toluene	<0.50		0.50	ug/L	22-OCT-18	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	22-OCT-18	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Trichloroethylene	0.85		0.50	ug/L	22-OCT-18	*0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	22-OCT-18	150			
	Vinyl chloride	<0.50		0.50	ug/L	22-OCT-18	0.5			
	o-Xylene	<0.30		0.30	ug/L	22-OCT-18				
	m+p-Xylenes	<0.40		0.40	ug/L	22-OCT-18				
	Xylenes (Total)	<0.50		0.50	ug/L	22-OCT-18	72			
	Surrogate: 4-Bromofluorobenzene	97.6		70-130	%	22-OCT-18				
	Surrogate: 1,4-Difluorobenzene	100.5		70-130	%	22-OCT-18				
L2182846-6	MW18-130D									
Sampled By:	M.S. & V.P. on 17-OCT-18 @ 13:2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	22-OCT-18	2700			
	Benzene	0.74		0.50	ug/L	22-OCT-18	*0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	22-OCT-18	16			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

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Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1			
L2182846-6	MW18-130D									
Sampled By:	M.S. & V.P. on 17-OCT-18 @ 13:2									
Matrix:	WATER									
Volatile Organic Compounds										
	Bromoform	<5.0		5.0	ug/L	22-OCT-18	5			
	Bromomethane	<0.50		0.50	ug/L	22-OCT-18	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	22-OCT-18	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	22-OCT-18	30			
	Dibromochloromethane	<2.0		2.0	ug/L	22-OCT-18	25			
	Chloroform	<1.0		1.0	ug/L	22-OCT-18	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	22-OCT-18	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	22-OCT-18	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	22-OCT-18	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	22-OCT-18	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	22-OCT-18	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	22-OCT-18	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	cis-1,2-Dichloroethylene	42.2		0.50	ug/L	22-OCT-18	*1.6			
	trans-1,2-Dichloroethylene	1.42		0.50	ug/L	22-OCT-18	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	22-OCT-18	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	22-OCT-18	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	22-OCT-18				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	22-OCT-18				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	22-OCT-18	2.4			
	n-Hexane	<0.50		0.50	ug/L	22-OCT-18	5			
	Methyl Ethyl Ketone	<20		20	ug/L	22-OCT-18	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	22-OCT-18	640			
	MTBE	<2.0		2.0	ug/L	22-OCT-18	15			
	Styrene	<0.50		0.50	ug/L	22-OCT-18	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	22-OCT-18	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Toluene	<0.50		0.50	ug/L	22-OCT-18	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	22-OCT-18	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	22-OCT-18	150			
	Vinyl chloride	5.41		0.50	ug/L	22-OCT-18	*0.5			
	o-Xylene	<0.30		0.30	ug/L	22-OCT-18				
	m+p-Xylenes	<0.40		0.40	ug/L	22-OCT-18				
	Xylenes (Total)	<0.50		0.50	ug/L	22-OCT-18	72			
	Surrogate: 4-Bromofluorobenzene	99.2		70-130	%	22-OCT-18				
	Surrogate: 1,4-Difluorobenzene	99.3		70-130	%	22-OCT-18				
Hydrocarbons										
	F1 (C6-C10)	<25		25	ug/L	22-OCT-18	420			
	F1-BTEX	<25		25	ug/L	22-OCT-18	420			
	F2 (C10-C16)	<100		100	ug/L	18-OCT-18	150			
	F3 (C16-C34)	<250		250	ug/L	18-OCT-18	500			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
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T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

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Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2182846-6	MW18-130D									
Sampled By:	M.S. & V.P. on 17-OCT-18 @ 13:2									
Matrix:	WATER						#1			
Hydrocarbons										
	F4 (C34-C50)	<250		250	ug/L	18-OCT-18	500			
	Total Hydrocarbons (C6-C50)	<370		370	ug/L	22-OCT-18				
	Chrom. to baseline at nC50	YES			No Unit	18-OCT-18				
	Surrogate: 2-Bromobenzotrifluoride	94.9		60-140	%	18-OCT-18				
	Surrogate: 3,4-Dichlorotoluene	84.5		60-140	%	22-OCT-18				
L2182846-7	MW18-131S									
Sampled By:	M.S. & V.P. on 17-OCT-18 @ 17:0									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30	OWP	30	ug/L	22-OCT-18	2700			
	Benzene	<0.50	OWP	0.50	ug/L	22-OCT-18	0.5			
	Bromodichloromethane	<2.0	OWP	2.0	ug/L	22-OCT-18	16			
	Bromoform	<5.0	OWP	5.0	ug/L	22-OCT-18	5			
	Bromomethane	<0.50	OWP	0.50	ug/L	22-OCT-18	0.89			
	Carbon tetrachloride	<0.20	OWP	0.20	ug/L	22-OCT-18	0.2			
	Chlorobenzene	<0.50	OWP	0.50	ug/L	22-OCT-18	30			
	Dibromochloromethane	<2.0	OWP	2.0	ug/L	22-OCT-18	25			
	Chloroform	<1.0	OWP	1.0	ug/L	22-OCT-18	2			
	1,2-Dibromoethane	<0.20	OWP	0.20	ug/L	22-OCT-18	0.2			
	1,2-Dichlorobenzene	<0.50	OWP	0.50	ug/L	22-OCT-18	3			
	1,3-Dichlorobenzene	<0.50	OWP	0.50	ug/L	22-OCT-18	59			
	1,4-Dichlorobenzene	<0.50	OWP	0.50	ug/L	22-OCT-18	0.5			
	Dichlorodifluoromethane	<2.0	OWP	2.0	ug/L	22-OCT-18	590			
	1,1-Dichloroethane	<0.50	OWP	0.50	ug/L	22-OCT-18	5			
	1,2-Dichloroethane	<0.50	OWP	0.50	ug/L	22-OCT-18	0.5			
	1,1-Dichloroethylene	<0.50	OWP	0.50	ug/L	22-OCT-18	0.5			
	cis-1,2-Dichloroethylene	2.43	OWP	0.50	ug/L	22-OCT-18	*1.6			
	trans-1,2-Dichloroethylene	<0.50	OWP	0.50	ug/L	22-OCT-18	1.6			
	Methylene Chloride	<5.0	OWP	5.0	ug/L	22-OCT-18	26			
	1,2-Dichloropropane	<0.50	OWP	0.50	ug/L	22-OCT-18	0.58			
	cis-1,3-Dichloropropene	<0.30	OWP	0.30	ug/L	22-OCT-18				
	trans-1,3-Dichloropropene	<0.30	OWP	0.30	ug/L	22-OCT-18				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Ethylbenzene	<0.50	OWP	0.50	ug/L	22-OCT-18	2.4			
	n-Hexane	<0.50	OWP	0.50	ug/L	22-OCT-18	5			
	Methyl Ethyl Ketone	<20	OWP	20	ug/L	22-OCT-18	1800			
	Methyl Isobutyl Ketone	<20	OWP	20	ug/L	22-OCT-18	640			
	MTBE	<2.0	OWP	2.0	ug/L	22-OCT-18	15			
	Styrene	<0.50	OWP	0.50	ug/L	22-OCT-18	5.4			
	1,1,1,2-Tetrachloroethane	<0.50	OWP	0.50	ug/L	22-OCT-18	1.1			
	1,1,2,2-Tetrachloroethane	<0.50	OWP	0.50	ug/L	22-OCT-18	0.5			
	Tetrachloroethylene	<0.50	OWP	0.50	ug/L	22-OCT-18	0.5			
	Toluene	<0.50	OWP	0.50	ug/L	22-OCT-18	24			
	1,1,1-Trichloroethane	<0.50	OWP	0.50	ug/L	22-OCT-18	23			
	1,1,2-Trichloroethane	<0.50	OWP	0.50	ug/L	22-OCT-18	0.5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2182846-7	MW18-131S									
Sampled By:	M.S. & V.P. on 17-OCT-18 @ 17:0									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Trichloroethylene	4.70	OWP	0.50	ug/L	22-OCT-18	*0.5			
	Trichlorofluoromethane	<5.0	OWP	5.0	ug/L	22-OCT-18	150			
	Vinyl chloride	<0.50	OWP	0.50	ug/L	22-OCT-18	0.5			
	o-Xylene	<0.30	OWP	0.30	ug/L	22-OCT-18				
	m+p-Xylenes	<0.40	OWP	0.40	ug/L	22-OCT-18				
	Xylenes (Total)	<0.50		0.50	ug/L	22-OCT-18	72			
	Surrogate: 4-Bromofluorobenzene	99.0		70-130	%	22-OCT-18				
	Surrogate: 1,4-Difluorobenzene	98.7		70-130	%	22-OCT-18				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	0.077		0.020	ug/L	22-OCT-18	4.1			
	Acenaphthylene	<0.020		0.020	ug/L	22-OCT-18	1			
	Anthracene	<0.020		0.020	ug/L	22-OCT-18	1			
	Benzo(a)anthracene	<0.020		0.020	ug/L	22-OCT-18	1			
	Benzo(a)pyrene	<0.010		0.010	ug/L	22-OCT-18	0.01			
	Benzo(b)fluoranthene	<0.020		0.020	ug/L	22-OCT-18	0.1			
	Benzo(g,h,i)perylene	<0.020		0.020	ug/L	22-OCT-18	0.2			
	Benzo(k)fluoranthene	<0.020		0.020	ug/L	22-OCT-18	0.1			
	Chrysene	<0.020		0.020	ug/L	22-OCT-18	0.1			
	Dibenzo(ah)anthracene	<0.020		0.020	ug/L	22-OCT-18	0.2			
	Fluoranthene	<0.020		0.020	ug/L	22-OCT-18	0.41			
	Fluorene	0.097		0.020	ug/L	22-OCT-18	120			
	Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	22-OCT-18	0.2			
	1+2-Methylnaphthalenes	0.263		0.028	ug/L	22-OCT-18	3.2			
	1-Methylnaphthalene	0.263		0.020	ug/L	22-OCT-18	3.2			
	2-Methylnaphthalene	<0.020		0.020	ug/L	22-OCT-18	3.2			
	Naphthalene	0.088		0.050	ug/L	22-OCT-18	7			
	Phenanthrene	0.099		0.020	ug/L	22-OCT-18	1			
	Pyrene	<0.020		0.020	ug/L	22-OCT-18	4.1			
	Surrogate: d10-Acenaphthene	87.4		60-140	%	22-OCT-18				
	Surrogate: d12-Chrysene	90.6		60-140	%	22-OCT-18				
	Surrogate: d8-Naphthalene	90.0		60-140	%	22-OCT-18				
	Surrogate: d10-Phenanthrene	93.8		60-140	%	22-OCT-18				
L2182846-8	MW18-132D									
Sampled By:	M.S. & V.P. on 17-OCT-18 @ 11:1									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	22-OCT-18	2700			
	Benzene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	22-OCT-18	16			
	Bromoform	<5.0		5.0	ug/L	22-OCT-18	5			
	Bromomethane	<0.50		0.50	ug/L	22-OCT-18	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	22-OCT-18	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	22-OCT-18	30			
	Dibromochloromethane	<2.0		2.0	ug/L	22-OCT-18	25			
	Chloroform	<1.0		1.0	ug/L	22-OCT-18	2			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2182846-8	MW18-132D									
Sampled By:	M.S. & V.P. on 17-OCT-18 @ 11:1									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	1,2-Dibromoethane	<0.20		0.20	ug/L	22-OCT-18	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	22-OCT-18	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	22-OCT-18	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	22-OCT-18	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	22-OCT-18	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	22-OCT-18	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	cis-1,2-Dichloroethylene	19.0		0.50	ug/L	22-OCT-18	*1.6			
	trans-1,2-Dichloroethylene	0.54		0.50	ug/L	22-OCT-18	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	22-OCT-18	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	22-OCT-18	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	22-OCT-18				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	22-OCT-18				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	22-OCT-18	2.4			
	n-Hexane	<0.50		0.50	ug/L	22-OCT-18	5			
	Methyl Ethyl Ketone	<20		20	ug/L	22-OCT-18	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	22-OCT-18	640			
	MTBE	<2.0		2.0	ug/L	22-OCT-18	15			
	Styrene	<0.50		0.50	ug/L	22-OCT-18	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	22-OCT-18	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Toluene	<0.50		0.50	ug/L	22-OCT-18	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	22-OCT-18	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	22-OCT-18	150			
	Vinyl chloride	4.41		0.50	ug/L	22-OCT-18	*0.5			
	o-Xylene	<0.30		0.30	ug/L	22-OCT-18				
	m+p-Xylenes	<0.40		0.40	ug/L	22-OCT-18				
	Xylenes (Total)	<0.50		0.50	ug/L	22-OCT-18	72			
	Surrogate: 4-Bromofluorobenzene	98.7		70-130	%	22-OCT-18				
	Surrogate: 1,4-Difluorobenzene	98.7		70-130	%	22-OCT-18				
Hydrocarbons										
	F1 (C6-C10)	<25		25	ug/L	22-OCT-18	420			
	F1-BTEX	<25		25	ug/L	22-OCT-18	420			
	F2 (C10-C16)	<100		100	ug/L	18-OCT-18	150			
	F3 (C16-C34)	<250		250	ug/L	18-OCT-18	500			
	F4 (C34-C50)	<250		250	ug/L	18-OCT-18	500			
	Total Hydrocarbons (C6-C50)	<370		370	ug/L	22-OCT-18				
	Chrom. to baseline at nC50	YES			No Unit	18-OCT-18				
	Surrogate: 2-Bromobenzotrifluoride	97.9		60-140	%	18-OCT-18				
	Surrogate: 3,4-Dichlorotoluene	80.8		60-140	%	22-OCT-18				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2182846-9	MW18-133D									
Sampled By:	M.S. & V.P. on 17-OCT-18 @ 13:2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	22-OCT-18	2700			
	Benzene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	22-OCT-18	16			
	Bromoform	<5.0		5.0	ug/L	22-OCT-18	5			
	Bromomethane	<0.50		0.50	ug/L	22-OCT-18	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	22-OCT-18	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	22-OCT-18	30			
	Dibromochloromethane	<2.0		2.0	ug/L	22-OCT-18	25			
	Chloroform	<1.0		1.0	ug/L	22-OCT-18	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	22-OCT-18	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	22-OCT-18	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	22-OCT-18	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	22-OCT-18	590			
	1,1-Dichloroethane	1.27		0.50	ug/L	22-OCT-18	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	22-OCT-18	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	cis-1,2-Dichloroethylene	3.63		0.50	ug/L	22-OCT-18	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	22-OCT-18	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	22-OCT-18	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	22-OCT-18	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	22-OCT-18				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	22-OCT-18				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	22-OCT-18	2.4			
	n-Hexane	<0.50		0.50	ug/L	22-OCT-18	5			
	Methyl Ethyl Ketone	<20		20	ug/L	22-OCT-18	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	22-OCT-18	640			
	MTBE	<2.0		2.0	ug/L	22-OCT-18	15			
	Styrene	<0.50		0.50	ug/L	22-OCT-18	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	22-OCT-18	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Toluene	<0.50		0.50	ug/L	22-OCT-18	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	22-OCT-18	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	22-OCT-18	150			
	Vinyl chloride	<0.50		0.50	ug/L	22-OCT-18	0.5			
	o-Xylene	<0.30		0.30	ug/L	22-OCT-18				
	m+p-Xylenes	<0.40		0.40	ug/L	22-OCT-18				
	Xylenes (Total)	<0.50		0.50	ug/L	22-OCT-18	72			
	Surrogate: 4-Bromofluorobenzene	99.1		70-130	%	22-OCT-18				
	Surrogate: 1,4-Difluorobenzene	98.6		70-130	%	22-OCT-18				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2182846-10	TRIP BLANK									
Sampled By:	M.S. & V.P. on 17-OCT-18									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	22-OCT-18	2700			
	Benzene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	22-OCT-18	16			
	Bromoform	<5.0		5.0	ug/L	22-OCT-18	5			
	Bromomethane	<0.50		0.50	ug/L	22-OCT-18	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	22-OCT-18	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	22-OCT-18	30			
	Dibromochloromethane	<2.0		2.0	ug/L	22-OCT-18	25			
	Chloroform	<1.0		1.0	ug/L	22-OCT-18	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	22-OCT-18	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	22-OCT-18	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	22-OCT-18	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	22-OCT-18	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	22-OCT-18	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	22-OCT-18	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	22-OCT-18	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	22-OCT-18	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	22-OCT-18	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	22-OCT-18	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	22-OCT-18				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	22-OCT-18				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	22-OCT-18	2.4			
	n-Hexane	<0.50		0.50	ug/L	22-OCT-18	5			
	Methyl Ethyl Ketone	<20		20	ug/L	22-OCT-18	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	22-OCT-18	640			
	MTBE	<2.0		2.0	ug/L	22-OCT-18	15			
	Styrene	<0.50		0.50	ug/L	22-OCT-18	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	22-OCT-18	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Toluene	<0.50		0.50	ug/L	22-OCT-18	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	22-OCT-18	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	22-OCT-18	150			
	Vinyl chloride	<0.50		0.50	ug/L	22-OCT-18	0.5			
	o-Xylene	<0.30		0.30	ug/L	22-OCT-18				
	m+p-Xylenes	<0.40		0.40	ug/L	22-OCT-18				
	Xylenes (Total)	<0.50		0.50	ug/L	22-OCT-18	72			
	Surrogate: 4-Bromofluorobenzene	99.3		70-130	%	22-OCT-18				
	Surrogate: 1,4-Difluorobenzene	99.1		70-130	%	22-OCT-18				
Hydrocarbons										
	F1 (C6-C10)	<25		25	ug/L	22-OCT-18	420			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2182846-10	TRIP BLANK									
Sampled By:	M.S. & V.P. on 17-OCT-18									
Matrix:	WATER						#1			
Hydrocarbons										
	F1-BTEX	<25		25	ug/L	22-OCT-18	420			
	Surrogate: 3,4-Dichlorotoluene	93.2		60-140	%	22-OCT-18				
L2182846-11	DUP1									
Sampled By:	M.S. & V.P. on 17-OCT-18									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	22-OCT-18	2700			
	Benzene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	22-OCT-18	16			
	Bromoform	<5.0		5.0	ug/L	22-OCT-18	5			
	Bromomethane	<0.50		0.50	ug/L	22-OCT-18	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	22-OCT-18	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	22-OCT-18	30			
	Dibromochloromethane	<2.0		2.0	ug/L	22-OCT-18	25			
	Chloroform	<1.0		1.0	ug/L	22-OCT-18	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	22-OCT-18	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	22-OCT-18	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	22-OCT-18	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	22-OCT-18	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	22-OCT-18	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	22-OCT-18	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	cis-1,2-Dichloroethylene	19.3		0.50	ug/L	22-OCT-18	*1.6			
	trans-1,2-Dichloroethylene	0.54		0.50	ug/L	22-OCT-18	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	22-OCT-18	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	22-OCT-18	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	22-OCT-18				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	22-OCT-18				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	22-OCT-18	2.4			
	n-Hexane	<0.50		0.50	ug/L	22-OCT-18	5			
	Methyl Ethyl Ketone	<20		20	ug/L	22-OCT-18	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	22-OCT-18	640			
	MTBE	<2.0		2.0	ug/L	22-OCT-18	15			
	Styrene	<0.50		0.50	ug/L	22-OCT-18	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	22-OCT-18	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Toluene	<0.50		0.50	ug/L	22-OCT-18	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	22-OCT-18	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	22-OCT-18	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	22-OCT-18	150			
	Vinyl chloride	4.51		0.50	ug/L	22-OCT-18	*0.5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2182846-11	DUP1									
Sampled By:	M.S. & V.P. on 17-OCT-18									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	o-Xylene	<0.30		0.30	ug/L	22-OCT-18				
	m+p-Xylenes	<0.40		0.40	ug/L	22-OCT-18				
	Xylenes (Total)	<0.50		0.50	ug/L	22-OCT-18	72			
	Surrogate: 4-Bromofluorobenzene	97.2		70-130	%	22-OCT-18				
	Surrogate: 1,4-Difluorobenzene	99.1		70-130	%	22-OCT-18				
Hydrocarbons										
	F1 (C6-C10)	<25		25	ug/L	22-OCT-18	420			
	F1-BTEX	<25		25	ug/L	22-OCT-18	420			
	F2 (C10-C16)	<100		100	ug/L	18-OCT-18	150			
	F3 (C16-C34)	<250		250	ug/L	18-OCT-18	500			
	F4 (C34-C50)	<250		250	ug/L	18-OCT-18	500			
	Total Hydrocarbons (C6-C50)	<370		370	ug/L	22-OCT-18				
	Chrom. to baseline at nC50	YES			No Unit	18-OCT-18				
	Surrogate: 2-Bromobenzotrifluoride	93.1		60-140	%	18-OCT-18				
	Surrogate: 3,4-Dichlorotoluene	80.8		60-140	%	22-OCT-18				
L2182846-12	DUP2									
Sampled By:	M.S. & V.P. on 17-OCT-18									
Matrix:	WATER						#1			
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.020		0.020	ug/L	22-OCT-18	4.1			
	Acenaphthylene	<0.020		0.020	ug/L	22-OCT-18	1			
	Anthracene	<0.020		0.020	ug/L	22-OCT-18	1			
	Benzo(a)anthracene	<0.020		0.020	ug/L	22-OCT-18	1			
	Benzo(a)pyrene	<0.010		0.010	ug/L	22-OCT-18	0.01			
	Benzo(b)fluoranthene	<0.020		0.020	ug/L	22-OCT-18	0.1			
	Benzo(g,h,i)perylene	<0.020		0.020	ug/L	22-OCT-18	0.2			
	Benzo(k)fluoranthene	<0.020		0.020	ug/L	22-OCT-18	0.1			
	Chrysene	<0.020		0.020	ug/L	22-OCT-18	0.1			
	Dibenzo(ah)anthracene	<0.020		0.020	ug/L	22-OCT-18	0.2			
	Fluoranthene	<0.020		0.020	ug/L	22-OCT-18	0.41			
	Fluorene	<0.020		0.020	ug/L	22-OCT-18	120			
	Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	22-OCT-18	0.2			
	1+2-Methylnaphthalenes	<0.028		0.028	ug/L	22-OCT-18	3.2			
	1-Methylnaphthalene	<0.020		0.020	ug/L	22-OCT-18	3.2			
	2-Methylnaphthalene	<0.020		0.020	ug/L	22-OCT-18	3.2			
	Naphthalene	<0.050		0.050	ug/L	22-OCT-18	7			
	Phenanthrene	<0.020		0.020	ug/L	22-OCT-18	1			
	Pyrene	<0.020		0.020	ug/L	22-OCT-18	4.1			
	Surrogate: d10-Acenaphthene	92.7		60-140	%	22-OCT-18				
	Surrogate: d12-Chrysene	98.5		60-140	%	22-OCT-18				
	Surrogate: d8-Naphthalene	96.3		60-140	%	22-OCT-18				
	Surrogate: d10-Phenanthrene	97.4		60-140	%	22-OCT-18				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

Reference Information

Sample Parameter Qualifier key listed:

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
OWP	Organic water sample contained visible sediment (must be included as part of analysis). Measured concentrations of organic substances in water can be biased high due to presence of sediment.

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference***
BAP-LABFILTER-511-WT	Water	B(a)P-lab filtered-153/04 (July 2011)	SW846 8270 (511)

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-F4-511-CALC-WT	Water	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-L

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Water	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Water	F2-F4-O.Reg 153/04 (July 2011)	EPA 3511/CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from water using a hexane micro-extraction technique. Instrumental analysis is by GC-FID, as per the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Tier 1 Method, CCME, 2001.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT	Water	PAH-Calculated Parameters	SW846 8270
PAH-511-WT	Water	PAH-O. Reg 153/04 (July 2011)	SW846 3510/8270

Aqueous samples, fortified with surrogates, are extracted using liquid/liquid extraction technique. The sample extracts are concentrated and then analyzed using GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

VOC-1,3-DCP-CALC-WT	Water	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Water	VOC by GCMS HS O.Reg 153/04 (July 2011)	SW846 8260

Liquid samples are analyzed by headspace GC/MSD.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

Reference Information

*** ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody numbers:

17-728110

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA		

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Quality Control Report

Workorder: L2182846 Report Date: 26-OCT-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BAP-LABFILTER-511-WT	**Water**							
Batch R4300307								
WG2912373-2 LCS								
Benzo(a)pyrene-lab filtered			107.4		%		50-140	25-OCT-18
WG2912373-3 LCSD		**WG2912373-2**						
Benzo(a)pyrene-lab filtered		107.4	101.2		%	6.0	50	25-OCT-18
WG2912373-1 MB								
Benzo(a)pyrene-lab filtered			<0.010		ug/L		0.01	25-OCT-18
Surrogate: d12-Chrysene			97.6		%		60-140	25-OCT-18
F1-HS-511-WT	**Water**							
Batch R4290107								
WG2908062-4 DUP		**WG2908062-3**						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	22-OCT-18
WG2908062-1 LCS								
F1 (C6-C10)			94.9		%		80-120	22-OCT-18
WG2908062-2 MB								
F1 (C6-C10)			<25		ug/L		25	22-OCT-18
Surrogate: 3,4-Dichlorotoluene			89.4		%		60-140	22-OCT-18
WG2908062-5 MS		**WG2908062-3**						
F1 (C6-C10)			85.9		%		60-140	22-OCT-18
F2-F4-511-WT	**Water**							
Batch R4287943								
WG2906689-2 LCS								
F2 (C10-C16)			105.4		%		70-130	18-OCT-18
F3 (C16-C34)			103.8		%		70-130	18-OCT-18
F4 (C34-C50)			111.0		%		70-130	18-OCT-18
WG2906689-3 LCSD		**WG2906689-2**						
F2 (C10-C16)		105.4	106.1		%	0.7	50	18-OCT-18
F3 (C16-C34)		103.8	105.8		%	1.9	50	18-OCT-18
F4 (C34-C50)		111.0	111.6		%	0.5	50	18-OCT-18
WG2906689-1 MB								
F2 (C10-C16)			<100		ug/L		100	18-OCT-18
F3 (C16-C34)			<250		ug/L		250	18-OCT-18
F4 (C34-C50)			<250		ug/L		250	18-OCT-18
Surrogate: 2-Bromobenzotrifluoride			97.5		%		60-140	18-OCT-18
PAH-511-WT	**Water**							

Quality Control Report

Workorder: L2182846 Report Date: 26-OCT-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R4290582								
WG2906689-2 LCS								
1-Methylnaphthalene			86.9		%		50-140	22-OCT-18
2-Methylnaphthalene			87.8		%		50-140	22-OCT-18
Acenaphthene			85.5		%		50-140	22-OCT-18
Acenaphthylene			89.8		%		50-140	22-OCT-18
Anthracene			98.2		%		50-140	22-OCT-18
Benzo(a)anthracene			109.1		%		50-140	22-OCT-18
Benzo(a)pyrene			90.1		%		50-140	22-OCT-18
Benzo(b)fluoranthene			89.0		%		50-140	22-OCT-18
Benzo(g,h,i)perylene			92.6		%		50-140	22-OCT-18
Benzo(k)fluoranthene			89.4		%		50-140	22-OCT-18
Chrysene			103.0		%		50-140	22-OCT-18
Dibenzo(ah)anthracene			99.1		%		50-140	22-OCT-18
Fluoranthene			97.3		%		50-140	22-OCT-18
Fluorene			94.3		%		50-140	22-OCT-18
Indeno(1,2,3-cd)pyrene			112.2		%		50-140	22-OCT-18
Naphthalene			84.2		%		50-140	22-OCT-18
Phenanthrene			94.5		%		50-140	22-OCT-18
Pyrene			97.1		%		50-140	22-OCT-18
WG2906689-3 LCSD		**WG2906689-2**						
1-Methylnaphthalene		86.9	85.6		%	1.5	50	22-OCT-18
2-Methylnaphthalene		87.8	87.7		%	0.1	50	22-OCT-18
Acenaphthene		85.5	82.8		%	3.2	50	22-OCT-18
Acenaphthylene		89.8	88.3		%	1.6	50	22-OCT-18
Anthracene		98.2	95.8		%	2.5	50	22-OCT-18
Benzo(a)anthracene		109.1	104.1		%	4.7	50	22-OCT-18
Benzo(a)pyrene		90.1	88.1		%	2.2	50	22-OCT-18
Benzo(b)fluoranthene		89.0	86.3		%	3.1	50	22-OCT-18
Benzo(g,h,i)perylene		92.6	91.2		%	1.6	50	22-OCT-18
Benzo(k)fluoranthene		89.4	87.0		%	2.7	50	22-OCT-18
Chrysene		103.0	99.5		%	3.4	50	22-OCT-18
Dibenzo(ah)anthracene		99.1	95.9		%	3.3	50	22-OCT-18
Fluoranthene		97.3	95.3		%	2.1	50	22-OCT-18
Fluorene		94.3	92.6		%	1.8	50	22-OCT-18

Quality Control Report

Workorder: L2182846 Report Date: 26-OCT-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R4290582								
WG2906689-3 LCSD		**WG2906689-2**						
Indeno(1,2,3-cd)pyrene		112.2	110.4		%	1.7	50	22-OCT-18
Naphthalene		84.2	83.5		%	0.8	50	22-OCT-18
Phenanthrene		94.5	92.2		%	2.5	50	22-OCT-18
Pyrene		97.1	93.0		%	4.3	50	22-OCT-18
WG2906689-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	22-OCT-18
2-Methylnaphthalene			<0.020		ug/L		0.02	22-OCT-18
Acenaphthene			<0.020		ug/L		0.02	22-OCT-18
Acenaphthylene			<0.020		ug/L		0.02	22-OCT-18
Anthracene			<0.020		ug/L		0.02	22-OCT-18
Benzo(a)anthracene			<0.020		ug/L		0.02	22-OCT-18
Benzo(a)pyrene			<0.010		ug/L		0.01	22-OCT-18
Benzo(b)fluoranthene			<0.020		ug/L		0.02	22-OCT-18
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	22-OCT-18
Benzo(k)fluoranthene			<0.020		ug/L		0.02	22-OCT-18
Chrysene			<0.020		ug/L		0.02	22-OCT-18
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	22-OCT-18
Fluoranthene			<0.020		ug/L		0.02	22-OCT-18
Fluorene			<0.020		ug/L		0.02	22-OCT-18
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	22-OCT-18
Naphthalene			<0.050		ug/L		0.05	22-OCT-18
Phenanthrene			<0.020		ug/L		0.02	22-OCT-18
Pyrene			<0.020		ug/L		0.02	22-OCT-18
Surrogate: d8-Naphthalene			91.7		%		60-140	22-OCT-18
Surrogate: d10-Phenanthrene			101.2		%		60-140	22-OCT-18
Surrogate: d12-Chrysene			95.0		%		60-140	22-OCT-18
Surrogate: d10-Acenaphthene			89.4		%		60-140	22-OCT-18
VOC-511-HS-WT	**Water**							
Batch R4290107								
WG2908062-4 DUP		**WG2908062-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-OCT-18
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-OCT-18
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-OCT-18
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-OCT-18

Quality Control Report

Workorder: L2182846 Report Date: 26-OCT-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4290107								
WG2908062-4 DUP		**WG2908062-3**						
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-OCT-18
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-OCT-18
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	22-OCT-18
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-OCT-18
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-OCT-18
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-OCT-18
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-OCT-18
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-OCT-18
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	22-OCT-18
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-OCT-18
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	22-OCT-18
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	22-OCT-18
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-OCT-18
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	22-OCT-18
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-OCT-18
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	22-OCT-18
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-OCT-18
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	22-OCT-18
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	22-OCT-18
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	22-OCT-18
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-OCT-18
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-OCT-18
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	22-OCT-18
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	22-OCT-18
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	22-OCT-18
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	22-OCT-18
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	22-OCT-18
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	22-OCT-18
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-OCT-18
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-OCT-18
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-OCT-18
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-OCT-18
trans-1,3-Dichloropropene		<0.30	<0.30		ug/L			22-OCT-18

Quality Control Report

Workorder: L2182846 Report Date: 26-OCT-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4290107								
WG2908062-4 DUP		**WG2908062-3**						
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	22-OCT-18
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-OCT-18
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	22-OCT-18
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-OCT-18
WG2908062-1 LCS								
1,1,1,2-Tetrachloroethane			109.6		%		70-130	22-OCT-18
1,1,2,2-Tetrachloroethane			102.2		%		70-130	22-OCT-18
1,1,1-Trichloroethane			113.9		%		70-130	22-OCT-18
1,1,2-Trichloroethane			111.4		%		70-130	22-OCT-18
1,1-Dichloroethane			116.7		%		70-130	22-OCT-18
1,1-Dichloroethylene			111.3		%		70-130	22-OCT-18
1,2-Dibromoethane			119.9		%		70-130	22-OCT-18
1,2-Dichlorobenzene			110.6		%		70-130	22-OCT-18
1,2-Dichloroethane			117.4		%		70-130	22-OCT-18
1,2-Dichloropropane			111.6		%		70-130	22-OCT-18
1,3-Dichlorobenzene			110.2		%		70-130	22-OCT-18
1,4-Dichlorobenzene			111.5		%		70-130	22-OCT-18
Acetone			121.2		%		60-140	22-OCT-18
Benzene			112.5		%		70-130	22-OCT-18
Bromodichloromethane			116.3		%		70-130	22-OCT-18
Bromoform			119.3		%		70-130	22-OCT-18
Bromomethane			94.1		%		60-140	22-OCT-18
Carbon tetrachloride			113.0		%		70-130	22-OCT-18
Chlorobenzene			109.3		%		70-130	22-OCT-18
Chloroform			115.9		%		70-130	22-OCT-18
cis-1,2-Dichloroethylene			112.8		%		70-130	22-OCT-18
cis-1,3-Dichloropropene			112.4		%		70-130	22-OCT-18
Dibromochloromethane			112.1		%		70-130	22-OCT-18
Dichlorodifluoromethane			143.1	MES	%		50-140	22-OCT-18
Ethylbenzene			106.6		%		70-130	22-OCT-18
n-Hexane			108.4		%		70-130	22-OCT-18
m+p-Xylenes			107.3		%		70-130	22-OCT-18
Methyl Ethyl Ketone			128.7		%		60-140	22-OCT-18
Methyl Isobutyl Ketone			117.8				60-140	

Quality Control Report

Workorder: L2182846 Report Date: 26-OCT-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4290107								
WG2908062-1 LCS								
Methyl Isobutyl Ketone			117.8		%		60-140	22-OCT-18
Methylene Chloride			118.8		%		70-130	22-OCT-18
MTBE			109.2		%		70-130	22-OCT-18
o-Xylene			106.5		%		70-130	22-OCT-18
Styrene			110.1		%		70-130	22-OCT-18
Tetrachloroethylene			109.5		%		70-130	22-OCT-18
Toluene			106.9		%		70-130	22-OCT-18
trans-1,2-Dichloroethylene			116.0		%		70-130	22-OCT-18
trans-1,3-Dichloropropene			108.6		%		70-130	22-OCT-18
Trichloroethylene			116.8		%		70-130	22-OCT-18
Trichlorofluoromethane			126.1		%		60-140	22-OCT-18
Vinyl chloride			115.9		%		60-140	22-OCT-18
WG2908062-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	22-OCT-18
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	22-OCT-18
1,1,1-Trichloroethane			<0.50		ug/L		0.5	22-OCT-18
1,1,2-Trichloroethane			<0.50		ug/L		0.5	22-OCT-18
1,1-Dichloroethane			<0.50		ug/L		0.5	22-OCT-18
1,1-Dichloroethylene			<0.50		ug/L		0.5	22-OCT-18
1,2-Dibromoethane			<0.20		ug/L		0.2	22-OCT-18
1,2-Dichlorobenzene			<0.50		ug/L		0.5	22-OCT-18
1,2-Dichloroethane			<0.50		ug/L		0.5	22-OCT-18
1,2-Dichloropropane			<0.50		ug/L		0.5	22-OCT-18
1,3-Dichlorobenzene			<0.50		ug/L		0.5	22-OCT-18
1,4-Dichlorobenzene			<0.50		ug/L		0.5	22-OCT-18
Acetone			<30		ug/L		30	22-OCT-18
Benzene			<0.50		ug/L		0.5	22-OCT-18
Bromodichloromethane			<2.0		ug/L		2	22-OCT-18
Bromoform			<5.0		ug/L		5	22-OCT-18
Bromomethane			<0.50		ug/L		0.5	22-OCT-18
Carbon tetrachloride			<0.20		ug/L		0.2	22-OCT-18
Chlorobenzene			<0.50		ug/L		0.5	22-OCT-18
Chloroform			<1.0		ug/L		1	22-OCT-18
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	22-OCT-18

Quality Control Report

Workorder: L2182846 Report Date: 26-OCT-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4290107								
WG2908062-2 MB								
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	22-OCT-18
Dibromochloromethane			<2.0		ug/L		2	22-OCT-18
Dichlorodifluoromethane			<2.0		ug/L		2	22-OCT-18
Ethylbenzene			<0.50		ug/L		0.5	22-OCT-18
n-Hexane			<0.50		ug/L		0.5	22-OCT-18
m+p-Xylenes			<0.40		ug/L		0.4	22-OCT-18
Methyl Ethyl Ketone			<20		ug/L		20	22-OCT-18
Methyl Isobutyl Ketone			<20		ug/L		20	22-OCT-18
Methylene Chloride			<5.0		ug/L		5	22-OCT-18
MTBE			<2.0		ug/L		2	22-OCT-18
o-Xylene			<0.30		ug/L		0.3	22-OCT-18
Styrene			<0.50		ug/L		0.5	22-OCT-18
Tetrachloroethylene			<0.50		ug/L		0.5	22-OCT-18
Toluene			<0.50		ug/L		0.5	22-OCT-18
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	22-OCT-18
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	22-OCT-18
Trichloroethylene			<0.50		ug/L		0.5	22-OCT-18
Trichlorofluoromethane			<5.0		ug/L		5	22-OCT-18
Vinyl chloride			<0.50		ug/L		0.5	22-OCT-18
Surrogate: 1,4-Difluorobenzene			99.0		%		70-130	22-OCT-18
Surrogate: 4-Bromofluorobenzene			99.5		%		70-130	22-OCT-18
WG2908062-5 MS		**WG2908062-3**						
1,1,1,2-Tetrachloroethane			110.1		%		50-140	22-OCT-18
1,1,2,2-Tetrachloroethane			103.5		%		50-140	22-OCT-18
1,1,1-Trichloroethane			113.6		%		50-140	22-OCT-18
1,1,2-Trichloroethane			114.6		%		50-140	22-OCT-18
1,1-Dichloroethane			118.5		%		50-140	22-OCT-18
1,1-Dichloroethylene			109.2		%		50-140	22-OCT-18
1,2-Dibromoethane			124.4		%		50-140	22-OCT-18
1,2-Dichlorobenzene			109.4		%		50-140	22-OCT-18
1,2-Dichloroethane			122.6		%		50-140	22-OCT-18
1,2-Dichloropropane			114.8		%		50-140	22-OCT-18
1,3-Dichlorobenzene			106.5		%		50-140	22-OCT-18
1,4-Dichlorobenzene			108.5		%		50-140	22-OCT-18

Quality Control Report

Workorder: L2182846 Report Date: 26-OCT-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4290107								
WG2908062-5 MS		**WG2908062-3**						
Acetone			133.2		%		50-140	22-OCT-18
Benzene			113.6		%		50-140	22-OCT-18
Bromodichloromethane			120.2		%		50-140	22-OCT-18
Bromoform			122.1		%		50-140	22-OCT-18
Bromomethane			91.3		%		50-140	22-OCT-18
Carbon tetrachloride			112.2		%		50-140	22-OCT-18
Chlorobenzene			108.4		%		50-140	22-OCT-18
Chloroform			118.1		%		50-140	22-OCT-18
cis-1,2-Dichloroethylene			114.6		%		50-140	22-OCT-18
cis-1,3-Dichloropropene			110.1		%		50-140	22-OCT-18
Dibromochloromethane			114.5		%		50-140	22-OCT-18
Dichlorodifluoromethane			131.1		%		50-140	22-OCT-18
Ethylbenzene			102.2		%		50-140	22-OCT-18
n-Hexane			104.6		%		50-140	22-OCT-18
m+p-Xylenes			103.1		%		50-140	22-OCT-18
Methyl Ethyl Ketone			130.8		%		50-140	22-OCT-18
Methyl Isobutyl Ketone			124.3		%		50-140	22-OCT-18
Methylene Chloride			122.4		%		50-140	22-OCT-18
MTBE			108.5		%		50-140	22-OCT-18
o-Xylene			102.9		%		50-140	22-OCT-18
Styrene			106.4		%		50-140	22-OCT-18
Tetrachloroethylene			105.2		%		50-140	22-OCT-18
Toluene			103.9		%		50-140	22-OCT-18
trans-1,2-Dichloroethylene			114.1		%		50-140	22-OCT-18
trans-1,3-Dichloropropene			103.5		%		50-140	22-OCT-18
Trichloroethylene			117.7		%		50-140	22-OCT-18
Trichlorofluoromethane			122.3		%		50-140	22-OCT-18
Vinyl chloride			109.9		%		50-140	22-OCT-18

Quality Control Report

Workorder: L2182846 Report Date: 26-OCT-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9
Contact: MICHAEL SHIRY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

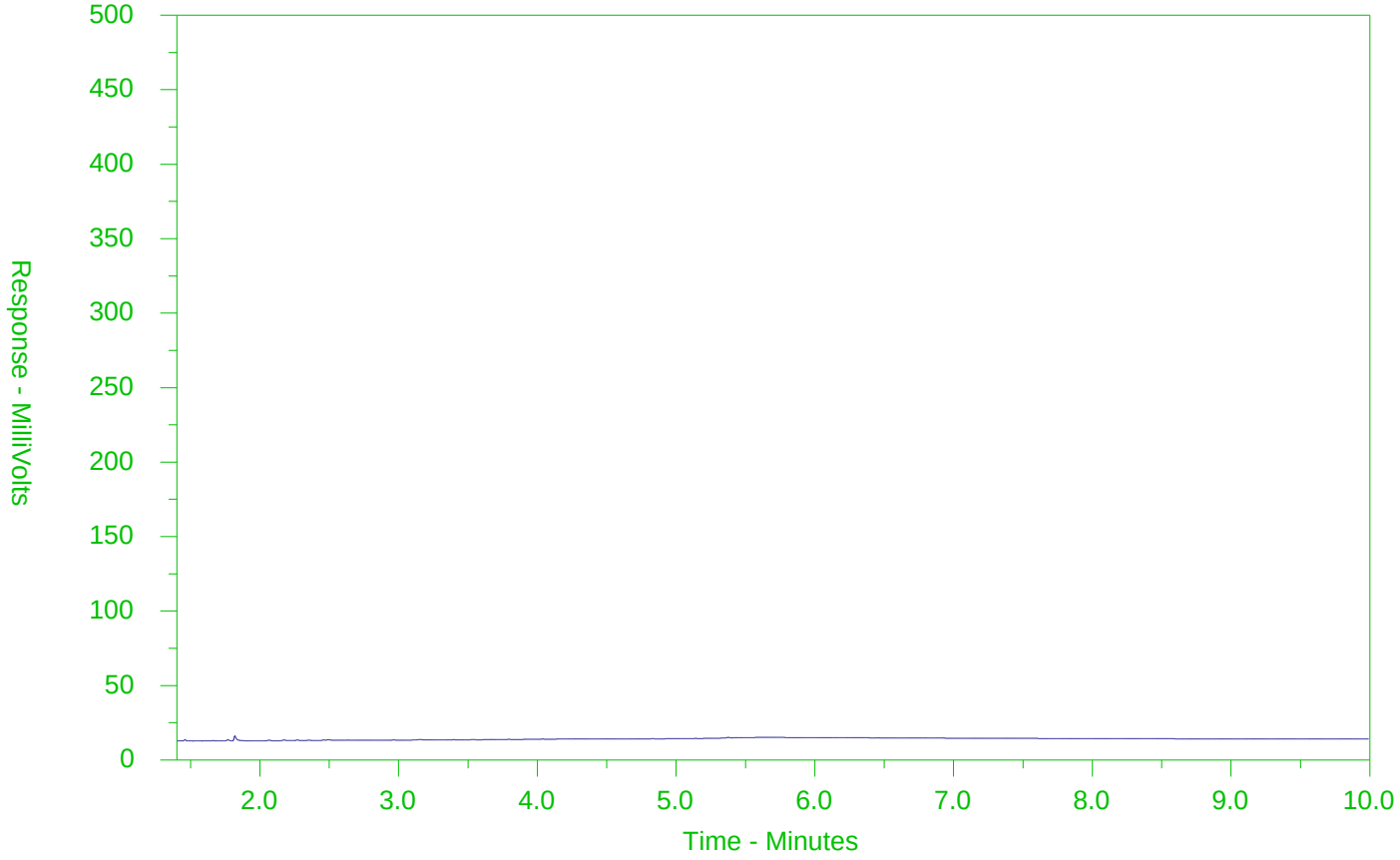
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2182846-6
Client Sample ID: MW18-130D



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

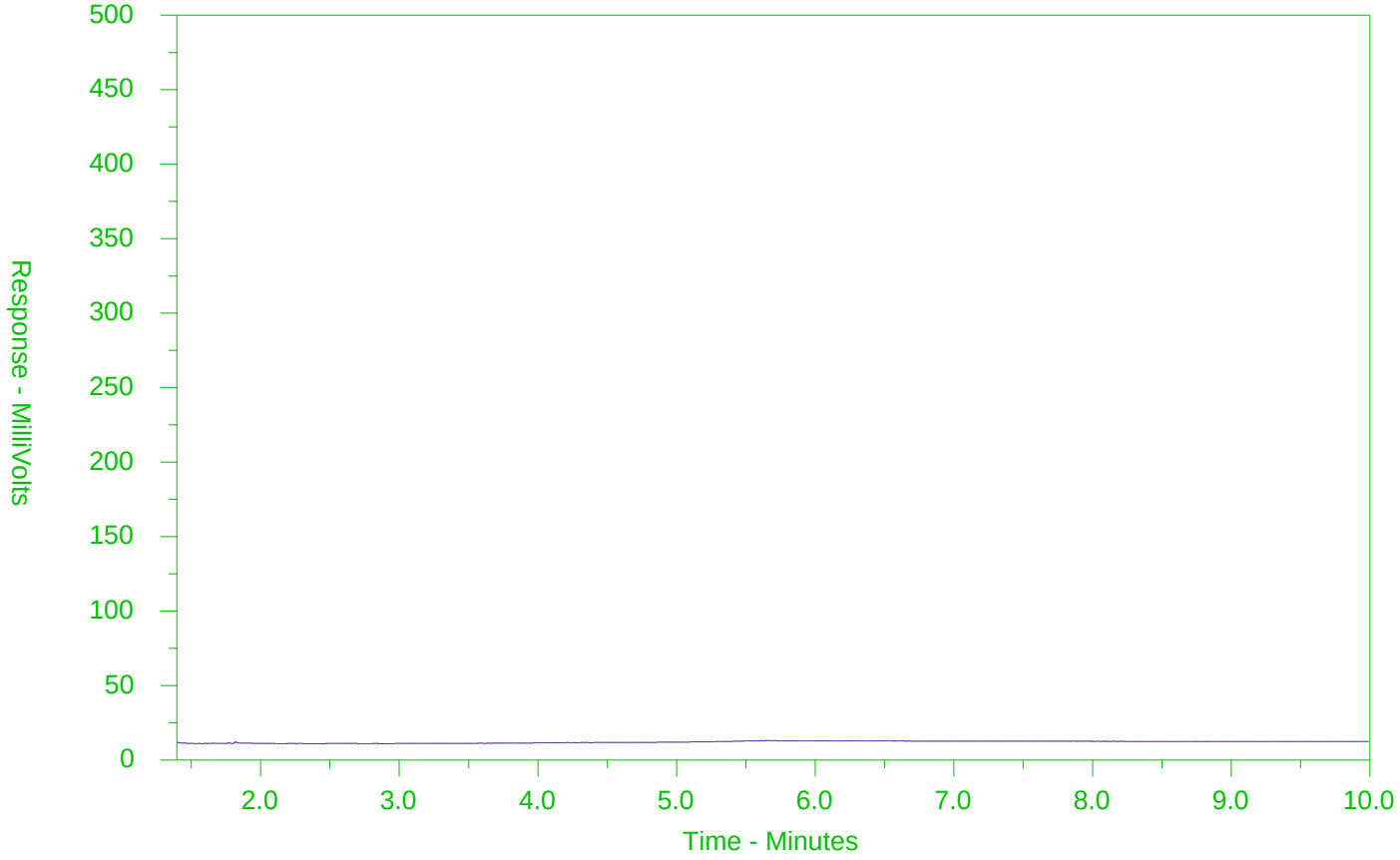
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2182846-8
Client Sample ID: MW18-132D



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

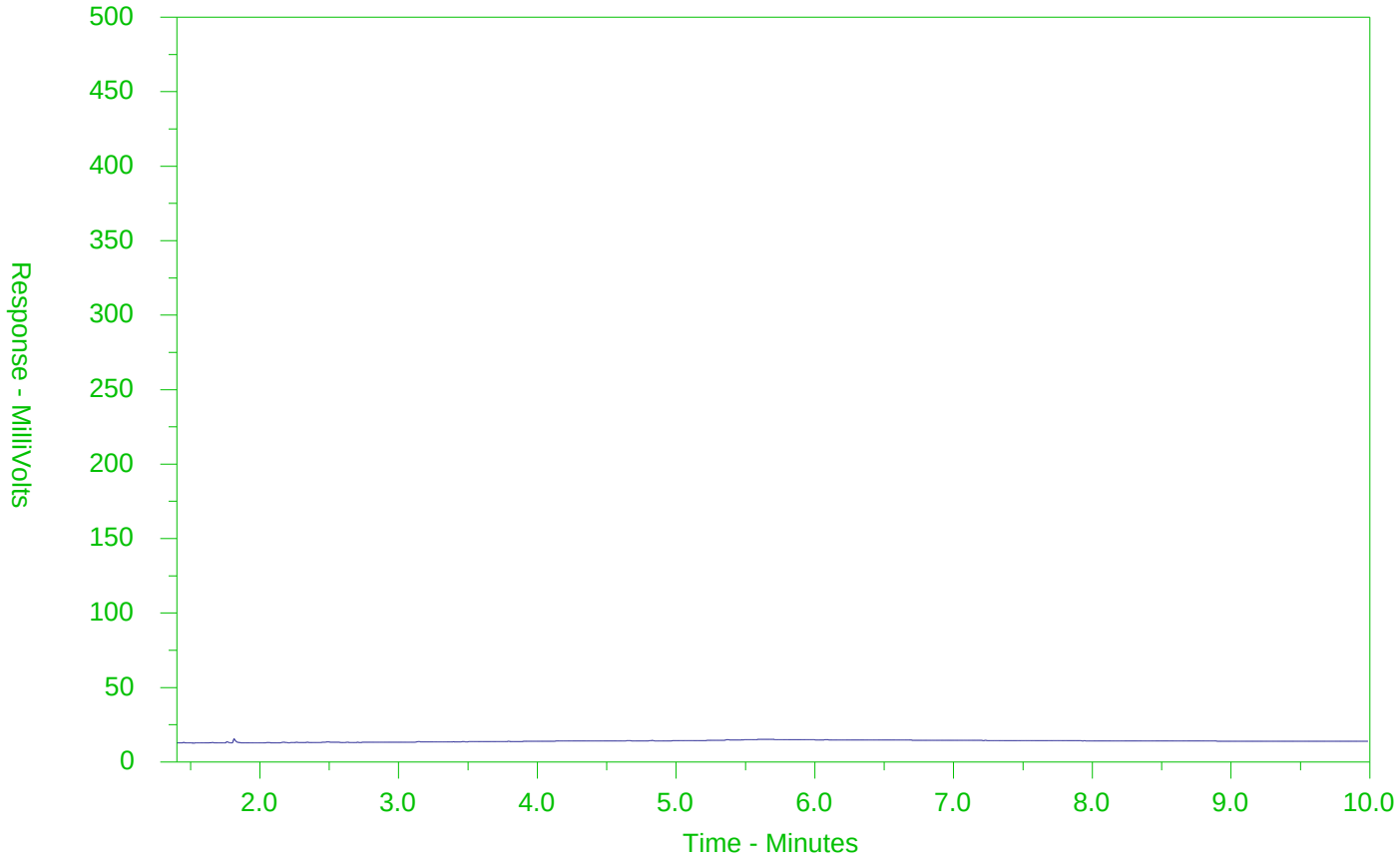
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2182846-11
Client Sample ID: DUP1



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2182846-COFC

COC Number: 17 - 728110

Page 1 of 1

Report To	Contact and company name below will appear on the final report	Report For	
Company:	Jacobs	Select Report Format:	☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Contact:	M. Shay / T. McCarthy	Quality Control (QC) Report with Report	☑ YES ☐ NO
Phone:		☐ Compare Results to Criteria on Report - provide details below if box checked	
	Company address below will appear on the final report	Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Street:		Email 1 or Fax	
City/Province:		Email 2	
Postal Code:		Email 3	
Invoice To	Same as Report To ☐ YES ☑ NO	**Invoice Distribution**	
	Copy of Invoice with Report ☐ YES ☑ NO	Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Company:		Email 1 or Fax	
Contact:	Acct Payable	Email 2	

Project Information

ALS Account # / Quote #:	Q62156
Job #:	694757
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only): L2182846 17C-28

ALS Contact: Mathy

Sampler: M. Shay / V. Pdoes

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

Priority (Business Days): 4 day [P4-20%] ☐ 3 day [P3-25%] ☐ 2 day [P2-50%] ☒

Emergency: 1 Business day [E-100%] ☐ Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	PAH	PHCs + BTEX	VOCs	VOCs + FI	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
1	OW25	17-Oct-18	1550	Water	X						2
2	OW31-S		1007				X				2
3	OW31-M		1405				X				2
4	OW31-E		1715				X				2
5	MW18-128D		1300				X				2
6	MW18-130D		1326			X	X				4
7	MW18-131S		1705		X		X				4
8	MW18-132D		1110			X	X				4
9	MW18-133D		1325				X				2
10	Trip Blank		—					X			2
11	DUP1		—			X	X				4
12.	DUP2		—		X						2

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☒ NO

Are samples for human consumption/ use? ☐ YES ☒ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐	SIF Observations	Yes ☐	No	☐
Ice Packs ☒	Ice Cubes ☐	Custody seal intact	Yes ☒	No	☐
Cooling Initiated ☒					

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
	2.4°C

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Vidu Petx	Date: 2018/10/17	Time: 18:25	Received by:	Date:	Time:	Received by:	Date: 17-Oct-18	Time: 18:30

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JULY 2017 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

CH2M HILL CANADA LIMITED
ATTN: ED TAVES / LUCAS RIBEIRO
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 22-NOV-18
Report Date: 26-NOV-18 14:03 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2200634

Project P.O. #: NOT SUBMITTED
Job Reference: 694757
C of C Numbers: 17-728707
Legal Site Desc:

Mathy Mahadeva
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2200634-1 MW-112 G Sampled By: CLIENT on 22-NOV-18 @ 16:30 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					23-NOV-18	R4353634
Antimony (Sb)-Dissolved	3.5	DLHC	1.0	ug/L	23-NOV-18	23-NOV-18	R4355208
Arsenic (As)-Dissolved	2.5	DLHC	1.0	ug/L	23-NOV-18	23-NOV-18	R4355208
Selenium (Se)-Dissolved	2.70	DLHC	0.50	ug/L	23-NOV-18	23-NOV-18	R4355208
Volatile Organic Compounds							
Acetone	<30		30	ug/L		23-NOV-18	R4353750
Benzene	0.86		0.50	ug/L		23-NOV-18	R4353750
Bromodichloromethane	7.3		2.0	ug/L		23-NOV-18	R4353750
Bromoform	<5.0		5.0	ug/L		23-NOV-18	R4353750
Bromomethane	<0.50		0.50	ug/L		23-NOV-18	R4353750
Carbon tetrachloride	<0.20		0.20	ug/L		23-NOV-18	R4353750
Chlorobenzene	<0.50		0.50	ug/L		23-NOV-18	R4353750
Dibromochloromethane	7.4		2.0	ug/L		23-NOV-18	R4353750
Chloroform	5.8		1.0	ug/L		23-NOV-18	R4353750
1,2-Dibromoethane	<0.20		0.20	ug/L		23-NOV-18	R4353750
1,2-Dichlorobenzene	<0.50		0.50	ug/L		23-NOV-18	R4353750
1,3-Dichlorobenzene	<0.50		0.50	ug/L		23-NOV-18	R4353750
1,4-Dichlorobenzene	<0.50		0.50	ug/L		23-NOV-18	R4353750
Dichlorodifluoromethane	<2.0		2.0	ug/L		23-NOV-18	R4353750
1,1-Dichloroethane	<0.50		0.50	ug/L		23-NOV-18	R4353750
1,2-Dichloroethane	<0.50		0.50	ug/L		23-NOV-18	R4353750
1,1-Dichloroethylene	<0.50		0.50	ug/L		23-NOV-18	R4353750
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		23-NOV-18	R4353750
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		23-NOV-18	R4353750
Methylene Chloride	<5.0		5.0	ug/L		23-NOV-18	R4353750
1,2-Dichloropropane	<0.50		0.50	ug/L		23-NOV-18	R4353750
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		23-NOV-18	R4353750
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		23-NOV-18	R4353750
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		23-NOV-18	
Ethylbenzene	<0.50		0.50	ug/L		23-NOV-18	R4353750
n-Hexane	<0.50		0.50	ug/L		23-NOV-18	R4353750
Methyl Ethyl Ketone	<20		20	ug/L		23-NOV-18	R4353750
Methyl Isobutyl Ketone	<20		20	ug/L		23-NOV-18	R4353750
MTBE	<2.0		2.0	ug/L		23-NOV-18	R4353750
Styrene	<0.50		0.50	ug/L		23-NOV-18	R4353750
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		23-NOV-18	R4353750
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		23-NOV-18	R4353750
Tetrachloroethylene	<0.50		0.50	ug/L		23-NOV-18	R4353750
Toluene	1.74		0.50	ug/L		23-NOV-18	R4353750
1,1,1-Trichloroethane	<0.50		0.50	ug/L		23-NOV-18	R4353750
1,1,2-Trichloroethane	<0.50		0.50	ug/L		23-NOV-18	R4353750

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2200634-1 MW-112 G Sampled By: CLIENT on 22-NOV-18 @ 16:30 Matrix: WATER							
Volatile Organic Compounds							
Trichloroethylene	<0.50		0.50	ug/L		23-NOV-18	R4353750
Trichlorofluoromethane	<5.0		5.0	ug/L		23-NOV-18	R4353750
Vinyl chloride	<0.50		0.50	ug/L		23-NOV-18	R4353750
o-Xylene	0.48		0.30	ug/L		23-NOV-18	R4353750
m+p-Xylenes	0.87		0.40	ug/L		23-NOV-18	R4353750
Xylenes (Total)	1.35		0.50	ug/L		23-NOV-18	
Surrogate: 4-Bromofluorobenzene	95.2		70-130	%		23-NOV-18	R4353750
Surrogate: 1,4-Difluorobenzene	103.2		70-130	%		23-NOV-18	R4353750

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier key listed:

Qualifier	Description
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8

The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

VOC-1,3-DCP-CALC-WT	Water	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Water	VOC by GCMS HS O.Reg 153/04 (July 2011)	SW846 8260

Liquid samples are analyzed by headspace GC/MSD.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

17-728707

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2200634 Report Date: 26-NOV-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: ED TAVES / LUCAS RIBEIRO

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R4355208								
WG2937461-4 DUP		**WG2937461-3**						
Antimony (Sb)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	23-NOV-18
Arsenic (As)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	23-NOV-18
Selenium (Se)-Dissolved		16.5	14.7		ug/L	12	20	23-NOV-18
WG2937461-2 LCS								
Antimony (Sb)-Dissolved			98.4		%		80-120	23-NOV-18
Arsenic (As)-Dissolved			104.6		%		80-120	23-NOV-18
Selenium (Se)-Dissolved			103.8		%		80-120	23-NOV-18
WG2937461-1 MB								
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	23-NOV-18
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	23-NOV-18
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	23-NOV-18
WG2937461-5 MS		**WG2937461-6**						
Antimony (Sb)-Dissolved			95.3		%		70-130	23-NOV-18
Arsenic (As)-Dissolved			97.9		%		70-130	23-NOV-18
VOC-511-HS-WT	**Water**							
Batch R4353750								
WG2934704-4 DUP		**WG2934704-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-NOV-18
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-NOV-18
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-NOV-18
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-NOV-18
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-NOV-18
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-NOV-18
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	23-NOV-18
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-NOV-18
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-NOV-18
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-NOV-18
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-NOV-18
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-NOV-18
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	23-NOV-18
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-NOV-18
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	23-NOV-18
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	23-NOV-18
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-NOV-18

Quality Control Report

Workorder: L2200634 Report Date: 26-NOV-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: ED TAVES / LUCAS RIBEIRO

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4353750								
WG2934704-4 DUP		**WG2934704-3**						
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	23-NOV-18
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-NOV-18
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	23-NOV-18
cis-1,2-Dichloroethylene		12.4	12.0		ug/L	3.4	30	23-NOV-18
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	23-NOV-18
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	23-NOV-18
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	23-NOV-18
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-NOV-18
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-NOV-18
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	23-NOV-18
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	23-NOV-18
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	23-NOV-18
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	23-NOV-18
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	23-NOV-18
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	23-NOV-18
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-NOV-18
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-NOV-18
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-NOV-18
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-NOV-18
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	23-NOV-18
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-NOV-18
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	23-NOV-18
Vinyl chloride		3.85	3.73		ug/L	3.2	30	23-NOV-18
WG2934704-1 LCS								
1,1,1,2-Tetrachloroethane			106.1		%		70-130	23-NOV-18
1,1,2,2-Tetrachloroethane			97.8		%		70-130	23-NOV-18
1,1,1-Trichloroethane			107.9		%		70-130	23-NOV-18
1,1,2-Trichloroethane			108.0		%		70-130	23-NOV-18
1,1-Dichloroethane			112.4		%		70-130	23-NOV-18
1,1-Dichloroethylene			107.7		%		70-130	23-NOV-18
1,2-Dibromoethane			107.5		%		70-130	23-NOV-18
1,2-Dichlorobenzene			107.8		%		70-130	23-NOV-18
1,2-Dichloroethane			107.6		%		70-130	23-NOV-18

Quality Control Report

Workorder: L2200634 Report Date: 26-NOV-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: ED TAVES / LUCAS RIBEIRO

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4353750								
WG2934704-1 LCS								
1,2-Dichloropropane			107.0		%		70-130	23-NOV-18
1,3-Dichlorobenzene			110.1		%		70-130	23-NOV-18
1,4-Dichlorobenzene			108.1		%		70-130	23-NOV-18
Acetone			119.8		%		60-140	23-NOV-18
Benzene			110.3		%		70-130	23-NOV-18
Bromodichloromethane			104.1		%		70-130	23-NOV-18
Bromoform			95.4		%		70-130	23-NOV-18
Bromomethane			96.3		%		60-140	23-NOV-18
Carbon tetrachloride			106.6		%		70-130	23-NOV-18
Chlorobenzene			108.3		%		70-130	23-NOV-18
Chloroform			105.5		%		70-130	23-NOV-18
cis-1,2-Dichloroethylene			105.0		%		70-130	23-NOV-18
cis-1,3-Dichloropropene			100.7		%		70-130	23-NOV-18
Dibromochloromethane			104.1		%		70-130	23-NOV-18
Dichlorodifluoromethane			131.1		%		50-140	23-NOV-18
Ethylbenzene			109.4		%		70-130	23-NOV-18
n-Hexane			102.2		%		70-130	23-NOV-18
m+p-Xylenes			107.8		%		70-130	23-NOV-18
Methyl Ethyl Ketone			102.0		%		60-140	23-NOV-18
Methyl Isobutyl Ketone			102.3		%		60-140	23-NOV-18
Methylene Chloride			108.5		%		70-130	23-NOV-18
MTBE			110.6		%		70-130	23-NOV-18
o-Xylene			106.8		%		70-130	23-NOV-18
Styrene			106.0		%		70-130	23-NOV-18
Tetrachloroethylene			111.1		%		70-130	23-NOV-18
Toluene			110.7		%		70-130	23-NOV-18
trans-1,2-Dichloroethylene			106.1		%		70-130	23-NOV-18
trans-1,3-Dichloropropene			102.9		%		70-130	23-NOV-18
Trichloroethylene			107.8		%		70-130	23-NOV-18
Trichlorofluoromethane			116.8		%		60-140	23-NOV-18
Vinyl chloride			87.8		%		60-140	23-NOV-18
WG2934704-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	23-NOV-18
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	23-NOV-18

Quality Control Report

Workorder: L2200634 Report Date: 26-NOV-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: ED TAVES / LUCAS RIBEIRO

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4353750								
WG2934704-2 MB								
1,1,1-Trichloroethane			<0.50		ug/L		0.5	23-NOV-18
1,1,2-Trichloroethane			<0.50		ug/L		0.5	23-NOV-18
1,1-Dichloroethane			<0.50		ug/L		0.5	23-NOV-18
1,1-Dichloroethylene			<0.50		ug/L		0.5	23-NOV-18
1,2-Dibromoethane			<0.20		ug/L		0.2	23-NOV-18
1,2-Dichlorobenzene			<0.50		ug/L		0.5	23-NOV-18
1,2-Dichloroethane			<0.50		ug/L		0.5	23-NOV-18
1,2-Dichloropropane			<0.50		ug/L		0.5	23-NOV-18
1,3-Dichlorobenzene			<0.50		ug/L		0.5	23-NOV-18
1,4-Dichlorobenzene			<0.50		ug/L		0.5	23-NOV-18
Acetone			<30		ug/L		30	23-NOV-18
Benzene			<0.50		ug/L		0.5	23-NOV-18
Bromodichloromethane			<2.0		ug/L		2	23-NOV-18
Bromoform			<5.0		ug/L		5	23-NOV-18
Bromomethane			<0.50		ug/L		0.5	23-NOV-18
Carbon tetrachloride			<0.20		ug/L		0.2	23-NOV-18
Chlorobenzene			<0.50		ug/L		0.5	23-NOV-18
Chloroform			<1.0		ug/L		1	23-NOV-18
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	23-NOV-18
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	23-NOV-18
Dibromochloromethane			<2.0		ug/L		2	23-NOV-18
Dichlorodifluoromethane			<2.0		ug/L		2	23-NOV-18
Ethylbenzene			<0.50		ug/L		0.5	23-NOV-18
n-Hexane			<0.50		ug/L		0.5	23-NOV-18
m+p-Xylenes			<0.40		ug/L		0.4	23-NOV-18
Methyl Ethyl Ketone			<20		ug/L		20	23-NOV-18
Methyl Isobutyl Ketone			<20		ug/L		20	23-NOV-18
Methylene Chloride			<5.0		ug/L		5	23-NOV-18
MTBE			<2.0		ug/L		2	23-NOV-18
o-Xylene			<0.30		ug/L		0.3	23-NOV-18
Styrene			<0.50		ug/L		0.5	23-NOV-18
Tetrachloroethylene			<0.50		ug/L		0.5	23-NOV-18
Toluene			<0.50		ug/L		0.5	23-NOV-18

Quality Control Report

Workorder: L2200634 Report Date: 26-NOV-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: ED TAVES / LUCAS RIBEIRO

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch	**R4353750**							
WG2934704-2	**MB**							
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	23-NOV-18
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	23-NOV-18
Trichloroethylene			<0.50		ug/L		0.5	23-NOV-18
Trichlorofluoromethane			<5.0		ug/L		5	23-NOV-18
Vinyl chloride			<0.50		ug/L		0.5	23-NOV-18
Surrogate: 1,4-Difluorobenzene			102.7		%		70-130	23-NOV-18
Surrogate: 4-Bromofluorobenzene			94.9		%		70-130	23-NOV-18
WG2934704-5	**MS**	**WG2934704-3**						
1,1,1,2-Tetrachloroethane			104.9		%		50-140	23-NOV-18
1,1,2,2-Tetrachloroethane			96.9		%		50-140	23-NOV-18
1,1,1-Trichloroethane			107.5		%		50-140	23-NOV-18
1,1,2-Trichloroethane			104.0		%		50-140	23-NOV-18
1,1-Dichloroethane			107.1		%		50-140	23-NOV-18
1,1-Dichloroethylene			105.7		%		50-140	23-NOV-18
1,2-Dibromoethane			101.9		%		50-140	23-NOV-18
1,2-Dichlorobenzene			108.2		%		50-140	23-NOV-18
1,2-Dichloroethane			103.4		%		50-140	23-NOV-18
1,2-Dichloropropane			104.9		%		50-140	23-NOV-18
1,3-Dichlorobenzene			112.2		%		50-140	23-NOV-18
1,4-Dichlorobenzene			111.0		%		50-140	23-NOV-18
Acetone			107.5		%		50-140	23-NOV-18
Benzene			109.7		%		50-140	23-NOV-18
Bromodichloromethane			102.4		%		50-140	23-NOV-18
Bromoform			92.6		%		50-140	23-NOV-18
Bromomethane			88.1		%		50-140	23-NOV-18
Carbon tetrachloride			106.6		%		50-140	23-NOV-18
Chlorobenzene			108.6		%		50-140	23-NOV-18
Chloroform			104.2		%		50-140	23-NOV-18
cis-1,2-Dichloroethylene			102.7		%		50-140	23-NOV-18
cis-1,3-Dichloropropene			98.2		%		50-140	23-NOV-18
Dibromochloromethane			100.9		%		50-140	23-NOV-18
Dichlorodifluoromethane			92.4		%		50-140	23-NOV-18
Ethylbenzene			110.2		%		50-140	23-NOV-18
n-Hexane			99.4		%		50-140	23-NOV-18

Quality Control Report

Workorder: L2200634 Report Date: 26-NOV-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: ED TAVES / LUCAS RIBEIRO

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4353750								
WG2934704-5 MS		**WG2934704-3**						
m+p-Xylenes			109.7		%		50-140	23-NOV-18
Methyl Ethyl Ketone			92.1		%		50-140	23-NOV-18
Methyl Isobutyl Ketone			98.0		%		50-140	23-NOV-18
Methylene Chloride			104.4		%		50-140	23-NOV-18
MTBE			111.6		%		50-140	23-NOV-18
o-Xylene			107.4		%		50-140	23-NOV-18
Styrene			106.8		%		50-140	23-NOV-18
Tetrachloroethylene			112.7		%		50-140	23-NOV-18
Toluene			109.9		%		50-140	23-NOV-18
trans-1,2-Dichloroethylene			107.9		%		50-140	23-NOV-18
trans-1,3-Dichloropropene			97.9		%		50-140	23-NOV-18
Trichloroethylene			109.4		%		50-140	23-NOV-18
Trichlorofluoromethane			111.6		%		50-140	23-NOV-18
Vinyl chloride			78.9		%		50-140	23-NOV-18

Quality Control Report

Workorder: L2200634 Report Date: 26-NOV-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9
Contact: ED TAVES / LUCAS RIBEIRO

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2200634-COFC

COC Number: 17 - 728707

Page of

Report To	Contact and company name below will appear on the final report
Company:	CIMA / JACOBS
Contact:	LUCAS RIBEIRO / PM: ED TAVOS
Phone:	647 217 7770 / ONTARIO
	Company address below will appear on the final report
Street:	
City/Province:	WATERLOO / KITCHENER
Postal Code:	

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: lucas.ribeiro@jacobs.com
Email 2
Email 3

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐; 3 day [P3-25%] ☐; 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E-100%] ☑; Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Invoice To	Same as Report To ☐ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	
Contact:	

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☑ MAIL ☑ FAX
Email 1 or Fax
Email 2

Project Information

ALS Account # / Quote #:
Job #: 694757
PO / AFE:
LSD:
ALS Lab Work Order # (lab use only): L2200634 22B
ALS Contact:
Sampler:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	VOC	As, Se, Sb (Metals)	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
1.	MW-112G	22-Nov-18	16:30	WATER	X	X			

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO
Are samples for human consumption/ use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				7.8°C			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: L Ribeiro	Date: 22-Nov-2018	Time:	Received by:	Date:	Time:	Received by:	Date: 22/Nov/2018	Time: 17:35

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JULY 2017 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

CH2M HILL CANADA LIMITED
ATTN: Amy Casey
CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 29-NOV-18
Report Date: 30-NOV-18 14:19 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2203734

Project P.O. #: NOT SUBMITTED
Job Reference:
C of C Numbers: 17-728964
Legal Site Desc:

Mathy Mahadeva
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2203734-1 MW18-112G Sampled By: CLIENT on 29-NOV-18 @ 16:00 Matrix: WATER							
Volatile Organic Compounds							
Acetone	<30		30	ug/L		30-NOV-18	R4366459
Benzene	<0.50		0.50	ug/L		30-NOV-18	R4366459
Bromodichloromethane	<2.0		2.0	ug/L		30-NOV-18	R4366459
Bromoform	<5.0		5.0	ug/L		30-NOV-18	R4366459
Bromomethane	<0.50		0.50	ug/L		30-NOV-18	R4366459
Carbon tetrachloride	<0.20		0.20	ug/L		30-NOV-18	R4366459
Chlorobenzene	<0.50		0.50	ug/L		30-NOV-18	R4366459
Dibromochloromethane	<2.0		2.0	ug/L		30-NOV-18	R4366459
Chloroform	<1.0		1.0	ug/L		30-NOV-18	R4366459
1,2-Dibromoethane	<0.20		0.20	ug/L		30-NOV-18	R4366459
1,2-Dichlorobenzene	<0.50		0.50	ug/L		30-NOV-18	R4366459
1,3-Dichlorobenzene	<0.50		0.50	ug/L		30-NOV-18	R4366459
1,4-Dichlorobenzene	<0.50		0.50	ug/L		30-NOV-18	R4366459
Dichlorodifluoromethane	<2.0		2.0	ug/L		30-NOV-18	R4366459
1,1-Dichloroethane	<0.50		0.50	ug/L		30-NOV-18	R4366459
1,2-Dichloroethane	<0.50		0.50	ug/L		30-NOV-18	R4366459
1,1-Dichloroethylene	<0.50		0.50	ug/L		30-NOV-18	R4366459
cis-1,2-Dichloroethylene	2.22		0.50	ug/L		30-NOV-18	R4366459
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		30-NOV-18	R4366459
Methylene Chloride	<5.0		5.0	ug/L		30-NOV-18	R4366459
1,2-Dichloropropane	<0.50		0.50	ug/L		30-NOV-18	R4366459
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		30-NOV-18	R4366459
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		30-NOV-18	R4366459
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		30-NOV-18	
Ethylbenzene	<0.50		0.50	ug/L		30-NOV-18	R4366459
n-Hexane	<0.50		0.50	ug/L		30-NOV-18	R4366459
Methyl Ethyl Ketone	<20		20	ug/L		30-NOV-18	R4366459
Methyl Isobutyl Ketone	<20		20	ug/L		30-NOV-18	R4366459
MTBE	<2.0		2.0	ug/L		30-NOV-18	R4366459
Styrene	<0.50		0.50	ug/L		30-NOV-18	R4366459
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		30-NOV-18	R4366459
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		30-NOV-18	R4366459
Tetrachloroethylene	<0.50		0.50	ug/L		30-NOV-18	R4366459
Toluene	<0.50		0.50	ug/L		30-NOV-18	R4366459
1,1,1-Trichloroethane	<0.50		0.50	ug/L		30-NOV-18	R4366459
1,1,2-Trichloroethane	<0.50		0.50	ug/L		30-NOV-18	R4366459
Trichloroethylene	<0.50		0.50	ug/L		30-NOV-18	R4366459
Trichlorofluoromethane	<5.0		5.0	ug/L		30-NOV-18	R4366459
Vinyl chloride	<0.50		0.50	ug/L		30-NOV-18	R4366459
o-Xylene	<0.30		0.30	ug/L		30-NOV-18	R4366459
m+p-Xylenes	<0.40		0.40	ug/L		30-NOV-18	R4366459

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2203734-1 MW18-112G Sampled By: CLIENT on 29-NOV-18 @ 16:00 Matrix: WATER							
Volatile Organic Compounds							
Xylenes (Total)	<0.50		0.50	ug/L		30-NOV-18	
Surrogate: 4-Bromofluorobenzene	94.8		70-130	%		30-NOV-18	R4366459
Surrogate: 1,4-Difluorobenzene	105.3		70-130	%		30-NOV-18	R4366459
L2203734-2 TRIP BLANK Sampled By: CLIENT on 29-NOV-18 Matrix: WATER							
Volatile Organic Compounds							
Acetone	<30		30	ug/L		30-NOV-18	R4366459
Benzene	<0.50		0.50	ug/L		30-NOV-18	R4366459
Bromodichloromethane	<2.0		2.0	ug/L		30-NOV-18	R4366459
Bromoform	<5.0		5.0	ug/L		30-NOV-18	R4366459
Bromomethane	<0.50		0.50	ug/L		30-NOV-18	R4366459
Carbon tetrachloride	<0.20		0.20	ug/L		30-NOV-18	R4366459
Chlorobenzene	<0.50		0.50	ug/L		30-NOV-18	R4366459
Dibromochloromethane	<2.0		2.0	ug/L		30-NOV-18	R4366459
Chloroform	<1.0		1.0	ug/L		30-NOV-18	R4366459
1,2-Dibromoethane	<0.20		0.20	ug/L		30-NOV-18	R4366459
1,2-Dichlorobenzene	<0.50		0.50	ug/L		30-NOV-18	R4366459
1,3-Dichlorobenzene	<0.50		0.50	ug/L		30-NOV-18	R4366459
1,4-Dichlorobenzene	<0.50		0.50	ug/L		30-NOV-18	R4366459
Dichlorodifluoromethane	<2.0		2.0	ug/L		30-NOV-18	R4366459
1,1-Dichloroethane	<0.50		0.50	ug/L		30-NOV-18	R4366459
1,2-Dichloroethane	<0.50		0.50	ug/L		30-NOV-18	R4366459
1,1-Dichloroethylene	<0.50		0.50	ug/L		30-NOV-18	R4366459
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		30-NOV-18	R4366459
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		30-NOV-18	R4366459
Methylene Chloride	<5.0		5.0	ug/L		30-NOV-18	R4366459
1,2-Dichloropropane	<0.50		0.50	ug/L		30-NOV-18	R4366459
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		30-NOV-18	R4366459
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		30-NOV-18	R4366459
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		30-NOV-18	
Ethylbenzene	<0.50		0.50	ug/L		30-NOV-18	R4366459
n-Hexane	<0.50		0.50	ug/L		30-NOV-18	R4366459
Methyl Ethyl Ketone	<20		20	ug/L		30-NOV-18	R4366459
Methyl Isobutyl Ketone	<20		20	ug/L		30-NOV-18	R4366459
MTBE	<2.0		2.0	ug/L		30-NOV-18	R4366459
Styrene	<0.50		0.50	ug/L		30-NOV-18	R4366459
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		30-NOV-18	R4366459
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		30-NOV-18	R4366459
Tetrachloroethylene	<0.50		0.50	ug/L		30-NOV-18	R4366459
Toluene	<0.50		0.50	ug/L		30-NOV-18	R4366459
1,1,1-Trichloroethane	<0.50		0.50	ug/L		30-NOV-18	R4366459

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2203734-2 TRIP BLANK Sampled By: CLIENT on 29-NOV-18 Matrix: WATER							
Volatile Organic Compounds							
1,1,2-Trichloroethane	<0.50		0.50	ug/L		30-NOV-18	R4366459
Trichloroethylene	<0.50		0.50	ug/L		30-NOV-18	R4366459
Trichlorofluoromethane	<5.0		5.0	ug/L		30-NOV-18	R4366459
Vinyl chloride	<0.50		0.50	ug/L		30-NOV-18	R4366459
o-Xylene	<0.30		0.30	ug/L		30-NOV-18	R4366459
m+p-Xylenes	<0.40		0.40	ug/L		30-NOV-18	R4366459
Xylenes (Total)	<0.50		0.50	ug/L		30-NOV-18	
Surrogate: 4-Bromofluorobenzene	93.9		70-130	%		30-NOV-18	R4366459
Surrogate: 1,4-Difluorobenzene	104.7		70-130	%		30-NOV-18	R4366459

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Laboratory Control Sample	Dichlorodifluoromethane	LCS-H	L2203734-1, -2
Laboratory Control Sample	Trichlorofluoromethane	MES	L2203734-1, -2

Qualifiers for Sample Submission Listed:

Qualifier	Description
CINT	Cooling initiated. Samples were received packed with ice or ice packs and were sampled the same day as received.

Sample Parameter Qualifier key listed:

Qualifier	Description
LCS-H	Lab Control Sample recovery was above ALS DQO. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
VOC-1,3-DCP-CALC-WT	Water	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Water	VOC by GCMS HS O.Reg 153/04 (July 2011)	SW846 8260

Liquid samples are analyzed by headspace GC/MSD.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

17-728964

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2203734 Report Date: 30-NOV-18

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Amy Casey

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4366459								
WG2941369-4 DUP		**WG2941369-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	30-NOV-18
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	30-NOV-18
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	30-NOV-18
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	30-NOV-18
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	30-NOV-18
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	30-NOV-18
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	30-NOV-18
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	30-NOV-18
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	30-NOV-18
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	30-NOV-18
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	30-NOV-18
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	30-NOV-18
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	30-NOV-18
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	30-NOV-18
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	30-NOV-18
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	30-NOV-18
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	30-NOV-18
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	30-NOV-18
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	30-NOV-18
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	30-NOV-18
cis-1,2-Dichloroethylene		2.22	2.06		ug/L	7.5	30	30-NOV-18
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	30-NOV-18
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	30-NOV-18
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	30-NOV-18
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	30-NOV-18
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	30-NOV-18
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	30-NOV-18
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	30-NOV-18
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	30-NOV-18
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	30-NOV-18
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	30-NOV-18
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	30-NOV-18
Styrene		<0.50	<0.50		ug/L			30-NOV-18

Quality Control Report

Workorder: L2203734 Report Date: 30-NOV-18

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Amy Casey

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch	**R4366459**							
WG2941369-4	**DUP**	**WG2941369-3**						
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	30-NOV-18
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	30-NOV-18
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	30-NOV-18
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	30-NOV-18
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	30-NOV-18
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	30-NOV-18
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	30-NOV-18
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	30-NOV-18
WG2941369-1	**LCS**							
1,1,1,2-Tetrachloroethane			108.9		%		70-130	30-NOV-18
1,1,2,2-Tetrachloroethane			94.3		%		70-130	30-NOV-18
1,1,1-Trichloroethane			124.5		%		70-130	30-NOV-18
1,1,2-Trichloroethane			100.0		%		70-130	30-NOV-18
1,1-Dichloroethane			112.7		%		70-130	30-NOV-18
1,1-Dichloroethylene			120.2		%		70-130	30-NOV-18
1,2-Dibromoethane			99.97		%		70-130	30-NOV-18
1,2-Dichlorobenzene			112.2		%		70-130	30-NOV-18
1,2-Dichloroethane			109.9		%		70-130	30-NOV-18
1,2-Dichloropropane			102.8		%		70-130	30-NOV-18
1,3-Dichlorobenzene			116.3		%		70-130	30-NOV-18
1,4-Dichlorobenzene			115.5		%		70-130	30-NOV-18
Acetone			88.1		%		60-140	30-NOV-18
Benzene			113.5		%		70-130	30-NOV-18
Bromodichloromethane			112.1		%		70-130	30-NOV-18
Bromoform			96.2		%		70-130	30-NOV-18
Bromomethane			104.3		%		60-140	30-NOV-18
Carbon tetrachloride			126.6		%		70-130	30-NOV-18
Chlorobenzene			109.6		%		70-130	30-NOV-18
Chloroform			113.6		%		70-130	30-NOV-18
cis-1,2-Dichloroethylene			110.7		%		70-130	30-NOV-18
cis-1,3-Dichloropropene			106.4		%		70-130	30-NOV-18
Dibromochloromethane			105.1		%		70-130	30-NOV-18
Dichlorodifluoromethane			158.3	LCS-H	%		50-140	30-NOV-18

Quality Control Report

Workorder: L2203734 Report Date: 30-NOV-18

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Amy Casey

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4366459								
WG2941369-1 LCS								
Ethylbenzene			108.9		%		70-130	30-NOV-18
n-Hexane			108.9		%		70-130	30-NOV-18
m+p-Xylenes			111.8		%		70-130	30-NOV-18
Methyl Ethyl Ketone			82.7		%		60-140	30-NOV-18
Methyl Isobutyl Ketone			79.7		%		60-140	30-NOV-18
Methylene Chloride			109.3		%		70-130	30-NOV-18
MTBE			113.9		%		70-130	30-NOV-18
o-Xylene			105.2		%		70-130	30-NOV-18
Styrene			104.4		%		70-130	30-NOV-18
Tetrachloroethylene			121.6		%		70-130	30-NOV-18
Toluene			108.4		%		70-130	30-NOV-18
trans-1,2-Dichloroethylene			114.9		%		70-130	30-NOV-18
trans-1,3-Dichloropropene			100.7		%		70-130	30-NOV-18
Trichloroethylene			119.7		%		70-130	30-NOV-18
Trichlorofluoromethane			144.9	MES	%		60-140	30-NOV-18
Vinyl chloride			97.8		%		60-140	30-NOV-18
WG2941369-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	30-NOV-18
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	30-NOV-18
1,1,1-Trichloroethane			<0.50		ug/L		0.5	30-NOV-18
1,1,2-Trichloroethane			<0.50		ug/L		0.5	30-NOV-18
1,1-Dichloroethane			<0.50		ug/L		0.5	30-NOV-18
1,1-Dichloroethylene			<0.50		ug/L		0.5	30-NOV-18
1,2-Dibromoethane			<0.20		ug/L		0.2	30-NOV-18
1,2-Dichlorobenzene			<0.50		ug/L		0.5	30-NOV-18
1,2-Dichloroethane			<0.50		ug/L		0.5	30-NOV-18
1,2-Dichloropropane			<0.50		ug/L		0.5	30-NOV-18
1,3-Dichlorobenzene			<0.50		ug/L		0.5	30-NOV-18
1,4-Dichlorobenzene			<0.50		ug/L		0.5	30-NOV-18
Acetone			<30		ug/L		30	30-NOV-18
Benzene			<0.50		ug/L		0.5	30-NOV-18
Bromodichloromethane			<2.0		ug/L		2	30-NOV-18
Bromoform			<5.0		ug/L		5	30-NOV-18
Bromomethane			<0.50		ug/L		0.5	30-NOV-18

Quality Control Report

Workorder: L2203734 Report Date: 30-NOV-18

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Amy Casey

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4366459								
WG2941369-2 MB								
Carbon tetrachloride			<0.20		ug/L		0.2	30-NOV-18
Chlorobenzene			<0.50		ug/L		0.5	30-NOV-18
Chloroform			<1.0		ug/L		1	30-NOV-18
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	30-NOV-18
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	30-NOV-18
Dibromochloromethane			<2.0		ug/L		2	30-NOV-18
Dichlorodifluoromethane			<2.0		ug/L		2	30-NOV-18
Ethylbenzene			<0.50		ug/L		0.5	30-NOV-18
n-Hexane			<0.50		ug/L		0.5	30-NOV-18
m+p-Xylenes			<0.40		ug/L		0.4	30-NOV-18
Methyl Ethyl Ketone			<20		ug/L		20	30-NOV-18
Methyl Isobutyl Ketone			<20		ug/L		20	30-NOV-18
Methylene Chloride			<5.0		ug/L		5	30-NOV-18
MTBE			<2.0		ug/L		2	30-NOV-18
o-Xylene			<0.30		ug/L		0.3	30-NOV-18
Styrene			<0.50		ug/L		0.5	30-NOV-18
Tetrachloroethylene			<0.50		ug/L		0.5	30-NOV-18
Toluene			<0.50		ug/L		0.5	30-NOV-18
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	30-NOV-18
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	30-NOV-18
Trichloroethylene			<0.50		ug/L		0.5	30-NOV-18
Trichlorofluoromethane			<5.0		ug/L		5	30-NOV-18
Vinyl chloride			<0.50		ug/L		0.5	30-NOV-18
Surrogate: 1,4-Difluorobenzene			104.5		%		70-130	30-NOV-18
Surrogate: 4-Bromofluorobenzene			93.5		%		70-130	30-NOV-18
WG2941369-5 MS		**WG2941369-3**						
1,1,1,2-Tetrachloroethane			107.9		%		50-140	30-NOV-18
1,1,2,2-Tetrachloroethane			91.5		%		50-140	30-NOV-18
1,1,1-Trichloroethane			123.9		%		50-140	30-NOV-18
1,1,2-Trichloroethane			98.7		%		50-140	30-NOV-18
1,1-Dichloroethane			112.6		%		50-140	30-NOV-18
1,1-Dichloroethylene			118.2		%		50-140	30-NOV-18
1,2-Dibromoethane			98.1		%		50-140	30-NOV-18
1,2-Dichlorobenzene			111.5		%		50-140	30-NOV-18

Quality Control Report

Workorder: L2203734 Report Date: 30-NOV-18

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Amy Casey

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4366459								
WG2941369-5 MS		**WG2941369-3**						
1,2-Dichloroethane			109.0		%		50-140	30-NOV-18
1,2-Dichloropropane			102.6		%		50-140	30-NOV-18
1,3-Dichlorobenzene			115.5		%		50-140	30-NOV-18
1,4-Dichlorobenzene			116.2		%		50-140	30-NOV-18
Acetone			86.4		%		50-140	30-NOV-18
Benzene			113.4		%		50-140	30-NOV-18
Bromodichloromethane			111.4		%		50-140	30-NOV-18
Bromoform			94.4		%		50-140	30-NOV-18
Bromomethane			99.6		%		50-140	30-NOV-18
Carbon tetrachloride			125.8		%		50-140	30-NOV-18
Chlorobenzene			109.0		%		50-140	30-NOV-18
Chloroform			113.3		%		50-140	30-NOV-18
cis-1,2-Dichloroethylene			109.9		%		50-140	30-NOV-18
cis-1,3-Dichloropropene			103.4		%		50-140	30-NOV-18
Dibromochloromethane			102.7		%		50-140	30-NOV-18
Dichlorodifluoromethane			139.0		%		50-140	30-NOV-18
Ethylbenzene			108.0		%		50-140	30-NOV-18
n-Hexane			105.7		%		50-140	30-NOV-18
m+p-Xylenes			111.0		%		50-140	30-NOV-18
Methyl Ethyl Ketone			76.5		%		50-140	30-NOV-18
Methyl Isobutyl Ketone			77.9		%		50-140	30-NOV-18
Methylene Chloride			108.8		%		50-140	30-NOV-18
MTBE			112.1		%		50-140	30-NOV-18
o-Xylene			104.5		%		50-140	30-NOV-18
Styrene			102.9		%		50-140	30-NOV-18
Tetrachloroethylene			120.4		%		50-140	30-NOV-18
Toluene			107.9		%		50-140	30-NOV-18
trans-1,2-Dichloroethylene			114.0		%		50-140	30-NOV-18
trans-1,3-Dichloropropene			95.7		%		50-140	30-NOV-18
Trichloroethylene			119.6		%		50-140	30-NOV-18
Trichlorofluoromethane			140.0		%		50-140	30-NOV-18
Vinyl chloride			93.1		%		50-140	30-NOV-18

Quality Control Report

Workorder: L2203734 Report Date: 30-NOV-18

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9
Contact: Amy Casey

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
LCS-H	Lab Control Sample recovery was above ALS DQO. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2203734-COFC

COC Number: 17 - 728964

Page of

Report To	Contact and company name below will appear on the final report
Company:	Jacobs
Contact:	Amy Casey
Phone:	519-803-2283
	Company address below will appear on the final report
Street:	72 Victoria St
City/Province:	Kitchener
Postal Code:	N2M 2N2
Invoice To	Same as Report To [X] YES [ ] NO
	Copy of Invoice with Report [ ] YES [ ] NO
Company:	
Contact:	

Report Format / Di

Select Report Format: [X] PDF [X] EXCEL [ ] EDD (DIGITAL)
Quality Control (QC) Report with Report [ ] YES [ ] NO
[ ] Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: [ ] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax amy.casey@jacobs.com
Email 2 michael.shingle@jacobs.com
Email 3

Invoice Distribution

Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax
Email 2

Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] [ ] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] [ ]; 3 day [P3-25%] [ ]; 2 day [P2-50%] [ ]

EMERGENCY: 1 Business day [E-100%] [X]; Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] [ ]

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #:
Job #:
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2203734

ALS Contact: Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	VOCs	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
	MW18-112G	29-11-18	16:00	W	X			2
	Trip blank				X			2

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] YES [ ] NO
Are samples for human consumption/ use? [ ] YES [ ] NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] SIF Observations Yes [ ] No [ ]
Ice Packs [ ] Ice Cubes [X] Custody seal intact Yes [ ] No [ ]
Cooling Initiated [X]

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				12.5			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date: 11/29/18	Time: 17:00	Received by	Date	Time	Received by	Date: Nov 29/18	Time: 18:00

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JULY 2017 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

CH2M HILL CANADA LIMITED
ATTN: AMY CASEY
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 03-DEC-18
Report Date: 23-JAN-19 13:26 (MT)
Version: FINAL REV. 3

Client Phone: 519-803-2283

Certificate of Analysis

Lab Work Order #: L2204937

Project P.O. #: NOT SUBMITTED
Job Reference: 694757
C of C Numbers: 17-666267
Legal Site Desc:

Comments: 23-JAN-19:
PEHT qualifier is not valid. Sample results were re-uploaded on JAN-23-19 to satisfy Reg. 153/04 list. Samples were analyzed on DEC-4-2018 within holding time.

DEC-20-18:
Sample ID change.

Mathy Mahadeva
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2204937-1 MW18-112G Sampled By: A. CASEY on 03-DEC-18 @ 16:15 Matrix: WATER							
Volatile Organic Compounds							
Acetone	<30	PEHT	30	ug/L		23-JAN-19	R4462537
Benzene	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
Bromodichloromethane	<2.0	PEHT	2.0	ug/L		23-JAN-19	R4462537
Bromoform	<5.0	PEHT	5.0	ug/L		23-JAN-19	R4462537
Bromomethane	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
Carbon tetrachloride	<0.20	PEHT	0.20	ug/L		23-JAN-19	R4462537
Chlorobenzene	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
Dibromochloromethane	<2.0	PEHT	2.0	ug/L		23-JAN-19	R4462537
Chloroform	<1.0	PEHT	1.0	ug/L		23-JAN-19	R4462537
1,2-Dibromoethane	<0.20	PEHT	0.20	ug/L		23-JAN-19	R4462537
1,2-Dichlorobenzene	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
1,3-Dichlorobenzene	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
1,4-Dichlorobenzene	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
Dichlorodifluoromethane	<2.0	PEHT	2.0	ug/L		23-JAN-19	R4462537
1,1-Dichloroethane	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
1,2-Dichloroethane	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
1,1-Dichloroethylene	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
cis-1,2-Dichloroethylene	1.55	PEHT	0.50	ug/L		23-JAN-19	R4462537
trans-1,2-Dichloroethylene	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
Methylene Chloride	<5.0	PEHT	5.0	ug/L		23-JAN-19	R4462537
1,2-Dichloropropane	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
cis-1,3-Dichloropropene	<0.30	PEHT	0.30	ug/L		23-JAN-19	R4462537
trans-1,3-Dichloropropene	<0.30	PEHT	0.30	ug/L		23-JAN-19	R4462537
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		23-JAN-19	
Ethylbenzene	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
n-Hexane	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
Methyl Ethyl Ketone	<20	PEHT	20	ug/L		23-JAN-19	R4462537
Methyl Isobutyl Ketone	<20	PEHT	20	ug/L		23-JAN-19	R4462537
MTBE	<2.0	PEHT	2.0	ug/L		23-JAN-19	R4462537
Styrene	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
1,1,1,2-Tetrachloroethane	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
1,1,2,2-Tetrachloroethane	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
Tetrachloroethylene	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
Toluene	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
1,1,1-Trichloroethane	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
1,1,2-Trichloroethane	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
Trichloroethylene	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
Trichlorofluoromethane	<5.0	PEHT	5.0	ug/L		23-JAN-19	R4462537
Vinyl chloride	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
o-Xylene	<0.30	PEHT	0.30	ug/L		23-JAN-19	R4462537
m+p-Xylenes	<0.40	PEHT	0.40	ug/L		23-JAN-19	R4462537

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2204937-1 MW18-112G Sampled By: A. CASEY on 03-DEC-18 @ 16:15 Matrix: WATER							
Volatile Organic Compounds							
Surrogate: 4-Bromofluorobenzene	97.8		70-130	%		23-JAN-19	R4462537
Surrogate: 1,4-Difluorobenzene	103.1		70-130	%		23-JAN-19	R4462537
L2204937-2 TRIP BLANK Sampled By: A. CASEY on 03-DEC-18 Matrix: WATER							
Volatile Organic Compounds							
Acetone	<30	PEHT	30	ug/L		23-JAN-19	R4462537
Benzene	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
Bromodichloromethane	<2.0	PEHT	2.0	ug/L		23-JAN-19	R4462537
Bromoform	<5.0	PEHT	5.0	ug/L		23-JAN-19	R4462537
Bromomethane	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
Carbon tetrachloride	<0.20	PEHT	0.20	ug/L		23-JAN-19	R4462537
Chlorobenzene	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
Dibromochloromethane	<2.0	PEHT	2.0	ug/L		23-JAN-19	R4462537
Chloroform	<1.0	PEHT	1.0	ug/L		23-JAN-19	R4462537
1,2-Dibromoethane	<0.20	PEHT	0.20	ug/L		23-JAN-19	R4462537
1,2-Dichlorobenzene	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
1,3-Dichlorobenzene	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
1,4-Dichlorobenzene	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
Dichlorodifluoromethane	<2.0	PEHT	2.0	ug/L		23-JAN-19	R4462537
1,1-Dichloroethane	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
1,2-Dichloroethane	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
1,1-Dichloroethylene	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
cis-1,2-Dichloroethylene	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
trans-1,2-Dichloroethylene	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
Methylene Chloride	<5.0	PEHT	5.0	ug/L		23-JAN-19	R4462537
1,2-Dichloropropane	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
cis-1,3-Dichloropropene	<0.30	PEHT	0.30	ug/L		23-JAN-19	R4462537
trans-1,3-Dichloropropene	<0.30	PEHT	0.30	ug/L		23-JAN-19	R4462537
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		23-JAN-19	
Ethylbenzene	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
n-Hexane	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
Methyl Ethyl Ketone	<20	PEHT	20	ug/L		23-JAN-19	R4462537
Methyl Isobutyl Ketone	<20	PEHT	20	ug/L		23-JAN-19	R4462537
MTBE	<2.0	PEHT	2.0	ug/L		23-JAN-19	R4462537
Styrene	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
1,1,1,2-Tetrachloroethane	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
1,1,2,2-Tetrachloroethane	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
Tetrachloroethylene	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
Toluene	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
1,1,1-Trichloroethane	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
1,1,2-Trichloroethane	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2204937-2 TRIP BLANK Sampled By: A. CASEY on 03-DEC-18 Matrix: WATER							
Volatile Organic Compounds							
Trichloroethylene	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
Trichlorofluoromethane	<5.0	PEHT	5.0	ug/L		23-JAN-19	R4462537
Vinyl chloride	<0.50	PEHT	0.50	ug/L		23-JAN-19	R4462537
o-Xylene	<0.30	PEHT	0.30	ug/L		23-JAN-19	R4462537
m+p-Xylenes	<0.40	PEHT	0.40	ug/L		23-JAN-19	R4462537
Surrogate: 4-Bromofluorobenzene	96.5		70-130	%		23-JAN-19	R4462537
Surrogate: 1,4-Difluorobenzene	103.0		70-130	%		23-JAN-19	R4462537

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier key listed:

Qualifier	Description
PEHT	Parameter Exceeded Recommended Holding Time Prior to Analysis

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
THM-SUM-PPB-CALC-WT	Water	Total Trihalomethanes (THMs)	CALCULATION
Total Trihalomethanes (THMs) represents the sum of bromodichloromethane, bromoform, chlorodibromomethane and chloroform. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.			
VOC-1,3-DCP-CALC-WT	Water	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Water	VOC by GCMS HS O.Reg 153/04 (July 2011)	SW846 8260
Liquid samples are analyzed by headspace GC/MSD.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).			
VOC-ROU-HS-WT	Water	Volatile Organic Compounds	SW846 8260
Aqueous samples are analyzed by headspace-GC/MS.			
XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION
Total xylenes represents the sum of o-xylene and m&p-xylene.			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

17-666267

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2204937 Report Date: 23-JAN-19

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: AMY CASEY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4462537								
WG2967049-4 DUP		**WG2967049-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-JAN-19
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-JAN-19
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-JAN-19
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-JAN-19
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-JAN-19
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-JAN-19
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	23-JAN-19
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-JAN-19
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-JAN-19
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-JAN-19
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-JAN-19
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-JAN-19
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	23-JAN-19
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-JAN-19
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	23-JAN-19
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	23-JAN-19
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-JAN-19
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	23-JAN-19
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-JAN-19
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	23-JAN-19
cis-1,2-Dichloroethylene		1.39	1.35		ug/L	2.9	30	23-JAN-19
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	23-JAN-19
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	23-JAN-19
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	23-JAN-19
Ethylbenzene		1.02	1.01		ug/L	1.0	30	23-JAN-19
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-JAN-19
m+p-Xylenes		6.58	6.52		ug/L	0.9	30	23-JAN-19
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	23-JAN-19
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	23-JAN-19
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	23-JAN-19
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	23-JAN-19
o-Xylene		1.45	1.43		ug/L	1.4	30	23-JAN-19
Styrene		<0.50	<0.50		ug/L			23-JAN-19

Quality Control Report

Workorder: L2204937 Report Date: 23-JAN-19

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: AMY CASEY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4462537								
WG2967049-4 DUP		**WG2967049-3**						
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-JAN-19
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-JAN-19
Toluene		4.48	4.51		ug/L	0.7	30	23-JAN-19
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-JAN-19
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	23-JAN-19
Trichloroethylene		10.8	10.8		ug/L	0.1	30	23-JAN-19
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	23-JAN-19
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	23-JAN-19
WG2967049-1 LCS								
1,1,1,2-Tetrachloroethane			90.9		%		70-130	23-JAN-19
1,1,2,2-Tetrachloroethane			88.5		%		70-130	23-JAN-19
1,1,1-Trichloroethane			106.5		%		70-130	23-JAN-19
1,1,2-Trichloroethane			90.9		%		70-130	23-JAN-19
1,1-Dichloroethane			100.6		%		70-130	23-JAN-19
1,1-Dichloroethylene			103.7		%		70-130	23-JAN-19
1,2-Dibromoethane			90.8		%		70-130	23-JAN-19
1,2-Dichlorobenzene			97.1		%		70-130	23-JAN-19
1,2-Dichloroethane			94.5		%		70-130	23-JAN-19
1,2-Dichloropropane			95.2		%		70-130	23-JAN-19
1,3-Dichlorobenzene			101.8		%		70-130	23-JAN-19
1,4-Dichlorobenzene			101.2		%		70-130	23-JAN-19
Acetone			95.6		%		60-140	23-JAN-19
Benzene			99.6		%		70-130	23-JAN-19
Bromodichloromethane			93.5		%		70-130	23-JAN-19
Bromoform			84.6		%		70-130	23-JAN-19
Bromomethane			129.9		%		60-140	23-JAN-19
Carbon tetrachloride			108.0		%		70-130	23-JAN-19
Chlorobenzene			95.9		%		70-130	23-JAN-19
Chloroform			96.0		%		70-130	23-JAN-19
cis-1,2-Dichloroethylene			95.2		%		70-130	23-JAN-19
cis-1,3-Dichloropropene			98.0		%		70-130	23-JAN-19
Dibromochloromethane			90.0		%		70-130	23-JAN-19
Dichlorodifluoromethane			109.9		%		50-140	23-JAN-19

Quality Control Report

Workorder: L2204937 Report Date: 23-JAN-19

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: AMY CASEY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4462537								
WG2967049-1 LCS								
Ethylbenzene			105.1		%		70-130	23-JAN-19
n-Hexane			111.1		%		70-130	23-JAN-19
m+p-Xylenes			105.6		%		70-130	23-JAN-19
Methyl Ethyl Ketone			92.2		%		60-140	23-JAN-19
Methyl Isobutyl Ketone			84.3		%		60-140	23-JAN-19
Methylene Chloride			97.1		%		70-130	23-JAN-19
MTBE			97.2		%		70-130	23-JAN-19
o-Xylene			101.5		%		70-130	23-JAN-19
Styrene			94.8		%		70-130	23-JAN-19
Tetrachloroethylene			109.9		%		70-130	23-JAN-19
Toluene			98.5		%		70-130	23-JAN-19
trans-1,2-Dichloroethylene			104.4		%		70-130	23-JAN-19
trans-1,3-Dichloropropene			97.2		%		70-130	23-JAN-19
Trichloroethylene			99.2		%		70-130	23-JAN-19
Trichlorofluoromethane			117.8		%		60-140	23-JAN-19
Vinyl chloride			91.4		%		60-140	23-JAN-19
WG2967049-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	23-JAN-19
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	23-JAN-19
1,1,1-Trichloroethane			<0.50		ug/L		0.5	23-JAN-19
1,1,2-Trichloroethane			<0.50		ug/L		0.5	23-JAN-19
1,1-Dichloroethane			<0.50		ug/L		0.5	23-JAN-19
1,1-Dichloroethylene			<0.50		ug/L		0.5	23-JAN-19
1,2-Dibromoethane			<0.20		ug/L		0.2	23-JAN-19
1,2-Dichlorobenzene			<0.50		ug/L		0.5	23-JAN-19
1,2-Dichloroethane			<0.50		ug/L		0.5	23-JAN-19
1,2-Dichloropropane			<0.50		ug/L		0.5	23-JAN-19
1,3-Dichlorobenzene			<0.50		ug/L		0.5	23-JAN-19
1,4-Dichlorobenzene			<0.50		ug/L		0.5	23-JAN-19
Acetone			<30		ug/L		30	23-JAN-19
Benzene			<0.50		ug/L		0.5	23-JAN-19
Bromodichloromethane			<2.0		ug/L		2	23-JAN-19
Bromoform			<5.0		ug/L		5	23-JAN-19
Bromomethane			<0.50		ug/L		0.5	23-JAN-19

Quality Control Report

Workorder: L2204937 Report Date: 23-JAN-19

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: AMY CASEY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch	**R4462537**							
WG2967049-2	**MB**							
Carbon tetrachloride			<0.20		ug/L		0.2	23-JAN-19
Chlorobenzene			<0.50		ug/L		0.5	23-JAN-19
Chloroform			<1.0		ug/L		1	23-JAN-19
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	23-JAN-19
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	23-JAN-19
Dibromochloromethane			<2.0		ug/L		2	23-JAN-19
Dichlorodifluoromethane			<2.0		ug/L		2	23-JAN-19
Ethylbenzene			<0.50		ug/L		0.5	23-JAN-19
n-Hexane			<0.50		ug/L		0.5	23-JAN-19
m+p-Xylenes			<0.40		ug/L		0.4	23-JAN-19
Methyl Ethyl Ketone			<20		ug/L		20	23-JAN-19
Methyl Isobutyl Ketone			<20		ug/L		20	23-JAN-19
Methylene Chloride			<5.0		ug/L		5	23-JAN-19
MTBE			<2.0		ug/L		2	23-JAN-19
o-Xylene			<0.30		ug/L		0.3	23-JAN-19
Styrene			<0.50		ug/L		0.5	23-JAN-19
Tetrachloroethylene			<0.50		ug/L		0.5	23-JAN-19
Toluene			<0.50		ug/L		0.5	23-JAN-19
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	23-JAN-19
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	23-JAN-19
Trichloroethylene			<0.50		ug/L		0.5	23-JAN-19
Trichlorofluoromethane			<5.0		ug/L		5	23-JAN-19
Vinyl chloride			<0.50		ug/L		0.5	23-JAN-19
Surrogate: 1,4-Difluorobenzene			103.6		%		70-130	23-JAN-19
Surrogate: 4-Bromofluorobenzene			96.1		%		70-130	23-JAN-19
WG2967049-5	**MS**	**WG2967049-3**						
1,1,1,2-Tetrachloroethane			90.6		%		50-140	23-JAN-19
1,1,2,2-Tetrachloroethane			87.0		%		50-140	23-JAN-19
1,1,1-Trichloroethane			104.9		%		50-140	23-JAN-19
1,1,2-Trichloroethane			92.0		%		50-140	23-JAN-19
1,1-Dichloroethane			100.7		%		50-140	23-JAN-19
1,1-Dichloroethylene			101.0		%		50-140	23-JAN-19
1,2-Dibromoethane			92.3		%		50-140	23-JAN-19
1,2-Dichlorobenzene			98.1		%		50-140	23-JAN-19

Quality Control Report

Workorder: L2204937 Report Date: 23-JAN-19

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: AMY CASEY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4462537								
WG2967049-5 MS		**WG2967049-3**						
1,2-Dichloroethane			97.4		%		50-140	23-JAN-19
1,2-Dichloropropane			96.6		%		50-140	23-JAN-19
1,3-Dichlorobenzene			102.3		%		50-140	23-JAN-19
1,4-Dichlorobenzene			102.0		%		50-140	23-JAN-19
Acetone			98.8		%		50-140	23-JAN-19
Benzene			100.0		%		50-140	23-JAN-19
Bromodichloromethane			95.4		%		50-140	23-JAN-19
Bromoform			84.8		%		50-140	23-JAN-19
Bromomethane			126.3		%		50-140	23-JAN-19
Carbon tetrachloride			106.4		%		50-140	23-JAN-19
Chlorobenzene			95.8		%		50-140	23-JAN-19
Chloroform			97.0		%		50-140	23-JAN-19
cis-1,2-Dichloroethylene			96.1		%		50-140	23-JAN-19
cis-1,3-Dichloropropene			101.1		%		50-140	23-JAN-19
Dibromochloromethane			90.5		%		50-140	23-JAN-19
Dichlorodifluoromethane			97.1		%		50-140	23-JAN-19
Ethylbenzene			103.2		%		50-140	23-JAN-19
n-Hexane			105.9		%		50-140	23-JAN-19
m+p-Xylenes			103.9		%		50-140	23-JAN-19
Methyl Ethyl Ketone			91.2		%		50-140	23-JAN-19
Methyl Isobutyl Ketone			85.4		%		50-140	23-JAN-19
Methylene Chloride			98.9		%		50-140	23-JAN-19
MTBE			96.9		%		50-140	23-JAN-19
o-Xylene			100.3		%		50-140	23-JAN-19
Styrene			93.9		%		50-140	23-JAN-19
Tetrachloroethylene			106.8		%		50-140	23-JAN-19
Toluene			97.2		%		50-140	23-JAN-19
trans-1,2-Dichloroethylene			103.5		%		50-140	23-JAN-19
trans-1,3-Dichloropropene			94.9		%		50-140	23-JAN-19
Trichloroethylene			98.2		%		50-140	23-JAN-19
Trichlorofluoromethane			113.4		%		50-140	23-JAN-19
Vinyl chloride			86.9		%		50-140	23-JAN-19

Quality Control Report

Workorder: L2204937 Report Date: 23-JAN-19

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9
Contact: AMY CASEY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Quality Control Report

Workorder: L2204937 Report Date: 23-JAN-19

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9
Contact: AMY CASEY

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Volatile Organic Compounds							
VOC by GCMS HS O.Reg 153/04 (July 2011)							
	1	03-DEC-18 16:15	23-JAN-19 11:34	14	51	days	EHT
	2	03-DEC-18	23-JAN-19 11:35	14	51	days	EHT

Legend & Qualifier Definitions:

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
EHTR: Exceeded ALS recommended hold time prior to sample receipt.
EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
EHT: Exceeded ALS recommended hold time prior to analysis.
Rec. HT: ALS recommended hold time (see units).

Notes*:
Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2204937 were received on 03-DEC-18 17:35.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2204937-COFC

COC Number: 17 - 666267

Page 1 of 1

Report To	Contact and company name below will appear on the final report	Report Format / Distribution	
Company:	Jacobs	Select Report Format:	☒ PDF ☒ EXCEL ☐ EDD (DIGITAL)
Contact:	Amy Casey	Quality Control (QC) Report with Report	☐ YES ☐ NO
Phone:	519 803 2283	☐ Compare Results to Criteria on Report - provide details below if box checked	
	Company address below will appear on the final report	Select Distribution:	☒ EMAIL ☐ MAIL ☐ FAX
Street:	72 Victoria St	Email 1 or Fax	amy.casey@jacobs.com
City/Province:	Kitchener ON	Email 2	katherine.appleby@jacobs.com
Postal Code:	N2M 2N2	Email 3	michael.shiry@jacobs.com jenny.mannist@jacobs.com
Invoice To	Same as Report To ☒ YES ☐ NO	Invoice Distribution	
	Copy of Invoice with Report ☐ YES ☐ NO	Select Invoice Distribution:	☐ EMAIL ☐ MAIL ☐ FAX
Company:		Email 1 or Fax	
Contact:		Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:		AFE/Cost Center:	PO#
Job #:	699757	Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (lab use only):	L2204937	ALS Contact: Mathy M.	Sampler: A. Casey

w - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
4 day [P4-20%]	☐	1 Business day [E-100%]	☒
3 day [P3-25%]	☐	Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)]	☐
2 day [P2-50%]	☐		

Date and Time Required for all E&P TATs: EOD Dec 4 2018

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	VOCs	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
	MW18-122G	03-012-18	16:15	W	X			2
	TRIP BLANK			W	X			2

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☒ NO	
Are samples for human consumption/ use? ☐ YES ☒ NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐	SIF Observations	Yes ☐	No	☐
Ice Packs ☐ Ice Cubes	☒	Custody seal intact	Yes ☐	No	☐
Cooling Initiated	☐				

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
			8.1		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: A. Casey	Date: 03/12/18	Time:	Received by:	Date:	Time:	Received by:	Date: DEC 3/2018	Time: 5:35

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JULY 2017 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

CH2M HILL CANADA LIMITED
ATTN: AMY CASEY
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 04-DEC-18
Report Date: 05-DEC-18 12:55 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2205658

Project P.O. #: NOT SUBMITTED
Job Reference:
C of C Numbers: 17-666268
Legal Site Desc:

Mathy Mahadeva
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2205658-1 MW17-100I Sampled By: CLIENT on 15-NOV-18 @ 15:10 Matrix: SOIL							
Physical Tests							
pH	7.79		0.10	pH units		05-DEC-18	R4374328
L2205658-2 MW17-100II Sampled By: CLIENT on 15-NOV-18 @ 15:20 Matrix: SOIL							
Physical Tests							
pH	7.78		0.10	pH units		05-DEC-18	R4374328

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
PH-WT	Soil	pH	MOEE E3137A

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

17-666268

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2205658 Report Date: 05-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: AMY CASEY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH-WT	**Soil**							
Batch R4374328								
WG2946138-1 DUP		**L2204896-4**						
pH		7.59	7.59	J	pH units	0.00	0.3	05-DEC-18
WG2946640-1 LCS								
pH			6.99		pH units		6.9-7.1	05-DEC-18

Quality Control Report

Workorder: L2205658 Report Date: 05-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9
Contact: AMY CASEY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2205658-COFC

COC Number: 17 - 666268

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	Jacobs
Contact:	Amy Casey
Phone:	519-803-2283
Company address below will appear on the final report	
Street:	72 Victoria St
City/Province:	Kitchener, ON
Postal Code:	N2M2N2
Invoice To	Same as Report To [X] YES [ ] NO
	Copy of Invoice with Report [ ] YES [ ] NO
Company:	
Contact:	

Report Format / Distribution

Select Report Format: [ ] PDF [X] EXCEL [ ] EDD (DIGITAL)
Quality Control (QC) Report with Report [ ] YES [ ] NO
[ ] Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax amy.casey@jacobs.com
Email 2
Email 3

Invoice Distribution

Select Invoice Distribution: [ ] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax
Email 2

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] [ ] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] [ ]; 3 day [P3-25%] [ ]; 2 day [P2-50%] [ ]

EMERGENCY: 1 Business day [E-100%] [X]; Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] [ ]

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #:
Job #:
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2205658
ALS Contact: Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	pH	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
	MW17-100i	15-011-18	15:10	S	X			
	MW17-100ii	15-011-18	15:20	S	X			
	MW17-204i	16-011-18	10:00	S		X		
	MW17-204ii	16-011-18	10:00	S		X		
	DUP 1	16-011-18	10:00	S		X		

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] YES [ ] NO
Are samples for human consumption/ use? [ ] YES [ ] NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] SIF Observations Yes [ ] No [ ]
Ice Packs [ ] Ice Cubes [X] Custody seal intact Yes [ ] No [ ]
Cooling Initiated [ ]

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
	1.3

SHIPMENT RELEASE (client use)

Released by: Amy Casey-Acy Date: Time:

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by: Date: 4 Dec 18 Time: 1725

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JULY 2017 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

CH2M HILL CANADA LIMITED
ATTN: MICHAEL SHIRY
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 12-DEC-18
Report Date: 14-DEC-18 08:42 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2209635

Project P.O. #: NOT SUBMITTED
Job Reference: 694757
C of C Numbers: 17-20181212
Legal Site Desc:

Mathy Mahadeva
Account Manager

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ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2209635-1	MW18-115D									
Sampled By:	VP on 12-DEC-18 @ 12:00									
Matrix:	WATER						#1			
Dissolved Metals										
	Dissolved Metals Filtration Location	FIELD			No Unit	13-DEC-18				
	Antimony (Sb)-Dissolved	0.12		0.10	ug/L	13-DEC-18	6			
	Arsenic (As)-Dissolved	0.80		0.10	ug/L	13-DEC-18	25			
	Barium (Ba)-Dissolved	51.9		0.10	ug/L	13-DEC-18	1000			
	Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	13-DEC-18	4			
	Boron (B)-Dissolved	70		10	ug/L	13-DEC-18	5000			
	Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	13-DEC-18	2.1			
	Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	13-DEC-18	50			
	Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	13-DEC-18	3.8			
	Copper (Cu)-Dissolved	<0.20		0.20	ug/L	13-DEC-18	69			
	Lead (Pb)-Dissolved	<0.050		0.050	ug/L	13-DEC-18	10			
	Molybdenum (Mo)-Dissolved	10.2		0.050	ug/L	13-DEC-18	70			
	Nickel (Ni)-Dissolved	1.02		0.50	ug/L	13-DEC-18	100			
	Selenium (Se)-Dissolved	5.83		0.050	ug/L	13-DEC-18	10			
	Silver (Ag)-Dissolved	<0.050		0.050	ug/L	13-DEC-18	1.2			
	Sodium (Na)-Dissolved	127000	DLHC	500	ug/L	13-DEC-18	490000			
	Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	13-DEC-18	2			
	Uranium (U)-Dissolved	3.91		0.010	ug/L	13-DEC-18	20			
	Vanadium (V)-Dissolved	<0.50		0.50	ug/L	13-DEC-18	6.2			
	Zinc (Zn)-Dissolved	<1.0		1.0	ug/L	13-DEC-18	890			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	14-DEC-18	2700			
	Benzene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	14-DEC-18	16			
	Bromoform	<5.0		5.0	ug/L	14-DEC-18	5			
	Bromomethane	<0.50		0.50	ug/L	14-DEC-18	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	14-DEC-18	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	14-DEC-18	30			
	Dibromochloromethane	<2.0		2.0	ug/L	14-DEC-18	25			
	Chloroform	<1.0		1.0	ug/L	14-DEC-18	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	14-DEC-18	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	14-DEC-18	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	14-DEC-18	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	14-DEC-18	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	14-DEC-18	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	14-DEC-18	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	14-DEC-18	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	14-DEC-18				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	14-DEC-18				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	14-DEC-18	2.4			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2209635-1	MW18-115D									
Sampled By:	VP on 12-DEC-18 @ 12:00									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	n-Hexane	<0.50		0.50	ug/L	14-DEC-18	5			
	Methyl Ethyl Ketone	<20		20	ug/L	14-DEC-18	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	14-DEC-18	640			
	MTBE	<2.0		2.0	ug/L	14-DEC-18	15			
	Styrene	<0.50		0.50	ug/L	14-DEC-18	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	14-DEC-18	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Toluene	<0.50		0.50	ug/L	14-DEC-18	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	14-DEC-18	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	14-DEC-18	150			
	Vinyl chloride	<0.50		0.50	ug/L	14-DEC-18	0.5			
	o-Xylene	<0.30		0.30	ug/L	14-DEC-18				
	m+p-Xylenes	<0.40		0.40	ug/L	14-DEC-18				
	Xylenes (Total)	<0.50		0.50	ug/L	14-DEC-18	72			
	Surrogate: 4-Bromofluorobenzene	96.0		70-130	%	14-DEC-18				
	Surrogate: 1,4-Difluorobenzene	98.4		70-130	%	14-DEC-18				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

Reference Information

Sample Parameter Qualifier key listed:

Qualifier	Description
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference***
MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8

The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

VOC-1,3-DCP-CALC-WT	Water	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Water	VOC by GCMS HS O.Reg 153/04 (July 2011)	SW846 8260

Liquid samples are analyzed by headspace GC/MSD.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

*** ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody numbers:

17-20181212

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA		

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Quality Control Report

Workorder: L2209635 Report Date: 14-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R4393615								
WG2952810-4 DUP		**WG2952810-3**						
Antimony (Sb)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	13-DEC-18
Arsenic (As)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	13-DEC-18
Barium (Ba)-Dissolved		56.8	57.9		ug/L	1.9	20	13-DEC-18
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	13-DEC-18
Boron (B)-Dissolved		<10	<10	RPD-NA	ug/L	N/A	20	13-DEC-18
Cadmium (Cd)-Dissolved		<0.0050	<0.0050	RPD-NA	ug/L	N/A	20	13-DEC-18
Chromium (Cr)-Dissolved		0.81	0.83		ug/L	3.1	20	13-DEC-18
Cobalt (Co)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	13-DEC-18
Copper (Cu)-Dissolved		0.66	0.68		ug/L	2.6	20	13-DEC-18
Lead (Pb)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	13-DEC-18
Molybdenum (Mo)-Dissolved		0.076	0.073		ug/L	2.8	20	13-DEC-18
Nickel (Ni)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	13-DEC-18
Selenium (Se)-Dissolved		0.164	0.139		ug/L	16	20	13-DEC-18
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	13-DEC-18
Sodium (Na)-Dissolved		2020	2010		ug/L	0.2	20	13-DEC-18
Thallium (Tl)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	13-DEC-18
Uranium (U)-Dissolved		0.193	0.186		ug/L	3.7	20	13-DEC-18
Vanadium (V)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	13-DEC-18
Zinc (Zn)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	13-DEC-18
WG2952810-2 LCS								
Antimony (Sb)-Dissolved			101.2		%		80-120	13-DEC-18
Arsenic (As)-Dissolved			103.4		%		80-120	13-DEC-18
Barium (Ba)-Dissolved			102.2		%		80-120	13-DEC-18
Beryllium (Be)-Dissolved			98.3		%		80-120	13-DEC-18
Boron (B)-Dissolved			99.8		%		80-120	13-DEC-18
Cadmium (Cd)-Dissolved			100.0		%		80-120	13-DEC-18
Chromium (Cr)-Dissolved			100.9		%		80-120	13-DEC-18
Cobalt (Co)-Dissolved			99.9		%		80-120	13-DEC-18
Copper (Cu)-Dissolved			111.3		%		80-120	13-DEC-18
Lead (Pb)-Dissolved			101.1		%		80-120	13-DEC-18
Molybdenum (Mo)-Dissolved			100.6		%		80-120	13-DEC-18
Nickel (Ni)-Dissolved			101.2		%		80-120	13-DEC-18
Selenium (Se)-Dissolved			102.2		%		80-120	13-DEC-18

Quality Control Report

Workorder: L2209635 Report Date: 14-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R4393615								
WG2952810-2 LCS								
Silver (Ag)-Dissolved			103.7		%		80-120	13-DEC-18
Sodium (Na)-Dissolved			100.7		%		80-120	13-DEC-18
Thallium (Tl)-Dissolved			100.3		%		80-120	13-DEC-18
Uranium (U)-Dissolved			100.7		%		80-120	13-DEC-18
Vanadium (V)-Dissolved			102.9		%		80-120	13-DEC-18
Zinc (Zn)-Dissolved			100.4		%		80-120	13-DEC-18
WG2952810-1 MB								
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	13-DEC-18
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	13-DEC-18
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	13-DEC-18
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	13-DEC-18
Boron (B)-Dissolved			<10		ug/L		10	13-DEC-18
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	13-DEC-18
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	13-DEC-18
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	13-DEC-18
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	13-DEC-18
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	13-DEC-18
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	13-DEC-18
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	13-DEC-18
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	13-DEC-18
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	13-DEC-18
Sodium (Na)-Dissolved			<50		ug/L		50	13-DEC-18
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	13-DEC-18
Uranium (U)-Dissolved			<0.010		ug/L		0.01	13-DEC-18
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	13-DEC-18
Zinc (Zn)-Dissolved			<1.0		ug/L		1	13-DEC-18
WG2952810-5 MS		**WG2952810-6**						
Antimony (Sb)-Dissolved			98.9		%		70-130	13-DEC-18
Arsenic (As)-Dissolved			105.4		%		70-130	13-DEC-18
Barium (Ba)-Dissolved			N/A	MS-B	%		-	13-DEC-18
Beryllium (Be)-Dissolved			99.7		%		70-130	13-DEC-18
Boron (B)-Dissolved			99.2		%		70-130	13-DEC-18
Cadmium (Cd)-Dissolved			101.4		%		70-130	13-DEC-18
Chromium (Cr)-Dissolved			100.5		%		70-130	13-DEC-18

Quality Control Report

Workorder: L2209635 Report Date: 14-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch	**R4393615**							
WG2952810-5	**MS**	**WG2952810-6**						
Cobalt (Co)-Dissolved			96.8		%		70-130	13-DEC-18
Copper (Cu)-Dissolved			96.7		%		70-130	13-DEC-18
Lead (Pb)-Dissolved			99.0		%		70-130	13-DEC-18
Molybdenum (Mo)-Dissolved			99.1		%		70-130	13-DEC-18
Nickel (Ni)-Dissolved			97.7		%		70-130	13-DEC-18
Selenium (Se)-Dissolved			105.6		%		70-130	13-DEC-18
Silver (Ag)-Dissolved			102.5		%		70-130	13-DEC-18
Sodium (Na)-Dissolved			N/A	MS-B	%		-	13-DEC-18
Thallium (Tl)-Dissolved			97.9		%		70-130	13-DEC-18
Uranium (U)-Dissolved			N/A	MS-B	%		-	13-DEC-18
Vanadium (V)-Dissolved			103.0		%		70-130	13-DEC-18
Zinc (Zn)-Dissolved			102.7		%		70-130	13-DEC-18
VOC-511-HS-WT	**Water**							
Batch	**R4395167**							
WG2951925-4	**DUP**	**WG2951925-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	14-DEC-18
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	14-DEC-18
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	14-DEC-18
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	14-DEC-18
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	14-DEC-18

Quality Control Report

Workorder: L2209635 Report Date: 14-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4395167								
WG2951925-4 DUP		**WG2951925-3**						
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	14-DEC-18
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	14-DEC-18
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	14-DEC-18
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	14-DEC-18
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	14-DEC-18
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	14-DEC-18
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	14-DEC-18
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	14-DEC-18
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	14-DEC-18
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	14-DEC-18
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	14-DEC-18
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	14-DEC-18
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
WG2951925-1 LCS								
1,1,1,2-Tetrachloroethane			109.2		%		70-130	14-DEC-18
1,1,2,2-Tetrachloroethane			126.0		%		70-130	14-DEC-18
1,1,1-Trichloroethane			104.8		%		70-130	14-DEC-18
1,1,2-Trichloroethane			118.2		%		70-130	14-DEC-18
1,1-Dichloroethane			112.5		%		70-130	14-DEC-18
1,1-Dichloroethylene			105.9		%		70-130	14-DEC-18
1,2-Dibromoethane			117.8		%		70-130	14-DEC-18
1,2-Dichlorobenzene			109.9		%		70-130	14-DEC-18
1,2-Dichloroethane			120.4		%		70-130	14-DEC-18
1,2-Dichloropropane			114.4		%		70-130	14-DEC-18

Quality Control Report

Workorder: L2209635 Report Date: 14-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4395167								
WG2951925-1 LCS								
1,3-Dichlorobenzene			106.2		%		70-130	14-DEC-18
1,4-Dichlorobenzene			107.3		%		70-130	14-DEC-18
Acetone			138.4		%		60-140	14-DEC-18
Benzene			114.0		%		70-130	14-DEC-18
Bromodichloromethane			114.0		%		70-130	14-DEC-18
Bromoform			118.1		%		70-130	14-DEC-18
Bromomethane			97.8		%		60-140	14-DEC-18
Carbon tetrachloride			102.2		%		70-130	14-DEC-18
Chlorobenzene			108.1		%		70-130	14-DEC-18
Chloroform			111.0		%		70-130	14-DEC-18
cis-1,2-Dichloroethylene			105.9		%		70-130	14-DEC-18
cis-1,3-Dichloropropene			117.2		%		70-130	14-DEC-18
Dibromochloromethane			111.1		%		70-130	14-DEC-18
Dichlorodifluoromethane			131.3		%		50-140	14-DEC-18
Ethylbenzene			97.2		%		70-130	14-DEC-18
n-Hexane			99.0		%		70-130	14-DEC-18
m+p-Xylenes			95.2		%		70-130	14-DEC-18
Methyl Ethyl Ketone			147.1	MES	%		60-140	14-DEC-18
Methyl Isobutyl Ketone			137.1		%		60-140	14-DEC-18
Methylene Chloride			122.4		%		70-130	14-DEC-18
MTBE			110.7		%		70-130	14-DEC-18
o-Xylene			97.2		%		70-130	14-DEC-18
Styrene			107.8		%		70-130	14-DEC-18
Tetrachloroethylene			101.5		%		70-130	14-DEC-18
Toluene			101.4		%		70-130	14-DEC-18
trans-1,2-Dichloroethylene			108.7		%		70-130	14-DEC-18
trans-1,3-Dichloropropene			113.8		%		70-130	14-DEC-18
Trichloroethylene			108.3		%		70-130	14-DEC-18
Trichlorofluoromethane			105.5		%		60-140	14-DEC-18
Vinyl chloride			86.4		%		60-140	14-DEC-18
WG2951925-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	14-DEC-18
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	14-DEC-18
1,1,1-Trichloroethane			<0.50		ug/L		0.5	14-DEC-18

Quality Control Report

Workorder: L2209635 Report Date: 14-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4395167								
WG2951925-2 MB								
1,1,2-Trichloroethane			<0.50		ug/L		0.5	14-DEC-18
1,1-Dichloroethane			<0.50		ug/L		0.5	14-DEC-18
1,1-Dichloroethylene			<0.50		ug/L		0.5	14-DEC-18
1,2-Dibromoethane			<0.20		ug/L		0.2	14-DEC-18
1,2-Dichlorobenzene			<0.50		ug/L		0.5	14-DEC-18
1,2-Dichloroethane			<0.50		ug/L		0.5	14-DEC-18
1,2-Dichloropropane			<0.50		ug/L		0.5	14-DEC-18
1,3-Dichlorobenzene			<0.50		ug/L		0.5	14-DEC-18
1,4-Dichlorobenzene			<0.50		ug/L		0.5	14-DEC-18
Acetone			<30		ug/L		30	14-DEC-18
Benzene			<0.50		ug/L		0.5	14-DEC-18
Bromodichloromethane			<2.0		ug/L		2	14-DEC-18
Bromoform			<5.0		ug/L		5	14-DEC-18
Bromomethane			<0.50		ug/L		0.5	14-DEC-18
Carbon tetrachloride			<0.20		ug/L		0.2	14-DEC-18
Chlorobenzene			<0.50		ug/L		0.5	14-DEC-18
Chloroform			<1.0		ug/L		1	14-DEC-18
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	14-DEC-18
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	14-DEC-18
Dibromochloromethane			<2.0		ug/L		2	14-DEC-18
Dichlorodifluoromethane			<2.0		ug/L		2	14-DEC-18
Ethylbenzene			<0.50		ug/L		0.5	14-DEC-18
n-Hexane			<0.50		ug/L		0.5	14-DEC-18
m+p-Xylenes			<0.40		ug/L		0.4	14-DEC-18
Methyl Ethyl Ketone			<20		ug/L		20	14-DEC-18
Methyl Isobutyl Ketone			<20		ug/L		20	14-DEC-18
Methylene Chloride			<5.0		ug/L		5	14-DEC-18
MTBE			<2.0		ug/L		2	14-DEC-18
o-Xylene			<0.30		ug/L		0.3	14-DEC-18
Styrene			<0.50		ug/L		0.5	14-DEC-18
Tetrachloroethylene			<0.50		ug/L		0.5	14-DEC-18
Toluene			<0.50		ug/L		0.5	14-DEC-18
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	14-DEC-18

Quality Control Report

Workorder: L2209635 Report Date: 14-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch	**R4395167**							
WG2951925-2	**MB**							
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	14-DEC-18
Trichloroethylene			<0.50		ug/L		0.5	14-DEC-18
Trichlorofluoromethane			<5.0		ug/L		5	14-DEC-18
Vinyl chloride			<0.50		ug/L		0.5	14-DEC-18
Surrogate: 1,4-Difluorobenzene			98.4		%		70-130	14-DEC-18
Surrogate: 4-Bromofluorobenzene			98.2		%		70-130	14-DEC-18
WG2951925-5	**MS**	**WG2951925-3**						
1,1,1,2-Tetrachloroethane			109.3		%		50-140	14-DEC-18
1,1,2,2-Tetrachloroethane			111.7		%		50-140	14-DEC-18
1,1,1-Trichloroethane			108.8		%		50-140	14-DEC-18
1,1,2-Trichloroethane			109.6		%		50-140	14-DEC-18
1,1-Dichloroethane			113.0		%		50-140	14-DEC-18
1,1-Dichloroethylene			107.5		%		50-140	14-DEC-18
1,2-Dibromoethane			105.6		%		50-140	14-DEC-18
1,2-Dichlorobenzene			110.4		%		50-140	14-DEC-18
1,2-Dichloroethane			109.7		%		50-140	14-DEC-18
1,2-Dichloropropane			110.4		%		50-140	14-DEC-18
1,3-Dichlorobenzene			109.1		%		50-140	14-DEC-18
1,4-Dichlorobenzene			109.4		%		50-140	14-DEC-18
Acetone			119.1		%		50-140	14-DEC-18
Benzene			113.5		%		50-140	14-DEC-18
Bromodichloromethane			110.2		%		50-140	14-DEC-18
Bromoform			106.9		%		50-140	14-DEC-18
Bromomethane			91.2		%		50-140	14-DEC-18
Carbon tetrachloride			106.9		%		50-140	14-DEC-18
Chlorobenzene			108.3		%		50-140	14-DEC-18
Chloroform			110.5		%		50-140	14-DEC-18
cis-1,2-Dichloroethylene			103.7		%		50-140	14-DEC-18
cis-1,3-Dichloropropene			105.3		%		50-140	14-DEC-18
Dibromochloromethane			104.4		%		50-140	14-DEC-18
Dichlorodifluoromethane			119.8		%		50-140	14-DEC-18
Ethylbenzene			100.6		%		50-140	14-DEC-18
n-Hexane			99.7		%		50-140	14-DEC-18
m+p-Xylenes			98.5		%		50-140	14-DEC-18

Quality Control Report

Workorder: L2209635 Report Date: 14-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4395167								
WG2951925-5 MS		**WG2951925-3**						
Methyl Ethyl Ketone			106.8		%		50-140	14-DEC-18
Methyl Isobutyl Ketone			108.3		%		50-140	14-DEC-18
Methylene Chloride			113.5		%		50-140	14-DEC-18
MTBE			110.4		%		50-140	14-DEC-18
o-Xylene			99.1		%		50-140	14-DEC-18
Styrene			105.1		%		50-140	14-DEC-18
Tetrachloroethylene			107.0		%		50-140	14-DEC-18
Toluene			103.0		%		50-140	14-DEC-18
trans-1,2-Dichloroethylene			107.8		%		50-140	14-DEC-18
trans-1,3-Dichloropropene			99.4		%		50-140	14-DEC-18
Trichloroethylene			110.4		%		50-140	14-DEC-18
Trichlorofluoromethane			107.3		%		50-140	14-DEC-18
Vinyl chloride			83.1		%		50-140	14-DEC-18

Quality Control Report

Workorder: L2209635 Report Date: 14-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9
Contact: MICHAEL SHIRY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2209635-COFC

COC Number: 17 - 20181212

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	CH2M HILL
Contact:	Michael Shiry
Phone:	
	Company address below will appear on the final report
Street:	72 Victoria Street S, Suite 300
City/Province:	Kitchener, Ontario
Postal Code:	N2G 4Y9
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	CH2M HILL
Contact:	Account Payables

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax michael.shiry@jacobs.com
Email 2 ed.taves@jacobs.com
Email 3

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax
Email 2

Project Information

ALS Account # / Quote #: Q62156
Job #: 694757
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2209635
ALS Contact:
Sampler: V. Peters

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
	4 day [P4-20%] ☐		1 Business day [E1 - 100%] ☐
	3 day [P3-25%] ☐		Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐
	2 day [P2-50%] ☐		

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	O. Reg. 153/04 Hydride Forming Metals	O. Reg. 153/04 Metals Only	PAHs	PHCs	VOCs	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
	MW18-115D	12-12-2018	12:00	water	X				X			3

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO
Are samples for human consumption/ use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☒ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				6.9°C			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: V. Peters	Date: 12/12/2018	Time: 4:50 pm	Received by:	Date:	Time:	Received by:	Date: 12/Dec/2018	Time: 16:50

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

SEPT 2017 FRONT

CH2M HILL CANADA LIMITED
ATTN: MICHAEL SHIRY
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 12-DEC-18
Report Date: 20-DEC-18 14:01 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2209758

Project P.O. #: NOT SUBMITTED
Job Reference: 694757
C of C Numbers: 17-12122018
Legal Site Desc:

Mathy Mahadeva
Account Manager

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ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2209758-1	MW18-112D									
Sampled By:	V. PETERS on 10-DEC-18 @ 09:4									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	14-DEC-18	2700			
	Benzene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	14-DEC-18	16			
	Bromoform	<5.0		5.0	ug/L	14-DEC-18	5			
	Bromomethane	<0.50		0.50	ug/L	14-DEC-18	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	14-DEC-18	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	14-DEC-18	30			
	Dibromochloromethane	<2.0		2.0	ug/L	14-DEC-18	25			
	Chloroform	<1.0		1.0	ug/L	14-DEC-18	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	14-DEC-18	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	14-DEC-18	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	14-DEC-18	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	14-DEC-18	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	14-DEC-18	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	14-DEC-18	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	14-DEC-18	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	14-DEC-18				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	14-DEC-18				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	14-DEC-18	2.4			
	n-Hexane	<0.50		0.50	ug/L	14-DEC-18	5			
	Methyl Ethyl Ketone	<20		20	ug/L	14-DEC-18	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	14-DEC-18	640			
	MTBE	<2.0		2.0	ug/L	14-DEC-18	15			
	Styrene	<0.50		0.50	ug/L	14-DEC-18	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	14-DEC-18	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Toluene	<0.50		0.50	ug/L	14-DEC-18	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	14-DEC-18	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	14-DEC-18	150			
	Vinyl chloride	<0.50		0.50	ug/L	14-DEC-18	0.5			
	o-Xylene	<0.30		0.30	ug/L	14-DEC-18				
	m+p-Xylenes	<0.40		0.40	ug/L	14-DEC-18				
	Xylenes (Total)	<0.50		0.50	ug/L	14-DEC-18	72			
	Surrogate: 4-Bromofluorobenzene	98.1		70-130	%	14-DEC-18				
	Surrogate: 1,4-Difluorobenzene	98.6		70-130	%	14-DEC-18				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

694757

ANALYTICAL GUIDELINE REPORT

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2209758-2	MW18-114D									
Sampled By:	V. PETERS on 10-DEC-18 @ 12:3									
Matrix:	WATER						#1			
Dissolved Metals										
	Dissolved Metals Filtration Location	FIELD			No Unit	13-DEC-18				
	Antimony (Sb)-Dissolved	6.2	DLHC	1.0	ug/L	13-DEC-18	*6			
	Arsenic (As)-Dissolved	23.0	DLHC	1.0	ug/L	13-DEC-18	25			
	Barium (Ba)-Dissolved	60.5	DLHC	1.0	ug/L	13-DEC-18	1000			
	Beryllium (Be)-Dissolved	<1.0	DLHC	1.0	ug/L	13-DEC-18	4			
	Boron (B)-Dissolved	110	DLHC	100	ug/L	13-DEC-18	5000			
	Cadmium (Cd)-Dissolved	<0.050	DLHC	0.050	ug/L	13-DEC-18	2.1			
	Chromium (Cr)-Dissolved	13.3	DLHC	5.0	ug/L	13-DEC-18	50			
	Cobalt (Co)-Dissolved	<1.0	DLHC	1.0	ug/L	13-DEC-18	3.8			
	Copper (Cu)-Dissolved	4.3	DLHC	2.0	ug/L	13-DEC-18	69			
	Lead (Pb)-Dissolved	9.88	DLHC	0.50	ug/L	13-DEC-18	10			
	Molybdenum (Mo)-Dissolved	52.4	DLHC	0.50	ug/L	13-DEC-18	70			
	Nickel (Ni)-Dissolved	<5.0	DLHC	5.0	ug/L	13-DEC-18	100			
	Selenium (Se)-Dissolved	0.64	DLHC	0.50	ug/L	13-DEC-18	10			
	Silver (Ag)-Dissolved	<0.50	DLHC	0.50	ug/L	13-DEC-18	1.2			
	Thallium (Tl)-Dissolved	<0.10	DLHC	0.10	ug/L	13-DEC-18	2			
	Uranium (U)-Dissolved	4.85	DLHC	0.10	ug/L	13-DEC-18	20			
	Vanadium (V)-Dissolved	<5.0	DLHC	5.0	ug/L	13-DEC-18	6.2			
	Zinc (Zn)-Dissolved	62	DLHC	10	ug/L	13-DEC-18	890			
L2209758-4	MW18-122G									
Sampled By:	V. PETERS on 10-DEC-18 @ 16:1									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	14-DEC-18	2700			
	Benzene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	14-DEC-18	16			
	Bromoform	<5.0		5.0	ug/L	14-DEC-18	5			
	Bromomethane	<0.50		0.50	ug/L	14-DEC-18	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	14-DEC-18	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	14-DEC-18	30			
	Dibromochloromethane	<2.0		2.0	ug/L	14-DEC-18	25			
	Chloroform	<1.0		1.0	ug/L	14-DEC-18	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	14-DEC-18	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	14-DEC-18	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	14-DEC-18	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	14-DEC-18	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	14-DEC-18	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	14-DEC-18	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	14-DEC-18	0.58			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

694757

ANALYTICAL GUIDELINE REPORT

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2209758-4	MW18-122G									
Sampled By:	V. PETERS on 10-DEC-18 @ 16:1									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	14-DEC-18				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	14-DEC-18				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	14-DEC-18	2.4			
	n-Hexane	0.72		0.50	ug/L	14-DEC-18	5			
	Methyl Ethyl Ketone	<20		20	ug/L	14-DEC-18	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	14-DEC-18	640			
	MTBE	<2.0		2.0	ug/L	14-DEC-18	15			
	Styrene	<0.50		0.50	ug/L	14-DEC-18	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	14-DEC-18	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Toluene	0.51		0.50	ug/L	14-DEC-18	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	14-DEC-18	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	14-DEC-18	150			
	Vinyl chloride	<0.50		0.50	ug/L	14-DEC-18	0.5			
	o-Xylene	<0.30		0.30	ug/L	14-DEC-18				
	m+p-Xylenes	0.43		0.40	ug/L	14-DEC-18				
	Xylenes (Total)	<0.50		0.50	ug/L	14-DEC-18	72			
	Surrogate: 4-Bromofluorobenzene	98.1		70-130	%	14-DEC-18				
	Surrogate: 1,4-Difluorobenzene	98.9		70-130	%	14-DEC-18				
L2209758-5	MW18-119D									
Sampled By:	V. PETERS on 10-DEC-18 @ 17:2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	14-DEC-18	2700			
	Benzene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	14-DEC-18	16			
	Bromoform	<5.0		5.0	ug/L	14-DEC-18	5			
	Bromomethane	<0.50		0.50	ug/L	14-DEC-18	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	14-DEC-18	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	14-DEC-18	30			
	Dibromochloromethane	<2.0		2.0	ug/L	14-DEC-18	25			
	Chloroform	<1.0		1.0	ug/L	14-DEC-18	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	14-DEC-18	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	14-DEC-18	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	14-DEC-18	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	cis-1,2-Dichloroethylene	1.67		0.50	ug/L	14-DEC-18	*1.6			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

694757

ANALYTICAL GUIDELINE REPORT

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2209758-5	MW18-119D									
Sampled By:	V. PETERS on 10-DEC-18 @ 17:2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	14-DEC-18	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	14-DEC-18	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	14-DEC-18	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	14-DEC-18				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	14-DEC-18				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	14-DEC-18	2.4			
	n-Hexane	1.62		0.50	ug/L	14-DEC-18	5			
	Methyl Ethyl Ketone	<20		20	ug/L	14-DEC-18	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	14-DEC-18	640			
	MTBE	<2.0		2.0	ug/L	14-DEC-18	15			
	Styrene	<0.50		0.50	ug/L	14-DEC-18	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	14-DEC-18	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Toluene	0.72		0.50	ug/L	14-DEC-18	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	14-DEC-18	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	14-DEC-18	150			
	Vinyl chloride	<0.50		0.50	ug/L	14-DEC-18	0.5			
	o-Xylene	0.59		0.30	ug/L	14-DEC-18				
	m+p-Xylenes	0.90		0.40	ug/L	14-DEC-18				
	Xylenes (Total)	1.49		0.50	ug/L	14-DEC-18	72			
	Surrogate: 4-Bromofluorobenzene	96.9		70-130	%	14-DEC-18				
	Surrogate: 1,4-Difluorobenzene	99.6		70-130	%	14-DEC-18				
L2209758-6	MW18-113D									
Sampled By:	V. PETERS on 11-DEC-18 @ 08:4									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	14-DEC-18	2700			
	Benzene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	14-DEC-18	16			
	Bromoform	<5.0		5.0	ug/L	14-DEC-18	5			
	Bromomethane	<0.50		0.50	ug/L	14-DEC-18	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	14-DEC-18	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	14-DEC-18	30			
	Dibromochloromethane	<2.0		2.0	ug/L	14-DEC-18	25			
	Chloroform	<1.0		1.0	ug/L	14-DEC-18	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	14-DEC-18	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	14-DEC-18	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	14-DEC-18	5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

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Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2209758-6	MW18-113D									
Sampled By:	V. PETERS on 11-DEC-18 @ 08:4									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	1,2-Dichloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	cis-1,2-Dichloroethylene	1.33		0.50	ug/L	14-DEC-18	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	14-DEC-18	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	14-DEC-18	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	14-DEC-18	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	14-DEC-18				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	14-DEC-18				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	14-DEC-18	2.4			
	n-Hexane	0.72		0.50	ug/L	14-DEC-18	5			
	Methyl Ethyl Ketone	<20		20	ug/L	14-DEC-18	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	14-DEC-18	640			
	MTBE	<2.0		2.0	ug/L	14-DEC-18	15			
	Styrene	<0.50		0.50	ug/L	14-DEC-18	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	14-DEC-18	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Toluene	0.52		0.50	ug/L	14-DEC-18	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	14-DEC-18	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Trichloroethylene	0.58		0.50	ug/L	14-DEC-18	*0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	14-DEC-18	150			
	Vinyl chloride	<0.50		0.50	ug/L	14-DEC-18	0.5			
	o-Xylene	<0.30		0.30	ug/L	14-DEC-18				
	m+p-Xylenes	<0.40		0.40	ug/L	14-DEC-18				
	Xylenes (Total)	<0.50		0.50	ug/L	14-DEC-18	72			
	Surrogate: 4-Bromofluorobenzene	97.7		70-130	%	14-DEC-18				
	Surrogate: 1,4-Difluorobenzene	98.7		70-130	%	14-DEC-18				
L2209758-7	MW18-135D									
Sampled By:	V. PETERS on 11-DEC-18 @ 10:3									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	14-DEC-18	2700			
	Benzene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	14-DEC-18	16			
	Bromoform	<5.0		5.0	ug/L	14-DEC-18	5			
	Bromomethane	<0.50		0.50	ug/L	14-DEC-18	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	14-DEC-18	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	14-DEC-18	30			
	Dibromochloromethane	<2.0		2.0	ug/L	14-DEC-18	25			
	Chloroform	<1.0		1.0	ug/L	14-DEC-18	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	14-DEC-18	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	59			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

694757

ANALYTICAL GUIDELINE REPORT

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2209758-7	MW18-135D									
Sampled By:	V. PETERS on 11-DEC-18 @ 10:3									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	14-DEC-18	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	14-DEC-18	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	cis-1,2-Dichloroethylene	0.89		0.50	ug/L	14-DEC-18	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	14-DEC-18	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	14-DEC-18	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	14-DEC-18	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	14-DEC-18				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	14-DEC-18				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	14-DEC-18	2.4			
	n-Hexane	<0.50		0.50	ug/L	14-DEC-18	5			
	Methyl Ethyl Ketone	<20		20	ug/L	14-DEC-18	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	14-DEC-18	640			
	MTBE	<2.0		2.0	ug/L	14-DEC-18	15			
	Styrene	<0.50		0.50	ug/L	14-DEC-18	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	14-DEC-18	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Toluene	<0.50		0.50	ug/L	14-DEC-18	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	14-DEC-18	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	14-DEC-18	150			
	Vinyl chloride	<0.50		0.50	ug/L	14-DEC-18	0.5			
	o-Xylene	<0.30		0.30	ug/L	14-DEC-18				
	m+p-Xylenes	<0.40		0.40	ug/L	14-DEC-18				
	Xylenes (Total)	<0.50		0.50	ug/L	14-DEC-18	72			
	Surrogate: 4-Bromofluorobenzene	95.6		70-130	%	14-DEC-18				
	Surrogate: 1,4-Difluorobenzene	99.4		70-130	%	14-DEC-18				
Hydrocarbons										
	F1 (C6-C10)	<25		25	ug/L	14-DEC-18	420			
	F1-BTEX	<25		25	ug/L	18-DEC-18	420			
	F2 (C10-C16)	<100		100	ug/L	13-DEC-18	150			
	F2-Naphth	<100		100	ug/L	18-DEC-18				
	F3 (C16-C34)	<250		250	ug/L	13-DEC-18	500			
	F3-PAH	<250		250	ug/L	18-DEC-18				
	F4 (C34-C50)	<250		250	ug/L	13-DEC-18	500			
	Total Hydrocarbons (C6-C50)	<370		370	ug/L	18-DEC-18				
	Chrom. to baseline at nC50	YES			No Unit	13-DEC-18				
	Surrogate: 2-Bromobenzotrifluoride	84.6		60-140	%	13-DEC-18				
	Surrogate: 3,4-Dichlorotoluene	77.1		60-140	%	14-DEC-18				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.020		0.020	ug/L	18-DEC-18	4.1			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2209758-7	MW18-135D									
Sampled By:	V. PETERS on 11-DEC-18 @ 10:3									
Matrix:	WATER						#1			
Polycyclic Aromatic Hydrocarbons										
	Acenaphthylene	<0.020		0.020	ug/L	18-DEC-18	1			
	Anthracene	<0.020		0.020	ug/L	18-DEC-18	1			
	Benzo(a)anthracene	<0.020		0.020	ug/L	18-DEC-18	1			
	Benzo(a)pyrene	<0.010		0.010	ug/L	18-DEC-18	0.01			
	Benzo(b)fluoranthene	<0.020		0.020	ug/L	18-DEC-18	0.1			
	Benzo(g,h,i)perylene	<0.020		0.020	ug/L	18-DEC-18	0.2			
	Benzo(k)fluoranthene	<0.020		0.020	ug/L	18-DEC-18	0.1			
	Chrysene	<0.020		0.020	ug/L	18-DEC-18	0.1			
	Dibenzo(ah)anthracene	<0.020		0.020	ug/L	18-DEC-18	0.2			
	Fluoranthene	<0.020		0.020	ug/L	18-DEC-18	0.41			
	Fluorene	<0.020		0.020	ug/L	18-DEC-18	120			
	Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	18-DEC-18	0.2			
	1+2-Methylnaphthalenes	<0.028		0.028	ug/L	18-DEC-18	3.2			
	1-Methylnaphthalene	<0.020		0.020	ug/L	18-DEC-18	3.2			
	2-Methylnaphthalene	<0.020		0.020	ug/L	18-DEC-18	3.2			
	Naphthalene	<0.050		0.050	ug/L	18-DEC-18	7			
	Phenanthrene	<0.020		0.020	ug/L	18-DEC-18	1			
	Pyrene	<0.020		0.020	ug/L	18-DEC-18	4.1			
	Surrogate: d10-Acenaphthene	96.3		60-140	%	18-DEC-18				
	Surrogate: d12-Chrysene	99.6		60-140	%	18-DEC-18				
	Surrogate: d8-Naphthalene	91.0		60-140	%	18-DEC-18				
	Surrogate: d10-Phenanthrene	98.0		60-140	%	18-DEC-18				
L2209758-8	MW18-114D									
Sampled By:	V. PETERS on 11-DEC-18 @ 13:1									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	14-DEC-18	2700			
	Benzene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	14-DEC-18	16			
	Bromoform	<5.0		5.0	ug/L	14-DEC-18	5			
	Bromomethane	<0.50		0.50	ug/L	14-DEC-18	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	14-DEC-18	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	14-DEC-18	30			
	Dibromochloromethane	<2.0		2.0	ug/L	14-DEC-18	25			
	Chloroform	1.1		1.0	ug/L	14-DEC-18	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	14-DEC-18	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	14-DEC-18	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	14-DEC-18	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	cis-1,2-Dichloroethylene	1.87		0.50	ug/L	14-DEC-18	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	14-DEC-18	1.6			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2209758-8	MW18-114D									
Sampled By:	V. PETERS on 11-DEC-18 @ 13:1									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Methylene Chloride	<5.0		5.0	ug/L	14-DEC-18	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	14-DEC-18	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	14-DEC-18				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	14-DEC-18				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	14-DEC-18	2.4			
	n-Hexane	0.77		0.50	ug/L	14-DEC-18	5			
	Methyl Ethyl Ketone	<20		20	ug/L	14-DEC-18	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	14-DEC-18	640			
	MTBE	<2.0		2.0	ug/L	14-DEC-18	15			
	Styrene	<0.50		0.50	ug/L	14-DEC-18	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	14-DEC-18	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Toluene	0.93		0.50	ug/L	14-DEC-18	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	14-DEC-18	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	14-DEC-18	150			
	Vinyl chloride	<0.50		0.50	ug/L	14-DEC-18	0.5			
	o-Xylene	0.32		0.30	ug/L	14-DEC-18				
	m+p-Xylenes	0.64		0.40	ug/L	14-DEC-18				
	Xylenes (Total)	0.96		0.50	ug/L	14-DEC-18	72			
	Surrogate: 4-Bromofluorobenzene	97.0		70-130	%	14-DEC-18				
	Surrogate: 1,4-Difluorobenzene	100.0		70-130	%	14-DEC-18				
L2209758-9	MW18-136D									
Sampled By:	V. PETERS on 11-DEC-18 @ 15:0									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	14-DEC-18	2700			
	Benzene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	14-DEC-18	16			
	Bromoform	<5.0		5.0	ug/L	14-DEC-18	5			
	Bromomethane	<0.50		0.50	ug/L	14-DEC-18	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	14-DEC-18	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	14-DEC-18	30			
	Dibromochloromethane	<2.0		2.0	ug/L	14-DEC-18	25			
	Chloroform	<1.0		1.0	ug/L	14-DEC-18	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	14-DEC-18	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	14-DEC-18	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	14-DEC-18	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2209758-9	MW18-136D									
Sampled By:	V. PETERS on 11-DEC-18 @ 15:0									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	1,1-Dichloroethylene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	cis-1,2-Dichloroethylene	1.65		0.50	ug/L	14-DEC-18	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	14-DEC-18	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	14-DEC-18	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	14-DEC-18	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	14-DEC-18				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	14-DEC-18				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	14-DEC-18	2.4			
	n-Hexane	<0.50		0.50	ug/L	14-DEC-18	5			
	Methyl Ethyl Ketone	<20		20	ug/L	14-DEC-18	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	14-DEC-18	640			
	MTBE	<2.0		2.0	ug/L	14-DEC-18	15			
	Styrene	<0.50		0.50	ug/L	14-DEC-18	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	14-DEC-18	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Toluene	<0.50		0.50	ug/L	14-DEC-18	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	14-DEC-18	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	14-DEC-18	150			
	Vinyl chloride	0.84		0.50	ug/L	14-DEC-18	*0.5			
	o-Xylene	<0.30		0.30	ug/L	14-DEC-18				
	m+p-Xylenes	<0.40		0.40	ug/L	14-DEC-18				
	Xylenes (Total)	<0.50		0.50	ug/L	14-DEC-18	72			
	Surrogate: 4-Bromofluorobenzene	98.3		70-130	%	14-DEC-18				
	Surrogate: 1,4-Difluorobenzene	99.4		70-130	%	14-DEC-18				
L2209758-10	MW18-136G									
Sampled By:	V. PETERS on 11-DEC-18 @ 14:3									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	14-DEC-18	2700			
	Benzene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	14-DEC-18	16			
	Bromoform	<5.0		5.0	ug/L	14-DEC-18	5			
	Bromomethane	<0.50		0.50	ug/L	14-DEC-18	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	14-DEC-18	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	14-DEC-18	30			
	Dibromochloromethane	<2.0		2.0	ug/L	14-DEC-18	25			
	Chloroform	<1.0		1.0	ug/L	14-DEC-18	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	14-DEC-18	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	0.5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2209758-10	MW18-136G									
Sampled By:	V. PETERS on 11-DEC-18 @ 14:3									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Dichlorodifluoromethane	<2.0		2.0	ug/L	14-DEC-18	590			
	1,1-Dichloroethane	0.94		0.50	ug/L	14-DEC-18	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	cis-1,2-Dichloroethylene	3.14		0.50	ug/L	14-DEC-18	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	14-DEC-18	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	14-DEC-18	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	14-DEC-18	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	14-DEC-18				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	14-DEC-18				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	14-DEC-18	2.4			
	n-Hexane	<0.50		0.50	ug/L	14-DEC-18	5			
	Methyl Ethyl Ketone	<20		20	ug/L	14-DEC-18	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	14-DEC-18	640			
	MTBE	<2.0		2.0	ug/L	14-DEC-18	15			
	Styrene	<0.50		0.50	ug/L	14-DEC-18	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	14-DEC-18	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Toluene	<0.50		0.50	ug/L	14-DEC-18	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	14-DEC-18	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	14-DEC-18	150			
	Vinyl chloride	<0.50		0.50	ug/L	14-DEC-18	0.5			
	o-Xylene	<0.30		0.30	ug/L	14-DEC-18				
	m+p-Xylenes	<0.40		0.40	ug/L	14-DEC-18				
	Xylenes (Total)	<0.50		0.50	ug/L	14-DEC-18	72			
	Surrogate: 4-Bromofluorobenzene	98.0		70-130	%	14-DEC-18				
	Surrogate: 1,4-Difluorobenzene	99.1		70-130	%	14-DEC-18				
L2209758-11	MW18-105G									
Sampled By:	V. PETERS on 11-DEC-18 @ 16:0									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	14-DEC-18	2700			
	Benzene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	14-DEC-18	16			
	Bromoform	<5.0		5.0	ug/L	14-DEC-18	5			
	Bromomethane	<0.50		0.50	ug/L	14-DEC-18	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	14-DEC-18	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	14-DEC-18	30			
	Dibromochloromethane	<2.0		2.0	ug/L	14-DEC-18	25			
	Chloroform	<1.0		1.0	ug/L	14-DEC-18	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	14-DEC-18	0.2			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

694757

ANALYTICAL GUIDELINE REPORT

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2209758-11	MW18-105G									
Sampled By:	V. PETERS on 11-DEC-18 @ 16:0									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	14-DEC-18	590			
	1,1-Dichloroethane	1.04		0.50	ug/L	14-DEC-18	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	cis-1,2-Dichloroethylene	2.04		0.50	ug/L	14-DEC-18	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	14-DEC-18	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	14-DEC-18	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	14-DEC-18	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	14-DEC-18				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	14-DEC-18				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	14-DEC-18	2.4			
	n-Hexane	<0.50		0.50	ug/L	14-DEC-18	5			
	Methyl Ethyl Ketone	<20		20	ug/L	14-DEC-18	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	14-DEC-18	640			
	MTBE	<2.0		2.0	ug/L	14-DEC-18	15			
	Styrene	<0.50		0.50	ug/L	14-DEC-18	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	14-DEC-18	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Toluene	<0.50		0.50	ug/L	14-DEC-18	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	14-DEC-18	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Trichloroethylene	0.50		0.50	ug/L	14-DEC-18	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	14-DEC-18	150			
	Vinyl chloride	<0.50		0.50	ug/L	14-DEC-18	0.5			
	o-Xylene	<0.30		0.30	ug/L	14-DEC-18				
	m+p-Xylenes	<0.40		0.40	ug/L	14-DEC-18				
	Xylenes (Total)	<0.50		0.50	ug/L	14-DEC-18	72			
	Surrogate: 4-Bromofluorobenzene	96.7		70-130	%	14-DEC-18				
	Surrogate: 1,4-Difluorobenzene	98.0		70-130	%	14-DEC-18				
L2209758-12	MW18-135S									
Sampled By:	V. PETERS on 11-DEC-18 @ 17:1									
Matrix:	WATER						#1			
Dissolved Metals										
	Dissolved Metals Filtration Location	FIELD			No Unit	13-DEC-18				
	Antimony (Sb)-Dissolved	<1.0	DLHC	1.0	ug/L	13-DEC-18	6			
	Arsenic (As)-Dissolved	<1.0	DLHC	1.0	ug/L	13-DEC-18	25			
	Barium (Ba)-Dissolved	80.1	DLHC	1.0	ug/L	13-DEC-18	1000			
	Beryllium (Be)-Dissolved	<1.0	DLHC	1.0	ug/L	13-DEC-18	4			
	Boron (B)-Dissolved	<100	DLHC	100	ug/L	13-DEC-18	5000			
	Cadmium (Cd)-Dissolved	<0.050	DLHC	0.050	ug/L	13-DEC-18	2.1			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1			
L2209758-12	MW18-135S									
Sampled By:	V. PETERS on 11-DEC-18 @ 17:1									
Matrix:	WATER									
Dissolved Metals										
	Chromium (Cr)-Dissolved	<5.0	DLHC	5.0	ug/L	13-DEC-18	50			
	Cobalt (Co)-Dissolved	<1.0	DLHC	1.0	ug/L	13-DEC-18	3.8			
	Copper (Cu)-Dissolved	<2.0	DLHC	2.0	ug/L	13-DEC-18	69			
	Lead (Pb)-Dissolved	<0.50	DLHC	0.50	ug/L	13-DEC-18	10			
	Molybdenum (Mo)-Dissolved	0.94	DLHC	0.50	ug/L	13-DEC-18	70			
	Nickel (Ni)-Dissolved	<5.0	DLHC	5.0	ug/L	13-DEC-18	100			
	Selenium (Se)-Dissolved	2.31	DLHC	0.50	ug/L	13-DEC-18	10			
	Silver (Ag)-Dissolved	<0.50	DLHC	0.50	ug/L	13-DEC-18	1.2			
	Sodium (Na)-Dissolved	4030	DLHC	500	ug/L	13-DEC-18	490000			
	Thallium (Tl)-Dissolved	<0.10	DLHC	0.10	ug/L	13-DEC-18	2			
	Uranium (U)-Dissolved	1.63	DLHC	0.10	ug/L	13-DEC-18	20			
	Vanadium (V)-Dissolved	<5.0	DLHC	5.0	ug/L	13-DEC-18	6.2			
	Zinc (Zn)-Dissolved	<10	DLHC	10	ug/L	13-DEC-18	890			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	17-DEC-18	2700			
	Benzene	0.80		0.50	ug/L	17-DEC-18	*0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	17-DEC-18	16			
	Bromoform	<5.0		5.0	ug/L	17-DEC-18	5			
	Bromomethane	<0.50		0.50	ug/L	17-DEC-18	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	17-DEC-18	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	17-DEC-18	30			
	Dibromochloromethane	<2.0		2.0	ug/L	17-DEC-18	25			
	Chloroform	<1.0		1.0	ug/L	17-DEC-18	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	17-DEC-18	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	17-DEC-18	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	17-DEC-18	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	17-DEC-18	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	17-DEC-18	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	17-DEC-18	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	17-DEC-18	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	17-DEC-18	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	17-DEC-18	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	17-DEC-18	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	17-DEC-18	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	17-DEC-18	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	17-DEC-18				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	17-DEC-18				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	17-DEC-18	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	17-DEC-18	2.4			
	n-Hexane	<0.50		0.50	ug/L	17-DEC-18	5			
	Methyl Ethyl Ketone	<20		20	ug/L	17-DEC-18	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	17-DEC-18	640			
	MTBE	<2.0		2.0	ug/L	17-DEC-18	15			
	Styrene	<0.50		0.50	ug/L	17-DEC-18	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	17-DEC-18	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	17-DEC-18	0.5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2209758-12	MW18-135S									
Sampled By:	V. PETERS on 11-DEC-18 @ 17:1									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Tetrachloroethylene	<0.50		0.50	ug/L	17-DEC-18	0.5			
	Toluene	<0.50		0.50	ug/L	17-DEC-18	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	17-DEC-18	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	17-DEC-18	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	17-DEC-18	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	17-DEC-18	150			
	Vinyl chloride	<0.50		0.50	ug/L	17-DEC-18	0.5			
	o-Xylene	<0.30		0.30	ug/L	17-DEC-18				
	m+p-Xylenes	<0.40		0.40	ug/L	17-DEC-18				
	Xylenes (Total)	<0.50		0.50	ug/L	17-DEC-18	72			
	Surrogate: 4-Bromofluorobenzene	98.8		70-130	%	17-DEC-18				
	Surrogate: 1,4-Difluorobenzene	99.1		70-130	%	17-DEC-18				
Hydrocarbons										
	F1 (C6-C10)	<25		25	ug/L	17-DEC-18	420			
	F1-BTEX	<25		25	ug/L	18-DEC-18	420			
	F2 (C10-C16)	190		100	ug/L	13-DEC-18	*150			
	F2-Naphth	190		100	ug/L	18-DEC-18				
	F3 (C16-C34)	<250		250	ug/L	13-DEC-18	500			
	F3-PAH	<250		250	ug/L	18-DEC-18				
	F4 (C34-C50)	<250		250	ug/L	13-DEC-18	500			
	Total Hydrocarbons (C6-C50)	<370		370	ug/L	18-DEC-18				
	Chrom. to baseline at nC50	YES			No Unit	13-DEC-18				
	Surrogate: 2-Bromobenzotrifluoride	91.9		60-140	%	13-DEC-18				
	Surrogate: 3,4-Dichlorotoluene	86.2		60-140	%	17-DEC-18				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	1.04		0.020	ug/L	18-DEC-18	4.1			
	Acenaphthylene	0.130		0.020	ug/L	18-DEC-18	1			
	Anthracene	0.073		0.020	ug/L	18-DEC-18	1			
	Benzo(a)anthracene	<0.020		0.020	ug/L	18-DEC-18	1			
	Benzo(a)pyrene	<0.010		0.010	ug/L	18-DEC-18	0.01			
	Benzo(b)fluoranthene	<0.020		0.020	ug/L	18-DEC-18	0.1			
	Benzo(g,h,i)perylene	<0.020		0.020	ug/L	18-DEC-18	0.2			
	Benzo(k)fluoranthene	<0.020		0.020	ug/L	18-DEC-18	0.1			
	Chrysene	<0.020		0.020	ug/L	18-DEC-18	0.1			
	Dibenzo(ah)anthracene	<0.020		0.020	ug/L	18-DEC-18	0.2			
	Fluoranthene	0.026		0.020	ug/L	18-DEC-18	0.41			
	Fluorene	1.40		0.020	ug/L	18-DEC-18	120			
	Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	18-DEC-18	0.2			
	1+2-Methylnaphthalenes	0.371		0.028	ug/L	18-DEC-18	3.2			
	1-Methylnaphthalene	0.348		0.020	ug/L	18-DEC-18	3.2			
	2-Methylnaphthalene	0.023		0.020	ug/L	18-DEC-18	3.2			
	Naphthalene	<0.465	DLQ	0.47	ug/L	18-DEC-18	7			
	Phenanthrene	0.119		0.020	ug/L	18-DEC-18	1			
	Pyrene	0.069		0.020	ug/L	18-DEC-18	4.1			
	Surrogate: d10-Acenaphthene	98.0		60-140	%	18-DEC-18				
	Surrogate: d12-Chrysene	93.2		60-140	%	18-DEC-18				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2209758-12	MW18-135S									
Sampled By:	V. PETERS on 11-DEC-18 @ 17:1									
Matrix:	WATER						#1			
Polycyclic Aromatic Hydrocarbons										
	Surrogate: d8-Naphthalene	93.3		60-140	%	18-DEC-18				
	Surrogate: d10-Phenanthrene	101.9		60-140	%	18-DEC-18				
L2209758-13	MW18-134D									
Sampled By:	V. PETERS on 12-DEC-18 @ 10:4									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	17-DEC-18	2700			
	Benzene	3.19		0.50	ug/L	17-DEC-18	*0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	17-DEC-18	16			
	Bromoform	<5.0		5.0	ug/L	17-DEC-18	5			
	Bromomethane	<0.50		0.50	ug/L	17-DEC-18	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	17-DEC-18	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	17-DEC-18	30			
	Dibromochloromethane	<2.0		2.0	ug/L	17-DEC-18	25			
	Chloroform	<1.0		1.0	ug/L	17-DEC-18	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	17-DEC-18	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	17-DEC-18	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	17-DEC-18	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	17-DEC-18	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	17-DEC-18	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	17-DEC-18	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	17-DEC-18	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	17-DEC-18	0.5			
	cis-1,2-Dichloroethylene	1.59		0.50	ug/L	17-DEC-18	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	17-DEC-18	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	17-DEC-18	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	17-DEC-18	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	17-DEC-18				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	17-DEC-18				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	17-DEC-18	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	17-DEC-18	2.4			
	n-Hexane	<0.50		0.50	ug/L	17-DEC-18	5			
	Methyl Ethyl Ketone	<20		20	ug/L	17-DEC-18	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	17-DEC-18	640			
	MTBE	<2.0		2.0	ug/L	17-DEC-18	15			
	Styrene	<0.50		0.50	ug/L	17-DEC-18	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	17-DEC-18	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	17-DEC-18	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	17-DEC-18	0.5			
	Toluene	<0.50		0.50	ug/L	17-DEC-18	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	17-DEC-18	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	17-DEC-18	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	17-DEC-18	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	17-DEC-18	150			
	Vinyl chloride	0.54		0.50	ug/L	17-DEC-18	*0.5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2209758-13	MW18-134D									
Sampled By:	V. PETERS on 12-DEC-18 @ 10:4									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	o-Xylene	<0.30		0.30	ug/L	17-DEC-18				
	m+p-Xylenes	<0.40		0.40	ug/L	17-DEC-18				
	Xylenes (Total)	<0.50		0.50	ug/L	17-DEC-18	72			
	Surrogate: 4-Bromofluorobenzene	99.8		70-130	%	17-DEC-18				
	Surrogate: 1,4-Difluorobenzene	98.0		70-130	%	17-DEC-18				
L2209758-14	DUP1									
Sampled By:	V. PETERS on 11-DEC-18									
Matrix:	WATER						#1			
Dissolved Metals										
	Dissolved Metals Filtration Location	FIELD			No Unit	13-DEC-18				
	Antimony (Sb)-Dissolved	<1.0	DLHC	1.0	ug/L	13-DEC-18	6			
	Arsenic (As)-Dissolved	<1.0	DLHC	1.0	ug/L	13-DEC-18	25			
	Barium (Ba)-Dissolved	81.9	DLHC	1.0	ug/L	13-DEC-18	1000			
	Beryllium (Be)-Dissolved	<1.0	DLHC	1.0	ug/L	13-DEC-18	4			
	Boron (B)-Dissolved	<100	DLHC	100	ug/L	13-DEC-18	5000			
	Cadmium (Cd)-Dissolved	<0.050	DLHC	0.050	ug/L	13-DEC-18	2.1			
	Chromium (Cr)-Dissolved	<5.0	DLHC	5.0	ug/L	13-DEC-18	50			
	Cobalt (Co)-Dissolved	<1.0	DLHC	1.0	ug/L	13-DEC-18	3.8			
	Copper (Cu)-Dissolved	<2.0	DLHC	2.0	ug/L	13-DEC-18	69			
	Lead (Pb)-Dissolved	<0.50	DLHC	0.50	ug/L	13-DEC-18	10			
	Molybdenum (Mo)-Dissolved	0.71	DLHC	0.50	ug/L	13-DEC-18	70			
	Nickel (Ni)-Dissolved	<5.0	DLHC	5.0	ug/L	13-DEC-18	100			
	Selenium (Se)-Dissolved	2.28	DLHC	0.50	ug/L	13-DEC-18	10			
	Silver (Ag)-Dissolved	<0.50	DLHC	0.50	ug/L	13-DEC-18	1.2			
	Sodium (Na)-Dissolved	3990	DLHC	500	ug/L	13-DEC-18	490000			
	Thallium (Tl)-Dissolved	<0.10	DLHC	0.10	ug/L	13-DEC-18	2			
	Uranium (U)-Dissolved	1.61	DLHC	0.10	ug/L	13-DEC-18	20			
	Vanadium (V)-Dissolved	<5.0	DLHC	5.0	ug/L	13-DEC-18	6.2			
	Zinc (Zn)-Dissolved	<10	DLHC	10	ug/L	13-DEC-18	890			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	17-DEC-18	2700			
	Benzene	0.78		0.50	ug/L	17-DEC-18	*0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	17-DEC-18	16			
	Bromoform	<5.0		5.0	ug/L	17-DEC-18	5			
	Bromomethane	<0.50		0.50	ug/L	17-DEC-18	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	17-DEC-18	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	17-DEC-18	30			
	Dibromochloromethane	<2.0		2.0	ug/L	17-DEC-18	25			
	Chloroform	<1.0		1.0	ug/L	17-DEC-18	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	17-DEC-18	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	17-DEC-18	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	17-DEC-18	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	17-DEC-18	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	17-DEC-18	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	17-DEC-18	5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2209758-14	DUP1									
Sampled By:	V. PETERS on 11-DEC-18									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	1,2-Dichloroethane	<0.50		0.50	ug/L	17-DEC-18	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	17-DEC-18	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	17-DEC-18	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	17-DEC-18	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	17-DEC-18	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	17-DEC-18	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	17-DEC-18				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	17-DEC-18				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	17-DEC-18	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	17-DEC-18	2.4			
	n-Hexane	<0.50		0.50	ug/L	17-DEC-18	5			
	Methyl Ethyl Ketone	<20		20	ug/L	17-DEC-18	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	17-DEC-18	640			
	MTBE	<2.0		2.0	ug/L	17-DEC-18	15			
	Styrene	<0.50		0.50	ug/L	17-DEC-18	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	17-DEC-18	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	17-DEC-18	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	17-DEC-18	0.5			
	Toluene	<0.50		0.50	ug/L	17-DEC-18	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	17-DEC-18	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	17-DEC-18	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	17-DEC-18	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	17-DEC-18	150			
	Vinyl chloride	<0.50		0.50	ug/L	17-DEC-18	0.5			
	o-Xylene	<0.30		0.30	ug/L	17-DEC-18				
	m+p-Xylenes	<0.40		0.40	ug/L	17-DEC-18				
	Xylenes (Total)	<0.50		0.50	ug/L	17-DEC-18	72			
	Surrogate: 4-Bromofluorobenzene	100.1		70-130	%	17-DEC-18				
	Surrogate: 1,4-Difluorobenzene	98.8		70-130	%	17-DEC-18				
Hydrocarbons										
	F1 (C6-C10)	<25		25	ug/L	17-DEC-18	420			
	F1-BTEX	<25		25	ug/L	18-DEC-18	420			
	F2 (C10-C16)	180		100	ug/L	13-DEC-18	*150			
	F2-Naphth	180		100	ug/L	18-DEC-18				
	F3 (C16-C34)	<250		250	ug/L	13-DEC-18	500			
	F3-PAH	<250		250	ug/L	18-DEC-18				
	F4 (C34-C50)	<250		250	ug/L	13-DEC-18	500			
	Total Hydrocarbons (C6-C50)	<370		370	ug/L	18-DEC-18				
	Chrom. to baseline at nC50	YES			No Unit	13-DEC-18				
	Surrogate: 2-Bromobenzotrifluoride	93.5		60-140	%	13-DEC-18				
	Surrogate: 3,4-Dichlorotoluene	94.7		60-140	%	17-DEC-18				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	1.03		0.020	ug/L	18-DEC-18	4.1			
	Acenaphthylene	0.128		0.020	ug/L	18-DEC-18	1			
	Anthracene	0.072		0.020	ug/L	18-DEC-18	1			
	Benzo(a)anthracene	<0.020		0.020	ug/L	18-DEC-18	1			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2209758-14	DUP1									
Sampled By:	V. PETERS on 11-DEC-18									
Matrix:	WATER						#1			
Polycyclic Aromatic Hydrocarbons										
	Benzo(a)pyrene	<0.010		0.010	ug/L	18-DEC-18	0.01			
	Benzo(b)fluoranthene	<0.020		0.020	ug/L	18-DEC-18	0.1			
	Benzo(g,h,i)perylene	<0.020		0.020	ug/L	18-DEC-18	0.2			
	Benzo(k)fluoranthene	<0.020		0.020	ug/L	18-DEC-18	0.1			
	Chrysene	<0.020		0.020	ug/L	18-DEC-18	0.1			
	Dibenzo(ah)anthracene	<0.020		0.020	ug/L	18-DEC-18	0.2			
	Fluoranthene	0.025		0.020	ug/L	18-DEC-18	0.41			
	Fluorene	1.39		0.020	ug/L	18-DEC-18	120			
	Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	18-DEC-18	0.2			
	1+2-Methylnaphthalenes	0.374		0.028	ug/L	18-DEC-18	3.2			
	1-Methylnaphthalene	0.352		0.020	ug/L	18-DEC-18	3.2			
	2-Methylnaphthalene	0.022		0.020	ug/L	18-DEC-18	3.2			
	Naphthalene	<0.465	DLQ	0.47	ug/L	18-DEC-18	7			
	Phenanthrene	0.127		0.020	ug/L	18-DEC-18	1			
	Pyrene	0.068		0.020	ug/L	18-DEC-18	4.1			
	Surrogate: d10-Acenaphthene	98.6		60-140	%	18-DEC-18				
	Surrogate: d12-Chrysene	95.5		60-140	%	18-DEC-18				
	Surrogate: d8-Naphthalene	94.9		60-140	%	18-DEC-18				
	Surrogate: d10-Phenanthrene	102.7		60-140	%	18-DEC-18				
L2209758-15	DUP2									
Sampled By:	V. PETERS on 12-DEC-18									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	18-DEC-18	2700			
	Benzene	2.95		0.50	ug/L	18-DEC-18	*0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	18-DEC-18	16			
	Bromoform	<5.0		5.0	ug/L	18-DEC-18	5			
	Bromomethane	<0.50		0.50	ug/L	18-DEC-18	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	18-DEC-18	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	18-DEC-18	30			
	Dibromochloromethane	<2.0		2.0	ug/L	18-DEC-18	25			
	Chloroform	<1.0		1.0	ug/L	18-DEC-18	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	18-DEC-18	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	18-DEC-18	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	18-DEC-18	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	18-DEC-18	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	18-DEC-18	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	18-DEC-18	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	18-DEC-18	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	18-DEC-18	0.5			
	cis-1,2-Dichloroethylene	1.55		0.50	ug/L	18-DEC-18	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	18-DEC-18	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	18-DEC-18	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	18-DEC-18	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	18-DEC-18				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2209758-15	DUP2									
Sampled By:	V. PETERS on 12-DEC-18									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	18-DEC-18				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	18-DEC-18	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	18-DEC-18	2.4			
	n-Hexane	<0.50		0.50	ug/L	18-DEC-18	5			
	Methyl Ethyl Ketone	<20		20	ug/L	18-DEC-18	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	18-DEC-18	640			
	MTBE	<2.0		2.0	ug/L	18-DEC-18	15			
	Styrene	<0.50		0.50	ug/L	18-DEC-18	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	18-DEC-18	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	18-DEC-18	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	18-DEC-18	0.5			
	Toluene	<0.50		0.50	ug/L	18-DEC-18	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	18-DEC-18	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	18-DEC-18	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	18-DEC-18	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	18-DEC-18	150			
	Vinyl chloride	0.51		0.50	ug/L	18-DEC-18	*0.5			
	o-Xylene	<0.30		0.30	ug/L	18-DEC-18				
	m+p-Xylenes	<0.40		0.40	ug/L	18-DEC-18				
	Xylenes (Total)	<0.50		0.50	ug/L	18-DEC-18	72			
	Surrogate: 4-Bromofluorobenzene	94.8		70-130	%	18-DEC-18				
	Surrogate: 1,4-Difluorobenzene	100.6		70-130	%	18-DEC-18				
L2209758-16	TRIP BLANK									
Sampled By:	V. PETERS on 12-DEC-18									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	17-DEC-18	2700			
	Benzene	<0.50		0.50	ug/L	17-DEC-18	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	17-DEC-18	16			
	Bromoform	<5.0		5.0	ug/L	17-DEC-18	5			
	Bromomethane	<0.50		0.50	ug/L	17-DEC-18	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	17-DEC-18	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	17-DEC-18	30			
	Dibromochloromethane	<2.0		2.0	ug/L	17-DEC-18	25			
	Chloroform	<1.0		1.0	ug/L	17-DEC-18	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	17-DEC-18	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	17-DEC-18	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	17-DEC-18	59			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	17-DEC-18	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	17-DEC-18	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	17-DEC-18	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	17-DEC-18	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	17-DEC-18	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	17-DEC-18	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	17-DEC-18	1.6			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2209758-16	TRIP BLANK									
Sampled By:	V. PETERS on 12-DEC-18									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Methylene Chloride	<5.0		5.0	ug/L	17-DEC-18	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	17-DEC-18	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	17-DEC-18				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	17-DEC-18				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	17-DEC-18	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	17-DEC-18	2.4			
	n-Hexane	<0.50		0.50	ug/L	17-DEC-18	5			
	Methyl Ethyl Ketone	<20		20	ug/L	17-DEC-18	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	17-DEC-18	640			
	MTBE	<2.0		2.0	ug/L	17-DEC-18	15			
	Styrene	<0.50		0.50	ug/L	17-DEC-18	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	17-DEC-18	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	17-DEC-18	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	17-DEC-18	0.5			
	Toluene	<0.50		0.50	ug/L	17-DEC-18	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	17-DEC-18	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	17-DEC-18	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	17-DEC-18	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	17-DEC-18	150			
	Vinyl chloride	<0.50		0.50	ug/L	17-DEC-18	0.5			
	o-Xylene	<0.30		0.30	ug/L	17-DEC-18				
	m+p-Xylenes	<0.40		0.40	ug/L	17-DEC-18				
	Xylenes (Total)	<0.50		0.50	ug/L	17-DEC-18	72			
	Surrogate: 4-Bromofluorobenzene	99.5		70-130	%	17-DEC-18				
	Surrogate: 1,4-Difluorobenzene	99.4		70-130	%	17-DEC-18				
Hydrocarbons										
	F1 (C6-C10)	<25		25	ug/L	17-DEC-18	420			
	F1-BTEX	<25		25	ug/L	17-DEC-18	420			
	Surrogate: 3,4-Dichlorotoluene	120.8		60-140	%	17-DEC-18				
L2209758-17	MW18-134S									
Sampled By:	V. PETERS on 12-DEC-18									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	14-DEC-18	2700			
	Benzene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	14-DEC-18	16			
	Bromoform	<5.0		5.0	ug/L	14-DEC-18	5			
	Bromomethane	<0.50		0.50	ug/L	14-DEC-18	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	14-DEC-18	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	14-DEC-18	30			
	Dibromochloromethane	<2.0		2.0	ug/L	14-DEC-18	25			
	Chloroform	<1.0		1.0	ug/L	14-DEC-18	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	14-DEC-18	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	3			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	59			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2209758-17	MW18-134S									
Sampled By:	V. PETERS on 12-DEC-18									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	14-DEC-18	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	14-DEC-18	5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	14-DEC-18	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	14-DEC-18	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	14-DEC-18	26			
	1,2-Dichloropropane	<0.50		0.50	ug/L	14-DEC-18	0.58			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	14-DEC-18				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	14-DEC-18				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	14-DEC-18	2.4			
	n-Hexane	<0.50		0.50	ug/L	14-DEC-18	5			
	Methyl Ethyl Ketone	<20		20	ug/L	14-DEC-18	1800			
	Methyl Isobutyl Ketone	<20		20	ug/L	14-DEC-18	640			
	MTBE	<2.0		2.0	ug/L	14-DEC-18	15			
	Styrene	<0.50		0.50	ug/L	14-DEC-18	5.4			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	14-DEC-18	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Toluene	<0.50		0.50	ug/L	14-DEC-18	24			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	14-DEC-18	23			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	14-DEC-18	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	14-DEC-18	150			
	Vinyl chloride	<0.50		0.50	ug/L	14-DEC-18	0.5			
	o-Xylene	<0.30		0.30	ug/L	14-DEC-18				
	m+p-Xylenes	<0.40		0.40	ug/L	14-DEC-18				
	Xylenes (Total)	<0.50		0.50	ug/L	14-DEC-18	72			
	Surrogate: 4-Bromofluorobenzene	96.0		70-130	%	14-DEC-18				
	Surrogate: 1,4-Difluorobenzene	98.4		70-130	%	14-DEC-18				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T6-Ground Water-All Types of Property Uses

#1: T6-Ground Water-All Types of Property Uses

Reference Information

Sample Parameter Qualifier key listed:

Qualifier	Description
DLQ	Detection Limit raised due to co-eluting interference. GCMS qualifier ion ratio did not meet acceptance criteria.
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference***
F1-F4-511-CALC-WT	Water	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-L

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Water	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Water	F2-F4-O.Reg 153/04 (July 2011)	EPA 3511/CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from water using a hexane micro-extraction technique. Instrumental analysis is by GC-FID, as per the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Tier 1 Method, CCME, 2001.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8

The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT	Water	PAH-Calculated Parameters	SW846 8270
PAH-511-WT	Water	PAH-O. Reg 153/04 (July 2011)	SW846 3510/8270

Aqueous samples, fortified with surrogates, are extracted using liquid/liquid extraction technique. The sample extracts are concentrated and then analyzed using GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

VOC-1,3-DCP-CALC-WT	Water	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Water	VOC by GCMS HS O.Reg 153/04 (July 2011)	SW846 8260

Liquid samples are analyzed by headspace GC/MSD.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

Reference Information

XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

*** ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody numbers:

17-12122018

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA		

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Quality Control Report

Workorder: L2209758 Report Date: 20-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT	**Water**							
Batch R4395489								
WG2949710-4 DUP		**WG2949710-3**						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	14-DEC-18
WG2949710-1 LCS								
F1 (C6-C10)			101.7		%		80-120	14-DEC-18
WG2949710-2 MB								
F1 (C6-C10)			<25		ug/L		25	14-DEC-18
Surrogate: 3,4-Dichlorotoluene			87.8		%		60-140	14-DEC-18
WG2949710-5 MS		**WG2949710-3**						
F1 (C6-C10)			87.9		%		60-140	14-DEC-18
Batch R4396802								
WG2951927-4 DUP		**WG2951927-3**						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	17-DEC-18
WG2951927-1 LCS								
F1 (C6-C10)			112.9		%		80-120	14-DEC-18
WG2951927-2 MB								
F1 (C6-C10)			<25		ug/L		25	17-DEC-18
Surrogate: 3,4-Dichlorotoluene			106.9		%		60-140	17-DEC-18
WG2951927-5 MS		**WG2951927-3**						
F1 (C6-C10)			96.8		%		60-140	17-DEC-18
F2-F4-511-WT	**Water**							
Batch R4394673								
WG2952851-2 LCS								
F2 (C10-C16)			106.6		%		70-130	13-DEC-18
F3 (C16-C34)			109.1		%		70-130	13-DEC-18
F4 (C34-C50)			113.3		%		70-130	13-DEC-18
WG2952851-3 LCSD		**WG2952851-2**						
F2 (C10-C16)		106.6	107.8		%	1.0	50	13-DEC-18
F3 (C16-C34)		109.1	107.6		%	1.4	50	13-DEC-18
F4 (C34-C50)		113.3	110.1		%	2.9	50	13-DEC-18
WG2952851-1 MB								
F2 (C10-C16)			<100		ug/L		100	13-DEC-18
F3 (C16-C34)			<250		ug/L		250	13-DEC-18
F4 (C34-C50)			<250		ug/L		250	13-DEC-18
Surrogate: 2-Bromobenzotrifluoride			75.0		%		60-140	13-DEC-18
MET-D-UG/L-MS-WT	**Water**							

Quality Control Report

Workorder: L2209758 Report Date: 20-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch	**R4393615**							
WG2952810-4	**DUP**	**WG2952810-3**						
Antimony (Sb)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	13-DEC-18
Arsenic (As)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	13-DEC-18
Barium (Ba)-Dissolved		56.8	57.9		ug/L	1.9	20	13-DEC-18
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	13-DEC-18
Boron (B)-Dissolved		<10	<10	RPD-NA	ug/L	N/A	20	13-DEC-18
Cadmium (Cd)-Dissolved		<0.0050	<0.0050	RPD-NA	ug/L	N/A	20	13-DEC-18
Chromium (Cr)-Dissolved		0.81	0.83		ug/L	3.1	20	13-DEC-18
Cobalt (Co)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	13-DEC-18
Copper (Cu)-Dissolved		0.66	0.68		ug/L	2.6	20	13-DEC-18
Lead (Pb)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	13-DEC-18
Molybdenum (Mo)-Dissolved		0.076	0.073		ug/L	2.8	20	13-DEC-18
Nickel (Ni)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	13-DEC-18
Selenium (Se)-Dissolved		0.164	0.139		ug/L	16	20	13-DEC-18
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	13-DEC-18
Sodium (Na)-Dissolved		2020	2010		ug/L	0.2	20	13-DEC-18
Thallium (Tl)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	13-DEC-18
Uranium (U)-Dissolved		0.193	0.186		ug/L	3.7	20	13-DEC-18
Vanadium (V)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	13-DEC-18
Zinc (Zn)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	13-DEC-18
WG2952810-2	**LCS**							
Antimony (Sb)-Dissolved			101.2		%		80-120	13-DEC-18
Arsenic (As)-Dissolved			103.4		%		80-120	13-DEC-18
Barium (Ba)-Dissolved			102.2		%		80-120	13-DEC-18
Beryllium (Be)-Dissolved			98.3		%		80-120	13-DEC-18
Boron (B)-Dissolved			99.8		%		80-120	13-DEC-18
Cadmium (Cd)-Dissolved			100.0		%		80-120	13-DEC-18
Chromium (Cr)-Dissolved			100.9		%		80-120	13-DEC-18
Cobalt (Co)-Dissolved			99.9		%		80-120	13-DEC-18
Copper (Cu)-Dissolved			111.3		%		80-120	13-DEC-18
Lead (Pb)-Dissolved			101.1		%		80-120	13-DEC-18
Molybdenum (Mo)-Dissolved			100.6		%		80-120	13-DEC-18
Nickel (Ni)-Dissolved			101.2		%		80-120	13-DEC-18
Selenium (Se)-Dissolved			102.2		%		80-120	13-DEC-18

Quality Control Report

Workorder: L2209758 Report Date: 20-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R4393615								
WG2952810-2 LCS								
Silver (Ag)-Dissolved			103.7		%		80-120	13-DEC-18
Sodium (Na)-Dissolved			100.7		%		80-120	13-DEC-18
Thallium (Tl)-Dissolved			100.3		%		80-120	13-DEC-18
Uranium (U)-Dissolved			100.7		%		80-120	13-DEC-18
Vanadium (V)-Dissolved			102.9		%		80-120	13-DEC-18
Zinc (Zn)-Dissolved			100.4		%		80-120	13-DEC-18
WG2952810-1 MB								
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	13-DEC-18
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	13-DEC-18
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	13-DEC-18
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	13-DEC-18
Boron (B)-Dissolved			<10		ug/L		10	13-DEC-18
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	13-DEC-18
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	13-DEC-18
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	13-DEC-18
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	13-DEC-18
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	13-DEC-18
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	13-DEC-18
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	13-DEC-18
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	13-DEC-18
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	13-DEC-18
Sodium (Na)-Dissolved			<50		ug/L		50	13-DEC-18
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	13-DEC-18
Uranium (U)-Dissolved			<0.010		ug/L		0.01	13-DEC-18
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	13-DEC-18
Zinc (Zn)-Dissolved			<1.0		ug/L		1	13-DEC-18
WG2952810-5 MS		**WG2952810-6**						
Antimony (Sb)-Dissolved			98.9		%		70-130	13-DEC-18
Arsenic (As)-Dissolved			105.4		%		70-130	13-DEC-18
Barium (Ba)-Dissolved			N/A	MS-B	%		-	13-DEC-18
Beryllium (Be)-Dissolved			99.7		%		70-130	13-DEC-18
Boron (B)-Dissolved			99.2		%		70-130	13-DEC-18
Cadmium (Cd)-Dissolved			101.4		%		70-130	13-DEC-18
Chromium (Cr)-Dissolved			100.5		%		70-130	13-DEC-18

Quality Control Report

Workorder: L2209758 Report Date: 20-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R4393615								
WG2952810-5 MS		**WG2952810-6**						
Cobalt (Co)-Dissolved			96.8		%		70-130	13-DEC-18
Copper (Cu)-Dissolved			96.7		%		70-130	13-DEC-18
Lead (Pb)-Dissolved			99.0		%		70-130	13-DEC-18
Molybdenum (Mo)-Dissolved			99.1		%		70-130	13-DEC-18
Nickel (Ni)-Dissolved			97.7		%		70-130	13-DEC-18
Selenium (Se)-Dissolved			105.6		%		70-130	13-DEC-18
Silver (Ag)-Dissolved			102.5		%		70-130	13-DEC-18
Sodium (Na)-Dissolved			N/A	MS-B	%		-	13-DEC-18
Thallium (Tl)-Dissolved			97.9		%		70-130	13-DEC-18
Uranium (U)-Dissolved			N/A	MS-B	%		-	13-DEC-18
Vanadium (V)-Dissolved			103.0		%		70-130	13-DEC-18
Zinc (Zn)-Dissolved			102.7		%		70-130	13-DEC-18
PAH-511-WT	**Water**							
Batch R4399476								
WG2952851-2 LCS								
1-Methylnaphthalene			105.0		%		50-140	18-DEC-18
2-Methylnaphthalene			103.8		%		50-140	18-DEC-18
Acenaphthene			107.3		%		50-140	18-DEC-18
Acenaphthylene			109.0		%		50-140	18-DEC-18
Anthracene			115.2		%		50-140	18-DEC-18
Benzo(a)anthracene			130.9		%		50-140	18-DEC-18
Benzo(a)pyrene			103.8		%		50-140	18-DEC-18
Benzo(b)fluoranthene			100.2		%		50-140	18-DEC-18
Benzo(g,h,i)perylene			116.7		%		50-140	18-DEC-18
Benzo(k)fluoranthene			107.4		%		50-140	18-DEC-18
Chrysene			124.2		%		50-140	18-DEC-18
Dibenzo(ah)anthracene			116.2		%		50-140	18-DEC-18
Fluoranthene			120.3		%		50-140	18-DEC-18
Fluorene			113.1		%		50-140	18-DEC-18
Indeno(1,2,3-cd)pyrene			129.3		%		50-140	18-DEC-18
Naphthalene			108.1		%		50-140	18-DEC-18
Phenanthrene			116.2		%		50-140	18-DEC-18
Pyrene			122.3		%		50-140	18-DEC-18
WG2952851-3 LCSD		**WG2952851-2**						

Quality Control Report

Workorder: L2209758 Report Date: 20-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R4399476								
WG2952851-3 LCSD		**WG2952851-2**						
1-Methylnaphthalene		105.0	106.0		%	1.0	50	18-DEC-18
2-Methylnaphthalene		103.8	105.2		%	1.3	50	18-DEC-18
Acenaphthene		107.3	108.7		%	1.3	50	18-DEC-18
Acenaphthylene		109.0	109.8		%	0.7	50	18-DEC-18
Anthracene		115.2	115.4		%	0.2	50	18-DEC-18
Benzo(a)anthracene		130.9	130.4		%	0.4	50	18-DEC-18
Benzo(a)pyrene		103.8	111.7		%	7.4	50	18-DEC-18
Benzo(b)fluoranthene		100.2	103.9		%	3.7	50	18-DEC-18
Benzo(g,h,i)perylene		116.7	117.8		%	1.0	50	18-DEC-18
Benzo(k)fluoranthene		107.4	111.4		%	3.6	50	18-DEC-18
Chrysene		124.2	123.8		%	0.3	50	18-DEC-18
Dibenzo(ah)anthracene		116.2	116.9		%	0.6	50	18-DEC-18
Fluoranthene		120.3	121.6		%	1.1	50	18-DEC-18
Fluorene		113.1	114.7		%	1.4	50	18-DEC-18
Indeno(1,2,3-cd)pyrene		129.3	129.0		%	0.2	50	18-DEC-18
Naphthalene		108.1	111.5		%	3.1	50	18-DEC-18
Phenanthrene		116.2	117.3		%	1.0	50	18-DEC-18
Pyrene		122.3	122.9		%	0.5	50	18-DEC-18
WG2952851-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	18-DEC-18
2-Methylnaphthalene			<0.020		ug/L		0.02	18-DEC-18
Acenaphthene			<0.020		ug/L		0.02	18-DEC-18
Acenaphthylene			<0.020		ug/L		0.02	18-DEC-18
Anthracene			<0.020		ug/L		0.02	18-DEC-18
Benzo(a)anthracene			<0.020		ug/L		0.02	18-DEC-18
Benzo(a)pyrene			<0.010		ug/L		0.01	18-DEC-18
Benzo(b)fluoranthene			<0.020		ug/L		0.02	18-DEC-18
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	18-DEC-18
Benzo(k)fluoranthene			<0.020		ug/L		0.02	18-DEC-18
Chrysene			<0.020		ug/L		0.02	18-DEC-18
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	18-DEC-18
Fluoranthene			<0.020		ug/L		0.02	18-DEC-18
Fluorene			<0.020		ug/L		0.02	18-DEC-18

Quality Control Report

Workorder: L2209758 Report Date: 20-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R4399476								
WG2952851-1 MB								
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	18-DEC-18
Naphthalene			<0.050		ug/L		0.05	18-DEC-18
Phenanthrene			<0.020		ug/L		0.02	18-DEC-18
Pyrene			<0.020		ug/L		0.02	18-DEC-18
Surrogate: d8-Naphthalene			89.6		%		60-140	18-DEC-18
Surrogate: d10-Phenanthrene			102.5		%		60-140	18-DEC-18
Surrogate: d12-Chrysene			106.3		%		60-140	18-DEC-18
Surrogate: d10-Acenaphthene			97.5		%		60-140	18-DEC-18
VOC-511-HS-WT	**Water**							
Batch R4395167								
WG2951925-4 DUP		**WG2951925-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	14-DEC-18
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	14-DEC-18
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	14-DEC-18
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	14-DEC-18
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	14-DEC-18
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	14-DEC-18
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	14-DEC-18

Quality Control Report

Workorder: L2209758 Report Date: 20-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4395167								
WG2951925-4 DUP		**WG2951925-3**						
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	14-DEC-18
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	14-DEC-18
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	14-DEC-18
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	14-DEC-18
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	14-DEC-18
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	14-DEC-18
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	14-DEC-18
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	14-DEC-18
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	14-DEC-18
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	14-DEC-18
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
WG2951925-1 LCS								
1,1,1,2-Tetrachloroethane			109.2		%		70-130	14-DEC-18
1,1,2,2-Tetrachloroethane			126.0		%		70-130	14-DEC-18
1,1,1-Trichloroethane			104.8		%		70-130	14-DEC-18
1,1,2-Trichloroethane			118.2		%		70-130	14-DEC-18
1,1-Dichloroethane			112.5		%		70-130	14-DEC-18
1,1-Dichloroethylene			105.9		%		70-130	14-DEC-18
1,2-Dibromoethane			117.8		%		70-130	14-DEC-18
1,2-Dichlorobenzene			109.9		%		70-130	14-DEC-18
1,2-Dichloroethane			120.4		%		70-130	14-DEC-18
1,2-Dichloropropane			114.4		%		70-130	14-DEC-18
1,3-Dichlorobenzene			106.2		%		70-130	14-DEC-18
1,4-Dichlorobenzene			107.3		%		70-130	14-DEC-18
Acetone			138.4		%		60-140	14-DEC-18
Benzene			114.0		%		70-130	14-DEC-18

Quality Control Report

Workorder: L2209758 Report Date: 20-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4395167								
WG2951925-1 LCS								
Bromodichloromethane			114.0		%		70-130	14-DEC-18
Bromoform			118.1		%		70-130	14-DEC-18
Bromomethane			97.8		%		60-140	14-DEC-18
Carbon tetrachloride			102.2		%		70-130	14-DEC-18
Chlorobenzene			108.1		%		70-130	14-DEC-18
Chloroform			111.0		%		70-130	14-DEC-18
cis-1,2-Dichloroethylene			105.9		%		70-130	14-DEC-18
cis-1,3-Dichloropropene			117.2		%		70-130	14-DEC-18
Dibromochloromethane			111.1		%		70-130	14-DEC-18
Dichlorodifluoromethane			131.3		%		50-140	14-DEC-18
Ethylbenzene			97.2		%		70-130	14-DEC-18
n-Hexane			99.0		%		70-130	14-DEC-18
m+p-Xylenes			95.2		%		70-130	14-DEC-18
Methyl Ethyl Ketone			147.1	MES	%		60-140	14-DEC-18
Methyl Isobutyl Ketone			137.1		%		60-140	14-DEC-18
Methylene Chloride			122.4		%		70-130	14-DEC-18
MTBE			110.7		%		70-130	14-DEC-18
o-Xylene			97.2		%		70-130	14-DEC-18
Styrene			107.8		%		70-130	14-DEC-18
Tetrachloroethylene			101.5		%		70-130	14-DEC-18
Toluene			101.4		%		70-130	14-DEC-18
trans-1,2-Dichloroethylene			108.7		%		70-130	14-DEC-18
trans-1,3-Dichloropropene			113.8		%		70-130	14-DEC-18
Trichloroethylene			108.3		%		70-130	14-DEC-18
Trichlorofluoromethane			105.5		%		60-140	14-DEC-18
Vinyl chloride			86.4		%		60-140	14-DEC-18
WG2951925-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	14-DEC-18
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	14-DEC-18
1,1,1-Trichloroethane			<0.50		ug/L		0.5	14-DEC-18
1,1,2-Trichloroethane			<0.50		ug/L		0.5	14-DEC-18
1,1-Dichloroethane			<0.50		ug/L		0.5	14-DEC-18
1,1-Dichloroethylene			<0.50		ug/L		0.5	14-DEC-18
1,2-Dibromoethane			<0.20		ug/L		0.2	14-DEC-18

Quality Control Report

Workorder: L2209758 Report Date: 20-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4395167								
WG2951925-2 MB								
1,2-Dichlorobenzene			<0.50		ug/L		0.5	14-DEC-18
1,2-Dichloroethane			<0.50		ug/L		0.5	14-DEC-18
1,2-Dichloropropane			<0.50		ug/L		0.5	14-DEC-18
1,3-Dichlorobenzene			<0.50		ug/L		0.5	14-DEC-18
1,4-Dichlorobenzene			<0.50		ug/L		0.5	14-DEC-18
Acetone			<30		ug/L		30	14-DEC-18
Benzene			<0.50		ug/L		0.5	14-DEC-18
Bromodichloromethane			<2.0		ug/L		2	14-DEC-18
Bromoform			<5.0		ug/L		5	14-DEC-18
Bromomethane			<0.50		ug/L		0.5	14-DEC-18
Carbon tetrachloride			<0.20		ug/L		0.2	14-DEC-18
Chlorobenzene			<0.50		ug/L		0.5	14-DEC-18
Chloroform			<1.0		ug/L		1	14-DEC-18
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	14-DEC-18
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	14-DEC-18
Dibromochloromethane			<2.0		ug/L		2	14-DEC-18
Dichlorodifluoromethane			<2.0		ug/L		2	14-DEC-18
Ethylbenzene			<0.50		ug/L		0.5	14-DEC-18
n-Hexane			<0.50		ug/L		0.5	14-DEC-18
m+p-Xylenes			<0.40		ug/L		0.4	14-DEC-18
Methyl Ethyl Ketone			<20		ug/L		20	14-DEC-18
Methyl Isobutyl Ketone			<20		ug/L		20	14-DEC-18
Methylene Chloride			<5.0		ug/L		5	14-DEC-18
MTBE			<2.0		ug/L		2	14-DEC-18
o-Xylene			<0.30		ug/L		0.3	14-DEC-18
Styrene			<0.50		ug/L		0.5	14-DEC-18
Tetrachloroethylene			<0.50		ug/L		0.5	14-DEC-18
Toluene			<0.50		ug/L		0.5	14-DEC-18
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	14-DEC-18
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	14-DEC-18
Trichloroethylene			<0.50		ug/L		0.5	14-DEC-18
Trichlorofluoromethane			<5.0		ug/L		5	14-DEC-18
Vinyl chloride			<0.50		ug/L		0.5	14-DEC-18

Quality Control Report

Workorder: L2209758 Report Date: 20-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4395167								
WG2951925-2 MB								
Surrogate: 1,4-Difluorobenzene			98.4		%		70-130	14-DEC-18
Surrogate: 4-Bromofluorobenzene			98.2		%		70-130	14-DEC-18
WG2951925-5 MS		**WG2951925-3**						
1,1,1,2-Tetrachloroethane			109.3		%		50-140	14-DEC-18
1,1,2,2-Tetrachloroethane			111.7		%		50-140	14-DEC-18
1,1,1-Trichloroethane			108.8		%		50-140	14-DEC-18
1,1,2-Trichloroethane			109.6		%		50-140	14-DEC-18
1,1-Dichloroethane			113.0		%		50-140	14-DEC-18
1,1-Dichloroethylene			107.5		%		50-140	14-DEC-18
1,2-Dibromoethane			105.6		%		50-140	14-DEC-18
1,2-Dichlorobenzene			110.4		%		50-140	14-DEC-18
1,2-Dichloroethane			109.7		%		50-140	14-DEC-18
1,2-Dichloropropane			110.4		%		50-140	14-DEC-18
1,3-Dichlorobenzene			109.1		%		50-140	14-DEC-18
1,4-Dichlorobenzene			109.4		%		50-140	14-DEC-18
Acetone			119.1		%		50-140	14-DEC-18
Benzene			113.5		%		50-140	14-DEC-18
Bromodichloromethane			110.2		%		50-140	14-DEC-18
Bromoform			106.9		%		50-140	14-DEC-18
Bromomethane			91.2		%		50-140	14-DEC-18
Carbon tetrachloride			106.9		%		50-140	14-DEC-18
Chlorobenzene			108.3		%		50-140	14-DEC-18
Chloroform			110.5		%		50-140	14-DEC-18
cis-1,2-Dichloroethylene			103.7		%		50-140	14-DEC-18
cis-1,3-Dichloropropene			105.3		%		50-140	14-DEC-18
Dibromochloromethane			104.4		%		50-140	14-DEC-18
Dichlorodifluoromethane			119.8		%		50-140	14-DEC-18
Ethylbenzene			100.6		%		50-140	14-DEC-18
n-Hexane			99.7		%		50-140	14-DEC-18
m+p-Xylenes			98.5		%		50-140	14-DEC-18
Methyl Ethyl Ketone			106.8		%		50-140	14-DEC-18
Methyl Isobutyl Ketone			108.3		%		50-140	14-DEC-18
Methylene Chloride			113.5		%		50-140	14-DEC-18
MTBE			110.4		%		50-140	14-DEC-18

Quality Control Report

Workorder: L2209758 Report Date: 20-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4395167								
WG2951925-5 MS		**WG2951925-3**						
o-Xylene			99.1		%		50-140	14-DEC-18
Styrene			105.1		%		50-140	14-DEC-18
Tetrachloroethylene			107.0		%		50-140	14-DEC-18
Toluene			103.0		%		50-140	14-DEC-18
trans-1,2-Dichloroethylene			107.8		%		50-140	14-DEC-18
trans-1,3-Dichloropropene			99.4		%		50-140	14-DEC-18
Trichloroethylene			110.4		%		50-140	14-DEC-18
Trichlorofluoromethane			107.3		%		50-140	14-DEC-18
Vinyl chloride			83.1		%		50-140	14-DEC-18
Batch R4395489								
WG2949710-4 DUP		**WG2949710-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	14-DEC-18
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	14-DEC-18
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	14-DEC-18
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	14-DEC-18
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	14-DEC-18
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	14-DEC-18
cis-1,2-Dichloroethylene		0.89	0.90		ug/L	1.1	30	14-DEC-18
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	14-DEC-18

Quality Control Report

Workorder: L2209758 Report Date: 20-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4395489								
WG2949710-4 DUP		**WG2949710-3**						
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	14-DEC-18
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	14-DEC-18
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	14-DEC-18
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	14-DEC-18
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	14-DEC-18
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	14-DEC-18
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	14-DEC-18
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	14-DEC-18
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	14-DEC-18
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	14-DEC-18
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-18
WG2949710-1 LCS								
1,1,1,2-Tetrachloroethane			106.2		%		70-130	14-DEC-18
1,1,2,2-Tetrachloroethane			113.1		%		70-130	14-DEC-18
1,1,1-Trichloroethane			110.5		%		70-130	14-DEC-18
1,1,2-Trichloroethane			110.9		%		70-130	14-DEC-18
1,1-Dichloroethane			116.1		%		70-130	14-DEC-18
1,1-Dichloroethylene			110.3		%		70-130	14-DEC-18
1,2-Dibromoethane			111.4		%		70-130	14-DEC-18
1,2-Dichlorobenzene			108.4		%		70-130	14-DEC-18
1,2-Dichloroethane			114.9		%		70-130	14-DEC-18
1,2-Dichloropropane			111.0		%		70-130	14-DEC-18
1,3-Dichlorobenzene			108.9		%		70-130	14-DEC-18
1,4-Dichlorobenzene			110.3		%		70-130	14-DEC-18
Acetone			108.2		%		60-140	14-DEC-18
Benzene			114.1		%		70-130	14-DEC-18

Quality Control Report

Workorder: L2209758 Report Date: 20-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4395489								
WG2949710-1 LCS								
Bromodichloromethane			114.2		%		70-130	14-DEC-18
Bromoform			107.4		%		70-130	14-DEC-18
Bromomethane			105.0		%		60-140	14-DEC-18
Carbon tetrachloride			109.2		%		70-130	14-DEC-18
Chlorobenzene			108.3		%		70-130	14-DEC-18
Chloroform			112.4		%		70-130	14-DEC-18
cis-1,2-Dichloroethylene			110.9		%		70-130	14-DEC-18
cis-1,3-Dichloropropene			113.6		%		70-130	14-DEC-18
Dibromochloromethane			109.6		%		70-130	14-DEC-18
Dichlorodifluoromethane			139.4		%		50-140	14-DEC-18
Ethylbenzene			97.8		%		70-130	14-DEC-18
n-Hexane			101.0		%		70-130	14-DEC-18
m+p-Xylenes			101.9		%		70-130	14-DEC-18
Methyl Ethyl Ketone			104.5		%		60-140	14-DEC-18
Methyl Isobutyl Ketone			91.9		%		60-140	14-DEC-18
Methylene Chloride			118.5		%		70-130	14-DEC-18
MTBE			111.1		%		70-130	14-DEC-18
o-Xylene			96.7		%		70-130	14-DEC-18
Styrene			100.7		%		70-130	14-DEC-18
Tetrachloroethylene			107.2		%		70-130	14-DEC-18
Toluene			100.7		%		70-130	14-DEC-18
trans-1,2-Dichloroethylene			113.1		%		70-130	14-DEC-18
trans-1,3-Dichloropropene			109.8		%		70-130	14-DEC-18
Trichloroethylene			111.2		%		70-130	14-DEC-18
Trichlorofluoromethane			118.7		%		60-140	14-DEC-18
Vinyl chloride			94.3		%		60-140	14-DEC-18
WG2949710-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	14-DEC-18
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	14-DEC-18
1,1,1-Trichloroethane			<0.50		ug/L		0.5	14-DEC-18
1,1,2-Trichloroethane			<0.50		ug/L		0.5	14-DEC-18
1,1-Dichloroethane			<0.50		ug/L		0.5	14-DEC-18
1,1-Dichloroethylene			<0.50		ug/L		0.5	14-DEC-18
1,2-Dibromoethane			<0.20		ug/L		0.2	14-DEC-18

Quality Control Report

Workorder: L2209758 Report Date: 20-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4395489								
WG2949710-2 MB								
1,2-Dichlorobenzene			<0.50		ug/L		0.5	14-DEC-18
1,2-Dichloroethane			<0.50		ug/L		0.5	14-DEC-18
1,2-Dichloropropane			<0.50		ug/L		0.5	14-DEC-18
1,3-Dichlorobenzene			<0.50		ug/L		0.5	14-DEC-18
1,4-Dichlorobenzene			<0.50		ug/L		0.5	14-DEC-18
Acetone			<30		ug/L		30	14-DEC-18
Benzene			<0.50		ug/L		0.5	14-DEC-18
Bromodichloromethane			<2.0		ug/L		2	14-DEC-18
Bromoform			<5.0		ug/L		5	14-DEC-18
Bromomethane			<0.50		ug/L		0.5	14-DEC-18
Carbon tetrachloride			<0.20		ug/L		0.2	14-DEC-18
Chlorobenzene			<0.50		ug/L		0.5	14-DEC-18
Chloroform			<1.0		ug/L		1	14-DEC-18
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	14-DEC-18
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	14-DEC-18
Dibromochloromethane			<2.0		ug/L		2	14-DEC-18
Dichlorodifluoromethane			<2.0		ug/L		2	14-DEC-18
Ethylbenzene			<0.50		ug/L		0.5	14-DEC-18
n-Hexane			<0.50		ug/L		0.5	14-DEC-18
m+p-Xylenes			<0.40		ug/L		0.4	14-DEC-18
Methyl Ethyl Ketone			<20		ug/L		20	14-DEC-18
Methyl Isobutyl Ketone			<20		ug/L		20	14-DEC-18
Methylene Chloride			<5.0		ug/L		5	14-DEC-18
MTBE			<2.0		ug/L		2	14-DEC-18
o-Xylene			<0.30		ug/L		0.3	14-DEC-18
Styrene			<0.50		ug/L		0.5	14-DEC-18
Tetrachloroethylene			<0.50		ug/L		0.5	14-DEC-18
Toluene			<0.50		ug/L		0.5	14-DEC-18
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	14-DEC-18
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	14-DEC-18
Trichloroethylene			<0.50		ug/L		0.5	14-DEC-18
Trichlorofluoromethane			<5.0		ug/L		5	14-DEC-18
Vinyl chloride			<0.50		ug/L		0.5	14-DEC-18

Quality Control Report

Workorder: L2209758 Report Date: 20-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4395489								
WG2949710-2 MB								
Surrogate: 1,4-Difluorobenzene			98.9		%		70-130	14-DEC-18
Surrogate: 4-Bromofluorobenzene			97.6		%		70-130	14-DEC-18
WG2949710-5 MS		**WG2949710-3**						
1,1,1,2-Tetrachloroethane			108.1		%		50-140	14-DEC-18
1,1,2,2-Tetrachloroethane			130.8		%		50-140	14-DEC-18
1,1,1-Trichloroethane			109.3		%		50-140	14-DEC-18
1,1,2-Trichloroethane			119.2		%		50-140	14-DEC-18
1,1-Dichloroethane			119.3		%		50-140	14-DEC-18
1,1-Dichloroethylene			106.4		%		50-140	14-DEC-18
1,2-Dibromoethane			121.5		%		50-140	14-DEC-18
1,2-Dichlorobenzene			108.7		%		50-140	14-DEC-18
1,2-Dichloroethane			126.7		%		50-140	14-DEC-18
1,2-Dichloropropane			117.5		%		50-140	14-DEC-18
1,3-Dichlorobenzene			105.0		%		50-140	14-DEC-18
1,4-Dichlorobenzene			106.3		%		50-140	14-DEC-18
Acetone			126.6		%		50-140	14-DEC-18
Benzene			116.0		%		50-140	14-DEC-18
Bromodichloromethane			121.7		%		50-140	14-DEC-18
Bromoform			116.1		%		50-140	14-DEC-18
Bromomethane			104.1		%		50-140	14-DEC-18
Carbon tetrachloride			106.5		%		50-140	14-DEC-18
Chlorobenzene			106.9		%		50-140	14-DEC-18
Chloroform			116.3		%		50-140	14-DEC-18
cis-1,2-Dichloroethylene			113.9		%		50-140	14-DEC-18
cis-1,3-Dichloropropene			115.9		%		50-140	14-DEC-18
Dibromochloromethane			116.2		%		50-140	14-DEC-18
Dichlorodifluoromethane			125.6		%		50-140	14-DEC-18
Ethylbenzene			91.9		%		50-140	14-DEC-18
n-Hexane			93.5		%		50-140	14-DEC-18
m+p-Xylenes			95.7		%		50-140	14-DEC-18
Methyl Ethyl Ketone			115.1		%		50-140	14-DEC-18
Methyl Isobutyl Ketone			106.6		%		50-140	14-DEC-18
Methylene Chloride			124.7		%		50-140	14-DEC-18
MTBE			110.8		%		50-140	14-DEC-18

Quality Control Report

Workorder: L2209758 Report Date: 20-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4395489								
WG2949710-5 MS		**WG2949710-3**						
o-Xylene			92.6		%		50-140	14-DEC-18
Styrene			97.6		%		50-140	14-DEC-18
Tetrachloroethylene			97.4		%		50-140	14-DEC-18
Toluene			97.1		%		50-140	14-DEC-18
trans-1,2-Dichloroethylene			107.8		%		50-140	14-DEC-18
trans-1,3-Dichloropropene			108.9		%		50-140	14-DEC-18
Trichloroethylene			107.8		%		50-140	14-DEC-18
Trichlorofluoromethane			113.0		%		50-140	14-DEC-18
Vinyl chloride			88.7		%		50-140	14-DEC-18
Batch R4396802								
WG2951927-4 DUP		**WG2951927-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	17-DEC-18
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	17-DEC-18
Benzene		0.78	0.72		ug/L	8.0	30	17-DEC-18
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	17-DEC-18
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	17-DEC-18
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	17-DEC-18
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	17-DEC-18
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	17-DEC-18

Quality Control Report

Workorder: L2209758 Report Date: 20-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4396802								
WG2951927-4 DUP		**WG2951927-3**						
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	17-DEC-18
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	17-DEC-18
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	17-DEC-18
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	17-DEC-18
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	17-DEC-18
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	17-DEC-18
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	17-DEC-18
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	17-DEC-18
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	17-DEC-18
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	17-DEC-18
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
WG2951927-1 LCS								
1,1,1,2-Tetrachloroethane			107.3		%		70-130	14-DEC-18
1,1,2,2-Tetrachloroethane			105.1		%		70-130	14-DEC-18
1,1,1-Trichloroethane			109.7		%		70-130	14-DEC-18
1,1,2-Trichloroethane			104.5		%		70-130	14-DEC-18
1,1-Dichloroethane			111.3		%		70-130	14-DEC-18
1,1-Dichloroethylene			111.7		%		70-130	14-DEC-18
1,2-Dibromoethane			100.6		%		70-130	14-DEC-18
1,2-Dichlorobenzene			110.3		%		70-130	14-DEC-18
1,2-Dichloroethane			104.0		%		70-130	14-DEC-18
1,2-Dichloropropane			106.3		%		70-130	14-DEC-18
1,3-Dichlorobenzene			112.9		%		70-130	14-DEC-18
1,4-Dichlorobenzene			113.2		%		70-130	14-DEC-18
Acetone			111.5		%		60-140	14-DEC-18
Benzene			112.3		%		70-130	14-DEC-18

Quality Control Report

Workorder: L2209758 Report Date: 20-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4396802								
WG2951927-1 LCS								
Bromodichloromethane			105.6		%		70-130	14-DEC-18
Bromoform			102.0		%		70-130	14-DEC-18
Bromomethane			95.9		%		60-140	14-DEC-18
Carbon tetrachloride			109.1		%		70-130	14-DEC-18
Chlorobenzene			108.1		%		70-130	14-DEC-18
Chloroform			108.1		%		70-130	14-DEC-18
cis-1,2-Dichloroethylene			102.6		%		70-130	14-DEC-18
cis-1,3-Dichloropropene			105.0		%		70-130	14-DEC-18
Dibromochloromethane			101.0		%		70-130	14-DEC-18
Dichlorodifluoromethane			138.8		%		50-140	14-DEC-18
Ethylbenzene			103.4		%		70-130	14-DEC-18
n-Hexane			108.3		%		70-130	14-DEC-18
m+p-Xylenes			101.8		%		70-130	14-DEC-18
Methyl Ethyl Ketone			109.9		%		60-140	14-DEC-18
Methyl Isobutyl Ketone			100.4		%		60-140	14-DEC-18
Methylene Chloride			112.7		%		70-130	14-DEC-18
MTBE			111.3		%		70-130	14-DEC-18
o-Xylene			100.3		%		70-130	14-DEC-18
Styrene			106.4		%		70-130	14-DEC-18
Tetrachloroethylene			112.8		%		70-130	14-DEC-18
Toluene			104.8		%		70-130	14-DEC-18
trans-1,2-Dichloroethylene			112.1		%		70-130	14-DEC-18
trans-1,3-Dichloropropene			100.0		%		70-130	14-DEC-18
Trichloroethylene			112.6		%		70-130	14-DEC-18
Trichlorofluoromethane			114.5		%		60-140	14-DEC-18
Vinyl chloride			90.2		%		60-140	14-DEC-18
WG2951927-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	17-DEC-18
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	17-DEC-18
1,1,1-Trichloroethane			<0.50		ug/L		0.5	17-DEC-18
1,1,2-Trichloroethane			<0.50		ug/L		0.5	17-DEC-18
1,1-Dichloroethane			<0.50		ug/L		0.5	17-DEC-18
1,1-Dichloroethylene			<0.50		ug/L		0.5	17-DEC-18
1,2-Dibromoethane			<0.20		ug/L		0.2	17-DEC-18

Quality Control Report

Workorder: L2209758 Report Date: 20-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4396802								
WG2951927-2 MB								
1,2-Dichlorobenzene			<0.50		ug/L		0.5	17-DEC-18
1,2-Dichloroethane			<0.50		ug/L		0.5	17-DEC-18
1,2-Dichloropropane			<0.50		ug/L		0.5	17-DEC-18
1,3-Dichlorobenzene			<0.50		ug/L		0.5	17-DEC-18
1,4-Dichlorobenzene			<0.50		ug/L		0.5	17-DEC-18
Acetone			<30		ug/L		30	17-DEC-18
Benzene			<0.50		ug/L		0.5	17-DEC-18
Bromodichloromethane			<2.0		ug/L		2	17-DEC-18
Bromoform			<5.0		ug/L		5	17-DEC-18
Bromomethane			<0.50		ug/L		0.5	17-DEC-18
Carbon tetrachloride			<0.20		ug/L		0.2	17-DEC-18
Chlorobenzene			<0.50		ug/L		0.5	17-DEC-18
Chloroform			<1.0		ug/L		1	17-DEC-18
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	17-DEC-18
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	17-DEC-18
Dibromochloromethane			<2.0		ug/L		2	17-DEC-18
Dichlorodifluoromethane			<2.0		ug/L		2	17-DEC-18
Ethylbenzene			<0.50		ug/L		0.5	17-DEC-18
n-Hexane			<0.50		ug/L		0.5	17-DEC-18
m+p-Xylenes			<0.40		ug/L		0.4	17-DEC-18
Methyl Ethyl Ketone			<20		ug/L		20	17-DEC-18
Methyl Isobutyl Ketone			<20		ug/L		20	17-DEC-18
Methylene Chloride			<5.0		ug/L		5	17-DEC-18
MTBE			<2.0		ug/L		2	17-DEC-18
o-Xylene			<0.30		ug/L		0.3	17-DEC-18
Styrene			<0.50		ug/L		0.5	17-DEC-18
Tetrachloroethylene			<0.50		ug/L		0.5	17-DEC-18
Toluene			<0.50		ug/L		0.5	17-DEC-18
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	17-DEC-18
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	17-DEC-18
Trichloroethylene			<0.50		ug/L		0.5	17-DEC-18
Trichlorofluoromethane			<5.0		ug/L		5	17-DEC-18
Vinyl chloride			<0.50		ug/L		0.5	17-DEC-18

Quality Control Report

Workorder: L2209758 Report Date: 20-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4396802								
WG2951927-2 MB								
Surrogate: 1,4-Difluorobenzene			99.0		%		70-130	17-DEC-18
Surrogate: 4-Bromofluorobenzene			97.2		%		70-130	17-DEC-18
WG2951927-5 MS		**WG2951927-3**						
1,1,1,2-Tetrachloroethane			109.0		%		50-140	18-DEC-18
1,1,2,2-Tetrachloroethane			125.3		%		50-140	18-DEC-18
1,1,1-Trichloroethane			102.8		%		50-140	18-DEC-18
1,1,2-Trichloroethane			117.5		%		50-140	18-DEC-18
1,1-Dichloroethane			110.1		%		50-140	18-DEC-18
1,1-Dichloroethylene			99.6		%		50-140	18-DEC-18
1,2-Dibromoethane			116.9		%		50-140	18-DEC-18
1,2-Dichlorobenzene			109.2		%		50-140	18-DEC-18
1,2-Dichloroethane			118.5		%		50-140	18-DEC-18
1,2-Dichloropropane			113.1		%		50-140	18-DEC-18
1,3-Dichlorobenzene			105.7		%		50-140	18-DEC-18
1,4-Dichlorobenzene			106.1		%		50-140	18-DEC-18
Acetone			140.4	MES	%		50-140	18-DEC-18
Benzene			113.0		%		50-140	18-DEC-18
Bromodichloromethane			113.6		%		50-140	18-DEC-18
Bromoform			119.8		%		50-140	18-DEC-18
Bromomethane			89.6		%		50-140	18-DEC-18
Carbon tetrachloride			100.6		%		50-140	18-DEC-18
Chlorobenzene			107.7		%		50-140	18-DEC-18
Chloroform			109.9		%		50-140	18-DEC-18
cis-1,2-Dichloroethylene			105.6		%		50-140	18-DEC-18
cis-1,3-Dichloropropene			111.2		%		50-140	18-DEC-18
Dibromochloromethane			110.4		%		50-140	18-DEC-18
Dichlorodifluoromethane			100.1		%		50-140	18-DEC-18
Ethylbenzene			95.3		%		50-140	18-DEC-18
n-Hexane			92.6		%		50-140	18-DEC-18
m+p-Xylenes			93.8		%		50-140	18-DEC-18
Methyl Ethyl Ketone			136.4		%		50-140	18-DEC-18
Methyl Isobutyl Ketone			132.0		%		50-140	18-DEC-18
Methylene Chloride			119.3		%		50-140	18-DEC-18
MTBE			109.5		%		50-140	18-DEC-18

Quality Control Report

Workorder: L2209758 Report Date: 20-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4396802								
WG2951927-5 MS		**WG2951927-3**						
o-Xylene			95.6		%		50-140	18-DEC-18
Styrene			105.3		%		50-140	18-DEC-18
Tetrachloroethylene			101.8		%		50-140	18-DEC-18
Toluene			99.4		%		50-140	18-DEC-18
trans-1,2-Dichloroethylene			105.5		%		50-140	18-DEC-18
trans-1,3-Dichloropropene			105.4		%		50-140	18-DEC-18
Trichloroethylene			108.8		%		50-140	18-DEC-18
Trichlorofluoromethane			98.0		%		50-140	18-DEC-18
Vinyl chloride			76.9		%		50-140	18-DEC-18
Batch R4397168								
WG2951880-4 DUP		**WG2951880-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	17-DEC-18
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	17-DEC-18
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	17-DEC-18
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	17-DEC-18
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	17-DEC-18
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	17-DEC-18
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	17-DEC-18

Quality Control Report

Workorder: L2209758 Report Date: 20-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4397168								
WG2951880-4 DUP		**WG2951880-3**						
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	17-DEC-18
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	17-DEC-18
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	17-DEC-18
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	17-DEC-18
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	17-DEC-18
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	17-DEC-18
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	17-DEC-18
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	17-DEC-18
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	17-DEC-18
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	17-DEC-18
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-DEC-18
WG2951880-1 LCS								
1,1,1,2-Tetrachloroethane			107.2		%		70-130	17-DEC-18
1,1,2,2-Tetrachloroethane			102.1		%		70-130	17-DEC-18
1,1,1-Trichloroethane			115.5		%		70-130	17-DEC-18
1,1,2-Trichloroethane			105.3		%		70-130	17-DEC-18
1,1-Dichloroethane			113.4		%		70-130	17-DEC-18
1,1-Dichloroethylene			111.3		%		70-130	17-DEC-18
1,2-Dibromoethane			107.1		%		70-130	17-DEC-18
1,2-Dichlorobenzene			109.5		%		70-130	17-DEC-18
1,2-Dichloroethane			115.1		%		70-130	17-DEC-18
1,2-Dichloropropane			104.4		%		70-130	17-DEC-18
1,3-Dichlorobenzene			110.7		%		70-130	17-DEC-18
1,4-Dichlorobenzene			111.8		%		70-130	17-DEC-18
Acetone			107.6		%		60-140	17-DEC-18
Benzene			111.8		%		70-130	17-DEC-18

Quality Control Report

Workorder: L2209758 Report Date: 20-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4397168								
WG2951880-1 LCS								
Bromodichloromethane			112.2		%		70-130	17-DEC-18
Bromoform			99.8		%		70-130	17-DEC-18
Bromomethane			99.6		%		60-140	17-DEC-18
Carbon tetrachloride			116.8		%		70-130	17-DEC-18
Chlorobenzene			109.3		%		70-130	17-DEC-18
Chloroform			111.8		%		70-130	17-DEC-18
cis-1,2-Dichloroethylene			109.3		%		70-130	17-DEC-18
cis-1,3-Dichloropropene			112.7		%		70-130	17-DEC-18
Dibromochloromethane			107.9		%		70-130	17-DEC-18
Dichlorodifluoromethane			126.9		%		50-140	17-DEC-18
Ethylbenzene			103.8		%		70-130	17-DEC-18
n-Hexane			99.4		%		70-130	17-DEC-18
m+p-Xylenes			107.7		%		70-130	17-DEC-18
Methyl Ethyl Ketone			111.0		%		60-140	17-DEC-18
Methyl Isobutyl Ketone			97.9		%		60-140	17-DEC-18
Methylene Chloride			110.8		%		70-130	17-DEC-18
MTBE			111.5		%		70-130	17-DEC-18
o-Xylene			101.7		%		70-130	17-DEC-18
Styrene			105.7		%		70-130	17-DEC-18
Tetrachloroethylene			113.0		%		70-130	17-DEC-18
Toluene			105.7		%		70-130	17-DEC-18
trans-1,2-Dichloroethylene			112.7		%		70-130	17-DEC-18
trans-1,3-Dichloropropene			110.4		%		70-130	17-DEC-18
Trichloroethylene			113.5		%		70-130	17-DEC-18
Trichlorofluoromethane			129.6		%		60-140	17-DEC-18
Vinyl chloride			88.6		%		60-140	17-DEC-18
WG2951880-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	17-DEC-18
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	17-DEC-18
1,1,1-Trichloroethane			<0.50		ug/L		0.5	17-DEC-18
1,1,2-Trichloroethane			<0.50		ug/L		0.5	17-DEC-18
1,1-Dichloroethane			<0.50		ug/L		0.5	17-DEC-18
1,1-Dichloroethylene			<0.50		ug/L		0.5	17-DEC-18
1,2-Dibromoethane			<0.20		ug/L		0.2	17-DEC-18

Quality Control Report

Workorder: L2209758 Report Date: 20-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4397168								
WG2951880-2 MB								
1,2-Dichlorobenzene			<0.50		ug/L		0.5	17-DEC-18
1,2-Dichloroethane			<0.50		ug/L		0.5	17-DEC-18
1,2-Dichloropropane			<0.50		ug/L		0.5	17-DEC-18
1,3-Dichlorobenzene			<0.50		ug/L		0.5	17-DEC-18
1,4-Dichlorobenzene			<0.50		ug/L		0.5	17-DEC-18
Acetone			<30		ug/L		30	17-DEC-18
Benzene			<0.50		ug/L		0.5	17-DEC-18
Bromodichloromethane			<2.0		ug/L		2	17-DEC-18
Bromoform			<5.0		ug/L		5	17-DEC-18
Bromomethane			<0.50		ug/L		0.5	17-DEC-18
Carbon tetrachloride			<0.20		ug/L		0.2	17-DEC-18
Chlorobenzene			<0.50		ug/L		0.5	17-DEC-18
Chloroform			<1.0		ug/L		1	17-DEC-18
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	17-DEC-18
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	17-DEC-18
Dibromochloromethane			<2.0		ug/L		2	17-DEC-18
Dichlorodifluoromethane			<2.0		ug/L		2	17-DEC-18
Ethylbenzene			<0.50		ug/L		0.5	17-DEC-18
n-Hexane			<0.50		ug/L		0.5	17-DEC-18
m+p-Xylenes			<0.40		ug/L		0.4	17-DEC-18
Methyl Ethyl Ketone			<20		ug/L		20	17-DEC-18
Methyl Isobutyl Ketone			<20		ug/L		20	17-DEC-18
Methylene Chloride			<5.0		ug/L		5	17-DEC-18
MTBE			<2.0		ug/L		2	17-DEC-18
o-Xylene			<0.30		ug/L		0.3	17-DEC-18
Styrene			<0.50		ug/L		0.5	17-DEC-18
Tetrachloroethylene			<0.50		ug/L		0.5	17-DEC-18
Toluene			<0.50		ug/L		0.5	17-DEC-18
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	17-DEC-18
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	17-DEC-18
Trichloroethylene			<0.50		ug/L		0.5	17-DEC-18
Trichlorofluoromethane			<5.0		ug/L		5	17-DEC-18
Vinyl chloride			<0.50		ug/L		0.5	17-DEC-18

Quality Control Report

Workorder: L2209758 Report Date: 20-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch	**R4397168**							
WG2951880-2	**MB**							
Surrogate: 1,4-Difluorobenzene			100.4		%		70-130	17-DEC-18
Surrogate: 4-Bromofluorobenzene			93.2		%		70-130	17-DEC-18
WG2951880-5	**MS**	**WG2951880-3**						
1,1,1,2-Tetrachloroethane			106.0		%		50-140	17-DEC-18
1,1,2,2-Tetrachloroethane			94.5		%		50-140	17-DEC-18
1,1,1-Trichloroethane			115.9		%		50-140	17-DEC-18
1,1,2-Trichloroethane			102.6		%		50-140	17-DEC-18
1,1-Dichloroethane			113.6		%		50-140	17-DEC-18
1,1-Dichloroethylene			110.8		%		50-140	17-DEC-18
1,2-Dibromoethane			103.0		%		50-140	17-DEC-18
1,2-Dichlorobenzene			109.7		%		50-140	17-DEC-18
1,2-Dichloroethane			112.9		%		50-140	17-DEC-18
1,2-Dichloropropane			103.4		%		50-140	17-DEC-18
1,3-Dichlorobenzene			114.5		%		50-140	17-DEC-18
1,4-Dichlorobenzene			115.7		%		50-140	17-DEC-18
Acetone			113.0		%		50-140	17-DEC-18
Benzene			111.5		%		50-140	17-DEC-18
Bromodichloromethane			110.6		%		50-140	17-DEC-18
Bromoform			94.5		%		50-140	17-DEC-18
Bromomethane			97.4		%		50-140	17-DEC-18
Carbon tetrachloride			116.2		%		50-140	17-DEC-18
Chlorobenzene			109.0		%		50-140	17-DEC-18
Chloroform			111.5		%		50-140	17-DEC-18
cis-1,2-Dichloroethylene			109.0		%		50-140	17-DEC-18
cis-1,3-Dichloropropene			114.4		%		50-140	17-DEC-18
Dibromochloromethane			104.5		%		50-140	17-DEC-18
Dichlorodifluoromethane			118.6		%		50-140	17-DEC-18
Ethylbenzene			103.6		%		50-140	17-DEC-18
n-Hexane			97.4		%		50-140	17-DEC-18
m+p-Xylenes			109.1		%		50-140	17-DEC-18
Methyl Ethyl Ketone			102.2		%		50-140	17-DEC-18
Methyl Isobutyl Ketone			91.4		%		50-140	17-DEC-18
Methylene Chloride			110.8		%		50-140	17-DEC-18
MTBE			109.7		%		50-140	17-DEC-18

Quality Control Report

Workorder: L2209758 Report Date: 20-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4397168								
WG2951880-5 MS		**WG2951880-3**						
o-Xylene			101.4		%		50-140	17-DEC-18
Styrene			104.0		%		50-140	17-DEC-18
Tetrachloroethylene			115.1		%		50-140	17-DEC-18
Toluene			105.1		%		50-140	17-DEC-18
trans-1,2-Dichloroethylene			114.0		%		50-140	17-DEC-18
trans-1,3-Dichloropropene			107.2		%		50-140	17-DEC-18
Trichloroethylene			114.4		%		50-140	17-DEC-18
Trichlorofluoromethane			128.1		%		50-140	17-DEC-18
Vinyl chloride			87.3		%		50-140	17-DEC-18

Quality Control Report

Workorder: L2209758 Report Date: 20-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9
Contact: MICHAEL SHIRY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

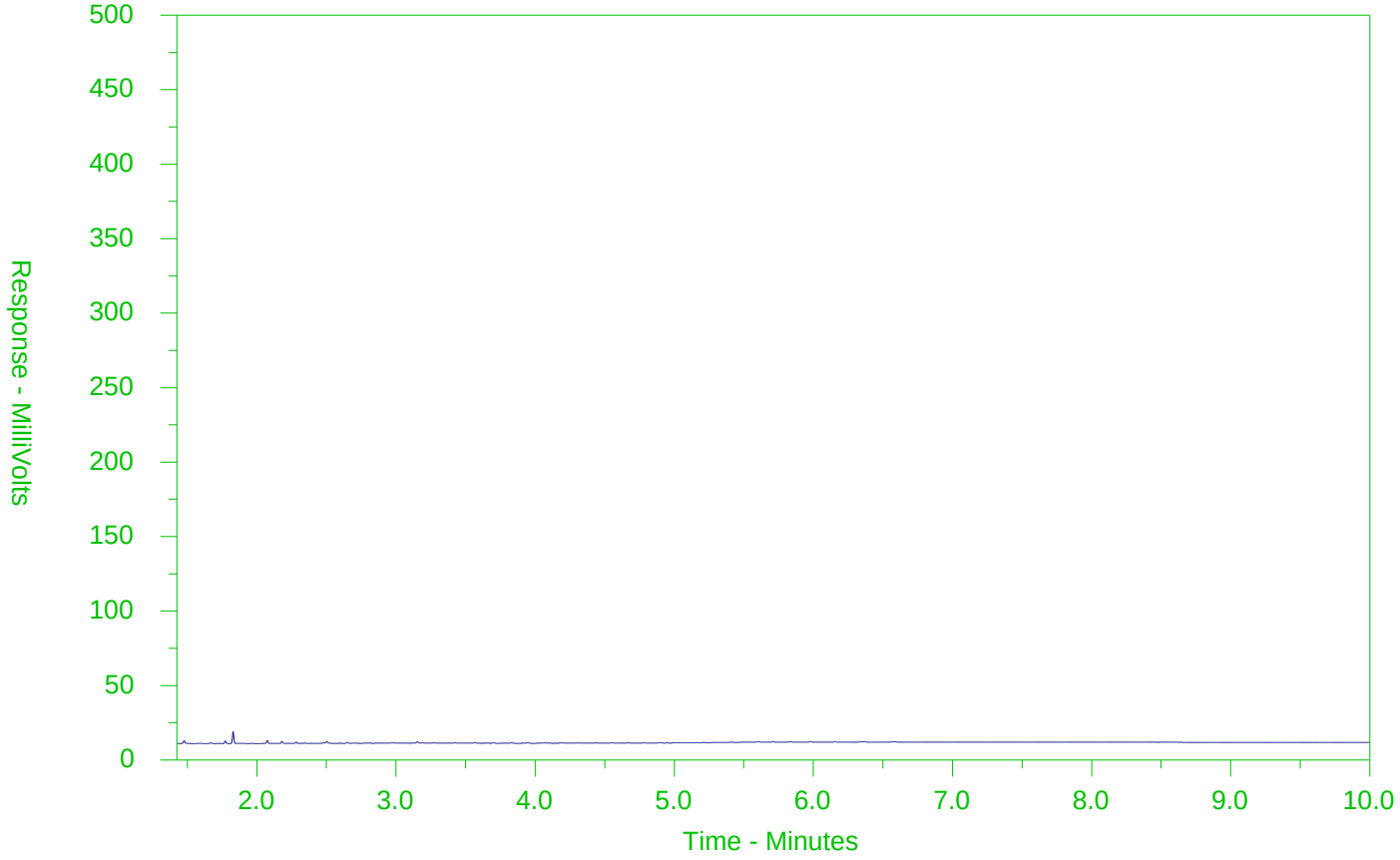
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2209758-7
Client Sample ID: MW18-135D



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

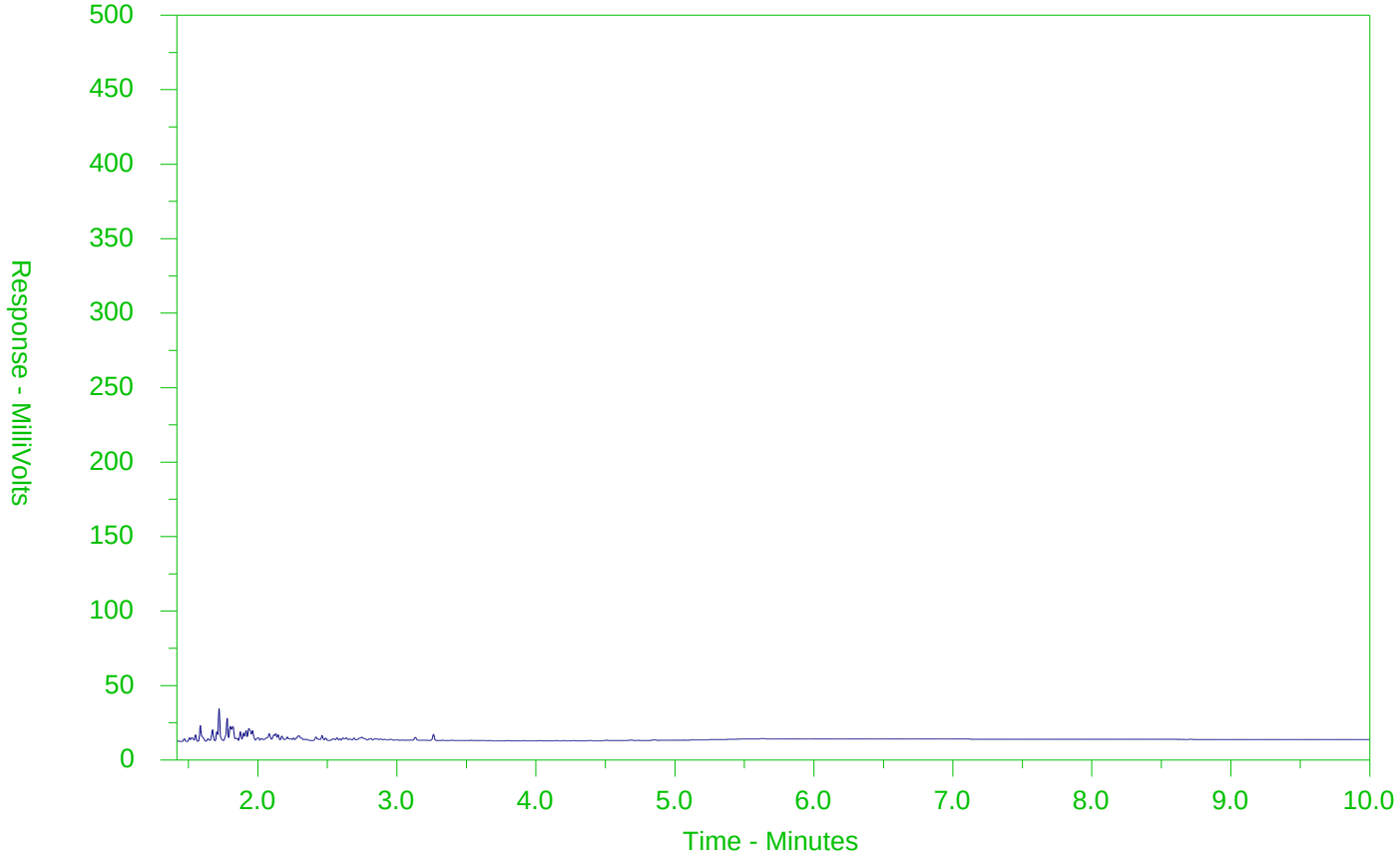
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2209758-12
Client Sample ID: MW18-135S



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

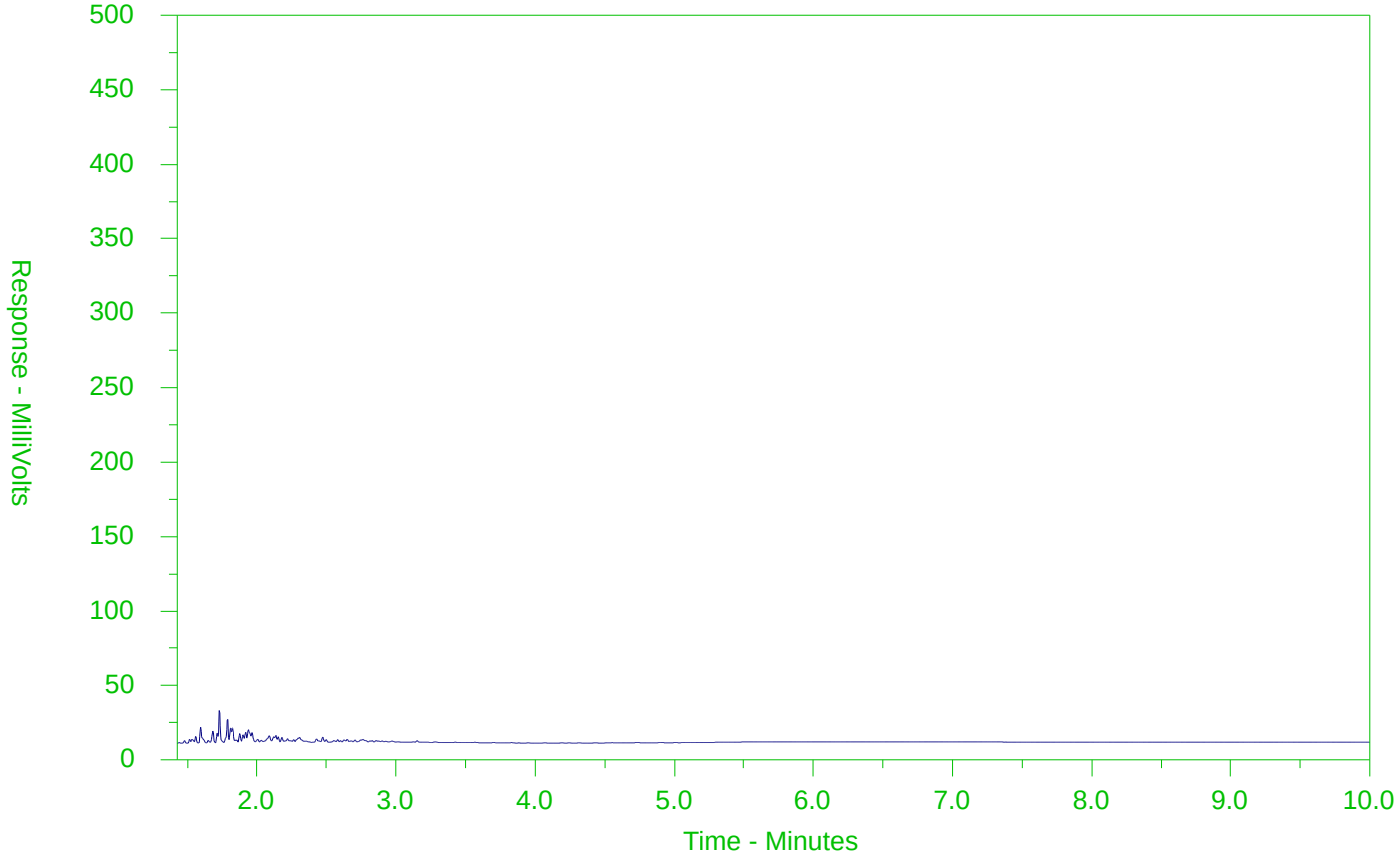
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2209758-14
Client Sample ID: DUP1



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2209758-COFC

COC Number: 17 - 12122018

Report To	Contact and company name below will appear on the final report
Company:	CH2M HILL
Contact:	Michael Shiry
Phone:	
	Company address below will appear on the final report
Street:	72 Victoria Street S, Suite 300
City/Province:	Kitchener, Ontario
Postal Code:	N2G 4Y9
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	CH2M HILL
Contact:	Account Payables

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax michael.shiry@jacobs.com
Email 2 ed.taves@jacobs.com
Email 3

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax
Email 2

Project Information

ALS Account # / Quote #: Q62156
Job #: 694757
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2209758-12C
ALS Contact: Sampler: V. Peters

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
4 day [P4-20%]	☐	1 Business day [E1 - 100%]	☐
3 day [P3-25%]	☐	Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)]	☐
2 day [P2-50%]	☐		

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	O. Reg 153/04 Hydride Forming Metals	O. Reg. 153/04 Metals Only	PAHs	PHCs	VOCs	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
12	MW18-134S	12-12-18	11:15	water					X			2
13	MW18-134D	12-12-18	10:45	water					X			2
14	DUP1	12-11-18	—	water		X	X	X	X			13
15	DUP2	12-12-18	—	water								2
16	TRIP BLANK	—	—	water								

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO
Are samples for human consumption/ use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☑ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C		
				4.1°C		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: V. Peters	Date: 12/12/2018	Time: 4:50 pm	Received by:	Date:	Time:	Received by:	Date: 12/Dec/2018	Time: 16:50

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY SEPT 2017 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

SIF.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2209758-COFC

COC Number: 17 - 12122018

Report To	Contact and company name below will appear on the final report
Company:	CH2M HILL
Contact:	Michael Shiry
Phone:	
	Company address below will appear on the final report
Street:	72 Victoria Street S, Suite 300
City/Province:	Kitchener, Ontario
Postal Code:	N2G 4Y9
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	CH2M HILL
Contact:	Account Payables

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax michael.shiry@jacobs.com
Email 2 ed.taves@jacobs.com
Email 3

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax
Email 2

Project Information

ALS Account # / Quote #: Q62156
Job #: 694757
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2209758 12C
ALS Contact: Sampler: V. Peters

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐; 3 day [P3-25%] ☐; 2 day [P2-50%] ☐
EMERGENCY: 1 Business day [E1 - 100%] ☐; Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	O. Reg 153/04 Hydride Forming Metals (F)	O. Reg 153/04 Metals Only	PAHs (P)	PHCs (P)	VOCs (P)	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
1	MW18-112D	12-10-18	9:40	water					X			2
2	MW18-114D	12-10-18	12:35	water	X							1
3	MW18-113D	12-10-18	13:54	water	X							1
4	MW18-122G	12-10-18	16:10	water					X			2
5	MW18-119D	12-10-18	17:25	water					X			2
6	MW18-113D	12-11-18	8:40	water					X			2
7	MW18-135D	12-11-18	10:30	water			X	X	X			8
8	MW18-114D	12-11-18	13:10	water					X			2
9	MW18-136D	12-11-18	15:00	water					X			2
10	MW18-136G	12-11-18	14:35	water					X			2
11	MW18-105G	12-11-18	16:05	water					X			2
12	MW18-135S	12-11-18	17:15	water		X	X	X	X			13

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO
Are samples for human consumption/ use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☑ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
			4.1°C		

SHIPMENT RELEASE (client use)

Released by: V. Peters Vicki Peters 12/12/2018 Time: 4:50 pm

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by: Date: 12/Dec/2018 Time: 16:55

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY

SEPT 2017 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

SIF

CH2M HILL CANADA LIMITED
ATTN: AMY CASEY
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 17-DEC-18
Report Date: 20-DEC-18 13:53 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2211509

Project P.O. #: NOT SUBMITTED
Job Reference: 694757
C of C Numbers: 17-625974
Legal Site Desc:

Mathy Mahadeva
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2211509-1 MW18-113D Sampled By: CLIENT on 17-DEC-18 @ 15:00 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					18-DEC-18	R4398911
Antimony (Sb)-Dissolved	0.00042		0.00010	mg/L	18-DEC-18	18-DEC-18	R4399948
Arsenic (As)-Dissolved	0.0171		0.00010	mg/L	18-DEC-18	18-DEC-18	R4399948
Selenium (Se)-Dissolved	0.000115		0.000050	mg/L	18-DEC-18	18-DEC-18	R4399948

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
MET-D-CCMS-WT	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020A (mod)

Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

17-625974

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2211509 Report Date: 20-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: AMY CASEY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WT	**Water**							
Batch R4399948								
WG2955942-4 DUP		**WG2955942-3**						
Antimony (Sb)-Dissolved		0.00022	0.00021		mg/L	1.1	20	18-DEC-18
Arsenic (As)-Dissolved		0.00025	0.00026		mg/L	2.3	20	18-DEC-18
Selenium (Se)-Dissolved		<0.000050	0.000065	RPD-NA	mg/L	N/A	20	18-DEC-18
WG2955942-2 LCS								
Antimony (Sb)-Dissolved			100.9		%		80-120	18-DEC-18
Arsenic (As)-Dissolved			100.9		%		80-120	18-DEC-18
Selenium (Se)-Dissolved			97.8		%		80-120	18-DEC-18
WG2955942-1 MB								
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	18-DEC-18
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	18-DEC-18
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	18-DEC-18
WG2955942-5 MS		**WG2955942-6**						
Antimony (Sb)-Dissolved			103.0		%		70-130	18-DEC-18
Arsenic (As)-Dissolved			104.5		%		70-130	18-DEC-18
Selenium (Se)-Dissolved			108.6		%		70-130	18-DEC-18

Quality Control Report

Workorder: L2211509 Report Date: 20-DEC-18

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9
Contact: AMY CASEY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2211509-COFC

COC Number: 17 - 625974

Page of

Report To	Contact and company name below will appear on the final report	Report For...		Below - Contact your AM to confirm all E&P TATs (surcharges may apply)
Company:	Jacobs	Select Report Format: ☐ PDF ☒ EXCEL ☐ EDD (DIGITAL)		Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply
Contact:	Amy Casey	Quality Control (QC) Report with Report ☐ YES ☐ NO		PRIORITY (Business Days): 4 day [P4-20%] ☐; 3 day [P3-25%] ☐; 2 day [P2-50%] ☐
Phone:	519 803 2283	☐ Compare Results to Criteria on Report - provide details below if box checked		EMERGENCY: 1 Business day [E-100%] ☐; Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] ☐
	Company address below will appear on the final report	Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX		
Street:	72 Victoria St	Email 1 or Fax amy.casey@jacobs.com		Date and Time Required for all E&P TATs: EOD Dec 21, 2018
City/Province:	Kitchener, ON	Email 2 jagatek		For tests that can not be performed according to the service level selected, you will be contacted.
Postal Code:		Email 3 katherine.appleby@jacobs.com		
Invoice To	Same as Report To ☒ YES ☐ NO	Invoice Distribution		Analysis Request
	Copy of Invoice with Report ☐ YES ☐ NO	Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below
Company:		Email 1 or Fax		
Contact:		Email 2		

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:		AFE/Cost Center:	PO#
Job #: 694757		Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (lab use only): L2211509		ALS Contact:	Sampler:

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	O.Reg 153 Hydride Arsenic (SS As, Se) Field Filtered	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
	MW 113D	17-12-18	15:00	W	X			1

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☒ NO	
Are samples for human consumption/ use? ☐ YES ☐ NO	

SAMPLE CONDITION AS RECEIVED (lab use only)			
Frozen ☐	SIF Observations	Yes ☐	No ☐
Ice Packs ☐ Ice Cubes ☒	Custody seal intact	Yes ☐	No ☐
Cooling Initiated ☐			
INITIAL COOLER TEMPERATURES °C		FINAL COOLER TEMPERATURES °C	
		6.8	

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: A. Casey	Date: 12/17/18	Time:	Received by:	Date:	Time:	Received by:	Date: Dec 17/2018	Time: 5:20

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JULY 2017 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

CH2M HILL Canada Ltd.
ATTN: MICHAEL SHIRY
245 CONSUMERS ROAD, SUITE 400
TORONTO ON M2J 1R3

Date Received: 21-DEC-18
Report Date: 28-DEC-18 11:47 (MT)
Version: FINAL

Client Phone: 416-499-0090

Certificate of Analysis

Lab Work Order #: L2213740

Project P.O. #: NOT SUBMITTED
Job Reference: 694757
C of C Numbers: 17-641726
Legal Site Desc:

Mathy Mahadeva
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2213740-1 TRIP BLANK Sampled By: AC on 21-DEC-18 Matrix: WATER							
Volatile Organic Compounds							
Acetone	<30		30	ug/L		24-DEC-18	R4413254
Benzene	<0.50		0.50	ug/L		24-DEC-18	R4413254
Bromodichloromethane	<2.0		2.0	ug/L		24-DEC-18	R4413254
Bromoform	<5.0		5.0	ug/L		24-DEC-18	R4413254
Bromomethane	<0.50		0.50	ug/L		24-DEC-18	R4413254
Carbon tetrachloride	<0.20		0.20	ug/L		24-DEC-18	R4413254
Chlorobenzene	<0.50		0.50	ug/L		24-DEC-18	R4413254
Dibromochloromethane	<2.0		2.0	ug/L		24-DEC-18	R4413254
Chloroform	<1.0		1.0	ug/L		24-DEC-18	R4413254
1,2-Dibromoethane	<0.20		0.20	ug/L		24-DEC-18	R4413254
1,2-Dichlorobenzene	<0.50		0.50	ug/L		24-DEC-18	R4413254
1,3-Dichlorobenzene	<0.50		0.50	ug/L		24-DEC-18	R4413254
1,4-Dichlorobenzene	<0.50		0.50	ug/L		24-DEC-18	R4413254
Dichlorodifluoromethane	<2.0		2.0	ug/L		24-DEC-18	R4413254
1,1-Dichloroethane	<0.50		0.50	ug/L		24-DEC-18	R4413254
1,2-Dichloroethane	<0.50		0.50	ug/L		24-DEC-18	R4413254
1,1-Dichloroethylene	<0.50		0.50	ug/L		24-DEC-18	R4413254
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		24-DEC-18	R4413254
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		24-DEC-18	R4413254
Methylene Chloride	<5.0		5.0	ug/L		24-DEC-18	R4413254
1,2-Dichloropropane	<0.50		0.50	ug/L		24-DEC-18	R4413254
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		24-DEC-18	R4413254
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		24-DEC-18	R4413254
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		24-DEC-18	
Ethylbenzene	<0.50		0.50	ug/L		24-DEC-18	R4413254
n-Hexane	<0.50		0.50	ug/L		24-DEC-18	R4413254
Methyl Ethyl Ketone	<20		20	ug/L		24-DEC-18	R4413254
Methyl Isobutyl Ketone	<20		20	ug/L		24-DEC-18	R4413254
MTBE	<2.0		2.0	ug/L		24-DEC-18	R4413254
Styrene	<0.50		0.50	ug/L		24-DEC-18	R4413254
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		24-DEC-18	R4413254
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		24-DEC-18	R4413254
Tetrachloroethylene	<0.50		0.50	ug/L		24-DEC-18	R4413254
Toluene	<0.50		0.50	ug/L		24-DEC-18	R4413254
1,1,1-Trichloroethane	<0.50		0.50	ug/L		24-DEC-18	R4413254
1,1,2-Trichloroethane	<0.50		0.50	ug/L		24-DEC-18	R4413254
Trichloroethylene	<0.50		0.50	ug/L		24-DEC-18	R4413254
Trichlorofluoromethane	<5.0		5.0	ug/L		24-DEC-18	R4413254
Vinyl chloride	<0.50		0.50	ug/L		24-DEC-18	R4413254
o-Xylene	<0.30		0.30	ug/L		24-DEC-18	R4413254
m+p-Xylenes	<0.40		0.40	ug/L		24-DEC-18	R4413254

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2213740-1 TRIP BLANK Sampled By: AC on 21-DEC-18 Matrix: WATER							
Volatile Organic Compounds							
Xylenes (Total)	<0.50		0.50	ug/L		24-DEC-18	
Surrogate: 4-Bromofluorobenzene	104.2		70-130	%		24-DEC-18	R4413254
Surrogate: 1,4-Difluorobenzene	95.3		70-130	%		24-DEC-18	R4413254
L2213740-2 MW17-102D Sampled By: AC on 21-DEC-18 @ 09:05 Matrix: WATER							
Volatile Organic Compounds							
Benzene	1.44		0.50	ug/L		24-DEC-18	R4413187
Ethylbenzene	<0.50		0.50	ug/L		24-DEC-18	R4413187
Toluene	<0.50		0.50	ug/L		24-DEC-18	R4413187
o-Xylene	<0.30		0.30	ug/L		24-DEC-18	R4413187
m+p-Xylenes	<0.40		0.40	ug/L		24-DEC-18	R4413187
Xylenes (Total)	<0.50		0.50	ug/L		24-DEC-18	
Surrogate: 4-Bromofluorobenzene	103.8		70-130	%		24-DEC-18	R4413187
Surrogate: 1,4-Difluorobenzene	100.7		70-130	%		24-DEC-18	R4413187
L2213740-3 MW18-113D Sampled By: AC on 21-DEC-18 @ 11:00 Matrix: WATER							
Volatile Organic Compounds							
Acetone	<30		30	ug/L		24-DEC-18	R4413254
Benzene	<0.50		0.50	ug/L		24-DEC-18	R4413254
Bromodichloromethane	<2.0		2.0	ug/L		24-DEC-18	R4413254
Bromoform	<5.0		5.0	ug/L		24-DEC-18	R4413254
Bromomethane	<0.50		0.50	ug/L		24-DEC-18	R4413254
Carbon tetrachloride	<0.20		0.20	ug/L		24-DEC-18	R4413254
Chlorobenzene	<0.50		0.50	ug/L		24-DEC-18	R4413254
Dibromochloromethane	<2.0		2.0	ug/L		24-DEC-18	R4413254
Chloroform	<1.0		1.0	ug/L		24-DEC-18	R4413254
1,2-Dibromoethane	<0.20		0.20	ug/L		24-DEC-18	R4413254
1,2-Dichlorobenzene	<0.50		0.50	ug/L		24-DEC-18	R4413254
1,3-Dichlorobenzene	<0.50		0.50	ug/L		24-DEC-18	R4413254
1,4-Dichlorobenzene	<0.50		0.50	ug/L		24-DEC-18	R4413254
Dichlorodifluoromethane	<2.0		2.0	ug/L		24-DEC-18	R4413254
1,1-Dichloroethane	<0.50		0.50	ug/L		24-DEC-18	R4413254
1,2-Dichloroethane	<0.50		0.50	ug/L		24-DEC-18	R4413254
1,1-Dichloroethylene	<0.50		0.50	ug/L		24-DEC-18	R4413254
cis-1,2-Dichloroethylene	1.75		0.50	ug/L		24-DEC-18	R4413254
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		24-DEC-18	R4413254
Methylene Chloride	<5.0		5.0	ug/L		24-DEC-18	R4413254
1,2-Dichloropropane	<0.50		0.50	ug/L		24-DEC-18	R4413254
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		24-DEC-18	R4413254
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		24-DEC-18	R4413254

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2213740-3 MW18-113D Sampled By: AC on 21-DEC-18 @ 11:00 Matrix: WATER							
Volatile Organic Compounds							
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		24-DEC-18	
Ethylbenzene	<0.50		0.50	ug/L		24-DEC-18	R4413254
n-Hexane	<0.50		0.50	ug/L		24-DEC-18	R4413254
Methyl Ethyl Ketone	<20		20	ug/L		24-DEC-18	R4413254
Methyl Isobutyl Ketone	<20		20	ug/L		24-DEC-18	R4413254
MTBE	<2.0		2.0	ug/L		24-DEC-18	R4413254
Styrene	<0.50		0.50	ug/L		24-DEC-18	R4413254
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		24-DEC-18	R4413254
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		24-DEC-18	R4413254
Tetrachloroethylene	<0.50		0.50	ug/L		24-DEC-18	R4413254
Toluene	<0.50		0.50	ug/L		24-DEC-18	R4413254
1,1,1-Trichloroethane	<0.50		0.50	ug/L		24-DEC-18	R4413254
1,1,2-Trichloroethane	<0.50		0.50	ug/L		24-DEC-18	R4413254
Trichloroethylene	<0.50		0.50	ug/L		24-DEC-18	R4413254
Trichlorofluoromethane	<5.0		5.0	ug/L		24-DEC-18	R4413254
Vinyl chloride	<0.50		0.50	ug/L		24-DEC-18	R4413254
o-Xylene	<0.30		0.30	ug/L		24-DEC-18	R4413254
m+p-Xylenes	<0.40		0.40	ug/L		24-DEC-18	R4413254
Xylenes (Total)	<0.50		0.50	ug/L		24-DEC-18	
Surrogate: 4-Bromofluorobenzene	102.9		70-130	%		24-DEC-18	R4413254
Surrogate: 1,4-Difluorobenzene	95.6		70-130	%		24-DEC-18	R4413254
L2213740-4 MW18-114D Sampled By: AC on 21-DEC-18 @ 10:20 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					24-DEC-18	R4412393
Antimony (Sb)-Dissolved	1.54		0.10	ug/L	24-DEC-18	24-DEC-18	R4414508
Arsenic (As)-Dissolved	24.8		0.10	ug/L	24-DEC-18	24-DEC-18	R4414508
Barium (Ba)-Dissolved	48.0		0.10	ug/L	24-DEC-18	24-DEC-18	R4414508
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	24-DEC-18	24-DEC-18	R4414508
Boron (B)-Dissolved	89		10	ug/L	24-DEC-18	24-DEC-18	R4414508
Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	24-DEC-18	24-DEC-18	R4414508
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	24-DEC-18	24-DEC-18	R4414508
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	24-DEC-18	24-DEC-18	R4414508
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	24-DEC-18	24-DEC-18	R4414508
Lead (Pb)-Dissolved	0.343		0.050	ug/L	24-DEC-18	24-DEC-18	R4414508
Molybdenum (Mo)-Dissolved	43.1		0.050	ug/L	24-DEC-18	24-DEC-18	R4414508
Nickel (Ni)-Dissolved	2.70		0.50	ug/L	24-DEC-18	24-DEC-18	R4414508
Selenium (Se)-Dissolved	0.177		0.050	ug/L	24-DEC-18	24-DEC-18	R4414508
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	24-DEC-18	24-DEC-18	R4414508
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	24-DEC-18	24-DEC-18	R4414508
Uranium (U)-Dissolved	5.35		0.010	ug/L	24-DEC-18	24-DEC-18	R4414508

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2213740-4 MW18-114D Sampled By: AC on 21-DEC-18 @ 10:20 Matrix: WATER							
Dissolved Metals							
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	24-DEC-18	24-DEC-18	R4414508
Zinc (Zn)-Dissolved	13.6		1.0	ug/L	24-DEC-18	24-DEC-18	R4414508

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L2213740-4
Matrix Spike	Boron (B)-Dissolved	MS-B	L2213740-4
Matrix Spike	Uranium (U)-Dissolved	MS-B	L2213740-4

Sample Parameter Qualifier key listed:

Qualifier	Description
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTX-511-HS-WT	Water	BTEX by Headspace	SW846 8260 (511)

BTX is determined by analyzing by headspace-GC/MS.

MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8

The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

VOC-1,3-DCP-CALC-WT	Water	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Water	VOC by GCMS HS O.Reg 153/04 (July 2011)	SW846 8260

Liquid samples are analyzed by headspace GC/MSD.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

17-641726

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2213740 Report Date: 28-DEC-18

Client: CH2M HILL Canada Ltd.
245 CONSUMERS ROAD, SUITE 400
TORONTO ON M2J 1R3

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTX-511-HS-WT	**Water**							
Batch R4413187								
WG2959685-4 DUP		**WG2959685-3**						
Benzene		1.44	1.42		ug/L	1.4	30	24-DEC-18
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	24-DEC-18
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	24-DEC-18
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	24-DEC-18
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	24-DEC-18
WG2959685-1 LCS								
Benzene			103.0		%		70-130	24-DEC-18
Ethylbenzene			101.8		%		70-130	24-DEC-18
m+p-Xylenes			101.1		%		70-130	24-DEC-18
o-Xylene			100.3		%		70-130	24-DEC-18
Toluene			102.8		%		70-130	24-DEC-18
WG2959685-2 MB								
Benzene			<0.50		ug/L		0.5	24-DEC-18
Ethylbenzene			<0.50		ug/L		0.5	24-DEC-18
m+p-Xylenes			<0.40		ug/L		0.4	24-DEC-18
o-Xylene			<0.30		ug/L		0.3	24-DEC-18
Toluene			<0.50		ug/L		0.5	24-DEC-18
Surrogate: 1,4-Difluorobenzene			101.3		%		70-130	24-DEC-18
Surrogate: 4-Bromofluorobenzene			101.7		%		70-130	24-DEC-18
WG2959685-5 MS		**WG2959685-3**						
Benzene			102.6		%		50-140	24-DEC-18
Ethylbenzene			101.1		%		50-140	24-DEC-18
m+p-Xylenes			100.5		%		50-140	24-DEC-18
o-Xylene			99.8		%		50-140	24-DEC-18
Toluene			102.7		%		50-140	24-DEC-18
MET-D-UG/L-MS-WT	**Water**							
Batch R4414508								
WG2960087-4 DUP		**WG2960087-3**						
Antimony (Sb)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	24-DEC-18
Arsenic (As)-Dissolved		0.61	0.61		ug/L	0.7	20	24-DEC-18
Barium (Ba)-Dissolved		61.4	60.6		ug/L	1.3	20	24-DEC-18
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	24-DEC-18
Boron (B)-Dissolved		68	68		ug/L	1.2	20	24-DEC-18
Cadmium (Cd)-Dissolved		0.126	0.130		ug/L	3.2	20	24-DEC-18

Quality Control Report

Workorder: L2213740 Report Date: 28-DEC-18

Client: CH2M HILL Canada Ltd.
245 CONSUMERS ROAD, SUITE 400
TORONTO ON M2J 1R3

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R4414508								
WG2960087-4 DUP		**WG2960087-3**						
Chromium (Cr)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	24-DEC-18
Cobalt (Co)-Dissolved		2.41	2.40		ug/L	0.7	20	24-DEC-18
Copper (Cu)-Dissolved		1.33	1.38		ug/L	4.2	20	24-DEC-18
Lead (Pb)-Dissolved		0.053	0.051		ug/L	3.1	20	24-DEC-18
Molybdenum (Mo)-Dissolved		3.42	3.35		ug/L	2.1	20	24-DEC-18
Nickel (Ni)-Dissolved		11.1	11.0		ug/L	1.3	20	24-DEC-18
Selenium (Se)-Dissolved		0.075	0.092	J	ug/L	0.017	0.1	24-DEC-18
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	24-DEC-18
Thallium (Tl)-Dissolved		0.039	0.036		ug/L	8.2	20	24-DEC-18
Uranium (U)-Dissolved		1.31	1.25		ug/L	4.8	20	24-DEC-18
Vanadium (V)-Dissolved		0.72	0.73		ug/L	1.4	20	24-DEC-18
Zinc (Zn)-Dissolved		4.8	5.1		ug/L	5.3	20	24-DEC-18
WG2960087-2 LCS								
Antimony (Sb)-Dissolved			96.8		%		80-120	24-DEC-18
Arsenic (As)-Dissolved			98.7		%		80-120	24-DEC-18
Barium (Ba)-Dissolved			97.7		%		80-120	24-DEC-18
Beryllium (Be)-Dissolved			99.6		%		80-120	24-DEC-18
Boron (B)-Dissolved			103.6		%		80-120	24-DEC-18
Cadmium (Cd)-Dissolved			100.2		%		80-120	24-DEC-18
Chromium (Cr)-Dissolved			98.9		%		80-120	24-DEC-18
Cobalt (Co)-Dissolved			96.3		%		80-120	24-DEC-18
Copper (Cu)-Dissolved			98.1		%		80-120	24-DEC-18
Lead (Pb)-Dissolved			101.7		%		80-120	24-DEC-18
Molybdenum (Mo)-Dissolved			105.5		%		80-120	24-DEC-18
Nickel (Ni)-Dissolved			97.3		%		80-120	24-DEC-18
Selenium (Se)-Dissolved			103.3		%		80-120	24-DEC-18
Silver (Ag)-Dissolved			103.3		%		80-120	24-DEC-18
Thallium (Tl)-Dissolved			97.9		%		80-120	24-DEC-18
Uranium (U)-Dissolved			101.5		%		80-120	24-DEC-18
Vanadium (V)-Dissolved			99.1		%		80-120	24-DEC-18
Zinc (Zn)-Dissolved			98.9		%		80-120	24-DEC-18
WG2960087-1 MB								
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	24-DEC-18
Arsenic (As)-Dissolved			<0.10				0.1	

Quality Control Report

Workorder: L2213740 Report Date: 28-DEC-18

Client: CH2M HILL Canada Ltd.
245 CONSUMERS ROAD, SUITE 400
TORONTO ON M2J 1R3

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch	**R4414508**							
WG2960087-1	**MB**							
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	24-DEC-18
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	24-DEC-18
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	24-DEC-18
Boron (B)-Dissolved			<10		ug/L		10	24-DEC-18
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	24-DEC-18
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	24-DEC-18
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	24-DEC-18
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	24-DEC-18
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	24-DEC-18
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	24-DEC-18
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	24-DEC-18
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	24-DEC-18
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	24-DEC-18
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	24-DEC-18
Uranium (U)-Dissolved			<0.010		ug/L		0.01	24-DEC-18
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	24-DEC-18
Zinc (Zn)-Dissolved			<1.0		ug/L		1	24-DEC-18
WG2960087-5	**MS**	**WG2960087-6**						
Antimony (Sb)-Dissolved			88.2		%		70-130	24-DEC-18
Arsenic (As)-Dissolved			92.2		%		70-130	24-DEC-18
Barium (Ba)-Dissolved			N/A	MS-B	%		-	24-DEC-18
Beryllium (Be)-Dissolved			93.9		%		70-130	24-DEC-18
Boron (B)-Dissolved			N/A	MS-B	%		-	24-DEC-18
Cadmium (Cd)-Dissolved			86.9		%		70-130	24-DEC-18
Chromium (Cr)-Dissolved			80.2		%		70-130	24-DEC-18
Lead (Pb)-Dissolved			90.8		%		70-130	24-DEC-18
Molybdenum (Mo)-Dissolved			81.2		%		70-130	24-DEC-18
Selenium (Se)-Dissolved			95.4		%		70-130	24-DEC-18
Silver (Ag)-Dissolved			88.1		%		70-130	24-DEC-18
Thallium (Tl)-Dissolved			93.6		%		70-130	24-DEC-18
Uranium (U)-Dissolved			N/A	MS-B	%		-	24-DEC-18
Vanadium (V)-Dissolved			84.8		%		70-130	24-DEC-18
VOC-511-HS-WT	**Water**							

Quality Control Report

Workorder: L2213740 Report Date: 28-DEC-18

Client: CH2M HILL Canada Ltd.
245 CONSUMERS ROAD, SUITE 400
TORONTO ON M2J 1R3

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4413254								
WG2955028-34 DUP		**WG2955028-33**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	24-DEC-18
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	24-DEC-18
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	24-DEC-18
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	24-DEC-18
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	24-DEC-18
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	24-DEC-18
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	24-DEC-18
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	24-DEC-18
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	24-DEC-18
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	24-DEC-18
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	24-DEC-18
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	24-DEC-18
Acetone		41	38		ug/L	6.9	30	24-DEC-18
Benzene		1.71	1.57		ug/L	8.5	30	24-DEC-18
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	24-DEC-18
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	24-DEC-18
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	24-DEC-18
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	24-DEC-18
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	24-DEC-18
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	24-DEC-18
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	24-DEC-18
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	24-DEC-18
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	24-DEC-18
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	24-DEC-18
Ethylbenzene		2.53	2.30		ug/L	9.5	30	24-DEC-18
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	24-DEC-18
m+p-Xylenes		23.2	21.3		ug/L	8.6	30	24-DEC-18
Methyl Ethyl Ketone		78	68		ug/L	13	30	24-DEC-18
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	24-DEC-18
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	24-DEC-18
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	24-DEC-18
o-Xylene		44.4	40.8		ug/L	8.5	30	24-DEC-18
Styrene		<0.50	<0.50		ug/L			24-DEC-18

Quality Control Report

Workorder: L2213740 Report Date: 28-DEC-18

Client: CH2M HILL Canada Ltd.
245 CONSUMERS ROAD, SUITE 400
TORONTO ON M2J 1R3

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4413254								
WG2955028-34 DUP		**WG2955028-33**						
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	24-DEC-18
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	24-DEC-18
Toluene		1.14	1.01		ug/L	12	30	24-DEC-18
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	24-DEC-18
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	24-DEC-18
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	24-DEC-18
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	24-DEC-18
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	24-DEC-18
WG2955028-31 LCS								
1,1,1,2-Tetrachloroethane			105.8		%		70-130	24-DEC-18
1,1,2,2-Tetrachloroethane			104.4		%		70-130	24-DEC-18
1,1,1-Trichloroethane			107.4		%		70-130	24-DEC-18
1,1,2-Trichloroethane			98.0		%		70-130	24-DEC-18
1,1-Dichloroethane			106.6		%		70-130	24-DEC-18
1,1-Dichloroethylene			108.2		%		70-130	24-DEC-18
1,2-Dibromoethane			95.3		%		70-130	24-DEC-18
1,2-Dichlorobenzene			107.4		%		70-130	24-DEC-18
1,2-Dichloroethane			98.2		%		70-130	24-DEC-18
1,2-Dichloropropane			99.5		%		70-130	24-DEC-18
1,3-Dichlorobenzene			113.3		%		70-130	24-DEC-18
1,4-Dichlorobenzene			112.6		%		70-130	24-DEC-18
Acetone			88.8		%		60-140	24-DEC-18
Benzene			107.2		%		70-130	24-DEC-18
Bromodichloromethane			100.6		%		70-130	24-DEC-18
Bromoform			97.7		%		70-130	24-DEC-18
Bromomethane			132.6		%		60-140	24-DEC-18
Carbon tetrachloride			107.3		%		70-130	24-DEC-18
Chlorobenzene			106.2		%		70-130	24-DEC-18
Chloroform			102.9		%		70-130	24-DEC-18
cis-1,2-Dichloroethylene			103.7		%		70-130	24-DEC-18
cis-1,3-Dichloropropene			100.9		%		70-130	24-DEC-18
Dibromochloromethane			94.8		%		70-130	24-DEC-18
Dichlorodifluoromethane			96.8		%		50-140	24-DEC-18

Quality Control Report

Workorder: L2213740 Report Date: 28-DEC-18

Client: CH2M HILL Canada Ltd.
245 CONSUMERS ROAD, SUITE 400
TORONTO ON M2J 1R3

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4413254								
WG2955028-31 LCS								
Ethylbenzene			109.6		%		70-130	24-DEC-18
n-Hexane			109.7		%		70-130	24-DEC-18
m+p-Xylenes			108.8		%		70-130	24-DEC-18
Methyl Ethyl Ketone			85.8		%		60-140	24-DEC-18
Methyl Isobutyl Ketone			79.1		%		60-140	24-DEC-18
Methylene Chloride			101.4		%		70-130	24-DEC-18
MTBE			108.8		%		70-130	24-DEC-18
o-Xylene			104.8		%		70-130	24-DEC-18
Styrene			106.4		%		70-130	24-DEC-18
Tetrachloroethylene			117.8		%		70-130	24-DEC-18
Toluene			109.1		%		70-130	24-DEC-18
trans-1,2-Dichloroethylene			110.1		%		70-130	24-DEC-18
trans-1,3-Dichloropropene			98.0		%		70-130	24-DEC-18
Trichloroethylene			112.7		%		70-130	24-DEC-18
Trichlorofluoromethane			118.6		%		60-140	24-DEC-18
Vinyl chloride			90.2		%		60-140	24-DEC-18
WG2955028-32 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	24-DEC-18
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	24-DEC-18
1,1,1-Trichloroethane			<0.50		ug/L		0.5	24-DEC-18
1,1,2-Trichloroethane			<0.50		ug/L		0.5	24-DEC-18
1,1-Dichloroethane			<0.50		ug/L		0.5	24-DEC-18
1,1-Dichloroethylene			<0.50		ug/L		0.5	24-DEC-18
1,2-Dibromoethane			<0.20		ug/L		0.2	24-DEC-18
1,2-Dichlorobenzene			<0.50		ug/L		0.5	24-DEC-18
1,2-Dichloroethane			<0.50		ug/L		0.5	24-DEC-18
1,2-Dichloropropane			<0.50		ug/L		0.5	24-DEC-18
1,3-Dichlorobenzene			<0.50		ug/L		0.5	24-DEC-18
1,4-Dichlorobenzene			<0.50		ug/L		0.5	24-DEC-18
Acetone			<30		ug/L		30	24-DEC-18
Benzene			<0.50		ug/L		0.5	24-DEC-18
Bromodichloromethane			<2.0		ug/L		2	24-DEC-18
Bromoform			<5.0		ug/L		5	24-DEC-18
Bromomethane			<0.50		ug/L		0.5	24-DEC-18

Quality Control Report

Workorder: L2213740 Report Date: 28-DEC-18

Client: CH2M HILL Canada Ltd.
245 CONSUMERS ROAD, SUITE 400
TORONTO ON M2J 1R3

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4413254								
WG2955028-32 MB								
Carbon tetrachloride			<0.20		ug/L		0.2	24-DEC-18
Chlorobenzene			<0.50		ug/L		0.5	24-DEC-18
Chloroform			<1.0		ug/L		1	24-DEC-18
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	24-DEC-18
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	24-DEC-18
Dibromochloromethane			<2.0		ug/L		2	24-DEC-18
Dichlorodifluoromethane			<2.0		ug/L		2	24-DEC-18
Ethylbenzene			<0.50		ug/L		0.5	24-DEC-18
n-Hexane			<0.50		ug/L		0.5	24-DEC-18
m+p-Xylenes			<0.40		ug/L		0.4	24-DEC-18
Methyl Ethyl Ketone			<20		ug/L		20	24-DEC-18
Methyl Isobutyl Ketone			<20		ug/L		20	24-DEC-18
Methylene Chloride			<5.0		ug/L		5	24-DEC-18
MTBE			<2.0		ug/L		2	24-DEC-18
o-Xylene			<0.30		ug/L		0.3	24-DEC-18
Styrene			<0.50		ug/L		0.5	24-DEC-18
Tetrachloroethylene			<0.50		ug/L		0.5	24-DEC-18
Toluene			<0.50		ug/L		0.5	24-DEC-18
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	24-DEC-18
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	24-DEC-18
Trichloroethylene			<0.50		ug/L		0.5	24-DEC-18
Trichlorofluoromethane			<5.0		ug/L		5	24-DEC-18
Vinyl chloride			<0.50		ug/L		0.5	24-DEC-18
Surrogate: 1,4-Difluorobenzene			96.2		%		70-130	24-DEC-18
Surrogate: 4-Bromofluorobenzene			104.5		%		70-130	24-DEC-18
WG2955028-35 MS		**WG2955028-33**						
1,1,1,2-Tetrachloroethane			106.0		%		50-140	24-DEC-18
1,1,2,2-Tetrachloroethane			106.9		%		50-140	24-DEC-18
1,1,1-Trichloroethane			106.7		%		50-140	24-DEC-18
1,1,2-Trichloroethane			98.3		%		50-140	24-DEC-18
1,1-Dichloroethane			106.3		%		50-140	24-DEC-18
1,1-Dichloroethylene			104.4		%		50-140	24-DEC-18
1,2-Dibromoethane			94.0		%		50-140	24-DEC-18
1,2-Dichlorobenzene			107.6		%		50-140	24-DEC-18

Quality Control Report

Workorder: L2213740 Report Date: 28-DEC-18

Client: CH2M HILL Canada Ltd.
245 CONSUMERS ROAD, SUITE 400
TORONTO ON M2J 1R3

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R4413254								
WG2955028-35 MS		**WG2955028-33**						
1,2-Dichloroethane			99.3		%		50-140	24-DEC-18
1,2-Dichloropropane			100.8		%		50-140	24-DEC-18
1,3-Dichlorobenzene			112.8		%		50-140	24-DEC-18
1,4-Dichlorobenzene			111.3		%		50-140	24-DEC-18
Acetone			82.7		%		50-140	24-DEC-18
Benzene			107.1		%		50-140	24-DEC-18
Bromodichloromethane			100.3		%		50-140	24-DEC-18
Bromoform			97.0		%		50-140	24-DEC-18
Bromomethane			128.3		%		50-140	24-DEC-18
Carbon tetrachloride			106.2		%		50-140	24-DEC-18
Chlorobenzene			105.8		%		50-140	24-DEC-18
Chloroform			103.4		%		50-140	24-DEC-18
cis-1,2-Dichloroethylene			103.9		%		50-140	24-DEC-18
cis-1,3-Dichloropropene			98.2		%		50-140	24-DEC-18
Dibromochloromethane			93.6		%		50-140	24-DEC-18
Dichlorodifluoromethane			88.2		%		50-140	24-DEC-18
Ethylbenzene			108.7		%		50-140	24-DEC-18
n-Hexane			103.3		%		50-140	24-DEC-18
m+p-Xylenes			107.6		%		50-140	24-DEC-18
Methyl Ethyl Ketone			62.1		%		50-140	24-DEC-18
Methyl Isobutyl Ketone			77.3		%		50-140	24-DEC-18
Methylene Chloride			100.6		%		50-140	24-DEC-18
MTBE			108.6		%		50-140	24-DEC-18
o-Xylene			104.3		%		50-140	24-DEC-18
Styrene			105.4		%		50-140	24-DEC-18
Tetrachloroethylene			115.0		%		50-140	24-DEC-18
Toluene			108.4		%		50-140	24-DEC-18
trans-1,2-Dichloroethylene			107.4		%		50-140	24-DEC-18
trans-1,3-Dichloropropene			98.0		%		50-140	24-DEC-18
Trichloroethylene			111.3		%		50-140	24-DEC-18
Trichlorofluoromethane			113.9		%		50-140	24-DEC-18
Vinyl chloride			85.7		%		50-140	24-DEC-18

Quality Control Report

Workorder: L2213740 Report Date: 28-DEC-18

Client: CH2M HILL Canada Ltd.
245 CONSUMERS ROAD, SUITE 400
TORONTO ON M2J 1R3
Contact: MICHAEL SHIRY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

* Canada Toll Free: 1 800 668 9878

L2213740-COFC

COC Number: 17 - 641726

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	CH2M HILL
Contact:	~~Accounts Payable~~ Michael Shiry.
Phone:	416-499-0090
	Company address below will appear on the final report
Street:	245 Consumers Rd.
City/Province:	Toronto / ON
Postal Code:	M2J 1R3
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	CH2M HILL
Contact:	Accounts Payable

Report Format / Distribution

Select Report Format: ☒ PDF ☒ EXCEL ☒ EDD (DIGITAL)
Quality Control (QC) Report with Report ☒ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: Michael.Shiry@jacobs.com
Email 2: Ed.Taves@jacobs.com
Email 3:

Invoice Distribution

Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: Accounts Payable
Email 2:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐; 3 day [P3-25%] ☐; 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E-100%] ☐; Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #:
Job #: 694757
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2213740
ALS Contact: Mathy.
Sampler: A. Canal.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Metal hydrides only	VOCs	BTEX	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
	Trip Blank	—	—	Water		X				2
	MW17-1020	21-12-18	09:05	↓			X			2
	MW18-1130	21-12-18	11:48	↓		X				2
	MW18-1140	21-12-18	10:20	↓	X					1

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☒ NO
Are samples for human consumption/ use? ☐ YES ☒ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
9.3				7.3			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Andrew Canal	Date: 2018-12-21	Time:	Received by:	Date: Dec 21/18	Time: 11:19	Received by: SB	Date: 12/21/18	Time: 17:15

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JULY 2017 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

CH2M HILL CANADA LIMITED
ATTN: ED TAVES
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 27-MAR-19
Report Date: 01-APR-19 14:38 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2250326

Project P.O. #: NOT SUBMITTED
Job Reference: 694757CH.01.04.02.05
C of C Numbers: 17-623248, 17-728869
Legal Site Desc:

Mathy Mahadeva
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2250326-1 OW25 Sampled By: J. GOWING on 27-MAR-19 @ 09:45 Matrix: WATER							
Hydrocarbons							
F2 (C10-C16)	<100		100	ug/L	29-MAR-19	29-MAR-19	R4588031
F2-Naphth	<100		100	ug/L		01-APR-19	
F3 (C16-C34)	<250		250	ug/L	29-MAR-19	29-MAR-19	R4588031
F3-PAH	<250		250	ug/L		01-APR-19	
F4 (C34-C50)	<250		250	ug/L	29-MAR-19	29-MAR-19	R4588031
Chrom. to baseline at nC50	YES				29-MAR-19	29-MAR-19	R4588031
Surrogate: 2-Bromobenzotrifluoride	92.1		60-140	%	29-MAR-19	29-MAR-19	R4588031
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Acenaphthylene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Anthracene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Benzo(a)anthracene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Benzo(a)pyrene	<0.010		0.010	ug/L	29-MAR-19	01-APR-19	R4587095
Benzo(b)fluoranthene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Benzo(k)fluoranthene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Chrysene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Fluoranthene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Fluorene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		01-APR-19	
1-Methylnaphthalene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
2-Methylnaphthalene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Naphthalene	<0.050		0.050	ug/L	29-MAR-19	01-APR-19	R4587095
Phenanthrene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Pyrene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Surrogate: d10-Acenaphthene	113.7		60-140	%	29-MAR-19	01-APR-19	R4587095
Surrogate: d12-Chrysene	114.7		60-140	%	29-MAR-19	01-APR-19	R4587095
Surrogate: d8-Naphthalene	116.0		60-140	%	29-MAR-19	01-APR-19	R4587095
Surrogate: d10-Phenanthrene	114.4		60-140	%	29-MAR-19	01-APR-19	R4587095
Semi-Volatile Organics							
Benzo(a)pyrene-lab filtered	<0.010		0.010	ug/L	28-MAR-19	01-APR-19	R4586913
Surrogate: d12-Chrysene	108.2		60-140	%	28-MAR-19	01-APR-19	R4586913
L2250326-2 OW07-32 Sampled By: J. GOWING on 27-MAR-19 @ 10:55 Matrix: WATER							
Polychlorinated Biphenyls							
Aroclor 1242	<0.020		0.020	ug/L	29-MAR-19	29-MAR-19	R4588077
Aroclor 1248	<0.020		0.020	ug/L	29-MAR-19	29-MAR-19	R4588077
Aroclor 1254	<0.020		0.020	ug/L	29-MAR-19	29-MAR-19	R4588077
Aroclor 1260	<0.020		0.020	ug/L	29-MAR-19	29-MAR-19	R4588077

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2250326-2 OW07-32 Sampled By: J. GOWING on 27-MAR-19 @ 10:55 Matrix: WATER							
Polychlorinated Biphenyls							
Total PCBs	<0.040		0.040	ug/L	29-MAR-19	29-MAR-19	R4588077
Surrogate: 2-fluorobiphenyl	78.5		50-150	%	29-MAR-19	29-MAR-19	R4588077
L2250326-3 OW07-37 Sampled By: J. GOWING on 27-MAR-19 @ 11:55 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					29-MAR-19	R4586725
Antimony (Sb)-Dissolved	0.42		0.10	ug/L	29-MAR-19	01-APR-19	R4587922
Arsenic (As)-Dissolved	0.24		0.10	ug/L	29-MAR-19	01-APR-19	R4587922
Barium (Ba)-Dissolved	27.4		0.10	ug/L	29-MAR-19	01-APR-19	R4587922
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	29-MAR-19	01-APR-19	R4587922
Boron (B)-Dissolved	46		10	ug/L	29-MAR-19	01-APR-19	R4587922
Cadmium (Cd)-Dissolved	0.842		0.010	ug/L	29-MAR-19	01-APR-19	R4587922
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	29-MAR-19	01-APR-19	R4587922
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	29-MAR-19	01-APR-19	R4587922
Copper (Cu)-Dissolved	9.99		0.20	ug/L	29-MAR-19	01-APR-19	R4587922
Lead (Pb)-Dissolved	0.899		0.050	ug/L	29-MAR-19	01-APR-19	R4587922
Molybdenum (Mo)-Dissolved	2.85		0.050	ug/L	29-MAR-19	01-APR-19	R4587922
Nickel (Ni)-Dissolved	4.86		0.50	ug/L	29-MAR-19	01-APR-19	R4587922
Selenium (Se)-Dissolved	3.73		0.050	ug/L	29-MAR-19	01-APR-19	R4587922
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	29-MAR-19	01-APR-19	R4587922
Sodium (Na)-Dissolved	104000	DLHC	500	ug/L	29-MAR-19	29-MAR-19	R4587922
Thallium (Tl)-Dissolved	0.083		0.010	ug/L	29-MAR-19	01-APR-19	R4587922
Uranium (U)-Dissolved	5.35		0.010	ug/L	29-MAR-19	01-APR-19	R4587922
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	29-MAR-19	01-APR-19	R4587922
Zinc (Zn)-Dissolved	744		1.0	ug/L	29-MAR-19	01-APR-19	R4587922
L2250326-4 MW18-114D Sampled By: J. GOWING on 27-MAR-19 @ 13:40 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					29-MAR-19	R4586725
Antimony (Sb)-Dissolved	0.12		0.10	ug/L	29-MAR-19	01-APR-19	R4587922
Arsenic (As)-Dissolved	9.11		0.10	ug/L	29-MAR-19	01-APR-19	R4587922
Selenium (Se)-Dissolved	0.254		0.050	ug/L	29-MAR-19	01-APR-19	R4587922
L2250326-5 OW03-1 Sampled By: J. GOWING on 27-MAR-19 @ 14:55 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Acenaphthylene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Anthracene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Benzo(a)anthracene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2250326-5 OW03-1 Sampled By: J. GOWING on 27-MAR-19 @ 14:55 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Benzo(a)pyrene	<0.010		0.010	ug/L	29-MAR-19	01-APR-19	R4587095
Benzo(b)fluoranthene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Benzo(k)fluoranthene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Chrysene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Fluoranthene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Fluorene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
1+2-Methylnaphthalenes	0.032		0.028	ug/L		01-APR-19	
1-Methylnaphthalene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
2-Methylnaphthalene	0.032		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Naphthalene	0.066		0.050	ug/L	29-MAR-19	01-APR-19	R4587095
Phenanthrene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Pyrene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Surrogate: d10-Acenaphthene	90.3		60-140	%	29-MAR-19	01-APR-19	R4587095
Surrogate: d12-Chrysene	95.1		60-140	%	29-MAR-19	01-APR-19	R4587095
Surrogate: d8-Naphthalene	92.1		60-140	%	29-MAR-19	01-APR-19	R4587095
Surrogate: d10-Phenanthrene	91.9		60-140	%	29-MAR-19	01-APR-19	R4587095
Semi-Volatile Organics							
Benzo(a)pyrene-lab filtered	<0.010		0.010	ug/L	28-MAR-19	01-APR-19	R4586913
Surrogate: d12-Chrysene	100.0		60-140	%	28-MAR-19	01-APR-19	R4586913
L2250326-6 OW23D Sampled By: J. GOWING on 27-MAR-19 @ 15:55 Matrix: WATER							
Hydrocarbons							
F2 (C10-C16)	<100		100	ug/L	29-MAR-19	29-MAR-19	R4588031
F3 (C16-C34)	<250		250	ug/L	29-MAR-19	29-MAR-19	R4588031
F4 (C34-C50)	<250		250	ug/L	29-MAR-19	29-MAR-19	R4588031
Chrom. to baseline at nC50	YES				29-MAR-19	29-MAR-19	R4588031
Surrogate: 2-Bromobenzotrifluoride	98.9		60-140	%	29-MAR-19	29-MAR-19	R4588031
L2250326-7 OW24D Sampled By: J. GOWING on 27-MAR-19 @ 17:05 Matrix: WATER							
Hydrocarbons							
F1 (C6-C10)	258		25	ug/L		29-MAR-19	R4586976
Surrogate: 3,4-Dichlorotoluene	101.3		60-140	%		29-MAR-19	R4586976
L2250326-8 GW-DUP1 Sampled By: J. GOWING on 27-MAR-19 Matrix: WATER							
Hydrocarbons							
F2 (C10-C16)	<100		100	ug/L	29-MAR-19	29-MAR-19	R4588031
F2-Naphth	<100		100	ug/L		01-APR-19	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2250326-8 GW-DUP1 Sampled By: J. GOWING on 27-MAR-19 Matrix: WATER							
Hydrocarbons							
F3 (C16-C34)	<250		250	ug/L	29-MAR-19	29-MAR-19	R4588031
F3-PAH	<250		250	ug/L		01-APR-19	
F4 (C34-C50)	<250		250	ug/L	29-MAR-19	29-MAR-19	R4588031
Chrom. to baseline at nC50	YES				29-MAR-19	29-MAR-19	R4588031
Surrogate: 2-Bromobenzotrifluoride	88.3		60-140	%	29-MAR-19	29-MAR-19	R4588031
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Acenaphthylene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Anthracene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Benzo(a)anthracene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Benzo(a)pyrene	<0.010		0.010	ug/L	29-MAR-19	01-APR-19	R4587095
Benzo(b)fluoranthene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Benzo(k)fluoranthene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Chrysene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Fluoranthene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Fluorene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		01-APR-19	
1-Methylnaphthalene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
2-Methylnaphthalene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Naphthalene	<0.050		0.050	ug/L	29-MAR-19	01-APR-19	R4587095
Phenanthrene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Pyrene	<0.020		0.020	ug/L	29-MAR-19	01-APR-19	R4587095
Surrogate: d10-Acenaphthene	107.0		60-140	%	29-MAR-19	01-APR-19	R4587095
Surrogate: d12-Chrysene	107.7		60-140	%	29-MAR-19	01-APR-19	R4587095
Surrogate: d8-Naphthalene	108.4		60-140	%	29-MAR-19	01-APR-19	R4587095
Surrogate: d10-Phenanthrene	105.6		60-140	%	29-MAR-19	01-APR-19	R4587095
Semi-Volatile Organics							
Benzo(a)pyrene-lab filtered	<0.010		0.010	ug/L	28-MAR-19	01-APR-19	R4586913
Surrogate: d12-Chrysene	106.9		60-140	%	28-MAR-19	01-APR-19	R4586913
L2250326-9 GW-DUP2 Sampled By: J. GOWING on 27-MAR-19 Matrix: WATER							
Polychlorinated Biphenyls							
Aroclor 1242	<0.020		0.020	ug/L	29-MAR-19	29-MAR-19	R4588077
Aroclor 1248	<0.020		0.020	ug/L	29-MAR-19	29-MAR-19	R4588077
Aroclor 1254	<0.020		0.020	ug/L	29-MAR-19	29-MAR-19	R4588077
Aroclor 1260	<0.020		0.020	ug/L	29-MAR-19	29-MAR-19	R4588077
Total PCBs	<0.040		0.040	ug/L	29-MAR-19	29-MAR-19	R4588077
Surrogate: 2-fluorobiphenyl	75.7		50-150	%	29-MAR-19	29-MAR-19	R4588077

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2250326-9 GW-DUP2 Sampled By: J. GOWING on 27-MAR-19 Matrix: WATER							
Polychlorinated Biphenyls							
L2250326-10 GW-DUP3 Sampled By: J. GOWING on 27-MAR-19 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					29-MAR-19	R4586725
Antimony (Sb)-Dissolved	0.42		0.10	ug/L	29-MAR-19	01-APR-19	R4587922
Arsenic (As)-Dissolved	0.21		0.10	ug/L	29-MAR-19	01-APR-19	R4587922
Barium (Ba)-Dissolved	27.1		0.10	ug/L	29-MAR-19	01-APR-19	R4587922
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	29-MAR-19	01-APR-19	R4587922
Boron (B)-Dissolved	46		10	ug/L	29-MAR-19	01-APR-19	R4587922
Cadmium (Cd)-Dissolved	0.849		0.010	ug/L	29-MAR-19	01-APR-19	R4587922
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	29-MAR-19	01-APR-19	R4587922
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	29-MAR-19	01-APR-19	R4587922
Copper (Cu)-Dissolved	9.96		0.20	ug/L	29-MAR-19	01-APR-19	R4587922
Lead (Pb)-Dissolved	0.890		0.050	ug/L	29-MAR-19	01-APR-19	R4587922
Molybdenum (Mo)-Dissolved	2.84		0.050	ug/L	29-MAR-19	01-APR-19	R4587922
Nickel (Ni)-Dissolved	4.78		0.50	ug/L	29-MAR-19	01-APR-19	R4587922
Selenium (Se)-Dissolved	3.87		0.050	ug/L	29-MAR-19	01-APR-19	R4587922
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	29-MAR-19	01-APR-19	R4587922
Sodium (Na)-Dissolved	106000	DLHC	500	ug/L	29-MAR-19	29-MAR-19	R4587922
Thallium (Tl)-Dissolved	0.086		0.010	ug/L	29-MAR-19	01-APR-19	R4587922
Uranium (U)-Dissolved	5.34		0.010	ug/L	29-MAR-19	01-APR-19	R4587922
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	29-MAR-19	01-APR-19	R4587922
Zinc (Zn)-Dissolved	747		1.0	ug/L	29-MAR-19	01-APR-19	R4587922
L2250326-11 GW-DUP4 Sampled By: J. GOWING on 27-MAR-19 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					29-MAR-19	R4586725
Antimony (Sb)-Dissolved	0.10		0.10	ug/L	29-MAR-19	01-APR-19	R4587922
Arsenic (As)-Dissolved	8.96		0.10	ug/L	29-MAR-19	01-APR-19	R4587922
Selenium (Se)-Dissolved	0.264		0.050	ug/L	29-MAR-19	01-APR-19	R4587922
L2250326-12 GW-DUP5 Sampled By: J. GOWING on 27-MAR-19 Matrix: WATER							
Hydrocarbons							
F1 (C6-C10)	254		25	ug/L		29-MAR-19	R4586976
Surrogate: 3,4-Dichlorotoluene	103.3		60-140	%		29-MAR-19	R4586976
L2250326-13 TRIP BLANK Sampled By: J. GOWING on 27-MAR-19 Matrix: WATER							
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		29-MAR-19	R4586976

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2250326-13 TRIP BLANK Sampled By: J. GOWING on 27-MAR-19 Matrix: WATER							
Hydrocarbons							
Surrogate: 3,4-Dichlorotoluene	106.6		60-140	%		29-MAR-19	R4586976

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L2250326-10, -3
Matrix Spike	Boron (B)-Dissolved	MS-B	L2250326-10, -3
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L2250326-10, -3
Matrix Spike	Uranium (U)-Dissolved	MS-B	L2250326-10, -3

Sample Parameter Qualifier key listed:

Qualifier	Description
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BAP-LABFILTER-511-WT	Water	B(a)P-lab filtered-153/04 (July 2011)	SW846 8270 (511)

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-F4-511-CALC-WT	Water	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-L

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Water	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Water	F2-F4-O.Reg 153/04 (July 2011)	EPA 3511/CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from water using a hexane micro-extraction technique. Instrumental analysis is by GC-FID, as per the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Tier 1 Method, CCME, 2001.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8

The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT	Water	PAH-Calculated Parameters	SW846 8270
PAH-511-WT	Water	PAH-O. Reg 153/04 (July 2011)	SW846 3510/8270

Aqueous samples, fortified with surrogates, are extracted using liquid/liquid extraction technique. The sample extracts are concentrated and then analyzed using GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG

Reference Information

must be reported).

PCB-511-WT Water PCB-O. Reg 153/04 (July 2011) SW846 3510/8082
Aqueous samples are extracted, then concentrated, reconstituted, and analyzed by GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

17-623248 17-728869

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2250326 Report Date: 01-APR-19

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: ED TAVES

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BAP-LABFILTER-511-WT	**Water**							
Batch R4586913								
WG3016407-2 LCS								
Benzo(a)pyrene-lab filtered			98.6		%		50-140	29-MAR-19
WG3016407-1 MB								
Benzo(a)pyrene-lab filtered			<0.010		ug/L		0.01	29-MAR-19
Surrogate: d12-Chrysene			104.8		%		60-140	29-MAR-19
F1-HS-511-WT	**Water**							
Batch R4586976								
WG3011921-1 LCS								
F1 (C6-C10)			97.3		%		80-120	29-MAR-19
WG3011921-2 MB								
F1 (C6-C10)			<25		ug/L		25	29-MAR-19
Surrogate: 3,4-Dichlorotoluene			102.1		%		60-140	29-MAR-19
WG3011921-5 MS		**WG3011921-3**						
F1 (C6-C10)			80.9		%		60-140	01-APR-19
F2-F4-511-WT	**Water**							
Batch R4588031								
WG3016865-2 LCS								
F2 (C10-C16)			93.6		%		70-130	29-MAR-19
F3 (C16-C34)			93.9		%		70-130	29-MAR-19
F4 (C34-C50)			99.2		%		70-130	29-MAR-19
WG3016865-1 MB								
F2 (C10-C16)			<100		ug/L		100	29-MAR-19
F3 (C16-C34)			<250		ug/L		250	29-MAR-19
F4 (C34-C50)			<250		ug/L		250	29-MAR-19
Surrogate: 2-Bromobenzotrifluoride			81.8		%		60-140	29-MAR-19
MET-D-UG/L-MS-WT	**Water**							
Batch R4587922								
WG3016815-4 DUP		**WG3016815-3**						
Antimony (Sb)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	01-APR-19
Arsenic (As)-Dissolved		0.42	0.41		ug/L	2.0	20	01-APR-19
Barium (Ba)-Dissolved		49.5	46.8		ug/L	5.6	20	01-APR-19
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	01-APR-19
Boron (B)-Dissolved		132	137		ug/L	3.8	20	01-APR-19
Cadmium (Cd)-Dissolved		0.205	0.201		ug/L	2.0	20	01-APR-19
Chromium (Cr)-Dissolved		1.17	1.13		ug/L	3.3	20	01-APR-19
Cobalt (Co)-Dissolved		1.08	1.07		ug/L			01-APR-19

Quality Control Report

Workorder: L2250326 Report Date: 01-APR-19

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: ED TAVES

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R4587922								
WG3016815-4 DUP		**WG3016815-3**						
Cobalt (Co)-Dissolved		1.08	1.07		ug/L	0.2	20	01-APR-19
Copper (Cu)-Dissolved		0.55	0.57		ug/L	2.7	20	01-APR-19
Lead (Pb)-Dissolved		0.057	0.056		ug/L	2.1	20	01-APR-19
Molybdenum (Mo)-Dissolved		0.424	0.445		ug/L	4.9	20	01-APR-19
Nickel (Ni)-Dissolved		2.28	2.22		ug/L	2.5	20	01-APR-19
Selenium (Se)-Dissolved		0.095	0.081		ug/L	16	20	01-APR-19
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	01-APR-19
Sodium (Na)-Dissolved		38000	37400		ug/L	1.6	20	01-APR-19
Thallium (Tl)-Dissolved		0.021	0.019		ug/L	7.5	20	01-APR-19
Uranium (U)-Dissolved		0.529	0.531		ug/L	0.4	20	01-APR-19
Vanadium (V)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	01-APR-19
Zinc (Zn)-Dissolved		1.8	1.9		ug/L	4.3	20	01-APR-19
WG3016815-2 LCS								
Antimony (Sb)-Dissolved			100.7		%		80-120	29-MAR-19
Arsenic (As)-Dissolved			99.2		%		80-120	29-MAR-19
Barium (Ba)-Dissolved			101.3		%		80-120	29-MAR-19
Beryllium (Be)-Dissolved			96.9		%		80-120	29-MAR-19
Boron (B)-Dissolved			95.5		%		80-120	29-MAR-19
Cadmium (Cd)-Dissolved			99.5		%		80-120	29-MAR-19
Chromium (Cr)-Dissolved			99.9		%		80-120	29-MAR-19
Cobalt (Co)-Dissolved			98.6		%		80-120	29-MAR-19
Copper (Cu)-Dissolved			98.4		%		80-120	29-MAR-19
Lead (Pb)-Dissolved			99.7		%		80-120	29-MAR-19
Molybdenum (Mo)-Dissolved			103.3		%		80-120	29-MAR-19
Nickel (Ni)-Dissolved			99.99		%		80-120	29-MAR-19
Selenium (Se)-Dissolved			99.6		%		80-120	29-MAR-19
Silver (Ag)-Dissolved			96.3		%		80-120	29-MAR-19
Sodium (Na)-Dissolved			104.9		%		80-120	29-MAR-19
Thallium (Tl)-Dissolved			102.5		%		80-120	29-MAR-19
Uranium (U)-Dissolved			98.2		%		80-120	29-MAR-19
Vanadium (V)-Dissolved			102.0		%		80-120	29-MAR-19
Zinc (Zn)-Dissolved			98.9		%		80-120	29-MAR-19
WG3016815-1 MB								
Antimony (Sb)-Dissolved			<0.10				0.1	

Quality Control Report

Workorder: L2250326 Report Date: 01-APR-19

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: ED TAVES

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch	**R4587922**							
WG3016815-1	**MB**							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	29-MAR-19
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	29-MAR-19
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	29-MAR-19
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	29-MAR-19
Boron (B)-Dissolved			<10		ug/L		10	29-MAR-19
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	29-MAR-19
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	29-MAR-19
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	29-MAR-19
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	29-MAR-19
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	29-MAR-19
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	29-MAR-19
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	29-MAR-19
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	29-MAR-19
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	29-MAR-19
Sodium (Na)-Dissolved			<50		ug/L		50	29-MAR-19
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	29-MAR-19
Uranium (U)-Dissolved			<0.010		ug/L		0.01	29-MAR-19
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	29-MAR-19
Zinc (Zn)-Dissolved			<1.0		ug/L		1	29-MAR-19
WG3016815-5	**MS**	**WG3016815-6**						
Antimony (Sb)-Dissolved			95.2		%		70-130	01-APR-19
Arsenic (As)-Dissolved			106.9		%		70-130	01-APR-19
Barium (Ba)-Dissolved			N/A	MS-B	%		-	01-APR-19
Beryllium (Be)-Dissolved			97.5		%		70-130	01-APR-19
Boron (B)-Dissolved			N/A	MS-B	%		-	01-APR-19
Cadmium (Cd)-Dissolved			98.9		%		70-130	01-APR-19
Chromium (Cr)-Dissolved			97.0		%		70-130	01-APR-19
Cobalt (Co)-Dissolved			96.2		%		70-130	01-APR-19
Copper (Cu)-Dissolved			96.3		%		70-130	01-APR-19
Lead (Pb)-Dissolved			96.3		%		70-130	01-APR-19
Molybdenum (Mo)-Dissolved			103.7		%		70-130	01-APR-19
Nickel (Ni)-Dissolved			94.8		%		70-130	01-APR-19
Selenium (Se)-Dissolved			120.1		%		70-130	01-APR-19
Silver (Ag)-Dissolved			94.3		%		70-130	01-APR-19

Quality Control Report

Workorder: L2250326 Report Date: 01-APR-19

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: ED TAVES

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R4587922								
WG3016815-5 MS		**WG3016815-6**						
Sodium (Na)-Dissolved			N/A	MS-B	%		-	01-APR-19
Thallium (Tl)-Dissolved			97.8		%		70-130	01-APR-19
Uranium (U)-Dissolved			N/A	MS-B	%		-	01-APR-19
Vanadium (V)-Dissolved			101.7		%		70-130	01-APR-19
Zinc (Zn)-Dissolved			98.0		%		70-130	01-APR-19
PAH-511-WT	**Water**							
Batch R4587095								
WG3016865-2 LCS								
1-Methylnaphthalene			92.6		%		50-140	29-MAR-19
2-Methylnaphthalene			90.9		%		50-140	29-MAR-19
Acenaphthene			106.1		%		50-140	29-MAR-19
Acenaphthylene			100.2		%		50-140	29-MAR-19
Anthracene			88.1		%		50-140	29-MAR-19
Benzo(a)anthracene			114.0		%		50-140	29-MAR-19
Benzo(a)pyrene			100.2		%		50-140	29-MAR-19
Benzo(b)fluoranthene			101.8		%		50-140	29-MAR-19
Benzo(g,h,i)perylene			111.5		%		50-140	29-MAR-19
Benzo(k)fluoranthene			115.8		%		50-140	29-MAR-19
Chrysene			120.3		%		50-140	29-MAR-19
Dibenzo(ah)anthracene			108.8		%		50-140	29-MAR-19
Fluoranthene			106.6		%		50-140	29-MAR-19
Fluorene			99.7		%		50-140	29-MAR-19
Indeno(1,2,3-cd)pyrene			103.8		%		50-140	29-MAR-19
Naphthalene			97.8		%		50-140	29-MAR-19
Phenanthrene			106.2		%		50-140	29-MAR-19
Pyrene			107.8		%		50-140	29-MAR-19
WG3016865-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	29-MAR-19
2-Methylnaphthalene			<0.020		ug/L		0.02	29-MAR-19
Acenaphthene			<0.020		ug/L		0.02	29-MAR-19
Acenaphthylene			<0.020		ug/L		0.02	29-MAR-19
Anthracene			<0.020		ug/L		0.02	29-MAR-19
Benzo(a)anthracene			<0.020		ug/L		0.02	29-MAR-19
Benzo(a)pyrene			<0.010		ug/L		0.01	29-MAR-19

Quality Control Report

Workorder: L2250326 Report Date: 01-APR-19

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: ED TAVES

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R4587095								
WG3016865-1 MB								
Benzo(b)fluoranthene			<0.020		ug/L		0.02	29-MAR-19
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	29-MAR-19
Benzo(k)fluoranthene			<0.020		ug/L		0.02	29-MAR-19
Chrysene			<0.020		ug/L		0.02	29-MAR-19
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	29-MAR-19
Fluoranthene			<0.020		ug/L		0.02	29-MAR-19
Fluorene			<0.020		ug/L		0.02	29-MAR-19
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	29-MAR-19
Naphthalene			<0.050		ug/L		0.05	29-MAR-19
Phenanthrene			<0.020		ug/L		0.02	29-MAR-19
Pyrene			<0.020		ug/L		0.02	29-MAR-19
Surrogate: d8-Naphthalene			119.6		%		60-140	29-MAR-19
Surrogate: d10-Phenanthrene			110.0		%		60-140	29-MAR-19
Surrogate: d12-Chrysene			112.7		%		60-140	29-MAR-19
Surrogate: d10-Acenaphthene			115.8		%		60-140	29-MAR-19
PCB-511-WT	**Water**							
Batch R4588077								
WG3015907-2 LCS								
Aroclor 1242			77.3		%		60-140	29-MAR-19
Aroclor 1248			92.5		%		60-140	29-MAR-19
Aroclor 1254			76.8		%		60-140	29-MAR-19
Aroclor 1260			90.8		%		60-140	29-MAR-19
WG3015907-1 MB								
Aroclor 1242			<0.020		ug/L		0.02	29-MAR-19
Aroclor 1248			<0.020		ug/L		0.02	29-MAR-19
Aroclor 1254			<0.020		ug/L		0.02	29-MAR-19
Aroclor 1260			<0.020		ug/L		0.02	29-MAR-19
Surrogate: 2-fluorobiphenyl			63.2		%		50-150	29-MAR-19

Quality Control Report

Workorder: L2250326 Report Date: 01-APR-19

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: ED TAVES

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

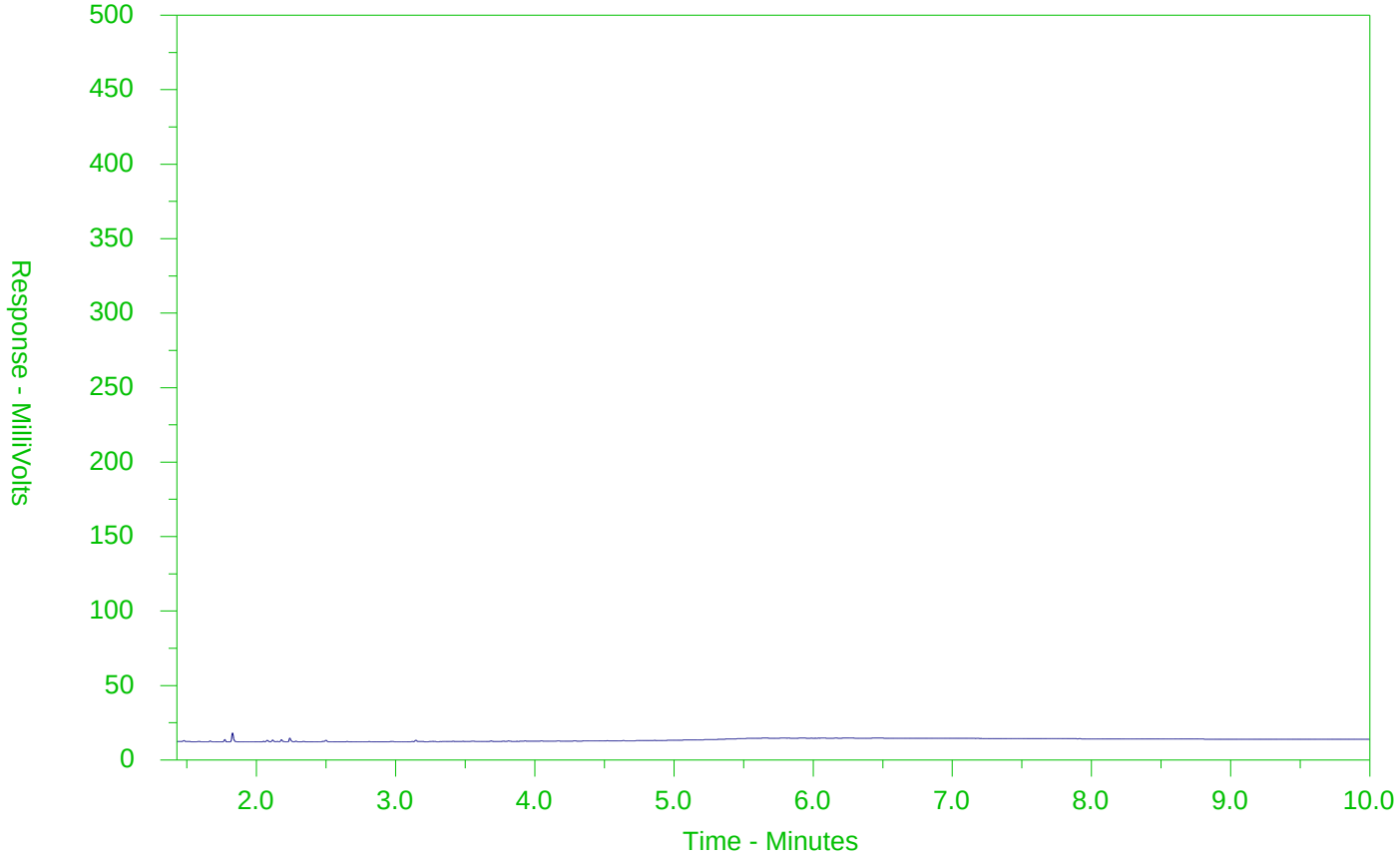
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2250326-1
Client Sample ID: OW25



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

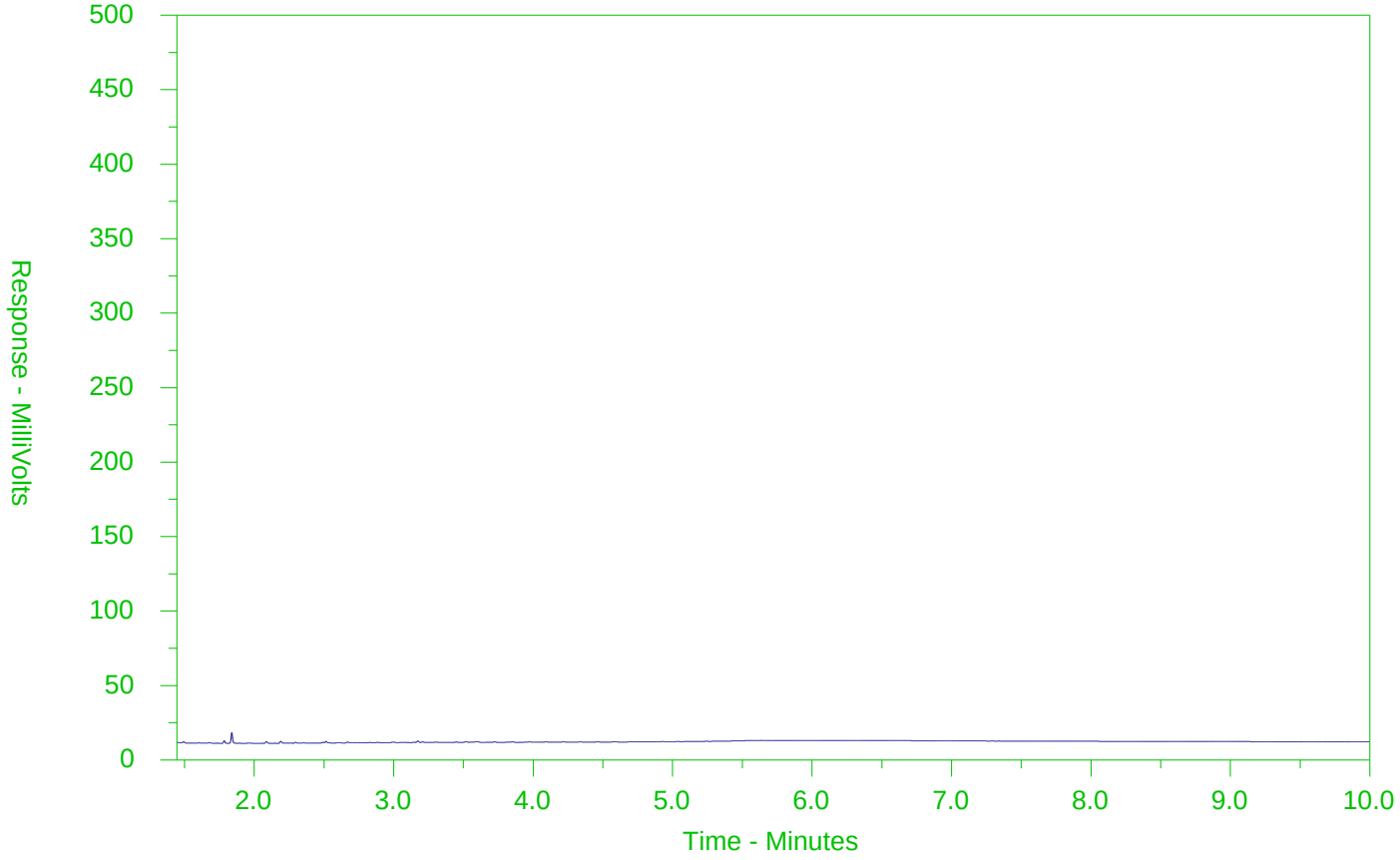
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2250326-6
Client Sample ID: OW23D



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

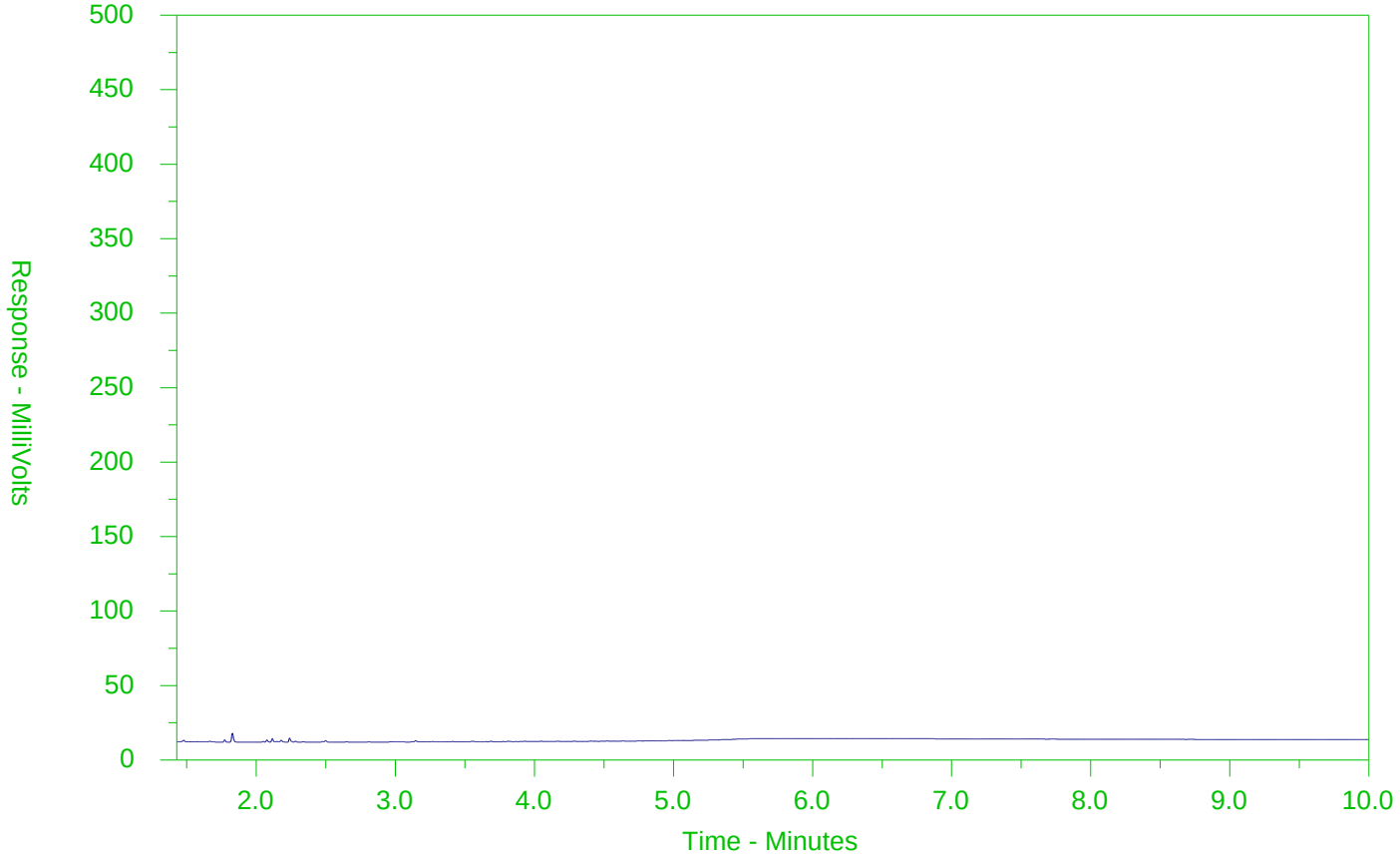
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2250326-8
Client Sample ID: GW-DUP1



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2250326-COFC

COC Number: 17 - 623248

Report To	Contact and company name below will appear on the final report
Company:	Jacobs (CH2M HILL)
Contact:	Jon Gowing
Phone:	519-997-2011
	Company address below will appear on the final report
Street:	72 Victoria St S
City/Province:	Kitchener ON
Postal Code:	N2G 4Y9
Invoice To	Same as Report To ☐ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	
Contact:	

Report Format / Distribution

Select Report Format: ☒ PDF ☒ EXCEL | | EDD (DIGITAL)
Quality Control (QC) Report with Report ☐ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☐ EMAIL | | MAIL ☐ FAX
Email 1 or Fax: ED.TAVES@jacobs.com
Email 2: Catherine.Appleby@jacobs
Email 3:

Invoice Distribution

Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax:
Email 2:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐; 3 day [P3-25%] ☐; 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E-100%] ☐; Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q62156
Job #: 694757CH.01.04.02.05
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#:
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2250326
ALS Contact: MATHY
Sampler: J. Gowing

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	F2-F4 (PHC)	PAH (Low Filter F&P)	PCB Aroclors	Metals Reg 153/04	Metals Reg 153/04 Cr6, As, Se, Hydride Forming	PHC (F1)	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
	OW25	27-03-19	09:45	GW 1	X	X							4
	OW07-32		10:55	2			X						2
	OW07-37		11:55	3				X					1
	MW18-114D		13:40	4					X				1
	OW03-1		14:55	5		X							2
	OW23D		15:55	6	X	X							2
	OW24D		17:05	7						X			2
	GW-DUP1		—	8	X	X							4
	GW-DUP2		—	9			X						2
	GW-DUP3		—	10				X					1
	GW-DUP4		—	11					X				1
	GW-DUP5		—	12						X			2

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☒ NO
Are samples for human consumption/ use? | | YES ☒ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Contact Catherine Appleby or Ed Taves for ~~special~~ sample ~~instructions~~. Questions.

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☒ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				7.7°C			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date: 3/27/2019	Time: 1520	Received by:	Date:	Time:	Received by:	Date: 27/Mar/2019	Time: 18:20

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION — WHITE - LABORATORY COPY — YELLOW - CLIENT COPY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2250326-COFC

COC Number: 17 - 728869

Page 2 of 2

Report To	Contact and company name below will appear on the final report
Company:	SEE PG 1
Contact:	
Phone:	
Company address below will appear on the final report	
Street:	JACOBS
City/Province:	
Postal Code:	

Report Format / Distribution

Select Report Format: ☐ PDF ☐ EXCEL | | EDD (DIGITAL)
Quality Control (QC) Report with Report ☐ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☐ EMAIL | | MAIL ☐ FAX
Email 1 or Fax
Email 2
Email 3

Select Service Level below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐; 3 day [P3-25%] ☐; 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E-100%] ☐; Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Invoice To	Same as Report To ☐ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	

Invoice Distribution

Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax
Email 2

Project Information

ALS Account # / Quote #: Q62156
Job #: 694757.01.04.02.05
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2250326
ALS Contact: Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	PHC F1	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
	TRIP BLANK	—	—	Water	X			2

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO
Are samples for human consumption/ use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☒ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C		
				7.7°C		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date: 3/27/19	Time: 1820	Received by:	Date:	Time:	Received by:	Date: 27/Mar/2019	Time: 18:20

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JULY 2017 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

CH2M HILL CANADA LIMITED
ATTN: MICHAEL SHIRY/ED TAVES
CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 03-APR-19
Report Date: 10-APR-19 12:17 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2252977

Project P.O. #:	NOT SUBMITTED
Job Reference:	674757
C of C Numbers:	17-630752
Legal Site Desc:	

Mathy Mahadeva
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2252977-1 TRIP BLANK Sampled By: M.SHIRY on 03-APR-19 Matrix: SOIL							
Physical Tests							
% Moisture	<0.10		0.10	%	03-APR-19	04-APR-19	R4590116
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	05-APR-19	08-APR-19	R4592043
Benzene	<0.0068		0.0068	ug/g	05-APR-19	08-APR-19	R4592043
Bromodichloromethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Bromoform	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Bromomethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Carbon tetrachloride	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Chlorobenzene	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Dibromochloromethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Chloroform	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,2-Dibromoethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,2-Dichlorobenzene	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,3-Dichlorobenzene	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,4-Dichlorobenzene	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Dichlorodifluoromethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,1-Dichloroethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,2-Dichloroethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,1-Dichloroethylene	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Methylene Chloride	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,2-Dichloropropane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	05-APR-19	08-APR-19	R4592043
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	05-APR-19	08-APR-19	R4592043
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		08-APR-19	
Ethylbenzene	<0.018		0.018	ug/g	05-APR-19	08-APR-19	R4592043
n-Hexane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Methyl Ethyl Ketone	<0.50		0.50	ug/g	05-APR-19	08-APR-19	R4592043
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	05-APR-19	08-APR-19	R4592043
MTBE	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Styrene	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Tetrachloroethylene	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Toluene	<0.080		0.080	ug/g	05-APR-19	08-APR-19	R4592043
1,1,1-Trichloroethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,1,2-Trichloroethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Trichloroethylene	<0.010		0.010	ug/g	05-APR-19	08-APR-19	R4592043
Trichlorofluoromethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Vinyl chloride	<0.020		0.020	ug/g	05-APR-19	08-APR-19	R4592043

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2252977-1 TRIP BLANK Sampled By: M.SHIRY on 03-APR-19 Matrix: SOIL							
Volatile Organic Compounds							
o-Xylene	<0.020		0.020	ug/g	05-APR-19	08-APR-19	R4592043
m+p-Xylenes	<0.030		0.030	ug/g	05-APR-19	08-APR-19	R4592043
Xylenes (Total)	<0.050		0.050	ug/g		08-APR-19	
Surrogate: 4-Bromofluorobenzene	100.9		50-140	%	05-APR-19	08-APR-19	R4592043
Surrogate: 1,4-Difluorobenzene	119.2		50-140	%	05-APR-19	08-APR-19	R4592043
L2252977-2 BH17-100I Sampled By: M.SHIRY on 03-APR-19 @ 13:10 Matrix: SOIL							
Physical Tests							
pH	7.71		0.10	pH units		04-APR-19	R4590210
L2252977-4 BH17-102I Sampled By: M.SHIRY on 03-APR-19 @ 12:20 Matrix: SOIL							
Physical Tests							
% Moisture	8.51		0.10	%	03-APR-19	04-APR-19	R4590116
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	05-APR-19	08-APR-19	R4592043
Benzene	<0.0068		0.0068	ug/g	05-APR-19	08-APR-19	R4592043
Bromodichloromethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Bromoform	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Bromomethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Carbon tetrachloride	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Chlorobenzene	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Dibromochloromethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Chloroform	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,2-Dibromoethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,2-Dichlorobenzene	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,3-Dichlorobenzene	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,4-Dichlorobenzene	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Dichlorodifluoromethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,1-Dichloroethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,2-Dichloroethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,1-Dichloroethylene	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Methylene Chloride	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,2-Dichloropropane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	05-APR-19	08-APR-19	R4592043
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	05-APR-19	08-APR-19	R4592043
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		08-APR-19	
Ethylbenzene	<0.018		0.018	ug/g	05-APR-19	08-APR-19	R4592043
n-Hexane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2252977-4 BH17-102I Sampled By: M.SHIRY on 03-APR-19 @ 12:20 Matrix: SOIL							
Volatile Organic Compounds							
Methyl Ethyl Ketone	<0.50		0.50	ug/g	05-APR-19	08-APR-19	R4592043
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	05-APR-19	08-APR-19	R4592043
MTBE	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Styrene	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Tetrachloroethylene	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Toluene	<0.080		0.080	ug/g	05-APR-19	08-APR-19	R4592043
1,1,1-Trichloroethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,1,2-Trichloroethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Trichloroethylene	0.032		0.010	ug/g	05-APR-19	08-APR-19	R4592043
Trichlorofluoromethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Vinyl chloride	<0.020		0.020	ug/g	05-APR-19	08-APR-19	R4592043
o-Xylene	0.023		0.020	ug/g	05-APR-19	08-APR-19	R4592043
m+p-Xylenes	<0.030		0.030	ug/g	05-APR-19	08-APR-19	R4592043
Xylenes (Total)	<0.050		0.050	ug/g		08-APR-19	
Surrogate: 4-Bromofluorobenzene	91.6		50-140	%	05-APR-19	08-APR-19	R4592043
Surrogate: 1,4-Difluorobenzene	109.7		50-140	%	05-APR-19	08-APR-19	R4592043
L2252977-5 BH17-102II Sampled By: M.SHIRY on 03-APR-19 @ 12:25 Matrix: SOIL							
Physical Tests							
% Moisture	5.98		0.10	%	03-APR-19	04-APR-19	R4590116
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	05-APR-19	08-APR-19	R4592043
Benzene	<0.0068		0.0068	ug/g	05-APR-19	08-APR-19	R4592043
Bromodichloromethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Bromoform	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Bromomethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Carbon tetrachloride	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Chlorobenzene	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Dibromochloromethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Chloroform	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,2-Dibromoethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,2-Dichlorobenzene	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,3-Dichlorobenzene	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,4-Dichlorobenzene	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Dichlorodifluoromethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,1-Dichloroethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,2-Dichloroethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,1-Dichloroethylene	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2252977-5 BH17-102II Sampled By: M.SHIRY on 03-APR-19 @ 12:25 Matrix: SOIL							
Volatile Organic Compounds							
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Methylene Chloride	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,2-Dichloropropane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	05-APR-19	08-APR-19	R4592043
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	05-APR-19	08-APR-19	R4592043
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		08-APR-19	
Ethylbenzene	<0.018		0.018	ug/g	05-APR-19	08-APR-19	R4592043
n-Hexane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Methyl Ethyl Ketone	<0.50		0.50	ug/g	05-APR-19	08-APR-19	R4592043
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	05-APR-19	08-APR-19	R4592043
MTBE	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Styrene	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Tetrachloroethylene	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Toluene	<0.080		0.080	ug/g	05-APR-19	08-APR-19	R4592043
1,1,1-Trichloroethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
1,1,2-Trichloroethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Trichloroethylene	0.011		0.010	ug/g	05-APR-19	08-APR-19	R4592043
Trichlorofluoromethane	<0.050		0.050	ug/g	05-APR-19	08-APR-19	R4592043
Vinyl chloride	<0.020		0.020	ug/g	05-APR-19	08-APR-19	R4592043
o-Xylene	<0.020		0.020	ug/g	05-APR-19	08-APR-19	R4592043
m+p-Xylenes	<0.030		0.030	ug/g	05-APR-19	08-APR-19	R4592043
Xylenes (Total)	<0.050		0.050	ug/g		08-APR-19	
Surrogate: 4-Bromofluorobenzene	109.9		50-140	%	05-APR-19	08-APR-19	R4592043
Surrogate: 1,4-Difluorobenzene	132.3		50-140	%	05-APR-19	08-APR-19	R4592043

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
MOISTURE-WT	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)
PH-WT	Soil	pH	MOEE E3137A

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

VOC-1,3-DCP-CALC-WT	Soil	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Soil	VOC-O.Reg 153/04 (July 2011)	SW846 8260 (511)

Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

17-630752

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2252977 Report Date: 10-APR-19

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY/ED TAVES

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MOISTURE-WT	**Soil**							
Batch R4590116								
WG3020542-3 DUP		**L2252706-1**						
% Moisture		16.5	15.3		%	7.4	20	04-APR-19
WG3020542-2 LCS								
% Moisture			102.0		%		90-110	04-APR-19
WG3020542-1 MB								
% Moisture			<0.10		%		0.1	04-APR-19
PH-WT	**Soil**							
Batch R4590210								
WG3020524-1 DUP		**L2253180-1**						
pH		7.33	7.34	J	pH units	0.01	0.3	04-APR-19
WG3020766-1 LCS								
pH			7.00		pH units		6.9-7.1	04-APR-19
VOC-511-HS-WT	**Soil**							
Batch R4592043								
WG3021651-4 DUP		**WG3021651-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-APR-19
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-APR-19
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-APR-19
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-APR-19
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-APR-19
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-APR-19
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-APR-19
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-APR-19
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-APR-19
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-APR-19
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-APR-19
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-APR-19
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	08-APR-19
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	08-APR-19
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-APR-19
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-APR-19
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-APR-19
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-APR-19
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-APR-19
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-APR-19

Quality Control Report

Workorder: L2252977 Report Date: 10-APR-19

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY/ED TAVES

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R4592043								
WG3021651-4 DUP		**WG3021651-3**						
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-APR-19
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	08-APR-19
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-APR-19
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-APR-19
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	08-APR-19
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-APR-19
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-APR-19
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-APR-19
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	08-APR-19
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	08-APR-19
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	08-APR-19
o-Xylene		0.023	0.023		ug/g	1.1	40	08-APR-19
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-APR-19
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-APR-19
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	08-APR-19
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-APR-19
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	08-APR-19
Trichloroethylene		0.032	0.031		ug/g	5.8	40	08-APR-19
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	08-APR-19
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	08-APR-19
WG3021651-2 LCS								
1,1,1,2-Tetrachloroethane			99.2		%		60-130	08-APR-19
1,1,2,2-Tetrachloroethane			89.6		%		60-130	08-APR-19
1,1,1-Trichloroethane			109.6		%		60-130	08-APR-19
1,1,2-Trichloroethane			96.6		%		60-130	08-APR-19
1,1-Dichloroethane			106.7		%		60-130	08-APR-19
1,1-Dichloroethylene			114.0		%		60-130	08-APR-19
1,2-Dibromoethane			90.9		%		70-130	08-APR-19
1,2-Dichlorobenzene			106.4		%		70-130	08-APR-19
1,2-Dichloroethane			99.3		%		60-130	08-APR-19
1,2-Dichloropropane			104.4		%		70-130	08-APR-19
1,3-Dichlorobenzene			113.8		%		70-130	08-APR-19
1,4-Dichlorobenzene			112.7		%		70-130	08-APR-19

Quality Control Report

Workorder: L2252977 Report Date: 10-APR-19

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY/ED TAVES

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R4592043								
WG3021651-2 LCS								
Acetone			86.0		%		60-140	08-APR-19
Benzene			110.6		%		70-130	08-APR-19
Bromodichloromethane			100.9		%		50-140	08-APR-19
Bromoform			81.1		%		70-130	08-APR-19
Bromomethane			106.4		%		50-140	08-APR-19
Carbon tetrachloride			108.4		%		70-130	08-APR-19
Chlorobenzene			105.4		%		70-130	08-APR-19
Chloroform			107.5		%		70-130	08-APR-19
cis-1,2-Dichloroethylene			103.0		%		70-130	08-APR-19
cis-1,3-Dichloropropene			102.4		%		70-130	08-APR-19
Dibromochloromethane			91.6		%		60-130	08-APR-19
Dichlorodifluoromethane			64.6		%		50-140	08-APR-19
Ethylbenzene			110.7		%		70-130	08-APR-19
n-Hexane			111.6		%		70-130	08-APR-19
Methylene Chloride			102.1		%		70-130	08-APR-19
MTBE			108.5		%		70-130	08-APR-19
m+p-Xylenes			113.6		%		70-130	08-APR-19
Methyl Ethyl Ketone			81.4		%		60-140	08-APR-19
Methyl Isobutyl Ketone			73.5		%		60-140	08-APR-19
o-Xylene			105.1		%		70-130	08-APR-19
Styrene			99.95		%		70-130	08-APR-19
Tetrachloroethylene			113.2		%		60-130	08-APR-19
Toluene			110.7		%		70-130	08-APR-19
trans-1,2-Dichloroethylene			116.9		%		60-130	08-APR-19
trans-1,3-Dichloropropene			99.8		%		70-130	08-APR-19
Trichloroethylene			111.3		%		60-130	08-APR-19
Trichlorofluoromethane			107.8		%		50-140	08-APR-19
Vinyl chloride			86.3		%		60-140	08-APR-19
WG3021651-1 MB								
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	08-APR-19
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	08-APR-19
1,1,1-Trichloroethane			<0.050		ug/g		0.05	08-APR-19
1,1,2-Trichloroethane			<0.050		ug/g		0.05	08-APR-19
1,1-Dichloroethane			<0.050		ug/g		0.05	08-APR-19

Quality Control Report

Workorder: L2252977 Report Date: 10-APR-19

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY/ED TAVES

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R4592043								
WG3021651-1 MB								
1,1-Dichloroethylene			<0.050		ug/g		0.05	08-APR-19
1,2-Dibromoethane			<0.050		ug/g		0.05	08-APR-19
1,2-Dichlorobenzene			<0.050		ug/g		0.05	08-APR-19
1,2-Dichloroethane			<0.050		ug/g		0.05	08-APR-19
1,2-Dichloropropane			<0.050		ug/g		0.05	08-APR-19
1,3-Dichlorobenzene			<0.050		ug/g		0.05	08-APR-19
1,4-Dichlorobenzene			<0.050		ug/g		0.05	08-APR-19
Acetone			<0.50		ug/g		0.5	08-APR-19
Benzene			<0.0068		ug/g		0.0068	08-APR-19
Bromodichloromethane			<0.050		ug/g		0.05	08-APR-19
Bromoform			<0.050		ug/g		0.05	08-APR-19
Bromomethane			<0.050		ug/g		0.05	08-APR-19
Carbon tetrachloride			<0.050		ug/g		0.05	08-APR-19
Chlorobenzene			<0.050		ug/g		0.05	08-APR-19
Chloroform			<0.050		ug/g		0.05	08-APR-19
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	08-APR-19
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	08-APR-19
Dibromochloromethane			<0.050		ug/g		0.05	08-APR-19
Dichlorodifluoromethane			<0.050		ug/g		0.05	08-APR-19
Ethylbenzene			<0.018		ug/g		0.018	08-APR-19
n-Hexane			<0.050		ug/g		0.05	08-APR-19
Methylene Chloride			<0.050		ug/g		0.05	08-APR-19
MTBE			<0.050		ug/g		0.05	08-APR-19
m+p-Xylenes			<0.030		ug/g		0.03	08-APR-19
Methyl Ethyl Ketone			<0.50		ug/g		0.5	08-APR-19
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	08-APR-19
o-Xylene			<0.020		ug/g		0.02	08-APR-19
Styrene			<0.050		ug/g		0.05	08-APR-19
Tetrachloroethylene			<0.050		ug/g		0.05	08-APR-19
Toluene			<0.080		ug/g		0.08	08-APR-19
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	08-APR-19
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	08-APR-19
Trichloroethylene			<0.010		ug/g		0.01	08-APR-19

Quality Control Report

Workorder: L2252977 Report Date: 10-APR-19

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY/ED TAVES

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R4592043								
WG3021651-1 MB								
Trichlorofluoromethane			<0.050		ug/g		0.05	08-APR-19
Vinyl chloride			<0.020		ug/g		0.02	08-APR-19
Surrogate: 1,4-Difluorobenzene			111.5		%		50-140	08-APR-19
Surrogate: 4-Bromofluorobenzene			95.3		%		50-140	08-APR-19
WG3021651-5 MS		**L2252977-4**						
1,1,1,2-Tetrachloroethane			100.6		%		50-140	08-APR-19
1,1,2,2-Tetrachloroethane			91.2		%		50-140	08-APR-19
1,1,1-Trichloroethane			111.6		%		50-140	08-APR-19
1,1,2-Trichloroethane			99.1		%		50-140	08-APR-19
1,1-Dichloroethane			108.7		%		50-140	08-APR-19
1,1-Dichloroethylene			116.3		%		50-140	08-APR-19
1,2-Dibromoethane			93.3		%		50-140	08-APR-19
1,2-Dichlorobenzene			106.9		%		50-140	08-APR-19
1,2-Dichloroethane			101.8		%		50-140	08-APR-19
1,2-Dichloropropane			106.9		%		50-140	08-APR-19
1,3-Dichlorobenzene			113.3		%		50-140	08-APR-19
1,4-Dichlorobenzene			112.5		%		50-140	08-APR-19
Acetone			90.4		%		50-140	08-APR-19
Benzene			112.5		%		50-140	08-APR-19
Bromodichloromethane			102.6		%		50-140	08-APR-19
Bromoform			82.5		%		50-140	08-APR-19
Bromomethane			110.4		%		50-140	08-APR-19
Carbon tetrachloride			109.5		%		50-140	08-APR-19
Chlorobenzene			106.6		%		50-140	08-APR-19
Chloroform			109.7		%		50-140	08-APR-19
cis-1,2-Dichloroethylene			105.1		%		50-140	08-APR-19
cis-1,3-Dichloropropene			104.9		%		50-140	08-APR-19
Dibromochloromethane			93.5		%		50-140	08-APR-19
Dichlorodifluoromethane			71.7		%		50-140	08-APR-19
Ethylbenzene			111.1		%		50-140	08-APR-19
n-Hexane			115.0		%		50-140	08-APR-19
Methylene Chloride			104.6		%		50-140	08-APR-19
MTBE			109.0		%		50-140	08-APR-19
m+p-Xylenes			114.1		%		50-140	08-APR-19

Quality Control Report

Workorder: L2252977 Report Date: 10-APR-19

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY/ED TAVES

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R4592043								
WG3021651-5 MS		**L2252977-4**						
Methyl Ethyl Ketone			81.0		%		50-140	08-APR-19
Methyl Isobutyl Ketone			75.7		%		50-140	08-APR-19
o-Xylene			105.8		%		50-140	08-APR-19
Styrene			100.4		%		50-140	08-APR-19
Tetrachloroethylene			112.4		%		50-140	08-APR-19
Toluene			111.6		%		50-140	08-APR-19
trans-1,2-Dichloroethylene			118.1		%		50-140	08-APR-19
trans-1,3-Dichloropropene			103.1		%		50-140	08-APR-19
Trichloroethylene			111.2		%		50-140	08-APR-19
Trichlorofluoromethane			111.0		%		50-140	08-APR-19
Vinyl chloride			89.1		%		50-140	08-APR-19

Quality Control Report

Workorder: L2252977 Report Date: 10-APR-19

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9
Contact: MICHAEL SHIRY/ED TAVES

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2252977-COFC

COC Number: 17 - 630752

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	Jacobs
Contact:	M. Shiny Ed Tavers
Phone:	
	Company address below will appear on the final report
Street:	
City/Province:	
Postal Code:	

Report Format / Distribution	
Select Report Format:	☒ PDF ☒ EXCEL ☒ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☒ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	
Email 2	
Email 3	

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
4 day [P4-20%]	☐	1 Business day [E-100%]	☐
3 day [P3-25%]	☐	Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)]	☐
2 day [P2-50%]	☐		

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Invoice To	Same as Report To	☐ YES ☑ NO
	Copy of Invoice with Report	☐ YES ☑ NO
Company:		
Contact:	Acct Payable	

Invoice Distribution	
Select Invoice Distribution:	☒ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	
Email 2	

Project Information	
ALS Account # / Quote #:	Q62156
Job #:	694757
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only): L2252977

ALS Contact: Matthew

Sampler: M. Shiny

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	VOC														SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
	Trip Blank	03-Apr-19	—	Methanol	X																1
	BH17-100i		1310	soil		X	→ 1 day Rush														1
	BH17-100ii		1315			X	~~→ 1 day Rush~~												X		1
	BH17-102i		1220		X																3
	BH17-102ii		1225		X																3

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☐ NO	
Are samples for human consumption/ use? ☐ YES ☐ NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐	SIF Observations	Yes ☐	No	☐
Ice Packs ☐	Ice Cubes ☒	Custody seal intact	Yes ☒	No	☐
Cooling Initiated	☐				

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
	3.5

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date: 2019/4/3	Time: 14:40	Received by:	Date:	Time:	Received by:	Date: 3-APR-19	Time: 1433

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JULY 2017 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

CH2M HILL CANADA LIMITED
ATTN: JON GOWING
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 17-APR-19
Report Date: 24-APR-19 14:36 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2259873

Project P.O. #: NOT SUBMITTED
Job Reference: 694757
C of C Numbers: 17-622539, 17-623582
Legal Site Desc:

Mathy Mahadeva
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2259873-1 BH19-209-2.5 Sampled By: J.GOWING on 16-APR-19 @ 11:50 Matrix: SOIL							
Physical Tests							
% Moisture	8.63		0.10	%	22-APR-19	23-APR-19	R4606426
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
Benzene	<0.0068		0.0068	ug/g	23-APR-19	24-APR-19	R4611475
Bromodichloromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Bromoform	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Bromomethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Carbon tetrachloride	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Chlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Dibromochloromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Chloroform	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dibromoethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,3-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,4-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Dichlorodifluoromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1-Dichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Methylene Chloride	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichloropropane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		24-APR-19	
Ethylbenzene	<0.018		0.018	ug/g	23-APR-19	24-APR-19	R4611475
n-Hexane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Methyl Ethyl Ketone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
MTBE	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Styrene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Tetrachloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Toluene	<0.080		0.080	ug/g	23-APR-19	24-APR-19	R4611475
1,1,1-Trichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,2-Trichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Trichloroethylene	0.037		0.010	ug/g	23-APR-19	24-APR-19	R4611475
Trichlorofluoromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Vinyl chloride	<0.020		0.020	ug/g	23-APR-19	24-APR-19	R4611475

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2259873-1 BH19-209-2.5 Sampled By: J.GOWING on 16-APR-19 @ 11:50 Matrix: SOIL							
Volatile Organic Compounds							
o-Xylene	<0.020		0.020	ug/g	23-APR-19	24-APR-19	R4611475
m+p-Xylenes	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
Xylenes (Total)	<0.050		0.050	ug/g		24-APR-19	
Surrogate: 4-Bromofluorobenzene	93.7		50-140	%	23-APR-19	24-APR-19	R4611475
Surrogate: 1,4-Difluorobenzene	106.1		50-140	%	23-APR-19	24-APR-19	R4611475
L2259873-2 BH19-209-7 Sampled By: J.GOWING on 16-APR-19 @ 12:00 Matrix: SOIL							
Physical Tests							
% Moisture	3.67		0.10	%	22-APR-19	23-APR-19	R4606426
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
Benzene	<0.0068		0.0068	ug/g	23-APR-19	24-APR-19	R4611475
Bromodichloromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Bromoform	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Bromomethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Carbon tetrachloride	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Chlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Dibromochloromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Chloroform	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dibromoethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,3-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,4-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Dichlorodifluoromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1-Dichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Methylene Chloride	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichloropropane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		24-APR-19	
Ethylbenzene	<0.018		0.018	ug/g	23-APR-19	24-APR-19	R4611475
n-Hexane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Methyl Ethyl Ketone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
MTBE	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Styrene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2259873-2 BH19-209-7 Sampled By: J.GOWING on 16-APR-19 @ 12:00 Matrix: SOIL							
Volatile Organic Compounds							
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Tetrachloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Toluene	<0.080		0.080	ug/g	23-APR-19	24-APR-19	R4611475
1,1,1-Trichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,2-Trichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Trichloroethylene	0.013		0.010	ug/g	23-APR-19	24-APR-19	R4611475
Trichlorofluoromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Vinyl chloride	<0.020		0.020	ug/g	23-APR-19	24-APR-19	R4611475
o-Xylene	<0.020		0.020	ug/g	23-APR-19	24-APR-19	R4611475
m+p-Xylenes	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
Xylenes (Total)	<0.050		0.050	ug/g		24-APR-19	
Surrogate: 4-Bromofluorobenzene	94.8		50-140	%	23-APR-19	24-APR-19	R4611475
Surrogate: 1,4-Difluorobenzene	106.8		50-140	%	23-APR-19	24-APR-19	R4611475
L2259873-3 BH19-209-9.5 Sampled By: J.GOWING on 16-APR-19 @ 12:10 Matrix: SOIL							
Physical Tests							
% Moisture	6.73		0.10	%	22-APR-19	23-APR-19	R4606426
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
Benzene	<0.0068		0.0068	ug/g	23-APR-19	24-APR-19	R4611475
Bromodichloromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Bromoform	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Bromomethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Carbon tetrachloride	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Chlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Dibromochloromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Chloroform	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dibromoethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,3-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,4-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Dichlorodifluoromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1-Dichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Methylene Chloride	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichloropropane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2259873-3 BH19-209-9.5 Sampled By: J.GOWING on 16-APR-19 @ 12:10 Matrix: SOIL							
Volatile Organic Compounds							
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		24-APR-19	
Ethylbenzene	<0.018		0.018	ug/g	23-APR-19	24-APR-19	R4611475
n-Hexane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Methyl Ethyl Ketone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
MTBE	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Styrene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Tetrachloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Toluene	<0.080		0.080	ug/g	23-APR-19	24-APR-19	R4611475
1,1,1-Trichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,2-Trichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Trichloroethylene	0.034		0.010	ug/g	23-APR-19	24-APR-19	R4611475
Trichlorofluoromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Vinyl chloride	<0.020		0.020	ug/g	23-APR-19	24-APR-19	R4611475
o-Xylene	<0.020		0.020	ug/g	23-APR-19	24-APR-19	R4611475
m+p-Xylenes	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
Xylenes (Total)	<0.050		0.050	ug/g		24-APR-19	
Surrogate: 4-Bromofluorobenzene	91.7		50-140	%	23-APR-19	24-APR-19	R4611475
Surrogate: 1,4-Difluorobenzene	103.0		50-140	%	23-APR-19	24-APR-19	R4611475
L2259873-4 BH19-210-2.5 Sampled By: J.GOWING on 16-APR-19 @ 12:40 Matrix: SOIL							
Physical Tests							
% Moisture	6.34		0.10	%	22-APR-19	23-APR-19	R4606426
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
Benzene	<0.0068		0.0068	ug/g	23-APR-19	24-APR-19	R4611475
Bromodichloromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Bromoform	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Bromomethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Carbon tetrachloride	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Chlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Dibromochloromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Chloroform	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dibromoethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,3-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,4-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Dichlorodifluoromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1-Dichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2259873-4 BH19-210-2.5 Sampled By: J.GOWING on 16-APR-19 @ 12:40 Matrix: SOIL							
Volatile Organic Compounds							
1,2-Dichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Methylene Chloride	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichloropropane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		24-APR-19	
Ethylbenzene	<0.018		0.018	ug/g	23-APR-19	24-APR-19	R4611475
n-Hexane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Methyl Ethyl Ketone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
MTBE	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Styrene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Tetrachloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Toluene	<0.080		0.080	ug/g	23-APR-19	24-APR-19	R4611475
1,1,1-Trichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,2-Trichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Trichloroethylene	<0.010		0.010	ug/g	23-APR-19	24-APR-19	R4611475
Trichlorofluoromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Vinyl chloride	<0.020		0.020	ug/g	23-APR-19	24-APR-19	R4611475
o-Xylene	<0.020		0.020	ug/g	23-APR-19	24-APR-19	R4611475
m+p-Xylenes	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
Xylenes (Total)	<0.050		0.050	ug/g		24-APR-19	
Surrogate: 4-Bromofluorobenzene	93.4		50-140	%	23-APR-19	24-APR-19	R4611475
Surrogate: 1,4-Difluorobenzene	105.1		50-140	%	23-APR-19	24-APR-19	R4611475
L2259873-5 BH19-210-6 Sampled By: J.GOWING on 16-APR-19 @ 12:50 Matrix: SOIL							
Physical Tests							
% Moisture	5.52		0.10	%	22-APR-19	23-APR-19	R4606426
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
Benzene	<0.0068		0.0068	ug/g	23-APR-19	24-APR-19	R4611475
Bromodichloromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Bromoform	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Bromomethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Carbon tetrachloride	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Chlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2259873-5 BH19-210-6 Sampled By: J.GOWING on 16-APR-19 @ 12:50 Matrix: SOIL							
Volatile Organic Compounds							
Dibromochloromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Chloroform	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dibromoethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,3-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,4-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Dichlorodifluoromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1-Dichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Methylene Chloride	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichloropropane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		24-APR-19	
Ethylbenzene	<0.018		0.018	ug/g	23-APR-19	24-APR-19	R4611475
n-Hexane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Methyl Ethyl Ketone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
MTBE	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Styrene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Tetrachloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Toluene	<0.080		0.080	ug/g	23-APR-19	24-APR-19	R4611475
1,1,1-Trichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,2-Trichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Trichloroethylene	<0.010		0.010	ug/g	23-APR-19	24-APR-19	R4611475
Trichlorofluoromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Vinyl chloride	<0.020		0.020	ug/g	23-APR-19	24-APR-19	R4611475
o-Xylene	<0.020		0.020	ug/g	23-APR-19	24-APR-19	R4611475
m+p-Xylenes	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
Xylenes (Total)	<0.050		0.050	ug/g		24-APR-19	
Surrogate: 4-Bromofluorobenzene	94.2		50-140	%	23-APR-19	24-APR-19	R4611475
Surrogate: 1,4-Difluorobenzene	107.1		50-140	%	23-APR-19	24-APR-19	R4611475
L2259873-6 BH19-210-7.5 Sampled By: J.GOWING on 16-APR-19 @ 13:00 Matrix: SOIL							
Physical Tests							
% Moisture	4.88		0.10	%	22-APR-19	23-APR-19	R4606426

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2259873-6 BH19-210-7.5							
Sampled By: J.GOWING on 16-APR-19 @ 13:00							
Matrix: SOIL							
Physical Tests							
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
Benzene	<0.0068		0.0068	ug/g	23-APR-19	24-APR-19	R4611475
Bromodichloromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Bromoform	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Bromomethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Carbon tetrachloride	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Chlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Dibromochloromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Chloroform	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dibromoethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,3-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,4-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Dichlorodifluoromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1-Dichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Methylene Chloride	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichloropropane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		24-APR-19	
Ethylbenzene	<0.018		0.018	ug/g	23-APR-19	24-APR-19	R4611475
n-Hexane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Methyl Ethyl Ketone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
MTBE	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Styrene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Tetrachloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Toluene	<0.080		0.080	ug/g	23-APR-19	24-APR-19	R4611475
1,1,1-Trichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,2-Trichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Trichloroethylene	<0.010		0.010	ug/g	23-APR-19	24-APR-19	R4611475
Trichlorofluoromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Vinyl chloride	<0.020		0.020	ug/g	23-APR-19	24-APR-19	R4611475
o-Xylene	<0.020		0.020	ug/g	23-APR-19	24-APR-19	R4611475

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2259873-6 BH19-210-7.5 Sampled By: J.GOWING on 16-APR-19 @ 13:00 Matrix: SOIL							
Volatile Organic Compounds							
m+p-Xylenes	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
Xylenes (Total)	<0.050		0.050	ug/g		24-APR-19	
Surrogate: 4-Bromofluorobenzene	90.8		50-140	%	23-APR-19	24-APR-19	R4611475
Surrogate: 1,4-Difluorobenzene	103.2		50-140	%	23-APR-19	24-APR-19	R4611475
L2259873-7 BH19-210-9.5 Sampled By: J.GOWING on 16-APR-19 @ 13:05 Matrix: SOIL							
Physical Tests							
% Moisture	11.1		0.10	%	22-APR-19	23-APR-19	R4607767
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
Benzene	<0.0068		0.0068	ug/g	23-APR-19	24-APR-19	R4611475
Bromodichloromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Bromoform	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Bromomethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Carbon tetrachloride	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Chlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Dibromochloromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Chloroform	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dibromoethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,3-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,4-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Dichlorodifluoromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1-Dichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Methylene Chloride	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichloropropane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		24-APR-19	
Ethylbenzene	<0.018		0.018	ug/g	23-APR-19	24-APR-19	R4611475
n-Hexane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Methyl Ethyl Ketone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
MTBE	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Styrene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2259873-7 BH19-210-9.5 Sampled By: J.GOWING on 16-APR-19 @ 13:05 Matrix: SOIL							
Volatile Organic Compounds							
Tetrachloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Toluene	<0.080		0.080	ug/g	23-APR-19	24-APR-19	R4611475
1,1,1-Trichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,2-Trichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Trichloroethylene	<0.010		0.010	ug/g	23-APR-19	24-APR-19	R4611475
Trichlorofluoromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Vinyl chloride	<0.020		0.020	ug/g	23-APR-19	24-APR-19	R4611475
o-Xylene	<0.020		0.020	ug/g	23-APR-19	24-APR-19	R4611475
m+p-Xylenes	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
Xylenes (Total)	<0.050		0.050	ug/g		24-APR-19	
Surrogate: 4-Bromofluorobenzene	86.7		50-140	%	23-APR-19	24-APR-19	R4611475
Surrogate: 1,4-Difluorobenzene	105.2		50-140	%	23-APR-19	24-APR-19	R4611475
L2259873-8 BH19-211-2.5 Sampled By: J.GOWING on 16-APR-19 @ 13:30 Matrix: SOIL							
Physical Tests							
% Moisture	4.49		0.10	%	22-APR-19	23-APR-19	R4607767
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
Benzene	<0.0068		0.0068	ug/g	23-APR-19	24-APR-19	R4611475
Bromodichloromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Bromoform	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Bromomethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Carbon tetrachloride	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Chlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Dibromochloromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Chloroform	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dibromoethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,3-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,4-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Dichlorodifluoromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1-Dichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Methylene Chloride	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichloropropane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		24-APR-19	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2259873-8 BH19-211-2.5 Sampled By: J.GOWING on 16-APR-19 @ 13:30 Matrix: SOIL							
Volatile Organic Compounds							
Ethylbenzene	<0.018		0.018	ug/g	23-APR-19	24-APR-19	R4611475
n-Hexane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Methyl Ethyl Ketone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
MTBE	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Styrene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Tetrachloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Toluene	<0.080		0.080	ug/g	23-APR-19	24-APR-19	R4611475
1,1,1-Trichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,2-Trichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Trichloroethylene	0.120		0.010	ug/g	23-APR-19	24-APR-19	R4611475
Trichlorofluoromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Vinyl chloride	<0.020		0.020	ug/g	23-APR-19	24-APR-19	R4611475
o-Xylene	<0.020		0.020	ug/g	23-APR-19	24-APR-19	R4611475
m+p-Xylenes	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
Xylenes (Total)	<0.050		0.050	ug/g		24-APR-19	
Surrogate: 4-Bromofluorobenzene	95.6		50-140	%	23-APR-19	24-APR-19	R4611475
Surrogate: 1,4-Difluorobenzene	108.5		50-140	%	23-APR-19	24-APR-19	R4611475
L2259873-9 BH19-211-4 Sampled By: J.GOWING on 16-APR-19 @ 13:40 Matrix: SOIL							
Physical Tests							
% Moisture	3.45		0.10	%	22-APR-19	23-APR-19	R4607767
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
Benzene	<0.0068		0.0068	ug/g	23-APR-19	24-APR-19	R4611475
Bromodichloromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Bromoform	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Bromomethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Carbon tetrachloride	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Chlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Dibromochloromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Chloroform	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dibromoethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,3-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,4-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Dichlorodifluoromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1-Dichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2259873-9 BH19-211-4 Sampled By: J.GOWING on 16-APR-19 @ 13:40 Matrix: SOIL							
Volatile Organic Compounds							
1,1-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Methylene Chloride	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichloropropane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		24-APR-19	
Ethylbenzene	<0.018		0.018	ug/g	23-APR-19	24-APR-19	R4611475
n-Hexane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Methyl Ethyl Ketone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
MTBE	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Styrene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Tetrachloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Toluene	<0.080		0.080	ug/g	23-APR-19	24-APR-19	R4611475
1,1,1-Trichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,2-Trichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Trichloroethylene	0.209		0.010	ug/g	23-APR-19	24-APR-19	R4611475
Trichlorofluoromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Vinyl chloride	<0.020		0.020	ug/g	23-APR-19	24-APR-19	R4611475
o-Xylene	<0.020		0.020	ug/g	23-APR-19	24-APR-19	R4611475
m+p-Xylenes	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
Xylenes (Total)	<0.050		0.050	ug/g		24-APR-19	
Surrogate: 4-Bromofluorobenzene	92.2		50-140	%	23-APR-19	24-APR-19	R4611475
Surrogate: 1,4-Difluorobenzene	105.0		50-140	%	23-APR-19	24-APR-19	R4611475
L2259873-10 BH19-211-10 Sampled By: J.GOWING on 16-APR-19 @ 13:50 Matrix: SOIL							
Physical Tests							
% Moisture	8.21		0.10	%	22-APR-19	23-APR-19	R4607767
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
Benzene	<0.0068		0.0068	ug/g	23-APR-19	24-APR-19	R4611475
Bromodichloromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Bromoform	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Bromomethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Carbon tetrachloride	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Chlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Dibromochloromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2259873-10 BH19-211-10 Sampled By: J.GOWING on 16-APR-19 @ 13:50 Matrix: SOIL							
Volatile Organic Compounds							
Chloroform	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dibromoethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,3-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,4-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Dichlorodifluoromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1-Dichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Methylene Chloride	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichloropropane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		24-APR-19	
Ethylbenzene	<0.018		0.018	ug/g	23-APR-19	24-APR-19	R4611475
n-Hexane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Methyl Ethyl Ketone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
MTBE	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Styrene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Tetrachloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Toluene	<0.080		0.080	ug/g	23-APR-19	24-APR-19	R4611475
1,1,1-Trichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,2-Trichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Trichloroethylene	0.085		0.010	ug/g	23-APR-19	24-APR-19	R4611475
Trichlorofluoromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Vinyl chloride	<0.020		0.020	ug/g	23-APR-19	24-APR-19	R4611475
o-Xylene	<0.020		0.020	ug/g	23-APR-19	24-APR-19	R4611475
m+p-Xylenes	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
Xylenes (Total)	<0.050		0.050	ug/g		24-APR-19	
Surrogate: 4-Bromofluorobenzene	84.9		50-140	%	23-APR-19	24-APR-19	R4611475
Surrogate: 1,4-Difluorobenzene	95.6		50-140	%	23-APR-19	24-APR-19	R4611475
L2259873-11 SOIL-DUP1 Sampled By: J.GOWING on 16-APR-19 Matrix: SOIL							
Physical Tests							
% Moisture	3.67		0.10	%	22-APR-19	23-APR-19	R4607767
Volatile Organic Compounds							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2259873-11 SOIL-DUP1 Sampled By: J.GOWING on 16-APR-19 Matrix: SOIL							
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
Benzene	<0.0068		0.0068	ug/g	23-APR-19	24-APR-19	R4611475
Bromodichloromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Bromoform	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Bromomethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Carbon tetrachloride	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Chlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Dibromochloromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Chloroform	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dibromoethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,3-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,4-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Dichlorodifluoromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1-Dichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Methylene Chloride	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichloropropane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		24-APR-19	
Ethylbenzene	<0.018		0.018	ug/g	23-APR-19	24-APR-19	R4611475
n-Hexane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Methyl Ethyl Ketone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
MTBE	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Styrene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Tetrachloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Toluene	<0.080		0.080	ug/g	23-APR-19	24-APR-19	R4611475
1,1,1-Trichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,2-Trichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Trichloroethylene	<0.010		0.010	ug/g	23-APR-19	24-APR-19	R4611475
Trichlorofluoromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Vinyl chloride	<0.020		0.020	ug/g	23-APR-19	24-APR-19	R4611475
o-Xylene	<0.020		0.020	ug/g	23-APR-19	24-APR-19	R4611475
m+p-Xylenes	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2259873-11 SOIL-DUP1 Sampled By: J.GOWING on 16-APR-19 Matrix: SOIL							
Volatile Organic Compounds							
Xylenes (Total)	<0.050		0.050	ug/g		24-APR-19	
Surrogate: 4-Bromofluorobenzene	89.4		50-140	%	23-APR-19	24-APR-19	R4611475
Surrogate: 1,4-Difluorobenzene	102.5		50-140	%	23-APR-19	24-APR-19	R4611475
L2259873-12 TRIP BLANK Sampled By: J.GOWING on 16-APR-19 Matrix: SOIL							
Physical Tests							
% Moisture	<0.10		0.10	%	22-APR-19	23-APR-19	R4607767
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
Benzene	<0.0068		0.0068	ug/g	23-APR-19	24-APR-19	R4611475
Bromodichloromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Bromoform	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Bromomethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Carbon tetrachloride	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Chlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Dibromochloromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Chloroform	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dibromoethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,3-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,4-Dichlorobenzene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Dichlorodifluoromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1-Dichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Methylene Chloride	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,2-Dichloropropane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		24-APR-19	
Ethylbenzene	<0.018		0.018	ug/g	23-APR-19	24-APR-19	R4611475
n-Hexane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Methyl Ethyl Ketone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	23-APR-19	24-APR-19	R4611475
MTBE	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Styrene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Tetrachloroethylene	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2259873-12 TRIP BLANK Sampled By: J.GOWING on 16-APR-19 Matrix: SOIL							
Volatile Organic Compounds							
Toluene	<0.080		0.080	ug/g	23-APR-19	24-APR-19	R4611475
1,1,1-Trichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
1,1,2-Trichloroethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Trichloroethylene	<0.010		0.010	ug/g	23-APR-19	24-APR-19	R4611475
Trichlorofluoromethane	<0.050		0.050	ug/g	23-APR-19	24-APR-19	R4611475
Vinyl chloride	<0.020		0.020	ug/g	23-APR-19	24-APR-19	R4611475
o-Xylene	<0.020		0.020	ug/g	23-APR-19	24-APR-19	R4611475
m+p-Xylenes	<0.030		0.030	ug/g	23-APR-19	24-APR-19	R4611475
Xylenes (Total)	<0.050		0.050	ug/g		24-APR-19	
Surrogate: 4-Bromofluorobenzene	90.8		50-140	%	23-APR-19	24-APR-19	R4611475
Surrogate: 1,4-Difluorobenzene	104.1		50-140	%	23-APR-19	24-APR-19	R4611475
L2259873-13 OW25 Sampled By: J.GOWING on 17-APR-19 @ 11:45 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	17-APR-19	22-APR-19	R4605567
Acenaphthylene	<0.020		0.020	ug/L	17-APR-19	22-APR-19	R4605567
Anthracene	<0.020		0.020	ug/L	17-APR-19	22-APR-19	R4605567
Benzo(a)anthracene	<0.020		0.020	ug/L	17-APR-19	22-APR-19	R4605567
Benzo(a)pyrene	<0.010		0.010	ug/L	17-APR-19	22-APR-19	R4605567
Benzo(b)fluoranthene	<0.020		0.020	ug/L	17-APR-19	22-APR-19	R4605567
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	17-APR-19	22-APR-19	R4605567
Benzo(k)fluoranthene	<0.020		0.020	ug/L	17-APR-19	22-APR-19	R4605567
Chrysene	<0.020		0.020	ug/L	17-APR-19	22-APR-19	R4605567
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	17-APR-19	22-APR-19	R4605567
Fluoranthene	<0.020		0.020	ug/L	17-APR-19	22-APR-19	R4605567
Fluorene	<0.020		0.020	ug/L	17-APR-19	22-APR-19	R4605567
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	17-APR-19	22-APR-19	R4605567
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		22-APR-19	
1-Methylnaphthalene	<0.020		0.020	ug/L	17-APR-19	22-APR-19	R4605567
2-Methylnaphthalene	<0.020		0.020	ug/L	17-APR-19	22-APR-19	R4605567
Naphthalene	<0.050		0.050	ug/L	17-APR-19	22-APR-19	R4605567
Phenanthrene	<0.020		0.020	ug/L	17-APR-19	22-APR-19	R4605567
Pyrene	<0.020		0.020	ug/L	17-APR-19	22-APR-19	R4605567
Surrogate: d10-Acenaphthene	87.0		60-140	%	17-APR-19	22-APR-19	R4605567
Surrogate: d12-Chrysene	86.0		60-140	%	17-APR-19	22-APR-19	R4605567
Surrogate: d8-Naphthalene	90.1		60-140	%	17-APR-19	22-APR-19	R4605567
Surrogate: d10-Phenanthrene	86.8		60-140	%	17-APR-19	22-APR-19	R4605567

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Laboratory Control Sample	Vinyl chloride	MES	L2259873-1, -10, -11, -12, -2, -3, -4, -5, -6, -7, -8, -9

Sample Parameter Qualifier key listed:

Qualifier	Description
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
METHYLNAPS-CALC-WT	Water	PAH-Calculated Parameters	SW846 8270
MOISTURE-WT	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)
PAH-511-WT	Water	PAH-O. Reg 153/04 (July 2011)	SW846 3510/8270

Aqueous samples, fortified with surrogates, are extracted using liquid/liquid extraction technique. The sample extracts are concentrated and then analyzed using GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

VOC-1,3-DCP-CALC-WT	Soil	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Soil	VOC-O.Reg 153/04 (July 2011)	SW846 8260 (511)

Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

17-622539 17-623582

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2259873 Report Date: 24-APR-19

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: JON GOWING

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R4605567								
WG3029969-2 LCS								
1-Methylnaphthalene			96.5		%		50-140	18-APR-19
2-Methylnaphthalene			92.2		%		50-140	18-APR-19
Acenaphthene			103.1		%		50-140	18-APR-19
Acenaphthylene			101.0		%		50-140	18-APR-19
Anthracene			107.6		%		50-140	18-APR-19
Benzo(a)anthracene			116.1		%		50-140	18-APR-19
Benzo(a)pyrene			105.0		%		50-140	18-APR-19
Benzo(b)fluoranthene			98.0		%		50-140	18-APR-19
Benzo(g,h,i)perylene			108.2		%		50-140	18-APR-19
Benzo(k)fluoranthene			105.1		%		50-140	18-APR-19
Chrysene			109.4		%		50-140	18-APR-19
Dibenzo(ah)anthracene			105.7		%		50-140	18-APR-19
Fluoranthene			109.0		%		50-140	18-APR-19
Fluorene			105.1		%		50-140	18-APR-19
Indeno(1,2,3-cd)pyrene			113.5		%		50-140	18-APR-19
Naphthalene			99.5		%		50-140	18-APR-19
Phenanthrene			109.1		%		50-140	18-APR-19
Pyrene			111.0		%		50-140	18-APR-19
WG3029969-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	18-APR-19
2-Methylnaphthalene			<0.020		ug/L		0.02	18-APR-19
Acenaphthene			<0.020		ug/L		0.02	18-APR-19
Acenaphthylene			<0.020		ug/L		0.02	18-APR-19
Anthracene			<0.020		ug/L		0.02	18-APR-19
Benzo(a)anthracene			<0.020		ug/L		0.02	18-APR-19
Benzo(a)pyrene			<0.010		ug/L		0.01	18-APR-19
Benzo(b)fluoranthene			<0.020		ug/L		0.02	18-APR-19
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	18-APR-19
Benzo(k)fluoranthene			<0.020		ug/L		0.02	18-APR-19
Chrysene			<0.020		ug/L		0.02	18-APR-19
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	18-APR-19
Fluoranthene			<0.020		ug/L		0.02	18-APR-19
Fluorene			<0.020		ug/L		0.02	18-APR-19
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	18-APR-19

Quality Control Report

Workorder: L2259873 Report Date: 24-APR-19

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: JON GOWING

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R4605567								
WG3029969-1 MB								
Naphthalene			<0.050		ug/L		0.05	18-APR-19
Phenanthrene			<0.020		ug/L		0.02	18-APR-19
Pyrene			<0.020		ug/L		0.02	18-APR-19
Surrogate: d8-Naphthalene			120.0		%		60-140	18-APR-19
Surrogate: d10-Phenanthrene			116.3		%		60-140	18-APR-19
Surrogate: d12-Chrysene			115.0		%		60-140	18-APR-19
Surrogate: d10-Acenaphthene			113.0		%		60-140	18-APR-19
MOISTURE-WT	**Soil**							
Batch R4606426								
WG3031536-3 DUP		**L2260518-4**						
% Moisture		18.1	18.5		%	2.3	20	23-APR-19
WG3031536-2 LCS								
% Moisture			100.1		%		90-110	23-APR-19
WG3031536-1 MB								
% Moisture			<0.10		%		0.1	23-APR-19
Batch R4607767								
WG3031559-3 DUP		**L2260253-1**						
% Moisture		7.57	7.58		%	0.1	20	23-APR-19
WG3031559-2 LCS								
% Moisture			99.98		%		90-110	23-APR-19
WG3031559-1 MB								
% Moisture			<0.10		%		0.1	23-APR-19
VOC-511-HS-WT	**Soil**							
Batch R4611475								
WG3032347-10 DUP		**WG3032347-9**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-APR-19
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-APR-19
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-APR-19
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-APR-19
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-APR-19
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-APR-19
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-APR-19
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-APR-19
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-APR-19
1,2-Dichloropropane		<0.050	<0.050					

Quality Control Report

Workorder: L2259873 Report Date: 24-APR-19

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: JON GOWING

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R4611475								
WG3032347-10 DUP		**WG3032347-9**						
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-APR-19
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-APR-19
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-APR-19
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	24-APR-19
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	24-APR-19
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-APR-19
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-APR-19
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-APR-19
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-APR-19
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-APR-19
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-APR-19
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-APR-19
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	24-APR-19
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-APR-19
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-APR-19
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	24-APR-19
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-APR-19
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-APR-19
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-APR-19
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	24-APR-19
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	24-APR-19
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	24-APR-19
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	24-APR-19
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-APR-19
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-APR-19
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	24-APR-19
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-APR-19
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	24-APR-19
Trichloroethylene		0.120	0.120		ug/g	0.4	40	24-APR-19
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-APR-19
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	24-APR-19
WG3032347-8 LCS								
1,1,1,2-Tetrachloroethane			99.4		%		60-130	24-APR-19

Quality Control Report

Workorder: L2259873 Report Date: 24-APR-19

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: JON GOWING

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch	**R4611475**							
WG3032347-8	**LCS**							
1,1,2,2-Tetrachloroethane			107.8		%		60-130	24-APR-19
1,1,1-Trichloroethane			96.2		%		60-130	24-APR-19
1,1,2-Trichloroethane			102.9		%		60-130	24-APR-19
1,1-Dichloroethane			97.3		%		60-130	24-APR-19
1,1-Dichloroethylene			84.8		%		60-130	24-APR-19
1,2-Dibromoethane			102.6		%		70-130	24-APR-19
1,2-Dichlorobenzene			105.8		%		70-130	24-APR-19
1,2-Dichloroethane			106.1		%		60-130	24-APR-19
1,2-Dichloropropane			103.9		%		70-130	24-APR-19
1,3-Dichlorobenzene			106.1		%		70-130	24-APR-19
1,4-Dichlorobenzene			108.8		%		70-130	24-APR-19
Acetone			108.3		%		60-140	24-APR-19
Benzene			101.2		%		70-130	24-APR-19
Bromodichloromethane			103.5		%		50-140	24-APR-19
Bromoform			103.3		%		70-130	24-APR-19
Bromomethane			83.7		%		50-140	24-APR-19
Carbon tetrachloride			96.0		%		70-130	24-APR-19
Chlorobenzene			103.9		%		70-130	24-APR-19
Chloroform			101.4		%		70-130	24-APR-19
cis-1,2-Dichloroethylene			99.6		%		70-130	24-APR-19
cis-1,3-Dichloropropene			109.5		%		70-130	24-APR-19
Dibromochloromethane			102.1		%		60-130	24-APR-19
Dichlorodifluoromethane			110.6		%		50-140	24-APR-19
Ethylbenzene			97.4		%		70-130	24-APR-19
n-Hexane			75.5		%		70-130	24-APR-19
Methylene Chloride			99.3		%		70-130	24-APR-19
MTBE			100.7		%		70-130	24-APR-19
m+p-Xylenes			99.2		%		70-130	24-APR-19
Methyl Ethyl Ketone			108.4		%		60-140	24-APR-19
Methyl Isobutyl Ketone			104.4		%		60-140	24-APR-19
o-Xylene			97.5		%		70-130	24-APR-19
Styrene			100.6		%		70-130	24-APR-19
Tetrachloroethylene			99.99		%		60-130	24-APR-19

Quality Control Report

Workorder: L2259873 Report Date: 24-APR-19

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: JON GOWING

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch	**R4611475**							
WG3032347-8	**LCS**							
Toluene			98.6		%		70-130	24-APR-19
trans-1,2-Dichloroethylene			95.5		%		60-130	24-APR-19
trans-1,3-Dichloropropene			102.3		%		70-130	24-APR-19
Trichloroethylene			104.4		%		60-130	24-APR-19
Trichlorofluoromethane			78.7		%		50-140	24-APR-19
Vinyl chloride			51.6	MES	%		60-140	24-APR-19
WG3032347-7	**MB**							
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	24-APR-19
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	24-APR-19
1,1,1-Trichloroethane			<0.050		ug/g		0.05	24-APR-19
1,1,2-Trichloroethane			<0.050		ug/g		0.05	24-APR-19
1,1-Dichloroethane			<0.050		ug/g		0.05	24-APR-19
1,1-Dichloroethylene			<0.050		ug/g		0.05	24-APR-19
1,2-Dibromoethane			<0.050		ug/g		0.05	24-APR-19
1,2-Dichlorobenzene			<0.050		ug/g		0.05	24-APR-19
1,2-Dichloroethane			<0.050		ug/g		0.05	24-APR-19
1,2-Dichloropropane			<0.050		ug/g		0.05	24-APR-19
1,3-Dichlorobenzene			<0.050		ug/g		0.05	24-APR-19
1,4-Dichlorobenzene			<0.050		ug/g		0.05	24-APR-19
Acetone			<0.50		ug/g		0.5	24-APR-19
Benzene			<0.0068		ug/g		0.0068	24-APR-19
Bromodichloromethane			<0.050		ug/g		0.05	24-APR-19
Bromoform			<0.050		ug/g		0.05	24-APR-19
Bromomethane			<0.050		ug/g		0.05	24-APR-19
Carbon tetrachloride			<0.050		ug/g		0.05	24-APR-19
Chlorobenzene			<0.050		ug/g		0.05	24-APR-19
Chloroform			<0.050		ug/g		0.05	24-APR-19
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	24-APR-19
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	24-APR-19
Dibromochloromethane			<0.050		ug/g		0.05	24-APR-19
Dichlorodifluoromethane			<0.050		ug/g		0.05	24-APR-19
Ethylbenzene			<0.018		ug/g		0.018	24-APR-19
n-Hexane			<0.050		ug/g		0.05	24-APR-19
Methylene Chloride			<0.050		ug/g		0.05	24-APR-19

Quality Control Report

Workorder: L2259873 Report Date: 24-APR-19

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: JON GOWING

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R4611475								
WG3032347-7 MB								
MTBE			<0.050		ug/g		0.05	24-APR-19
m+p-Xylenes			<0.030		ug/g		0.03	24-APR-19
Methyl Ethyl Ketone			<0.50		ug/g		0.5	24-APR-19
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	24-APR-19
o-Xylene			<0.020		ug/g		0.02	24-APR-19
Styrene			<0.050		ug/g		0.05	24-APR-19
Tetrachloroethylene			<0.050		ug/g		0.05	24-APR-19
Toluene			<0.080		ug/g		0.08	24-APR-19
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	24-APR-19
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	24-APR-19
Trichloroethylene			<0.010		ug/g		0.01	24-APR-19
Trichlorofluoromethane			<0.050		ug/g		0.05	24-APR-19
Vinyl chloride			<0.020		ug/g		0.02	24-APR-19
Surrogate: 1,4-Difluorobenzene			104.5		%		50-140	24-APR-19
Surrogate: 4-Bromofluorobenzene			92.8		%		50-140	24-APR-19
WG3032347-11 MS		**L2259873-8**						
1,1,1,2-Tetrachloroethane			97.9		%		50-140	24-APR-19
1,1,2,2-Tetrachloroethane			101.2		%		50-140	24-APR-19
1,1,1-Trichloroethane			95.6		%		50-140	24-APR-19
1,1,2-Trichloroethane			100.6		%		50-140	24-APR-19
1,1-Dichloroethane			95.9		%		50-140	24-APR-19
1,1-Dichloroethylene			84.5		%		50-140	24-APR-19
1,2-Dibromoethane			99.0		%		50-140	24-APR-19
1,2-Dichlorobenzene			101.2		%		50-140	24-APR-19
1,2-Dichloroethane			101.8		%		50-140	24-APR-19
1,2-Dichloropropane			100.7		%		50-140	24-APR-19
1,3-Dichlorobenzene			100.6		%		50-140	24-APR-19
1,4-Dichlorobenzene			102.3		%		50-140	24-APR-19
Acetone			105.6		%		50-140	24-APR-19
Benzene			98.7		%		50-140	24-APR-19
Bromodichloromethane			99.6		%		50-140	24-APR-19
Bromoform			99.6		%		50-140	24-APR-19
Bromomethane			80.0		%		50-140	24-APR-19
Carbon tetrachloride			95.3		%		50-140	24-APR-19

Quality Control Report

Workorder: L2259873 Report Date: 24-APR-19

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: JON GOWING

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R4611475								
WG3032347-11 MS		**L2259873-8**						
Chlorobenzene			100.9		%		50-140	24-APR-19
Chloroform			99.3		%		50-140	24-APR-19
cis-1,2-Dichloroethylene			96.6		%		50-140	24-APR-19
cis-1,3-Dichloropropene			96.6		%		50-140	24-APR-19
Dibromochloromethane			99.8		%		50-140	24-APR-19
Dichlorodifluoromethane			122.0		%		50-140	24-APR-19
Ethylbenzene			95.7		%		50-140	24-APR-19
n-Hexane			77.2		%		50-140	24-APR-19
Methylene Chloride			96.3		%		50-140	24-APR-19
MTBE			98.1		%		50-140	24-APR-19
m+p-Xylenes			96.9		%		50-140	24-APR-19
Methyl Ethyl Ketone			96.8		%		50-140	24-APR-19
Methyl Isobutyl Ketone			96.4		%		50-140	24-APR-19
o-Xylene			95.3		%		50-140	24-APR-19
Styrene			95.8		%		50-140	24-APR-19
Tetrachloroethylene			98.0		%		50-140	24-APR-19
Toluene			97.5		%		50-140	24-APR-19
trans-1,2-Dichloroethylene			91.5		%		50-140	24-APR-19
trans-1,3-Dichloropropene			90.1		%		50-140	24-APR-19
Trichloroethylene			103.9		%		50-140	24-APR-19
Trichlorofluoromethane			80.2		%		50-140	24-APR-19
Vinyl chloride			52.0		%		50-140	24-APR-19

Quality Control Report

Workorder: L2259873 Report Date: 24-APR-19

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9
Contact: JON GOWING

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2259873-COFC

COC Number: 17 - 623582

Report To	Contact and company name below will appear on the final report
Company:	JACOBS
Contact:	Jon Gowing
Phone:	519-579-3500
Company address below will appear on the final report	
Street:	72 Victoria St South Suite 2
City/Province:	Kitchener ON
Postal Code:	N2G 4Y9
Invoice To	Same as Report To [X] YES [ ] NO
	Copy of Invoice with Report [ ] YES [ ] NO
Company:	
Contact:	

Report Format / Distribution

Select Report Format: [X] PDF [X] EXCEL [ ] EDD (DIGITAL)
Quality Control (QC) Report with Report [ ] YES [ ] NO
[ ] Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: [ ] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax: ED.TAVES@JACOBS.com
Email 2: Mike.Shirey@JACOBS.com
Email 3:

Invoice Distribution

Select Invoice Distribution: [ ] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax:
Email 2:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] [X] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] [ ]; 3 day [P3-25%] [ ]; 2 day [P2-50%] [ ]
EMERGENCY: 1 Business day [E-100%] [ ]; Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] [ ]

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #:
Job #: 694757
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#:
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2259873
ALS Contact: MATHY
Sampler: J. Gowing

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	VOC	PAH	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
	BH19-209 - 2.5	16-04-19	1150	Soil	X				3
	7		1200		X				3
	9.5		1210		X				3
	BH19-210 - 2.5		1240		X				3
	6		1250		X				3
	7.5		1300		X				3
	9.5		1305		X				3
	BH19-211 - 2.5		1330		X				3
	4		1340		X				3
	10		1350		X				3
	Soil - Dup1		—		X				2
	TRIP BLANK	—	—	Meth	X				1

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] YES [ ] NO
Are samples for human consumption/ use? [ ] YES [ ] NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Use Moisture. Sample from BH19-209-7 for Soil Dup1

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] SIF Observations Yes [ ] No [ ]
Ice Packs [ ] Ice Cubes [X] Custody seal intact Yes [ ] No [ ]
Cooling Initiated [ ]

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
	0.8

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date: 4/17/2019	Time: 1640	Received by:	Date:	Time:	Received by:	Date: Apr 17/19	Time: 16:45

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2259873-COFC

COC Number: 17 - 622539

Report To — Contact and company name below will appear on the final report

Company: JACOBS
Contact: Jon Gowing
Phone:
Company address below will appear on the final report
Street: SEE Pg 1
City/Province:
Postal Code:

Report Format / D

Select Report Format: [x] PDF [x] EXCEL | | EDD (DIGITAL)
Quality Control (QC) Report with Report [ ] YES [ ] NO
[ ] Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: [ ] EMAIL | | MAIL [ ] FAX
Email 1 or Fax
Email 2 See Pg 1
Email 3

Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] [x] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] [ ]; 3 day [P3-25%] [ ]; 2 day [P2-50%] [ ]

EMERGENCY: 1 Business day [E-100%] [ ]; Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] [ ]

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Invoice To Same as Report To [ ] YES [ ] NO
Copy of Invoice with Report [ ] YES [ ] NO
Company:
Contact:

Invoice Distribution

Select Invoice Distribution: [ ] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax
Email 2

Project Information

ALS Account # / Quote #:
Job #: 694757
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2259873
ALS Contact: MATTHY
Sampler: J. Gowing

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	PAH	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
	OW25	17-04-19	1145	WATER	X			2

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] YES [ ] NO
Are samples for human consumption/ use? | | YES | | NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Do not analyze Duplicate Sample.

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] SIF Observations Yes [ ] No [ ]
Ice Packs [x] Ice Cubes [x] Custody seal intact Yes [ ] No [ ]
Cooling Initiated [ ]

INITIAL COOLER TEMPERATURES °C
FINAL COOLER TEMPERATURES °C 8.3

SHIPMENT RELEASE (client use)

Released by: Date: 4/17/19 Time: 1645

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Apr 17/19 Time: 16:45

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JULY 2017 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

CH2M HILL CANADA LIMITED
ATTN: MICHAEL SHIRY
CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 21-FEB-20
Report Date: 16-MAR-20 15:25 (MT)
Version: FINAL REV. 3

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2419793

Project P.O. #: NOT SUBMITTED
Job Reference: 694757CH
C of C Numbers: 17-795231
Legal Site Desc:

Emily Hansen
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-1 TP20-324-1-1.5'							
Sampled By: V.PETERS on 20-FEB-20 @ 09:00							
Matrix: SOIL							
Physical Tests							
Conductivity	0.0777		0.0040	mS/cm		25-FEB-20	R5006028
% Moisture	4.67		0.25	%	22-FEB-20	23-FEB-20	R5001687
Cyanides							
Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002617
Saturated Paste Extractables							
SAR	<0.10	SAR:DL	0.10	SAR		25-FEB-20	R5004988
Calcium (Ca)	6.63		0.50	mg/L		25-FEB-20	R5004988
Magnesium (Mg)	0.69		0.50	mg/L		25-FEB-20	R5004988
Sodium (Na)	<0.50		0.50	mg/L		25-FEB-20	R5004988
Metals							
Antimony (Sb)	<1.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Arsenic (As)	2.7		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Barium (Ba)	18.9		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Beryllium (Be)	<0.50		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Boron (B)	5.4		5.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Boron (B), Hot Water Ext.	<0.10		0.10	ug/g	24-FEB-20	25-FEB-20	R5004990
Cadmium (Cd)	0.75		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Chromium (Cr)	9.6		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Cobalt (Co)	3.5		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Copper (Cu)	13.5		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Lead (Pb)	54.7		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Mercury (Hg)	0.0099		0.0050	ug/g	24-FEB-20	25-FEB-20	R5004991
Molybdenum (Mo)	<1.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Nickel (Ni)	8.9		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Selenium (Se)	<1.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Silver (Ag)	<0.20		0.20	ug/g	24-FEB-20	25-FEB-20	R5005066
Thallium (Tl)	<0.50		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Uranium (U)	<1.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Vanadium (V)	18.4		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Zinc (Zn)	777		5.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Speciated Metals							
Chromium, Hexavalent	<0.20		0.20	ug/g	22-FEB-20	24-FEB-20	R5006648
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
Benzene	<0.0068		0.0068	ug/g	22-FEB-20	24-FEB-20	R5002212
Bromodichloromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Bromoform	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Bromomethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Carbon tetrachloride	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Chlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Dibromochloromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Chloroform	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-1 TP20-324-1-1.5'							
Sampled By: V.PETERS on 20-FEB-20 @ 09:00							
Matrix: SOIL							
Volatile Organic Compounds							
1,2-Dibromoethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,3-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,4-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Dichlorodifluoromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1-Dichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Methylene Chloride	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichloropropane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		24-FEB-20	
Ethylbenzene	<0.018		0.018	ug/g	22-FEB-20	24-FEB-20	R5002212
n-Hexane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Methyl Ethyl Ketone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
MTBE	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Styrene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Tetrachloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Toluene	<0.080		0.080	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,1-Trichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,2-Trichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Trichloroethylene	<0.010		0.010	ug/g	22-FEB-20	24-FEB-20	R5002212
Trichlorofluoromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Vinyl chloride	<0.020		0.020	ug/g	22-FEB-20	24-FEB-20	R5002212
o-Xylene	<0.020		0.020	ug/g	22-FEB-20	24-FEB-20	R5002212
m+p-Xylenes	<0.030		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
Xylenes (Total)	<0.050		0.050	ug/g		24-FEB-20	
Surrogate: 4-Bromofluorobenzene	92.9		50-140	%	22-FEB-20	24-FEB-20	R5002212
Surrogate: 1,4-Difluorobenzene	105.9		50-140	%	22-FEB-20	24-FEB-20	R5002212
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	22-FEB-20	24-FEB-20	R5002212
F1-BTEX	<5.0		5.0	ug/g		27-FEB-20	
F2 (C10-C16)	<10		10	ug/g	24-FEB-20	25-FEB-20	R5008228
F2-Naphth	<10		10	ug/g		27-FEB-20	
F3 (C16-C34)	<50		50	ug/g	24-FEB-20	25-FEB-20	R5008228

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-1 TP20-324-1-1.5'							
Sampled By: V.PETERS on 20-FEB-20 @ 09:00							
Matrix: SOIL							
Hydrocarbons							
F3-PAH	<50		50	ug/g		27-FEB-20	
F4 (C34-C50)	<50		50	ug/g	24-FEB-20	25-FEB-20	R5008228
Total Hydrocarbons (C6-C50)	<72		72	ug/g		27-FEB-20	
Chrom. to baseline at nC50	YES				24-FEB-20	25-FEB-20	R5008228
Surrogate: 2-Bromobenzotrifluoride	82.6		60-140	%	24-FEB-20	25-FEB-20	R5008228
Surrogate: 3,4-Dichlorotoluene	75.2		60-140	%	22-FEB-20	24-FEB-20	R5002212
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Acenaphthylene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Anthracene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(a)anthracene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(a)pyrene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(b)fluoranthene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(g,h,i)perylene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(k)fluoranthene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Chrysene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Dibenzo(ah)anthracene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Fluoranthene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Fluorene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
1+2-Methylnaphthalenes	<0.042		0.042	ug/g		25-FEB-20	
1-Methylnaphthalene	<0.030		0.030	ug/g	22-FEB-20	25-FEB-20	R5004428
2-Methylnaphthalene	<0.030		0.030	ug/g	22-FEB-20	25-FEB-20	R5004428
Naphthalene	<0.013		0.013	ug/g	22-FEB-20	25-FEB-20	R5004428
Phenanthrene	<0.046		0.046	ug/g	22-FEB-20	25-FEB-20	R5004428
Pyrene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Surrogate: 2-Fluorobiphenyl	90.2		50-140	%	22-FEB-20	25-FEB-20	R5004428
Surrogate: p-Terphenyl d14	89.8		50-140	%	22-FEB-20	25-FEB-20	R5004428
L2419793-3 TP20-323-2-2.5'							
Sampled By: V.PETERS on 20-FEB-20 @ 10:07							
Matrix: SOIL							
Physical Tests							
Conductivity	0.139		0.0040	mS/cm		25-FEB-20	R5006028
% Moisture	10.2		0.25	%	22-FEB-20	23-FEB-20	R5001687
Cyanides							
Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002617
Saturated Paste Extractables							
SAR	<0.10	SAR:DL	0.10	SAR		25-FEB-20	R5004988
Calcium (Ca)	15.7		0.50	mg/L		25-FEB-20	R5004988
Magnesium (Mg)	1.31		0.50	mg/L		25-FEB-20	R5004988
Sodium (Na)	<0.50		0.50	mg/L		25-FEB-20	R5004988
Metals							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-3 TP20-323-2-2.5'							
Sampled By: V.PETERS on 20-FEB-20 @ 10:07							
Matrix: SOIL							
Metals							
Antimony (Sb)	1.5		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Arsenic (As)	4.7		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Barium (Ba)	37.2		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Beryllium (Be)	<0.50		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Boron (B)	5.4		5.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Boron (B), Hot Water Ext.	0.20		0.10	ug/g	24-FEB-20	25-FEB-20	R5004990
Cadmium (Cd)	<0.50		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Chromium (Cr)	14.9		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Cobalt (Co)	3.8		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Copper (Cu)	21.1		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Lead (Pb)	87.9		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Mercury (Hg)	0.0246		0.0050	ug/g	24-FEB-20	25-FEB-20	R5004991
Molybdenum (Mo)	<1.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Nickel (Ni)	10.2		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Selenium (Se)	<1.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Silver (Ag)	<0.20		0.20	ug/g	24-FEB-20	25-FEB-20	R5005066
Thallium (Tl)	<0.50		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Uranium (U)	<1.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Vanadium (V)	20.4		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Zinc (Zn)	92.2		5.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Speciated Metals							
Chromium, Hexavalent	<0.20		0.20	ug/g	22-FEB-20	24-FEB-20	R5006648
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Acenaphthylene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Anthracene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(a)anthracene	0.098		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(a)pyrene	0.100		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(b)fluoranthene	0.231		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(g,h,i)perylene	0.130		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(k)fluoranthene	0.064		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Chrysene	0.159		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Dibenzo(ah)anthracene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Fluoranthene	0.160		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Fluorene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Indeno(1,2,3-cd)pyrene	0.104		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
1+2-Methylnaphthalenes	0.416		0.042	ug/g		25-FEB-20	
1-Methylnaphthalene	0.187		0.030	ug/g	22-FEB-20	25-FEB-20	R5004428
2-Methylnaphthalene	0.230		0.030	ug/g	22-FEB-20	25-FEB-20	R5004428
Naphthalene	0.182		0.013	ug/g	22-FEB-20	25-FEB-20	R5004428
Phenanthrene	0.233		0.046	ug/g	22-FEB-20	25-FEB-20	R5004428

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-3 TP20-323-2-2.5'							
Sampled By: V.PETERS on 20-FEB-20 @ 10:07							
Matrix: SOIL							
Polycyclic Aromatic Hydrocarbons							
Pyrene	0.131		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Surrogate: 2-Fluorobiphenyl	98.8		50-140	%	22-FEB-20	25-FEB-20	R5004428
Surrogate: p-Terphenyl d14	100.2		50-140	%	22-FEB-20	25-FEB-20	R5004428
L2419793-5 TP20-322-2-2.5'							
Sampled By: V.PETERS on 20-FEB-20 @ 11:10							
Matrix: SOIL							
Physical Tests							
Conductivity	0.116		0.0040	mS/cm		25-FEB-20	R5006028
% Moisture	8.53		0.25	%	22-FEB-20	23-FEB-20	R5001687
Cyanides							
Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002617
Saturated Paste Extractables							
SAR	<0.10		0.10	SAR		25-FEB-20	R5004988
Calcium (Ca)	11.2		0.50	mg/L		25-FEB-20	R5004988
Magnesium (Mg)	1.28		0.50	mg/L		25-FEB-20	R5004988
Sodium (Na)	0.51		0.50	mg/L		25-FEB-20	R5004988
Metals							
Antimony (Sb)	1.5		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Arsenic (As)	5.4		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Barium (Ba)	26.5		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Beryllium (Be)	<0.50		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Boron (B)	<5.0		5.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Boron (B), Hot Water Ext.	0.23		0.10	ug/g	24-FEB-20	25-FEB-20	R5004990
Cadmium (Cd)	<0.50		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Chromium (Cr)	13.9		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Cobalt (Co)	4.9		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Copper (Cu)	21.1		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Lead (Pb)	40.2		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Mercury (Hg)	0.0197		0.0050	ug/g	24-FEB-20	25-FEB-20	R5004991
Molybdenum (Mo)	<1.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Nickel (Ni)	10.9		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Selenium (Se)	<1.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Silver (Ag)	<0.20		0.20	ug/g	24-FEB-20	25-FEB-20	R5005066
Thallium (Tl)	<0.50		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Uranium (U)	<1.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Vanadium (V)	18.7		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Zinc (Zn)	183		5.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Speciated Metals							
Chromium, Hexavalent	<0.20		0.20	ug/g	22-FEB-20	24-FEB-20	R5006648
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
Benzene	0.0081		0.0068	ug/g	22-FEB-20	24-FEB-20	R5002212

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-5 TP20-322-2-2.5'							
Sampled By: V.PETERS on 20-FEB-20 @ 11:10							
Matrix: SOIL							
Volatile Organic Compounds							
Bromodichloromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Bromoform	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Bromomethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Carbon tetrachloride	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Chlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Dibromochloromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Chloroform	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dibromoethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,3-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,4-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Dichlorodifluoromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1-Dichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Methylene Chloride	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichloropropane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		24-FEB-20	
Ethylbenzene	0.018		0.018	ug/g	22-FEB-20	24-FEB-20	R5002212
n-Hexane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Methyl Ethyl Ketone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
MTBE	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Styrene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Tetrachloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Toluene	<0.080		0.080	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,1-Trichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,2-Trichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Trichloroethylene	<0.010		0.010	ug/g	22-FEB-20	24-FEB-20	R5002212
Trichlorofluoromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Vinyl chloride	<0.020		0.020	ug/g	22-FEB-20	24-FEB-20	R5002212
o-Xylene	0.072		0.020	ug/g	22-FEB-20	24-FEB-20	R5002212
m+p-Xylenes	0.070		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
Xylenes (Total)	0.141		0.050	ug/g		24-FEB-20	
Surrogate: 4-Bromofluorobenzene	83.2		50-140	%	22-FEB-20	24-FEB-20	R5002212

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-5 TP20-322-2-2.5'							
Sampled By: V.PETERS on 20-FEB-20 @ 11:10							
Matrix: SOIL							
Volatile Organic Compounds							
Surrogate: 1,4-Difluorobenzene	95.8		50-140	%	22-FEB-20	24-FEB-20	R5002212
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	22-FEB-20	24-FEB-20	R5002212
F1-BTEX	<5.0		5.0	ug/g		27-FEB-20	
F2 (C10-C16)	<10		10	ug/g	24-FEB-20	26-FEB-20	R5008228
F2-Naphth	<10		10	ug/g		27-FEB-20	
F3 (C16-C34)	61		50	ug/g	24-FEB-20	26-FEB-20	R5008228
F3-PAH	59		50	ug/g		27-FEB-20	
F4 (C34-C50)	<50		50	ug/g	24-FEB-20	26-FEB-20	R5008228
Total Hydrocarbons (C6-C50)	<72		72	ug/g		27-FEB-20	
Chrom. to baseline at nC50	YES				24-FEB-20	26-FEB-20	R5008228
Surrogate: 2-Bromobenzotrifluoride	81.6		60-140	%	24-FEB-20	26-FEB-20	R5008228
Surrogate: 3,4-Dichlorotoluene	61.8		60-140	%	22-FEB-20	24-FEB-20	R5002212
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	0.054		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Acenaphthylene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Anthracene	0.086		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(a)anthracene	0.194		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(a)pyrene	0.143		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(b)fluoranthene	0.295		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(g,h,i)perylene	0.136		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(k)fluoranthene	0.077		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Chrysene	0.246		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Dibenzo(ah)anthracene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Fluoranthene	0.398		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Fluorene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Indeno(1,2,3-cd)pyrene	0.110		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
1+2-Methylnaphthalenes	0.276		0.042	ug/g		25-FEB-20	
1-Methylnaphthalene	0.122		0.030	ug/g	22-FEB-20	25-FEB-20	R5004428
2-Methylnaphthalene	0.155		0.030	ug/g	22-FEB-20	25-FEB-20	R5004428
Naphthalene	0.138		0.013	ug/g	22-FEB-20	25-FEB-20	R5004428
Phenanthrene	0.397		0.046	ug/g	22-FEB-20	25-FEB-20	R5004428
Pyrene	0.319		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Surrogate: 2-Fluorobiphenyl	98.7		50-140	%	22-FEB-20	25-FEB-20	R5004428
Surrogate: p-Terphenyl d14	100.3		50-140	%	22-FEB-20	25-FEB-20	R5004428
L2419793-7 TP20-321-2.75-3.25'							
Sampled By: V.PETERS on 20-FEB-20 @ 12:00							
Matrix: SOIL							
Physical Tests							
Conductivity	0.123		0.0040	mS/cm		25-FEB-20	R5006028
% Moisture	4.32		0.25	%	22-FEB-20	23-FEB-20	R5001687
Cyanides							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-7 TP20-321-2.75-3.25'							
Sampled By: V.PETERS on 20-FEB-20 @ 12:00							
Matrix: SOIL							
Cyanides							
Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002617
Saturated Paste Extractables							
SAR	0.15		0.10	SAR		25-FEB-20	R5004988
Calcium (Ca)	9.12		0.50	mg/L		25-FEB-20	R5004988
Magnesium (Mg)	2.49		0.50	mg/L		25-FEB-20	R5004988
Sodium (Na)	1.92		0.50	mg/L		25-FEB-20	R5004988
Metals							
Antimony (Sb)	<1.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Arsenic (As)	2.2		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Barium (Ba)	16.8		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Beryllium (Be)	<0.50		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Boron (B)	14.9		5.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Boron (B), Hot Water Ext.	<0.10		0.10	ug/g	24-FEB-20	25-FEB-20	R5004990
Cadmium (Cd)	2.21		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Chromium (Cr)	7.2		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Cobalt (Co)	4.1		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Copper (Cu)	11.5		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Lead (Pb)	308		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Mercury (Hg)	0.0595		0.0050	ug/g	24-FEB-20	25-FEB-20	R5004991
Molybdenum (Mo)	<1.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Nickel (Ni)	9.4		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Selenium (Se)	<1.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Silver (Ag)	<0.20		0.20	ug/g	24-FEB-20	25-FEB-20	R5005066
Thallium (Tl)	<0.50		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Uranium (U)	1.5		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Vanadium (V)	15.8		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Zinc (Zn)	1000		5.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Speciated Metals							
Chromium, Hexavalent	<0.20		0.20	ug/g	22-FEB-20	24-FEB-20	R5006648
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
Benzene	<0.0068		0.0068	ug/g	22-FEB-20	24-FEB-20	R5002212
Bromodichloromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Bromoform	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Bromomethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Carbon tetrachloride	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Chlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Dibromochloromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Chloroform	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dibromoethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,3-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-7 TP20-321-2.75-3.25'							
Sampled By: V.PETERS on 20-FEB-20 @ 12:00							
Matrix: SOIL							
Volatile Organic Compounds							
1,4-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Dichlorodifluoromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1-Dichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Methylene Chloride	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichloropropane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		24-FEB-20	
Ethylbenzene	<0.018		0.018	ug/g	22-FEB-20	24-FEB-20	R5002212
n-Hexane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Methyl Ethyl Ketone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
MTBE	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Styrene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Tetrachloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Toluene	<0.080		0.080	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,1-Trichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,2-Trichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Trichloroethylene	<0.010		0.010	ug/g	22-FEB-20	24-FEB-20	R5002212
Trichlorofluoromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Vinyl chloride	<0.020		0.020	ug/g	22-FEB-20	24-FEB-20	R5002212
o-Xylene	<0.020		0.020	ug/g	22-FEB-20	24-FEB-20	R5002212
m+p-Xylenes	<0.030		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
Xylenes (Total)	<0.050		0.050	ug/g		24-FEB-20	
Surrogate: 4-Bromofluorobenzene	106.6		50-140	%	22-FEB-20	24-FEB-20	R5002212
Surrogate: 1,4-Difluorobenzene	121.2		50-140	%	22-FEB-20	24-FEB-20	R5002212
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	22-FEB-20	24-FEB-20	R5002212
F1-BTEX	<5.0		5.0	ug/g		27-FEB-20	
F2 (C10-C16)	19		10	ug/g	24-FEB-20	25-FEB-20	R5008228
F2-Naphth	19		10	ug/g		27-FEB-20	
F3 (C16-C34)	112		50	ug/g	24-FEB-20	25-FEB-20	R5008228
F3-PAH	112		50	ug/g		27-FEB-20	
F4 (C34-C50)	<50		50	ug/g	24-FEB-20	25-FEB-20	R5008228
Total Hydrocarbons (C6-C50)	131		72	ug/g		27-FEB-20	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-7 TP20-321-2.75-3.25'							
Sampled By: V.PETERS on 20-FEB-20 @ 12:00							
Matrix: SOIL							
Hydrocarbons							
Chrom. to baseline at nC50	YES				24-FEB-20	25-FEB-20	R5008228
Surrogate: 2-Bromobenzotrifluoride	80.3		60-140	%	24-FEB-20	25-FEB-20	R5008228
Surrogate: 3,4-Dichlorotoluene	76.3		60-140	%	22-FEB-20	24-FEB-20	R5002212
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Acenaphthylene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Anthracene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(a)anthracene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(a)pyrene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(b)fluoranthene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(g,h,i)perylene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(k)fluoranthene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Chrysene	0.054		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Dibenzo(ah)anthracene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Fluoranthene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Fluorene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
1+2-Methylnaphthalenes	<0.042		0.042	ug/g		25-FEB-20	
1-Methylnaphthalene	<0.030		0.030	ug/g	22-FEB-20	25-FEB-20	R5004428
2-Methylnaphthalene	<0.030		0.030	ug/g	22-FEB-20	25-FEB-20	R5004428
Naphthalene	<0.013		0.013	ug/g	22-FEB-20	25-FEB-20	R5004428
Phenanthrene	0.077		0.046	ug/g	22-FEB-20	25-FEB-20	R5004428
Pyrene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Surrogate: 2-Fluorobiphenyl	92.0		50-140	%	22-FEB-20	25-FEB-20	R5004428
Surrogate: p-Terphenyl d14	95.9		50-140	%	22-FEB-20	25-FEB-20	R5004428
L2419793-8 TP20-321-4.5-5'							
Sampled By: V.PETERS on 20-FEB-20 @ 12:15							
Matrix: SOIL							
Physical Tests							
Conductivity	1.64		0.0040	mS/cm		25-FEB-20	R5006028
% Moisture	9.88		0.25	%	22-FEB-20	23-FEB-20	R5001687
Cyanides							
Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002617
Saturated Paste Extractables							
SAR	<0.10		0.10	SAR		25-FEB-20	R5004988
Calcium (Ca)	439		0.50	mg/L		25-FEB-20	R5004988
Magnesium (Mg)	12.0		0.50	mg/L		25-FEB-20	R5004988
Sodium (Na)	2.69		0.50	mg/L		25-FEB-20	R5004988
Metals							
Antimony (Sb)	<1.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Arsenic (As)	2.2		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Barium (Ba)	21.8		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-8 TP20-321-4.5-5'							
Sampled By: V.PETERS on 20-FEB-20 @ 12:15							
Matrix: SOIL							
Metals							
Beryllium (Be)	<0.50		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Boron (B)	18.4		5.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Boron (B), Hot Water Ext.	<0.10		0.10	ug/g	24-FEB-20	25-FEB-20	R5004990
Cadmium (Cd)	3.03		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Chromium (Cr)	6.5		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Cobalt (Co)	4.6		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Copper (Cu)	11.4		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Lead (Pb)	149		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Mercury (Hg)	0.0773		0.0050	ug/g	24-FEB-20	25-FEB-20	R5004991
Molybdenum (Mo)	1.6		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Nickel (Ni)	9.3		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Selenium (Se)	<1.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Silver (Ag)	<0.20		0.20	ug/g	24-FEB-20	25-FEB-20	R5005066
Thallium (Tl)	<0.50		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Uranium (U)	1.9		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Vanadium (V)	14.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Zinc (Zn)	1310		5.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Speciated Metals							
Chromium, Hexavalent	<0.20		0.20	ug/g	22-FEB-20	24-FEB-20	R5006648
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
Benzene	<0.0068		0.0068	ug/g	22-FEB-20	24-FEB-20	R5002212
Bromodichloromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Bromoform	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Bromomethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Carbon tetrachloride	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Chlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Dibromochloromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Chloroform	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dibromoethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,3-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,4-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Dichlorodifluoromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1-Dichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Methylene Chloride	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichloropropane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-8 TP20-321-4.5-5'							
Sampled By: V.PETERS on 20-FEB-20 @ 12:15							
Matrix: SOIL							
Volatile Organic Compounds							
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		24-FEB-20	
Ethylbenzene	<0.018		0.018	ug/g	22-FEB-20	24-FEB-20	R5002212
n-Hexane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Methyl Ethyl Ketone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
MTBE	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Styrene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Tetrachloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Toluene	<0.080		0.080	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,1-Trichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,2-Trichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Trichloroethylene	<0.010		0.010	ug/g	22-FEB-20	24-FEB-20	R5002212
Trichlorofluoromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Vinyl chloride	<0.020		0.020	ug/g	22-FEB-20	24-FEB-20	R5002212
o-Xylene	<0.020		0.020	ug/g	22-FEB-20	24-FEB-20	R5002212
m+p-Xylenes	<0.030		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
Xylenes (Total)	<0.050		0.050	ug/g		24-FEB-20	
Surrogate: 4-Bromofluorobenzene	94.7		50-140	%	22-FEB-20	24-FEB-20	R5002212
Surrogate: 1,4-Difluorobenzene	107.0		50-140	%	22-FEB-20	24-FEB-20	R5002212
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	22-FEB-20	24-FEB-20	R5002212
F1-BTEX	<5.0		5.0	ug/g		27-FEB-20	
F2 (C10-C16)	<10		10	ug/g	24-FEB-20	26-FEB-20	R5008228
F2-Naphth	<10		10	ug/g		27-FEB-20	
F3 (C16-C34)	61		50	ug/g	24-FEB-20	26-FEB-20	R5008228
F3-PAH	61		50	ug/g		27-FEB-20	
F4 (C34-C50)	<50		50	ug/g	24-FEB-20	26-FEB-20	R5008228
Total Hydrocarbons (C6-C50)	<72		72	ug/g		27-FEB-20	
Chrom. to baseline at nC50	YES				24-FEB-20	26-FEB-20	R5008228
Surrogate: 2-Bromobenzotrifluoride	87.0		60-140	%	24-FEB-20	26-FEB-20	R5008228
Surrogate: 3,4-Dichlorotoluene	75.3		60-140	%	22-FEB-20	24-FEB-20	R5002212
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Acenaphthylene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Anthracene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(a)anthracene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(a)pyrene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-8 TP20-321-4.5-5'							
Sampled By: V.PETERS on 20-FEB-20 @ 12:15							
Matrix: SOIL							
Polycyclic Aromatic Hydrocarbons							
Benzo(b)fluoranthene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(g,h,i)perylene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(k)fluoranthene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Chrysene	0.056		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Dibenzo(ah)anthracene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Fluoranthene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Fluorene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
1+2-Methylnaphthalenes	<0.042		0.042	ug/g		25-FEB-20	
1-Methylnaphthalene	0.031		0.030	ug/g	22-FEB-20	25-FEB-20	R5004428
2-Methylnaphthalene	<0.030		0.030	ug/g	22-FEB-20	25-FEB-20	R5004428
Naphthalene	0.018		0.013	ug/g	22-FEB-20	25-FEB-20	R5004428
Phenanthrene	0.071		0.046	ug/g	22-FEB-20	25-FEB-20	R5004428
Pyrene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Surrogate: 2-Fluorobiphenyl	89.8		50-140	%	22-FEB-20	25-FEB-20	R5004428
Surrogate: p-Terphenyl d14	94.2		50-140	%	22-FEB-20	25-FEB-20	R5004428
L2419793-9 TP20-320-2.5-3'							
Sampled By: V.PETERS on 20-FEB-20 @ 13:00							
Matrix: SOIL							
Physical Tests							
Conductivity	2.13		0.0040	mS/cm		25-FEB-20	R5006028
% Moisture	4.65		0.25	%	22-FEB-20	23-FEB-20	R5001687
Cyanides							
Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002617
Saturated Paste Extractables							
SAR	<0.10		0.10	SAR		25-FEB-20	R5004988
Calcium (Ca)	650		0.50	mg/L		25-FEB-20	R5004988
Magnesium (Mg)	10.1		0.50	mg/L		25-FEB-20	R5004988
Sodium (Na)	1.88		0.50	mg/L		25-FEB-20	R5004988
Metals							
Antimony (Sb)	<1.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Arsenic (As)	2.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Barium (Ba)	24.3		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Beryllium (Be)	<0.50		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Boron (B)	20.5		5.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Boron (B), Hot Water Ext.	0.12		0.10	ug/g	24-FEB-20	25-FEB-20	R5004990
Cadmium (Cd)	2.58		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Chromium (Cr)	6.2		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Cobalt (Co)	4.2		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Copper (Cu)	10.5		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Lead (Pb)	147		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Mercury (Hg)	0.0709		0.0050	ug/g	24-FEB-20	25-FEB-20	R5004991

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-9 TP20-320-2.5-3'							
Sampled By: V.PETERS on 20-FEB-20 @ 13:00							
Matrix: SOIL							
Metals							
Molybdenum (Mo)	1.7		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Nickel (Ni)	9.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Selenium (Se)	<1.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Silver (Ag)	<0.20		0.20	ug/g	24-FEB-20	25-FEB-20	R5005066
Thallium (Tl)	<0.50		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Uranium (U)	2.1		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Vanadium (V)	12.3		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Zinc (Zn)	1060		5.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Speciated Metals							
Chromium, Hexavalent	<0.20		0.20	ug/g	22-FEB-20	24-FEB-20	R5006648
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
Benzene	<0.0068		0.0068	ug/g	22-FEB-20	24-FEB-20	R5002212
Bromodichloromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Bromoform	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Bromomethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Carbon tetrachloride	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Chlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Dibromochloromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Chloroform	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dibromoethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,3-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,4-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Dichlorodifluoromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1-Dichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Methylene Chloride	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichloropropane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		24-FEB-20	
Ethylbenzene	<0.018		0.018	ug/g	22-FEB-20	24-FEB-20	R5002212
n-Hexane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Methyl Ethyl Ketone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
MTBE	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Styrene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-9 TP20-320-2.5-3'							
Sampled By: V.PETERS on 20-FEB-20 @ 13:00							
Matrix: SOIL							
Volatile Organic Compounds							
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Tetrachloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Toluene	<0.080		0.080	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,1-Trichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,2-Trichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Trichloroethylene	<0.010		0.010	ug/g	22-FEB-20	24-FEB-20	R5002212
Trichlorofluoromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Vinyl chloride	<0.020		0.020	ug/g	22-FEB-20	24-FEB-20	R5002212
o-Xylene	<0.020		0.020	ug/g	22-FEB-20	24-FEB-20	R5002212
m+p-Xylenes	<0.030		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
Xylenes (Total)	<0.050		0.050	ug/g		24-FEB-20	
Surrogate: 4-Bromofluorobenzene	101.8		50-140	%	22-FEB-20	24-FEB-20	R5002212
Surrogate: 1,4-Difluorobenzene	117.1		50-140	%	22-FEB-20	24-FEB-20	R5002212
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	22-FEB-20	24-FEB-20	R5002212
F1-BTEX	<5.0		5.0	ug/g		27-FEB-20	
F2 (C10-C16)	16		10	ug/g	24-FEB-20	25-FEB-20	R5008228
F2-Naphth	16		10	ug/g		27-FEB-20	
F3 (C16-C34)	117		50	ug/g	24-FEB-20	25-FEB-20	R5008228
F3-PAH	117		50	ug/g		27-FEB-20	
F4 (C34-C50)	54		50	ug/g	24-FEB-20	25-FEB-20	R5008228
Total Hydrocarbons (C6-C50)	188		72	ug/g		27-FEB-20	
Chrom. to baseline at nC50	YES				24-FEB-20	25-FEB-20	R5008228
Surrogate: 2-Bromobenzotrifluoride	84.6		60-140	%	24-FEB-20	25-FEB-20	R5008228
Surrogate: 3,4-Dichlorotoluene	80.1		60-140	%	22-FEB-20	24-FEB-20	R5002212
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Acenaphthylene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Anthracene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(a)anthracene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(a)pyrene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(b)fluoranthene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(g,h,i)perylene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(k)fluoranthene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Chrysene	0.058		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Dibenzo(ah)anthracene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Fluoranthene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Fluorene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
1+2-Methylnaphthalenes	<0.042		0.042	ug/g		25-FEB-20	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-9 TP20-320-2.5-3'							
Sampled By: V.PETERS on 20-FEB-20 @ 13:00							
Matrix: SOIL							
Polycyclic Aromatic Hydrocarbons							
1-Methylnaphthalene	0.034		0.030	ug/g	22-FEB-20	25-FEB-20	R5004428
2-Methylnaphthalene	<0.030		0.030	ug/g	22-FEB-20	25-FEB-20	R5004428
Naphthalene	<0.013		0.013	ug/g	22-FEB-20	25-FEB-20	R5004428
Phenanthrene	0.057		0.046	ug/g	22-FEB-20	25-FEB-20	R5004428
Pyrene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Surrogate: 2-Fluorobiphenyl	91.7		50-140	%	22-FEB-20	25-FEB-20	R5004428
Surrogate: p-Terphenyl d14	95.5		50-140	%	22-FEB-20	25-FEB-20	R5004428
L2419793-11 DUP1							
Sampled By: V.PETERS on 20-FEB-20							
Matrix: SOIL							
Physical Tests							
Conductivity	0.112		0.0040	mS/cm		25-FEB-20	R5006028
% Moisture	10.7		0.25	%	22-FEB-20	23-FEB-20	R5001687
Cyanides							
Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002617
Saturated Paste Extractables							
SAR	<0.10	SAR:DL	0.10	SAR		25-FEB-20	R5004988
Calcium (Ca)	11.2		0.50	mg/L		25-FEB-20	R5004988
Magnesium (Mg)	1.27		0.50	mg/L		25-FEB-20	R5004988
Sodium (Na)	<0.50		0.50	mg/L		25-FEB-20	R5004988
Metals							
Antimony (Sb)	1.4		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Arsenic (As)	5.1		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Barium (Ba)	30.8		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Beryllium (Be)	<0.50		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Boron (B)	6.2		5.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Boron (B), Hot Water Ext.	0.22		0.10	ug/g	24-FEB-20	25-FEB-20	R5004990
Cadmium (Cd)	<0.50		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Chromium (Cr)	12.5		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Cobalt (Co)	5.1		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Copper (Cu)	19.7		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Lead (Pb)	40.7		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Mercury (Hg)	0.0167		0.0050	ug/g	24-FEB-20	25-FEB-20	R5004991
Molybdenum (Mo)	<1.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Nickel (Ni)	10.6		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Selenium (Se)	<1.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Silver (Ag)	<0.20		0.20	ug/g	24-FEB-20	25-FEB-20	R5005066
Thallium (Tl)	<0.50		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Uranium (U)	<1.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Vanadium (V)	22.5		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Zinc (Zn)	178		5.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Speciated Metals							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-11 DUP1 Sampled By: V.PETERS on 20-FEB-20 Matrix: SOIL							
Speciated Metals							
Chromium, Hexavalent	<0.20		0.20	ug/g	22-FEB-20	24-FEB-20	R5006648
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
Benzene	<0.0068		0.0068	ug/g	22-FEB-20	24-FEB-20	R5002212
Bromodichloromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Bromoform	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Bromomethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Carbon tetrachloride	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Chlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Dibromochloromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Chloroform	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dibromoethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,3-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,4-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Dichlorodifluoromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1-Dichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Methylene Chloride	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichloropropane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		24-FEB-20	
Ethylbenzene	<0.018		0.018	ug/g	22-FEB-20	24-FEB-20	R5002212
n-Hexane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Methyl Ethyl Ketone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
MTBE	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Styrene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Tetrachloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Toluene	<0.080		0.080	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,1-Trichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,2-Trichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Trichloroethylene	<0.010		0.010	ug/g	22-FEB-20	24-FEB-20	R5002212
Trichlorofluoromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Vinyl chloride	<0.020		0.020	ug/g	22-FEB-20	24-FEB-20	R5002212

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-11 DUP1 Sampled By: V.PETERS on 20-FEB-20 Matrix: SOIL							
Volatile Organic Compounds							
o-Xylene	0.055		0.020	ug/g	22-FEB-20	24-FEB-20	R5002212
m+p-Xylenes	0.057		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
Xylenes (Total)	0.112		0.050	ug/g		24-FEB-20	
Surrogate: 4-Bromofluorobenzene	89.5		50-140	%	22-FEB-20	24-FEB-20	R5002212
Surrogate: 1,4-Difluorobenzene	102.5		50-140	%	22-FEB-20	24-FEB-20	R5002212
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	22-FEB-20	24-FEB-20	R5002212
F1-BTEX	<5.0		5.0	ug/g		27-FEB-20	
F2 (C10-C16)	<10		10	ug/g	24-FEB-20	26-FEB-20	R5008228
F2-Naphth	<10		10	ug/g		27-FEB-20	
F3 (C16-C34)	68		50	ug/g	24-FEB-20	26-FEB-20	R5008228
F3-PAH	57		50	ug/g		27-FEB-20	
F4 (C34-C50)	<50		50	ug/g	24-FEB-20	26-FEB-20	R5008228
Total Hydrocarbons (C6-C50)	<72		72	ug/g		27-FEB-20	
Chrom. to baseline at nC50	YES				24-FEB-20	26-FEB-20	R5008228
Surrogate: 2-Bromobenzotrifluoride	79.6		60-140	%	24-FEB-20	26-FEB-20	R5008228
Surrogate: 3,4-Dichlorotoluene	77.8		60-140	%	22-FEB-20	24-FEB-20	R5002212
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Acenaphthylene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Anthracene	0.181		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(a)anthracene	1.41		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(a)pyrene	1.30		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(b)fluoranthene	1.89		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(g,h,i)perylene	0.932		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(k)fluoranthene	0.553		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Chrysene	1.51		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Dibenzo(ah)anthracene	0.261		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Fluoranthene	2.15		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Fluorene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Indeno(1,2,3-cd)pyrene	0.884		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
1+2-Methylnaphthalenes	0.209		0.042	ug/g		25-FEB-20	
1-Methylnaphthalene	0.091		0.030	ug/g	22-FEB-20	25-FEB-20	R5004428
2-Methylnaphthalene	0.118		0.030	ug/g	22-FEB-20	25-FEB-20	R5004428
Naphthalene	0.095		0.013	ug/g	22-FEB-20	25-FEB-20	R5004428
Phenanthrene	0.611		0.046	ug/g	22-FEB-20	25-FEB-20	R5004428
Pyrene	2.06		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Surrogate: 2-Fluorobiphenyl	98.1		50-140	%	22-FEB-20	25-FEB-20	R5004428
Surrogate: p-Terphenyl d14	100.4		50-140	%	22-FEB-20	25-FEB-20	R5004428
L2419793-12 DUP2 Sampled By: V.PETERS on 20-FEB-20 Matrix: SOIL							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-12 DUP2 Sampled By: V.PETERS on 20-FEB-20 Matrix: SOIL							
Physical Tests							
Conductivity	2.19		0.0040	mS/cm		25-FEB-20	R5006028
% Moisture	4.62		0.25	%	22-FEB-20	23-FEB-20	R5001687
Cyanides							
Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002617
Saturated Paste Extractables							
SAR	<0.10		0.10	SAR		25-FEB-20	R5004988
Calcium (Ca)	663		0.50	mg/L		25-FEB-20	R5004988
Magnesium (Mg)	9.41		0.50	mg/L		25-FEB-20	R5004988
Sodium (Na)	2.12		0.50	mg/L		25-FEB-20	R5004988
Metals							
Antimony (Sb)	<1.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Arsenic (As)	2.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Barium (Ba)	23.4		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Beryllium (Be)	<0.50		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Boron (B)	18.4		5.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Boron (B), Hot Water Ext.	0.15		0.10	ug/g	24-FEB-20	25-FEB-20	R5004990
Cadmium (Cd)	2.13		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Chromium (Cr)	6.5		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Cobalt (Co)	4.4		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Copper (Cu)	10.5		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Lead (Pb)	135		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Mercury (Hg)	0.0706		0.0050	ug/g	24-FEB-20	25-FEB-20	R5004991
Molybdenum (Mo)	1.7		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Nickel (Ni)	9.3		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Selenium (Se)	<1.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Silver (Ag)	<0.20		0.20	ug/g	24-FEB-20	25-FEB-20	R5005066
Thallium (Tl)	<0.50		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Uranium (U)	2.2		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Vanadium (V)	13.1		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Zinc (Zn)	862		5.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Speciated Metals							
Chromium, Hexavalent	<0.20		0.20	ug/g	22-FEB-20	24-FEB-20	R5006648
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
Benzene	<0.0068		0.0068	ug/g	22-FEB-20	24-FEB-20	R5002212
Bromodichloromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Bromoform	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Bromomethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Carbon tetrachloride	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Chlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Dibromochloromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Chloroform	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-12 DUP2 Sampled By: V.PETERS on 20-FEB-20 Matrix: SOIL							
Volatile Organic Compounds							
1,2-Dibromoethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,3-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,4-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Dichlorodifluoromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1-Dichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Methylene Chloride	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichloropropane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		24-FEB-20	
Ethylbenzene	<0.018		0.018	ug/g	22-FEB-20	24-FEB-20	R5002212
n-Hexane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Methyl Ethyl Ketone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
MTBE	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Styrene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Tetrachloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Toluene	<0.080		0.080	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,1-Trichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,2-Trichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Trichloroethylene	<0.010		0.010	ug/g	22-FEB-20	24-FEB-20	R5002212
Trichlorofluoromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Vinyl chloride	<0.020		0.020	ug/g	22-FEB-20	24-FEB-20	R5002212
o-Xylene	<0.020		0.020	ug/g	22-FEB-20	24-FEB-20	R5002212
m+p-Xylenes	<0.030		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
Xylenes (Total)	<0.050		0.050	ug/g		24-FEB-20	
Surrogate: 4-Bromofluorobenzene	100.0		50-140	%	22-FEB-20	24-FEB-20	R5002212
Surrogate: 1,4-Difluorobenzene	110.9		50-140	%	22-FEB-20	24-FEB-20	R5002212
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	22-FEB-20	24-FEB-20	R5002212
F1-BTEX	<5.0		5.0	ug/g		27-FEB-20	
F2 (C10-C16)	16		10	ug/g	24-FEB-20	25-FEB-20	R5008228
F2-Naphth	16		10	ug/g		27-FEB-20	
F3 (C16-C34)	119		50	ug/g	24-FEB-20	25-FEB-20	R5008228

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-12 DUP2 Sampled By: V.PETERS on 20-FEB-20 Matrix: SOIL							
Hydrocarbons							
F3-PAH	119		50	ug/g		27-FEB-20	
F4 (C34-C50)	54		50	ug/g	24-FEB-20	25-FEB-20	R5008228
Total Hydrocarbons (C6-C50)	189		72	ug/g		27-FEB-20	
Chrom. to baseline at nC50	YES				24-FEB-20	25-FEB-20	R5008228
Surrogate: 2-Bromobenzotrifluoride	83.1		60-140	%	24-FEB-20	25-FEB-20	R5008228
Surrogate: 3,4-Dichlorotoluene	84.2		60-140	%	22-FEB-20	24-FEB-20	R5002212
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Acenaphthylene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Anthracene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(a)anthracene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(a)pyrene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(b)fluoranthene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(g,h,i)perylene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(k)fluoranthene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Chrysene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Dibenzo(ah)anthracene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Fluoranthene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Fluorene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
1+2-Methylnaphthalenes	<0.042		0.042	ug/g		25-FEB-20	
1-Methylnaphthalene	<0.030		0.030	ug/g	22-FEB-20	25-FEB-20	R5004428
2-Methylnaphthalene	<0.030		0.030	ug/g	22-FEB-20	25-FEB-20	R5004428
Naphthalene	<0.013		0.013	ug/g	22-FEB-20	25-FEB-20	R5004428
Phenanthrene	<0.046		0.046	ug/g	22-FEB-20	25-FEB-20	R5004428
Pyrene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Surrogate: 2-Fluorobiphenyl	89.1		50-140	%	22-FEB-20	25-FEB-20	R5004428
Surrogate: p-Terphenyl d14	91.3		50-140	%	22-FEB-20	25-FEB-20	R5004428
L2419793-13 BH20-213-0.5-2.5 Sampled By: V.PETERS on 21-FEB-20 @ 14:30 Matrix: SOIL							
Physical Tests							
Conductivity	0.533		0.0040	mS/cm		25-FEB-20	R5006028
% Moisture	11.7		0.25	%	22-FEB-20	23-FEB-20	R5001687
Cyanides							
Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002617
Saturated Paste Extractables							
SAR	<0.10		0.10	SAR		25-FEB-20	R5004988
Calcium (Ca)	76.7		0.50	mg/L		25-FEB-20	R5004988
Magnesium (Mg)	8.47		0.50	mg/L		25-FEB-20	R5004988
Sodium (Na)	1.42		0.50	mg/L		25-FEB-20	R5004988
Metals							

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-13 BH20-213-0.5-2.5 Sampled By: V.PETERS on 21-FEB-20 @ 14:30 Matrix: SOIL							
Metals							
Antimony (Sb)	1.4		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Arsenic (As)	7.5		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Barium (Ba)	48.9		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Beryllium (Be)	<0.50		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Boron (B)	5.6		5.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Boron (B), Hot Water Ext.	0.61		0.10	ug/g	24-FEB-20	25-FEB-20	R5004990
Cadmium (Cd)	<0.50		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Chromium (Cr)	16.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Cobalt (Co)	7.3		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Copper (Cu)	30.6		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Lead (Pb)	42.5		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Mercury (Hg)	0.0394		0.0050	ug/g	24-FEB-20	25-FEB-20	R5004991
Molybdenum (Mo)	1.9		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Nickel (Ni)	16.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Selenium (Se)	<1.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Silver (Ag)	<0.20		0.20	ug/g	24-FEB-20	25-FEB-20	R5005066
Thallium (Tl)	<0.50		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Uranium (U)	<1.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Vanadium (V)	23.7		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Zinc (Zn)	63.7		5.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Speciated Metals							
Chromium, Hexavalent	<0.20		0.20	ug/g	22-FEB-20	24-FEB-20	R5006648
Polycyclic Aromatic Hydrocarbons							
1+2-Methylnaphthalenes	0.242		0.042	ug/g		02-MAR-20	
Semi-Volatile Organics							
Acenaphthene	<0.050		0.050	ug/g	27-FEB-20	02-MAR-20	R5012104
Acenaphthylene	<0.050		0.050	ug/g	27-FEB-20	02-MAR-20	R5012104
Anthracene	<0.050		0.050	ug/g	27-FEB-20	02-MAR-20	R5012104
Benzo(a)anthracene	0.054		0.050	ug/g	27-FEB-20	02-MAR-20	R5012104
Benzo(a)pyrene	<0.050		0.050	ug/g	27-FEB-20	02-MAR-20	R5012104
Benzo(b)fluoranthene	<0.050		0.050	ug/g	27-FEB-20	02-MAR-20	R5012104
Benzo(ghi)perylene	<0.050		0.050	ug/g	27-FEB-20	02-MAR-20	R5012104
Benzo(k)fluoranthene	<0.050		0.050	ug/g	27-FEB-20	02-MAR-20	R5012104
Biphenyl	<0.050		0.050	ug/g	27-FEB-20	02-MAR-20	R5012104
4-Chloroaniline	<0.10		0.10	ug/g	27-FEB-20	02-MAR-20	R5012104
Bis(2-chloroethyl)ether	<0.10		0.10	ug/g	27-FEB-20	02-MAR-20	R5012104
Bis(2-chloroisopropyl)ether	<0.10		0.10	ug/g	27-FEB-20	02-MAR-20	R5012104
2-Chlorophenol	<0.10		0.10	ug/g	27-FEB-20	02-MAR-20	R5012104
Chrysene	0.058		0.050	ug/g	27-FEB-20	02-MAR-20	R5012104
Dibenzo(a,h)anthracene	<0.050		0.050	ug/g	27-FEB-20	02-MAR-20	R5012104
3,3'-Dichlorobenzidine	<0.10		0.10	ug/g	27-FEB-20	02-MAR-20	R5012104
2,4-Dichlorophenol	<0.10		0.10	ug/g	27-FEB-20	02-MAR-20	R5012104

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-13 BH20-213-0.5-2.5 Sampled By: V.PETERS on 21-FEB-20 @ 14:30 Matrix: SOIL							
Semi-Volatile Organics							
Diethylphthalate	<0.10		0.10	ug/g	27-FEB-20	02-MAR-20	R5012104
Dimethylphthalate	<0.10		0.10	ug/g	27-FEB-20	02-MAR-20	R5012104
2,4-Dimethylphenol	<0.10		0.10	ug/g	27-FEB-20	02-MAR-20	R5012104
2,4-Dinitrophenol	<1.0		1.0	ug/g	27-FEB-20	02-MAR-20	R5012104
2,4-Dinitrotoluene	<0.10		0.10	ug/g	27-FEB-20	02-MAR-20	R5012104
2,6-Dinitrotoluene	<0.10		0.10	ug/g	27-FEB-20	02-MAR-20	R5012104
2,4+2,6-Dinitrotoluene	<0.14		0.14	ug/g		02-MAR-20	
Bis(2-ethylhexyl)phthalate	<0.10		0.10	ug/g	27-FEB-20	02-MAR-20	R5012104
Fluoranthene	0.066		0.050	ug/g	27-FEB-20	02-MAR-20	R5012104
Fluorene	<0.050		0.050	ug/g	27-FEB-20	02-MAR-20	R5012104
Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	27-FEB-20	02-MAR-20	R5012104
1-Methylnaphthalene	0.110		0.030	ug/g	27-FEB-20	02-MAR-20	R5012104
2-Methylnaphthalene	0.133		0.030	ug/g	27-FEB-20	02-MAR-20	R5012104
Naphthalene	0.088		0.050	ug/g	27-FEB-20	02-MAR-20	R5012104
Pentachlorophenol	<0.10		0.10	ug/g	27-FEB-20	02-MAR-20	R5012104
Phenanthrene	0.125		0.050	ug/g	27-FEB-20	02-MAR-20	R5012104
Phenol	<0.10		0.10	ug/g	27-FEB-20	02-MAR-20	R5012104
Pyrene	0.061		0.050	ug/g	27-FEB-20	02-MAR-20	R5012104
1,2,4-Trichlorobenzene	<0.050		0.050	ug/g	27-FEB-20	02-MAR-20	R5012104
2,4,5-Trichlorophenol	<0.10		0.10	ug/g	27-FEB-20	02-MAR-20	R5012104
2,4,6-Trichlorophenol	<0.10		0.10	ug/g	27-FEB-20	02-MAR-20	R5012104
Surrogate: 2-Fluorobiphenyl	115.2		50-140	%	27-FEB-20	02-MAR-20	R5012104
Surrogate: Nitrobenzene d5	118.5		50-140	%	27-FEB-20	02-MAR-20	R5012104
Surrogate: p-Terphenyl d14	114.4		50-140	%	27-FEB-20	02-MAR-20	R5012104
Surrogate: 2,4,6-Tribromophenol	109.1		50-140	%	27-FEB-20	02-MAR-20	R5012104
L2419793-15 BH18-207I-0.5-2.5 Sampled By: V.PETERS on 21-FEB-20 @ 09:55 Matrix: SOIL							
Physical Tests							
% Moisture	12.1		0.25	%	22-FEB-20	23-FEB-20	R5001687
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
Benzene	0.0320		0.0068	ug/g	22-FEB-20	24-FEB-20	R5002212
Bromodichloromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Bromoform	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Bromomethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Carbon tetrachloride	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Chlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Dibromochloromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Chloroform	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dibromoethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-15 BH18-207I-0.5-2.5 Sampled By: V.PETERS on 21-FEB-20 @ 09:55 Matrix: SOIL							
Volatile Organic Compounds							
1,3-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,4-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Dichlorodifluoromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1-Dichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Methylene Chloride	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichloropropane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		24-FEB-20	
Ethylbenzene	<0.018		0.018	ug/g	22-FEB-20	24-FEB-20	R5002212
n-Hexane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Methyl Ethyl Ketone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
MTBE	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Styrene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Tetrachloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Toluene	0.097		0.080	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,1-Trichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,2-Trichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Trichloroethylene	35.4		0.010	ug/g	22-FEB-20	24-FEB-20	R5002212
Trichlorofluoromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Vinyl chloride	<0.020		0.020	ug/g	22-FEB-20	24-FEB-20	R5002212
o-Xylene	0.099		0.020	ug/g	22-FEB-20	24-FEB-20	R5002212
m+p-Xylenes	0.128		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
Xylenes (Total)	0.226		0.050	ug/g		24-FEB-20	
Surrogate: 4-Bromofluorobenzene	93.2		50-140	%	22-FEB-20	24-FEB-20	R5002212
Surrogate: 1,4-Difluorobenzene	110.6		50-140	%	22-FEB-20	24-FEB-20	R5002212
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Acenaphthylene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Anthracene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(a)anthracene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(a)pyrene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(b)fluoranthene	0.057		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(g,h,i)perylene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-15 BH18-207I-0.5-2.5 Sampled By: V.PETERS on 21-FEB-20 @ 09:55 Matrix: SOIL							
Polycyclic Aromatic Hydrocarbons							
Benzo(k)fluoranthene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Chrysene	0.062		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Dibenzo(ah)anthracene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Fluoranthene	0.081		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Fluorene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
1+2-Methylnaphthalenes	<0.042		0.042	ug/g		25-FEB-20	
1-Methylnaphthalene	<0.030		0.030	ug/g	22-FEB-20	25-FEB-20	R5004428
2-Methylnaphthalene	<0.030		0.030	ug/g	22-FEB-20	25-FEB-20	R5004428
Naphthalene	0.020		0.013	ug/g	22-FEB-20	25-FEB-20	R5004428
Phenanthrene	0.064		0.046	ug/g	22-FEB-20	25-FEB-20	R5004428
Pyrene	0.084		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Surrogate: 2-Fluorobiphenyl	98.2		50-140	%	22-FEB-20	25-FEB-20	R5004428
Surrogate: p-Terphenyl d14	99.7		50-140	%	22-FEB-20	25-FEB-20	R5004428
L2419793-16 BH18-207I-5-7 Sampled By: V.PETERS on 21-FEB-20 @ 10:20 Matrix: SOIL							
Physical Tests							
% Moisture	6.59		0.25	%	25-FEB-20	26-FEB-20	R5006471
Metals							
Antimony (Sb)	<2.0	DLHC	2.0	ug/g	24-FEB-20	25-FEB-20	R5005288
Arsenic (As)	4.0	DLHC	2.0	ug/g	24-FEB-20	25-FEB-20	R5005288
Barium (Ba)	20	DLHC	10	ug/g	24-FEB-20	25-FEB-20	R5005288
Beryllium (Be)	<2.0	DLHC	2.0	ug/g	24-FEB-20	25-FEB-20	R5005288
Boron (B)	<100	DLHC	100	ug/g	24-FEB-20	25-FEB-20	R5005288
Cadmium (Cd)	1.18	DLHC	0.50	ug/g	24-FEB-20	25-FEB-20	R5005288
Chromium (Cr)	<10	DLHC	10	ug/g	24-FEB-20	25-FEB-20	R5005288
Cobalt (Co)	3.6	DLHC	2.0	ug/g	24-FEB-20	25-FEB-20	R5005288
Copper (Cu)	23	DLHC	10	ug/g	24-FEB-20	25-FEB-20	R5005288
Lead (Pb)	101	DLHC	10	ug/g	24-FEB-20	25-FEB-20	R5005288
Molybdenum (Mo)	<2.0	DLHC	2.0	ug/g	24-FEB-20	25-FEB-20	R5005288
Nickel (Ni)	10	DLHC	10	ug/g	24-FEB-20	25-FEB-20	R5005288
Selenium (Se)	<4.0	DLHC	4.0	ug/g	24-FEB-20	25-FEB-20	R5005288
Silver (Ag)	<2.0	DLHC	2.0	ug/g	24-FEB-20	25-FEB-20	R5005288
Thallium (Tl)	<1.0	DLHC	1.0	ug/g	24-FEB-20	25-FEB-20	R5005288
Uranium (U)	<1.0	DLHC	1.0	ug/g	24-FEB-20	25-FEB-20	R5005288
Vanadium (V)	12.3	DLHC	4.0	ug/g	24-FEB-20	25-FEB-20	R5005288
Zinc (Zn)	2500	DLHC	40	ug/g	24-FEB-20	25-FEB-20	R5005288
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	26-FEB-20	27-FEB-20	R5009106
Benzene	<0.0068		0.0068	ug/g	26-FEB-20	27-FEB-20	R5009106
Bromodichloromethane	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-16 BH18-207I-5-7 Sampled By: V.PETERS on 21-FEB-20 @ 10:20 Matrix: SOIL							
Volatile Organic Compounds							
Bromoform	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
Bromomethane	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
Carbon tetrachloride	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
Chlorobenzene	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
Dibromochloromethane	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
Chloroform	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
1,2-Dibromoethane	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
1,2-Dichlorobenzene	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
1,3-Dichlorobenzene	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
1,4-Dichlorobenzene	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
Dichlorodifluoromethane	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
1,1-Dichloroethane	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
1,2-Dichloroethane	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
1,1-Dichloroethylene	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
Methylene Chloride	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
1,2-Dichloropropane	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	26-FEB-20	27-FEB-20	R5009106
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	26-FEB-20	27-FEB-20	R5009106
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		27-FEB-20	
Ethylbenzene	<0.018		0.018	ug/g	26-FEB-20	27-FEB-20	R5009106
n-Hexane	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
Methyl Ethyl Ketone	<0.50		0.50	ug/g	26-FEB-20	27-FEB-20	R5009106
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	26-FEB-20	27-FEB-20	R5009106
MTBE	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
Styrene	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
Tetrachloroethylene	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
Toluene	<0.080		0.080	ug/g	26-FEB-20	27-FEB-20	R5009106
1,1,1-Trichloroethane	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
1,1,2-Trichloroethane	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
Trichloroethylene	0.308		0.010	ug/g	26-FEB-20	27-FEB-20	R5009106
Trichlorofluoromethane	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
Vinyl chloride	<0.020		0.020	ug/g	26-FEB-20	27-FEB-20	R5009106
o-Xylene	<0.020		0.020	ug/g	26-FEB-20	27-FEB-20	R5009106
m+p-Xylenes	<0.030		0.030	ug/g	26-FEB-20	27-FEB-20	R5009106
Xylenes (Total)	<0.050		0.050	ug/g		27-FEB-20	
Surrogate: 4-Bromofluorobenzene	97.1		50-140	%	26-FEB-20	27-FEB-20	R5009106
Surrogate: 1,4-Difluorobenzene	109.5		50-140	%	26-FEB-20	27-FEB-20	R5009106

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-16 BH18-207I-5-7 Sampled By: V.PETERS on 21-FEB-20 @ 10:20 Matrix: SOIL							
Volatile Organic Compounds							
L2419793-17 BH18-207I-7.5-9.5 Sampled By: V.PETERS on 21-FEB-20 @ 10:40 Matrix: SOIL							
Physical Tests							
% Moisture	8.08		0.25	%	25-FEB-20	26-FEB-20	R5006471
Metals							
Antimony (Sb)	<2.0	DLHC	2.0	ug/g	24-FEB-20	25-FEB-20	R5005288
Arsenic (As)	4.1	DLHC	2.0	ug/g	24-FEB-20	25-FEB-20	R5005288
Barium (Ba)	22	DLHC	10	ug/g	24-FEB-20	25-FEB-20	R5005288
Beryllium (Be)	<2.0	DLHC	2.0	ug/g	24-FEB-20	25-FEB-20	R5005288
Boron (B)	<100	DLHC	100	ug/g	24-FEB-20	25-FEB-20	R5005288
Cadmium (Cd)	5.09	DLHC	0.50	ug/g	24-FEB-20	25-FEB-20	R5005288
Chromium (Cr)	10	DLHC	10	ug/g	24-FEB-20	25-FEB-20	R5005288
Cobalt (Co)	3.7	DLHC	2.0	ug/g	24-FEB-20	25-FEB-20	R5005288
Copper (Cu)	48	DLHC	10	ug/g	24-FEB-20	25-FEB-20	R5005288
Lead (Pb)	91	DLHC	10	ug/g	24-FEB-20	25-FEB-20	R5005288
Molybdenum (Mo)	<2.0	DLHC	2.0	ug/g	24-FEB-20	25-FEB-20	R5005288
Nickel (Ni)	16	DLHC	10	ug/g	24-FEB-20	25-FEB-20	R5005288
Selenium (Se)	<4.0	DLHC	4.0	ug/g	24-FEB-20	25-FEB-20	R5005288
Silver (Ag)	<2.0	DLHC	2.0	ug/g	24-FEB-20	25-FEB-20	R5005288
Thallium (Tl)	<1.0	DLHC	1.0	ug/g	24-FEB-20	25-FEB-20	R5005288
Uranium (U)	<1.0	DLHC	1.0	ug/g	24-FEB-20	25-FEB-20	R5005288
Vanadium (V)	14.3	DLHC	4.0	ug/g	24-FEB-20	25-FEB-20	R5005288
Zinc (Zn)	8650	DLHC	40	ug/g	24-FEB-20	25-FEB-20	R5005288
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	26-FEB-20	27-FEB-20	R5009106
Benzene	<0.0068		0.0068	ug/g	26-FEB-20	27-FEB-20	R5009106
Bromodichloromethane	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
Bromoform	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
Bromomethane	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
Carbon tetrachloride	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
Chlorobenzene	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
Dibromochloromethane	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
Chloroform	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
1,2-Dibromoethane	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
1,2-Dichlorobenzene	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
1,3-Dichlorobenzene	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
1,4-Dichlorobenzene	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
Dichlorodifluoromethane	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
1,1-Dichloroethane	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
1,2-Dichloroethane	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
1,1-Dichloroethylene	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-17 BH18-207I-7.5-9.5 Sampled By: V.PETERS on 21-FEB-20 @ 10:40 Matrix: SOIL							
Volatile Organic Compounds							
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
Methylene Chloride	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
1,2-Dichloropropane	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	26-FEB-20	27-FEB-20	R5009106
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	26-FEB-20	27-FEB-20	R5009106
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		27-FEB-20	
Ethylbenzene	<0.018		0.018	ug/g	26-FEB-20	27-FEB-20	R5009106
n-Hexane	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
Methyl Ethyl Ketone	<0.50		0.50	ug/g	26-FEB-20	27-FEB-20	R5009106
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	26-FEB-20	27-FEB-20	R5009106
MTBE	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
Styrene	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
Tetrachloroethylene	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
Toluene	<0.080		0.080	ug/g	26-FEB-20	27-FEB-20	R5009106
1,1,1-Trichloroethane	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
1,1,2-Trichloroethane	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
Trichloroethylene	0.040		0.010	ug/g	26-FEB-20	27-FEB-20	R5009106
Trichlorofluoromethane	<0.050		0.050	ug/g	26-FEB-20	27-FEB-20	R5009106
Vinyl chloride	<0.020		0.020	ug/g	26-FEB-20	27-FEB-20	R5009106
o-Xylene	<0.020		0.020	ug/g	26-FEB-20	27-FEB-20	R5009106
m+p-Xylenes	<0.030		0.030	ug/g	26-FEB-20	27-FEB-20	R5009106
Xylenes (Total)	<0.050		0.050	ug/g		27-FEB-20	
Surrogate: 4-Bromofluorobenzene	116.2		50-140	%	26-FEB-20	27-FEB-20	R5009106
Surrogate: 1,4-Difluorobenzene	123.4		50-140	%	26-FEB-20	27-FEB-20	R5009106
L2419793-18 BH20-212-0.5-2 Sampled By: V.PETERS on 21-FEB-20 @ 12:15 Matrix: SOIL							
Physical Tests							
Conductivity	0.136		0.0040	mS/cm		25-FEB-20	R5006028
% Moisture	15.4		0.25	%	22-FEB-20	23-FEB-20	R5001687
Cyanides							
Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002617
Saturated Paste Extractables							
SAR	0.29		0.10	SAR		25-FEB-20	R5004988
Calcium (Ca)	8.50		0.50	mg/L		25-FEB-20	R5004988
Magnesium (Mg)	2.77		0.50	mg/L		25-FEB-20	R5004988
Sodium (Na)	3.75		0.50	mg/L		25-FEB-20	R5004988
Metals							
Antimony (Sb)	1.2		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-18 BH20-212-0.5-2 Sampled By: V.PETERS on 21-FEB-20 @ 12:15 Matrix: SOIL							
Metals							
Arsenic (As)	4.9		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Barium (Ba)	23.1		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Beryllium (Be)	<0.50		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Boron (B)	6.2		5.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Boron (B), Hot Water Ext.	0.24		0.10	ug/g	24-FEB-20	25-FEB-20	R5004990
Cadmium (Cd)	<0.50		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Chromium (Cr)	14.7		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Cobalt (Co)	5.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Copper (Cu)	25.9		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Lead (Pb)	23.4		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Mercury (Hg)	<0.0050		0.0050	ug/g	24-FEB-20	25-FEB-20	R5004991
Molybdenum (Mo)	<1.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Nickel (Ni)	11.5		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Selenium (Se)	<1.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Silver (Ag)	<0.20		0.20	ug/g	24-FEB-20	25-FEB-20	R5005066
Thallium (Tl)	<0.50		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Uranium (U)	<1.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Vanadium (V)	28.8		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Zinc (Zn)	56.2		5.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Speciated Metals							
Chromium, Hexavalent	<0.20		0.20	ug/g	22-FEB-20	24-FEB-20	R5006648
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
Benzene	<0.0068		0.0068	ug/g	22-FEB-20	24-FEB-20	R5002212
Bromodichloromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Bromoform	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Bromomethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Carbon tetrachloride	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Chlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Dibromochloromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Chloroform	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dibromoethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,3-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,4-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Dichlorodifluoromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1-Dichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-18 BH20-212-0.5-2							
Sampled By: V.PETERS on 21-FEB-20 @ 12:15							
Matrix: SOIL							
Volatile Organic Compounds							
Methylene Chloride	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichloropropane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		24-FEB-20	
Ethylbenzene	<0.018		0.018	ug/g	22-FEB-20	24-FEB-20	R5002212
n-Hexane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Methyl Ethyl Ketone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
MTBE	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Styrene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Tetrachloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Toluene	<0.080		0.080	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,1-Trichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,2-Trichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Trichloroethylene	<0.010		0.010	ug/g	22-FEB-20	24-FEB-20	R5002212
Trichlorofluoromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Vinyl chloride	<0.020		0.020	ug/g	22-FEB-20	24-FEB-20	R5002212
o-Xylene	<0.020		0.020	ug/g	22-FEB-20	24-FEB-20	R5002212
m+p-Xylenes	<0.030		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
Xylenes (Total)	<0.050		0.050	ug/g		24-FEB-20	
Surrogate: 4-Bromofluorobenzene	87.2		50-140	%	22-FEB-20	24-FEB-20	R5002212
Surrogate: 1,4-Difluorobenzene	98.8		50-140	%	22-FEB-20	24-FEB-20	R5002212
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	22-FEB-20	24-FEB-20	R5002212
F1-BTEX	<5.0		5.0	ug/g		27-FEB-20	
F2 (C10-C16)	<10		10	ug/g	24-FEB-20	26-FEB-20	R5008228
F2-Naphth	<10		10	ug/g		27-FEB-20	
F3 (C16-C34)	<50		50	ug/g	24-FEB-20	26-FEB-20	R5008228
F3-PAH	<50		50	ug/g		27-FEB-20	
F4 (C34-C50)	<50		50	ug/g	24-FEB-20	26-FEB-20	R5008228
Total Hydrocarbons (C6-C50)	<72		72	ug/g		27-FEB-20	
Chrom. to baseline at nC50	YES				24-FEB-20	26-FEB-20	R5008228
Surrogate: 2-Bromobenzotrifluoride	79.1		60-140	%	24-FEB-20	26-FEB-20	R5008228
Surrogate: 3,4-Dichlorotoluene	76.6		60-140	%	22-FEB-20	24-FEB-20	R5002212
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Acenaphthylene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Anthracene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-18 BH20-212-0.5-2 Sampled By: V.PETERS on 21-FEB-20 @ 12:15 Matrix: SOIL							
Polycyclic Aromatic Hydrocarbons							
Benzo(a)anthracene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(a)pyrene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(b)fluoranthene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(g,h,i)perylene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(k)fluoranthene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Chrysene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Dibenzo(ah)anthracene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Fluoranthene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Fluorene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
1+2-Methylnaphthalenes	0.070		0.042	ug/g		25-FEB-20	
1-Methylnaphthalene	0.038		0.030	ug/g	22-FEB-20	25-FEB-20	R5004428
2-Methylnaphthalene	0.032		0.030	ug/g	22-FEB-20	25-FEB-20	R5004428
Naphthalene	0.014		0.013	ug/g	22-FEB-20	25-FEB-20	R5004428
Phenanthrene	<0.046		0.046	ug/g	22-FEB-20	25-FEB-20	R5004428
Pyrene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Surrogate: 2-Fluorobiphenyl	99.9		50-140	%	22-FEB-20	25-FEB-20	R5004428
Surrogate: p-Terphenyl d14	98.0		50-140	%	22-FEB-20	25-FEB-20	R5004428
L2419793-20 BH20-214-0.5-2 Sampled By: V.PETERS on 21-FEB-20 @ 13:30 Matrix: SOIL							
Physical Tests							
Conductivity	0.445		0.0040	mS/cm		25-FEB-20	R5006028
% Moisture	12.3		0.25	%	25-FEB-20	26-FEB-20	R5006167
Cyanides							
Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	24-FEB-20	25-FEB-20	R5005149
Saturated Paste Extractables							
SAR	0.32		0.10	SAR		25-FEB-20	R5004988
Calcium (Ca)	64.1		0.50	mg/L		25-FEB-20	R5004988
Magnesium (Mg)	10.1		0.50	mg/L		25-FEB-20	R5004988
Sodium (Na)	10.5		0.50	mg/L		25-FEB-20	R5004988
Metals							
Antimony (Sb)	3.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Arsenic (As)	9.2		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Barium (Ba)	54.5		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Beryllium (Be)	<0.50		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Boron (B)	9.5		5.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Boron (B), Hot Water Ext.	0.37		0.10	ug/g	24-FEB-20	25-FEB-20	R5004990
Cadmium (Cd)	<0.50		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Chromium (Cr)	9.4		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Cobalt (Co)	5.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Copper (Cu)	26.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-20 BH20-214-0.5-2 Sampled By: V.PETERS on 21-FEB-20 @ 13:30 Matrix: SOIL							
Metals							
Lead (Pb)	67.2		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Mercury (Hg)	0.185		0.0050	ug/g	24-FEB-20	25-FEB-20	R5004991
Molybdenum (Mo)	1.1		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Nickel (Ni)	10.5		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Selenium (Se)	1.9		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Silver (Ag)	<0.20		0.20	ug/g	24-FEB-20	25-FEB-20	R5005066
Thallium (Tl)	<0.50		0.50	ug/g	24-FEB-20	25-FEB-20	R5005066
Uranium (U)	<1.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Vanadium (V)	13.8		1.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Zinc (Zn)	175		5.0	ug/g	24-FEB-20	25-FEB-20	R5005066
Speciated Metals							
Chromium, Hexavalent	<0.20		0.20	ug/g	24-FEB-20	25-FEB-20	R5006914
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	25-FEB-20	26-FEB-20	R5006956
Benzene	0.0322		0.0068	ug/g	25-FEB-20	26-FEB-20	R5006956
Bromodichloromethane	<4.1	DLVH	4.1	ug/g	25-FEB-20	26-FEB-20	R5006956
Bromoform	<0.050		0.050	ug/g	25-FEB-20	26-FEB-20	R5006956
Bromomethane	<0.050		0.050	ug/g	25-FEB-20	26-FEB-20	R5006956
Carbon tetrachloride	<0.050		0.050	ug/g	25-FEB-20	26-FEB-20	R5006956
Chlorobenzene	<0.050		0.050	ug/g	25-FEB-20	26-FEB-20	R5006956
Dibromochloromethane	<0.050		0.050	ug/g	25-FEB-20	26-FEB-20	R5006956
Chloroform	<0.15	DLVH	0.15	ug/g	25-FEB-20	26-FEB-20	R5006956
1,2-Dibromoethane	<0.050		0.050	ug/g	25-FEB-20	26-FEB-20	R5006956
1,2-Dichlorobenzene	<0.050		0.050	ug/g	25-FEB-20	26-FEB-20	R5006956
1,3-Dichlorobenzene	<0.050		0.050	ug/g	25-FEB-20	26-FEB-20	R5006956
1,4-Dichlorobenzene	<0.050		0.050	ug/g	25-FEB-20	26-FEB-20	R5006956
Dichlorodifluoromethane	<0.050		0.050	ug/g	25-FEB-20	26-FEB-20	R5006956
1,1-Dichloroethane	<0.050		0.050	ug/g	25-FEB-20	26-FEB-20	R5006956
1,2-Dichloroethane	<0.050		0.050	ug/g	25-FEB-20	26-FEB-20	R5006956
1,1-Dichloroethylene	<0.050		0.050	ug/g	25-FEB-20	26-FEB-20	R5006956
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	25-FEB-20	26-FEB-20	R5006956
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	25-FEB-20	26-FEB-20	R5006956
Methylene Chloride	<0.050		0.050	ug/g	25-FEB-20	26-FEB-20	R5006956
1,2-Dichloropropane	<0.050		0.050	ug/g	25-FEB-20	26-FEB-20	R5006956
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	25-FEB-20	26-FEB-20	R5006956
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	25-FEB-20	26-FEB-20	R5006956
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		26-FEB-20	
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		26-FEB-20	
Ethylbenzene	0.234		0.018	ug/g	25-FEB-20	26-FEB-20	R5006956
n-Hexane	0.254		0.050	ug/g	25-FEB-20	26-FEB-20	R5006956
Methyl Ethyl Ketone	<0.70	RRR	0.70	ug/g	25-FEB-20	26-FEB-20	R5006956
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	25-FEB-20	26-FEB-20	R5006956

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-20 BH20-214-0.5-2 Sampled By: V.PETERS on 21-FEB-20 @ 13:30 Matrix: SOIL							
Volatile Organic Compounds							
MTBE	<0.050		0.050	ug/g	25-FEB-20	26-FEB-20	R5006956
Styrene	<0.050		0.050	ug/g	25-FEB-20	26-FEB-20	R5006956
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	25-FEB-20	26-FEB-20	R5006956
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	25-FEB-20	26-FEB-20	R5006956
Tetrachloroethylene	<0.050		0.050	ug/g	25-FEB-20	26-FEB-20	R5006956
Toluene	0.611		0.080	ug/g	25-FEB-20	26-FEB-20	R5006956
1,1,1-Trichloroethane	<0.050		0.050	ug/g	25-FEB-20	26-FEB-20	R5006956
1,1,2-Trichloroethane	<0.050		0.050	ug/g	25-FEB-20	26-FEB-20	R5006956
Trichloroethylene	<0.010		0.010	ug/g	25-FEB-20	26-FEB-20	R5006956
Trichlorofluoromethane	<0.050		0.050	ug/g	25-FEB-20	26-FEB-20	R5006956
Vinyl chloride	<0.020		0.020	ug/g	25-FEB-20	26-FEB-20	R5006956
o-Xylene	1.32		0.020	ug/g	25-FEB-20	26-FEB-20	R5006956
m+p-Xylenes	1.27		0.030	ug/g	25-FEB-20	26-FEB-20	R5006956
Xylenes (Total)	2.59		0.050	ug/g		26-FEB-20	
Xylenes (Total)	2.59		0.050	ug/g		26-FEB-20	
Surrogate: 4-Bromofluorobenzene	74.3		50-140	%	25-FEB-20	26-FEB-20	R5006956
Surrogate: 1,4-Difluorobenzene	100.0		50-140	%	25-FEB-20	26-FEB-20	R5006956
Hydrocarbons							
F1 (C6-C10)	36.6		5.0	ug/g	25-FEB-20	27-FEB-20	R5006956
F1-BTEX	33.1		5.0	ug/g		16-MAR-20	
F2 (C10-C16)	52		10	ug/g	24-FEB-20	25-FEB-20	R5008228
F2-Naphth	50		10	ug/g		16-MAR-20	
F3 (C16-C34)	193		50	ug/g	24-FEB-20	25-FEB-20	R5008228
F3-PAH	185		50	ug/g		16-MAR-20	
F4 (C34-C50)	61		50	ug/g	24-FEB-20	25-FEB-20	R5008228
F4G-SG (GHH-Silica)	290		250	ug/g	25-FEB-20	25-FEB-20	R5011338
Total Hydrocarbons (C6-C50)	342		72	ug/g		16-MAR-20	
Chrom. to baseline at nC50	NO				24-FEB-20	25-FEB-20	R5008228
Surrogate: 2-Bromobenzotrifluoride	80.5		60-140	%	24-FEB-20	25-FEB-20	R5008228
Surrogate: 3,4-Dichlorotoluene	60.4		60-140	%	25-FEB-20	27-FEB-20	R5006956
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	0.186		0.050	ug/g	24-FEB-20	25-FEB-20	R5005211
Acenaphthylene	<0.050		0.050	ug/g	24-FEB-20	25-FEB-20	R5005211
Anthracene	0.328		0.050	ug/g	24-FEB-20	25-FEB-20	R5005211
Benzo(a)anthracene	0.762		0.050	ug/g	24-FEB-20	25-FEB-20	R5005211
Benzo(a)pyrene	0.504		0.050	ug/g	24-FEB-20	25-FEB-20	R5005211
Benzo(b)fluoranthene	0.847		0.050	ug/g	24-FEB-20	25-FEB-20	R5005211
Benzo(g,h,i)perylene	0.325		0.050	ug/g	24-FEB-20	25-FEB-20	R5005211
Benzo(k)fluoranthene	0.224		0.050	ug/g	24-FEB-20	25-FEB-20	R5005211
Chrysene	1.03		0.050	ug/g	24-FEB-20	25-FEB-20	R5005211
Dibenzo(ah)anthracene	0.103		0.050	ug/g	24-FEB-20	25-FEB-20	R5005211
Fluoranthene	1.56		0.050	ug/g	24-FEB-20	25-FEB-20	R5005211

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-20 BH20-214-0.5-2 Sampled By: V.PETERS on 21-FEB-20 @ 13:30 Matrix: SOIL							
Polycyclic Aromatic Hydrocarbons							
Fluorene	0.210		0.050	ug/g	24-FEB-20	25-FEB-20	R5005211
Indeno(1,2,3-cd)pyrene	0.253		0.050	ug/g	24-FEB-20	25-FEB-20	R5005211
1+2-Methylnaphthalenes	3.76		0.042	ug/g		16-MAR-20	
1-Methylnaphthalene	1.73		0.030	ug/g	24-FEB-20	25-FEB-20	R5005211
2-Methylnaphthalene	2.04		0.030	ug/g	24-FEB-20	25-FEB-20	R5005211
Naphthalene	1.18		0.013	ug/g	24-FEB-20	25-FEB-20	R5005211
Phenanthrene	2.58		0.046	ug/g	24-FEB-20	25-FEB-20	R5005211
Pyrene	1.27		0.050	ug/g	24-FEB-20	25-FEB-20	R5005211
Surrogate: 2-Fluorobiphenyl	61.9		50-140	%	24-FEB-20	25-FEB-20	R5005211
Surrogate: p-Terphenyl d14	71.4		50-140	%	24-FEB-20	25-FEB-20	R5005211
Report Remarks : RRR: LOR raised due to possible false positive.							
L2419793-21 BH20-214-2.5-3 Sampled By: V.PETERS on 21-FEB-20 @ 13:45 Matrix: SOIL							
Physical Tests							
Conductivity	0.373		0.0040	mS/cm		26-FEB-20	R5008606
% Moisture	16.0		0.25	%	22-FEB-20	23-FEB-20	R5001687
Cyanides							
Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002617
Saturated Paste Extractables							
SAR	0.51		0.10	SAR		25-FEB-20	R5006107
Calcium (Ca)	43.8		0.50	mg/L		25-FEB-20	R5006107
Magnesium (Mg)	6.22		0.50	mg/L		25-FEB-20	R5006107
Sodium (Na)	13.5		0.50	mg/L		25-FEB-20	R5006107
Metals							
Antimony (Sb)	<1.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005001
Arsenic (As)	8.5		1.0	ug/g	24-FEB-20	25-FEB-20	R5005001
Barium (Ba)	51.3		1.0	ug/g	24-FEB-20	25-FEB-20	R5005001
Beryllium (Be)	<0.50		0.50	ug/g	24-FEB-20	25-FEB-20	R5005001
Boron (B)	10.4		5.0	ug/g	24-FEB-20	25-FEB-20	R5005001
Boron (B), Hot Water Ext.	0.43		0.10	ug/g	25-FEB-20	25-FEB-20	R5005666
Cadmium (Cd)	0.89		0.50	ug/g	24-FEB-20	25-FEB-20	R5005001
Chromium (Cr)	15.6		1.0	ug/g	24-FEB-20	25-FEB-20	R5005001
Cobalt (Co)	5.7		1.0	ug/g	24-FEB-20	25-FEB-20	R5005001
Copper (Cu)	21.9		1.0	ug/g	24-FEB-20	25-FEB-20	R5005001
Lead (Pb)	133		1.0	ug/g	24-FEB-20	25-FEB-20	R5005001
Mercury (Hg)	0.0751		0.0050	ug/g	24-FEB-20	25-FEB-20	R5004997
Molybdenum (Mo)	1.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005001
Nickel (Ni)	14.2		1.0	ug/g	24-FEB-20	25-FEB-20	R5005001
Selenium (Se)	<1.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005001
Silver (Ag)	<0.20		0.20	ug/g	24-FEB-20	25-FEB-20	R5005001
Thallium (Tl)	<0.50		0.50	ug/g	24-FEB-20	25-FEB-20	R5005001

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-21 BH20-214-2.5-3							
Sampled By: V.PETERS on 21-FEB-20 @ 13:45							
Matrix: SOIL							
Metals							
Uranium (U)	<1.0		1.0	ug/g	24-FEB-20	25-FEB-20	R5005001
Vanadium (V)	26.1		1.0	ug/g	24-FEB-20	25-FEB-20	R5005001
Zinc (Zn)	567		5.0	ug/g	24-FEB-20	25-FEB-20	R5005001
Speciated Metals							
Chromium, Hexavalent	<0.20		0.20	ug/g	22-FEB-20	24-FEB-20	R5006648
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
Benzene	<0.0068		0.0068	ug/g	22-FEB-20	24-FEB-20	R5002212
Bromodichloromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Bromoform	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Bromomethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Carbon tetrachloride	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Chlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Dibromochloromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Chloroform	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dibromoethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,3-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,4-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Dichlorodifluoromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1-Dichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Methylene Chloride	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichloropropane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		24-FEB-20	
Ethylbenzene	<0.018		0.018	ug/g	22-FEB-20	24-FEB-20	R5002212
n-Hexane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Methyl Ethyl Ketone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
MTBE	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Styrene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Tetrachloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Toluene	<0.080		0.080	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,1-Trichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-21 BH20-214-2.5-3							
Sampled By: V.PETERS on 21-FEB-20 @ 13:45							
Matrix: SOIL							
Volatile Organic Compounds							
1,1,2-Trichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Trichloroethylene	<0.010		0.010	ug/g	22-FEB-20	24-FEB-20	R5002212
Trichlorofluoromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Vinyl chloride	<0.020		0.020	ug/g	22-FEB-20	24-FEB-20	R5002212
o-Xylene	<0.020		0.020	ug/g	22-FEB-20	24-FEB-20	R5002212
m+p-Xylenes	<0.030		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
Xylenes (Total)	<0.050		0.050	ug/g		24-FEB-20	
Surrogate: 4-Bromofluorobenzene	91.8		50-140	%	22-FEB-20	24-FEB-20	R5002212
Surrogate: 1,4-Difluorobenzene	105.0		50-140	%	22-FEB-20	24-FEB-20	R5002212
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	22-FEB-20	24-FEB-20	R5002212
F1-BTEX	<5.0		5.0	ug/g		27-FEB-20	
F2 (C10-C16)	12		10	ug/g	24-FEB-20	26-FEB-20	R5008228
F2-Naphth	12		10	ug/g		27-FEB-20	
F3 (C16-C34)	68		50	ug/g	24-FEB-20	26-FEB-20	R5008228
F3-PAH	68		50	ug/g		27-FEB-20	
F4 (C34-C50)	<50		50	ug/g	24-FEB-20	26-FEB-20	R5008228
Total Hydrocarbons (C6-C50)	80		72	ug/g		27-FEB-20	
Chrom. to baseline at nC50	YES				24-FEB-20	26-FEB-20	R5008228
Surrogate: 2-Bromobenzotrifluoride	75.0		60-140	%	24-FEB-20	26-FEB-20	R5008228
Surrogate: 3,4-Dichlorotoluene	72.5		60-140	%	22-FEB-20	24-FEB-20	R5002212
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Acenaphthylene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Anthracene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(a)anthracene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(a)pyrene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(b)fluoranthene	0.056		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(g,h,i)perylene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Benzo(k)fluoranthene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Chrysene	0.064		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Dibenzo(ah)anthracene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Fluoranthene	0.080		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Fluorene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428
1+2-Methylnaphthalenes	0.368		0.042	ug/g		25-FEB-20	
1-Methylnaphthalene	0.166		0.030	ug/g	22-FEB-20	25-FEB-20	R5004428
2-Methylnaphthalene	0.202		0.030	ug/g	22-FEB-20	25-FEB-20	R5004428
Naphthalene	0.120		0.013	ug/g	22-FEB-20	25-FEB-20	R5004428
Phenanthrene	0.168		0.046	ug/g	22-FEB-20	25-FEB-20	R5004428
Pyrene	0.069		0.050	ug/g	22-FEB-20	25-FEB-20	R5004428

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-21 BH20-214-2.5-3 Sampled By: V.PETERS on 21-FEB-20 @ 13:45 Matrix: SOIL							
Polycyclic Aromatic Hydrocarbons							
Surrogate: 2-Fluorobiphenyl	98.7		50-140	%	22-FEB-20	25-FEB-20	R5004428
Surrogate: p-Terphenyl d14	101.1		50-140	%	22-FEB-20	25-FEB-20	R5004428
L2419793-22 TB-001 Sampled By: V.PETERS on 21-FEB-20 Matrix: SOIL							
Physical Tests							
% Moisture	<0.25		0.25	%	22-FEB-20	23-FEB-20	R5001687
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
Benzene	<0.0068		0.0068	ug/g	22-FEB-20	24-FEB-20	R5002212
Bromodichloromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Bromoform	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Bromomethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Carbon tetrachloride	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Chlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Dibromochloromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Chloroform	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dibromoethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,3-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,4-Dichlorobenzene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Dichlorodifluoromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1-Dichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Methylene Chloride	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,2-Dichloropropane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		24-FEB-20	
Ethylbenzene	<0.018		0.018	ug/g	22-FEB-20	24-FEB-20	R5002212
n-Hexane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Methyl Ethyl Ketone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	22-FEB-20	24-FEB-20	R5002212
MTBE	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Styrene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Tetrachloroethylene	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Toluene	<0.080		0.080	ug/g	22-FEB-20	24-FEB-20	R5002212

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2419793-22 TB-001 Sampled By: V.PETERS on 21-FEB-20 Matrix: SOIL							
Volatile Organic Compounds							
1,1,1-Trichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
1,1,2-Trichloroethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Trichloroethylene	<0.010		0.010	ug/g	22-FEB-20	24-FEB-20	R5002212
Trichlorofluoromethane	<0.050		0.050	ug/g	22-FEB-20	24-FEB-20	R5002212
Vinyl chloride	<0.020		0.020	ug/g	22-FEB-20	24-FEB-20	R5002212
o-Xylene	<0.020		0.020	ug/g	22-FEB-20	24-FEB-20	R5002212
m+p-Xylenes	<0.030		0.030	ug/g	22-FEB-20	24-FEB-20	R5002212
Xylenes (Total)	<0.050		0.050	ug/g		24-FEB-20	
Surrogate: 4-Bromofluorobenzene	92.5		50-140	%	22-FEB-20	24-FEB-20	R5002212
Surrogate: 1,4-Difluorobenzene	104.9		50-140	%	22-FEB-20	24-FEB-20	R5002212

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Laboratory Control Sample	3,3'-Dichlorobenzidine	LCS-L	L2419793-13

Sample Parameter Qualifier key listed:

Qualifier	Description
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
DLVH	Detection Limit raised due to interference from Volatile Hydrocarbons on VOC method. Chromatographic elution of interfering peaks in the same region as test analytes prevents a determination of whether VOC analyte is present or absent (above/below regular detection limits).
LCS-L	Lab Control Sample recovery was below ALS DQO. Reference Material and/or Matrix Spike results were acceptable. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.
RRR	Refer to Report Remarks for issues regarding this analysis
SAR:DL	SAR is incalculable due to undetectable Na. Detection Limit represents maximum possible SAR value.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
625-511-WT	Soil	ABN-O.Reg 153/04 (July 2011)	SW846 8270 (511)

Soil and sediment samples are dried by mixing with a desiccant prior to extraction. The extracts are dried, concentrated and exchanged into a solvent and analyzed by GC/MS. Depending on the analytical GC/MS column used benzo(j)fluoranthene may chromatographically co-elute with benzo(b)fluoranthene or benzo(k)fluoranthene.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B

A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD

The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

DINITROTOL-CALC-WT	Soil	ABN-Calculated Parameters	SW846 8270
EC-WT	Soil	Conductivity (EC)	MOEE E3138

A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

Reference Information

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT Soil F1-O.Reg 153/04 (July 2011) E3398/CCME TIER 1-HS

Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT Soil F2-F4-O.Reg 153/04 (July 2011) CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from soil with 1:1 hexane:acetone using a rotary extractor. Extracts are treated with silica gel to remove polar organic interferences. F2, F3, & F4 are analyzed by GC-FID. F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where both F4 (C34-C50) and F4G-sg are reported for a sample, the larger of the two values is used for comparison against the relevant CCME guideline for F4.
7. F4G-sg cannot be added to the C6 to C50 hydrocarbon results to obtain an estimate of total extractable hydrocarbons.
8. This method is validated for use.
9. Data from analysis of validation and quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram, unless otherwise indicated.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F4G-ADD-511-WT Soil F4G SG-O.Reg 153/04 (July 2011) MOE DECPH-E3398/CCME TIER 1

F4G, gravimetric analysis, is determined if the chromatogram does not return to baseline at or before C50. A soil sample is extracted with a solvent mix, the solvent is evaporated and the weight of the residue is determined.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

HG-200.2-CVAA-WT Soil Mercury in Soil by CVAAS EPA 200.2/1631E (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-200.2-CCMS-WT Soil Metals in Soil by CRC ICPMS EPA 200.2/6020A (mod)

Soil/sediment is dried, disaggregated, and sieved (2 mm). For tests intended to support Ontario regulations, the <2mm fraction is ground to pass through a 0.355 mm sieve. Strong Acid Leachable Metals in the <2mm fraction are solubilized by heated digestion with nitric and hydrochloric acids. Instrumental analysis is by Collision / Reaction Cell ICPMS.

Limitations: This method is intended to liberate environmentally available metals. Silicate minerals are not solubilized. Some metals may be only partially recovered (matrix dependent), including Al, Ba, Be, Cr, S, Sr, Ti, Tl, V, W, and Zr. Elemental Sulfur may be poorly recovered by this method. Volatile forms of sulfur (e.g. sulfide, H2S) may be excluded if lost during sampling, storage, or digestion.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG

Reference Information

must be reported).

METHYLNAPS-CALC-WT	Soil	ABN-Calculated Parameters	SW846 8270
MOISTURE-WT	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)
PAH-511-WT	Soil	PAH-O.Reg 153/04 (July 2011)	SW846 3510/8270

A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking techniqueis used to extract the sample with a mixture of methanol and toluene. The extracts are concentrated and analyzed by GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C

A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

VOC-1,3-DCP-CALC-WT	Soil	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Soil	VOC-O.Reg 153/04 (July 2011)	SW846 8260 (511)

Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

17-795231

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Soil**							
Batch R5012104								
WG3283089-3 DUP		**WG3283089-5**						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	02-MAR-20
1,2,4-Trichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-MAR-20
2-Chlorophenol		<0.10	<0.10	RPD-NA	ug/g	N/A	40	02-MAR-20
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	02-MAR-20
2,4-Dichlorophenol		<0.10	<0.10	RPD-NA	ug/g	N/A	40	02-MAR-20
2,4-Dimethylphenol		<0.10	<0.10	RPD-NA	ug/g	N/A	40	02-MAR-20
2,4-Dinitrophenol		<1.0	<1.0	RPD-NA	ug/g	N/A	40	02-MAR-20
2,4-Dinitrotoluene		<0.10	<0.10	RPD-NA	ug/g	N/A	40	02-MAR-20
2,4,5-Trichlorophenol		<0.10	<0.10	RPD-NA	ug/g	N/A	40	02-MAR-20
2,4,6-Trichlorophenol		<0.10	<0.10	RPD-NA	ug/g	N/A	40	02-MAR-20
2,6-Dinitrotoluene		<0.10	<0.10	RPD-NA	ug/g	N/A	40	02-MAR-20
3,3'-Dichlorobenzidine		<0.10	<0.10	RPD-NA	ug/g	N/A	40	02-MAR-20
4-Chloroaniline		<0.10	<0.10	RPD-NA	ug/g	N/A	40	02-MAR-20
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-MAR-20
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-MAR-20
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-MAR-20
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-MAR-20
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-MAR-20
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-MAR-20
Benzo(ghi)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-MAR-20
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-MAR-20
Biphenyl		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-MAR-20
Bis(2-chloroethyl)ether		<0.10	<0.10	RPD-NA	ug/g	N/A	40	02-MAR-20
Bis(2-chloroisopropyl)ether		<0.10	<0.10	RPD-NA	ug/g	N/A	40	02-MAR-20
Bis(2-ethylhexyl)phthalate		<0.10	<0.20	RPD-NA	ug/g	N/A	40	02-MAR-20
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-MAR-20
Dibenzo(a,h)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-MAR-20
Diethylphthalate		<0.10	<0.10	RPD-NA	ug/g	N/A	40	02-MAR-20
Dimethylphthalate		<0.10	<0.10	RPD-NA	ug/g	N/A	40	02-MAR-20
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-MAR-20
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-MAR-20
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-MAR-20
Naphthalene		<0.050	<0.050		ug/g			02-MAR-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Soil**							
Batch R5012104								
WG3283089-3 DUP		**WG3283089-5**						
Naphthalene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-MAR-20
Pentachlorophenol		<0.10	<0.10	RPD-NA	ug/g	N/A	40	02-MAR-20
Phenanthrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-MAR-20
Phenol		<0.10	<0.10	RPD-NA	ug/g	N/A	40	02-MAR-20
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-MAR-20
WG3283089-2 LCS								
1-Methylnaphthalene			99.5		%		50-140	02-MAR-20
1,2,4-Trichlorobenzene			86.6		%		50-140	02-MAR-20
2-Chlorophenol			95.0		%		50-140	02-MAR-20
2-Methylnaphthalene			98.4		%		50-140	02-MAR-20
2,4-Dichlorophenol			97.5		%		50-140	02-MAR-20
2,4-Dimethylphenol			94.4		%		30-130	02-MAR-20
2,4-Dinitrophenol			84.6		%		30-130	02-MAR-20
2,4-Dinitrotoluene			101.6		%		50-140	02-MAR-20
2,4,5-Trichlorophenol			97.9		%		50-140	02-MAR-20
2,4,6-Trichlorophenol			98.5		%		50-140	02-MAR-20
2,6-Dinitrotoluene			96.4		%		50-140	02-MAR-20
3,3'-Dichlorobenzidine			21.4	LCS-L	%		30-130	02-MAR-20
4-Chloroaniline			68.9		%		30-130	02-MAR-20
Acenaphthene			95.5		%		50-140	02-MAR-20
Acenaphthylene			86.7		%		50-140	02-MAR-20
Anthracene			92.2		%		50-140	02-MAR-20
Benzo(a)anthracene			97.0		%		50-140	02-MAR-20
Benzo(a)pyrene			99.3		%		50-140	02-MAR-20
Benzo(b)fluoranthene			95.2		%		50-140	02-MAR-20
Benzo(ghi)perylene			108.9		%		50-140	02-MAR-20
Benzo(k)fluoranthene			115.6		%		50-140	02-MAR-20
Biphenyl			96.4		%		50-140	02-MAR-20
Bis(2-chloroethyl)ether			89.7		%		50-140	02-MAR-20
Bis(2-chloroisopropyl)ether			88.0		%		50-140	02-MAR-20
Bis(2-ethylhexyl)phthalate			95.2		%		50-140	02-MAR-20
Chrysene			104.2		%		50-140	02-MAR-20
Dibenzo(a,h)anthracene			109.7		%		50-140	02-MAR-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Soil**							
Batch R5012104								
WG3283089-2 LCS								
Diethylphthalate			91.9		%		50-140	02-MAR-20
Dimethylphthalate			90.9		%		50-140	02-MAR-20
Fluoranthene			96.4		%		50-140	02-MAR-20
Fluorene			92.9		%		50-140	02-MAR-20
Indeno(1,2,3-cd)pyrene			102.5		%		50-140	02-MAR-20
Naphthalene			91.5		%		50-140	02-MAR-20
Pentachlorophenol			96.7		%		50-140	02-MAR-20
Phenanthrene			95.1		%		50-140	02-MAR-20
Phenol			86.7		%		30-130	02-MAR-20
Pyrene			95.0		%		50-140	02-MAR-20
WG3283089-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	02-MAR-20
1,2,4-Trichlorobenzene			<0.050		ug/g		0.05	02-MAR-20
2-Chlorophenol			<0.10		ug/g		0.1	02-MAR-20
2-Methylnaphthalene			<0.030		ug/g		0.03	02-MAR-20
2,4-Dichlorophenol			<0.10		ug/g		0.1	02-MAR-20
2,4-Dimethylphenol			<0.10		ug/g		0.1	02-MAR-20
2,4-Dinitrophenol			<1.0		ug/g		1	02-MAR-20
2,4-Dinitrotoluene			<0.10		ug/g		0.1	02-MAR-20
2,4,5-Trichlorophenol			<0.10		ug/g		0.1	02-MAR-20
2,4,6-Trichlorophenol			<0.10		ug/g		0.1	02-MAR-20
2,6-Dinitrotoluene			<0.10		ug/g		0.1	02-MAR-20
3,3'-Dichlorobenzidine			<0.10		ug/g		0.1	02-MAR-20
4-Chloroaniline			<0.10		ug/g		0.1	02-MAR-20
Acenaphthene			<0.050		ug/g		0.05	02-MAR-20
Acenaphthylene			<0.050		ug/g		0.05	02-MAR-20
Anthracene			<0.050		ug/g		0.05	02-MAR-20
Benzo(a)anthracene			<0.050		ug/g		0.05	02-MAR-20
Benzo(a)pyrene			<0.050		ug/g		0.05	02-MAR-20
Benzo(b)fluoranthene			<0.050		ug/g		0.05	02-MAR-20
Benzo(ghi)perylene			<0.050		ug/g		0.05	02-MAR-20
Benzo(k)fluoranthene			<0.050		ug/g		0.05	02-MAR-20
Biphenyl			<0.050		ug/g		0.05	02-MAR-20
Bis(2-chloroethyl)ether			<0.10		ug/g		0.1	02-MAR-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Soil**							
Batch R5012104								
WG3283089-1 MB								
Bis(2-chloroisopropyl)ether			<0.10		ug/g		0.1	02-MAR-20
Bis(2-ethylhexyl)phthalate			<0.10		ug/g		0.1	02-MAR-20
Chrysene			<0.050		ug/g		0.05	02-MAR-20
Dibenzo(a,h)anthracene			<0.050		ug/g		0.05	02-MAR-20
Diethylphthalate			<0.10		ug/g		0.1	02-MAR-20
Dimethylphthalate			<0.10		ug/g		0.1	02-MAR-20
Fluoranthene			<0.050		ug/g		0.05	02-MAR-20
Fluorene			<0.050		ug/g		0.05	02-MAR-20
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	02-MAR-20
Naphthalene			<0.050		ug/g		0.05	02-MAR-20
Pentachlorophenol			<0.10		ug/g		0.1	02-MAR-20
Phenanthrene			<0.050		ug/g		0.05	02-MAR-20
Phenol			<0.10		ug/g		0.1	02-MAR-20
Pyrene			<0.050		ug/g		0.05	02-MAR-20
Surrogate: 2-Fluorobiphenyl			107.3		%		50-140	02-MAR-20
Surrogate: 2,4,6-Tribromophenol			63.3		%		50-140	02-MAR-20
Surrogate: Nitrobenzene d5			100.0		%		50-140	02-MAR-20
Surrogate: p-Terphenyl d14			141.0	SURQC	%		50-140	02-MAR-20
WG3283089-4 MS		**WG3283089-5**						
1-Methylnaphthalene			103.1		%		50-140	02-MAR-20
1,2,4-Trichlorobenzene			88.4		%		50-140	02-MAR-20
2-Chlorophenol			98.2		%		50-140	02-MAR-20
2-Methylnaphthalene			102.1		%		50-140	02-MAR-20
2,4-Dichlorophenol			99.4		%		50-140	02-MAR-20
2,4-Dimethylphenol			87.1		%		30-150	02-MAR-20
2,4-Dinitrophenol			92.5		%		30-150	02-MAR-20
2,4-Dinitrotoluene			107.0		%		50-140	02-MAR-20
2,4,5-Trichlorophenol			103.1		%		50-140	02-MAR-20
2,4,6-Trichlorophenol			103.0		%		50-140	02-MAR-20
2,6-Dinitrotoluene			101.9		%		50-140	02-MAR-20
3,3'-Dichlorobenzidine			97.2		%		30-130	02-MAR-20
4-Chloroaniline			85.7		%		30-130	02-MAR-20
Acenaphthene			98.2		%		50-140	02-MAR-20
Acenaphthylene			91.4		%		50-140	02-MAR-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Soil**							
Batch R5012104								
WG3283089-4 MS		**WG3283089-5**						
Anthracene			98.3		%		50-140	02-MAR-20
Benzo(a)anthracene			112.8		%		50-140	02-MAR-20
Benzo(a)pyrene			100.1		%		50-140	02-MAR-20
Benzo(b)fluoranthene			87.4		%		50-140	02-MAR-20
Benzo(ghi)perylene			102.5		%		50-140	02-MAR-20
Benzo(k)fluoranthene			104.1		%		50-140	02-MAR-20
Biphenyl			98.9		%		50-140	02-MAR-20
Bis(2-chloroethyl)ether			93.7		%		50-140	02-MAR-20
Bis(2-chloroisopropyl)ether			90.6		%		50-140	02-MAR-20
Bis(2-ethylhexyl)phthalate			122.2		%		50-140	02-MAR-20
Chrysene			101.0		%		50-140	02-MAR-20
Dibenzo(a,h)anthracene			93.5		%		50-140	02-MAR-20
Diethylphthalate			91.9		%		50-140	02-MAR-20
Dimethylphthalate			93.8		%		50-140	02-MAR-20
Fluoranthene			97.7		%		50-140	02-MAR-20
Fluorene			94.5		%		50-140	02-MAR-20
Indeno(1,2,3-cd)pyrene			95.3		%		50-140	02-MAR-20
Naphthalene			94.0		%		50-140	02-MAR-20
Pentachlorophenol			98.8		%		50-140	02-MAR-20
Phenanthrene			96.7		%		50-140	02-MAR-20
Phenol			90.0		%		30-130	02-MAR-20
Pyrene			97.0		%		50-140	02-MAR-20
B-HWS-R511-WT	**Soil**							
Batch R5004990								
WG3281013-4 DUP		**L2419793-5**						
Boron (B), Hot Water Ext.		0.23	0.21		ug/g	7.6	30	25-FEB-20
WG3281013-2 IRM		**WT SAR3**						
Boron (B), Hot Water Ext.			90.2		%		70-130	25-FEB-20
WG3281013-3 LCS								
Boron (B), Hot Water Ext.			102.0		%		70-130	25-FEB-20
WG3281013-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	25-FEB-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT	**Soil**							
Batch R5005666								
WG3281016-4 DUP		**L2419876-7**						
Boron (B), Hot Water Ext.		0.17	0.18		ug/g	3.4	30	25-FEB-20
WG3281016-2 IRM		**WT SAR3**						
Boron (B), Hot Water Ext.			99.1		%		70-130	25-FEB-20
WG3281016-3 LCS								
Boron (B), Hot Water Ext.			102.0		%		70-130	25-FEB-20
WG3281016-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	25-FEB-20
CN-WAD-R511-WT	**Soil**							
Batch R5002617								
WG3279038-3 DUP		**L2418765-7**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	24-FEB-20
WG3279038-2 LCS								
Cyanide, Weak Acid Diss			91.5		%		80-120	24-FEB-20
WG3279038-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	24-FEB-20
WG3279038-4 MS		**L2418765-7**						
Cyanide, Weak Acid Diss			100.4		%		70-130	24-FEB-20
Batch R5005149								
WG3280381-3 DUP		**WG3280381-5**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	25-FEB-20
WG3280381-2 LCS								
Cyanide, Weak Acid Diss			100.3		%		80-120	25-FEB-20
WG3280381-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	25-FEB-20
WG3280381-4 MS		**WG3280381-5**						
Cyanide, Weak Acid Diss			122.5		%		70-130	25-FEB-20
CR-CR6-IC-WT	**Soil**							
Batch R5006648								
WG3279901-4 CRM		**WT-SQC012**						
Chromium, Hexavalent			92.4		%		70-130	24-FEB-20
WG3279901-3 DUP		**L2419793-18**						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	24-FEB-20
WG3279901-2 LCS								
Chromium, Hexavalent			87.7		%		80-120	24-FEB-20
WG3279901-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	24-FEB-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CR-CR6-IC-WT	**Soil**							
Batch R5006914								
WG3280630-4 CRM		**WT-SQC012**						
Chromium, Hexavalent			93.7		%		70-130	25-FEB-20
WG3280630-3 DUP		**L2419312-1**						
Chromium, Hexavalent		0.36	<0.20	RPD-NA	ug/g	N/A	35	25-FEB-20
WG3280630-2 LCS								
Chromium, Hexavalent			93.4		%		80-120	25-FEB-20
WG3280630-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	25-FEB-20
EC-WT	**Soil**							
Batch R5006028								
WG3281014-4 DUP		**WG3281014-3**						
Conductivity		0.320	0.333		mS/cm	4.0	20	25-FEB-20
WG3281014-2 IRM		**WT SAR3**						
Conductivity			98.1		%		70-130	25-FEB-20
WG3281292-1 LCS								
Conductivity			99.9		%		90-110	25-FEB-20
WG3281014-1 MB								
Conductivity			<0.0040		mS/cm		0.004	25-FEB-20
Batch R5008606								
WG3281021-4 DUP		**WG3281021-3**						
Conductivity		0.766	0.788		mS/cm	2.8	20	26-FEB-20
WG3281021-2 IRM		**WT SAR3**						
Conductivity			108.7		%		70-130	26-FEB-20
WG3281294-1 LCS								
Conductivity			100.3		%		90-110	26-FEB-20
WG3281021-1 MB								
Conductivity			<0.0040		mS/cm		0.004	26-FEB-20
F1-HS-511-WT	**Soil**							
Batch R5002212								
WG3279894-4 DUP		**WG3279894-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	24-FEB-20
WG3279894-2 LCS								
F1 (C6-C10)			107.3		%		80-120	24-FEB-20
WG3279894-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	24-FEB-20
Surrogate: 3,4-Dichlorotoluene			93.5		%		60-140	24-FEB-20
WG3279894-6 MS		**L2419680-3**						

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT	**Soil**							
Batch R5002212								
WG3279894-6 MS		**L2419680-3**						
F1 (C6-C10)			102.9		%		60-140	24-FEB-20
Batch R5006956								
WG3281118-4 DUP		**WG3281118-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	26-FEB-20
WG3281118-2 LCS								
F1 (C6-C10)			107.6		%		80-120	26-FEB-20
WG3281118-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	26-FEB-20
Surrogate: 3,4-Dichlorotoluene			88.1		%		60-140	26-FEB-20
WG3281118-6 MS		**L2419275-2**						
F1 (C6-C10)			119.0		%		60-140	26-FEB-20
F2-F4-511-WT	**Soil**							
Batch R5008228								
WG3280548-3 DUP		**WG3280548-5**						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	25-FEB-20
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	25-FEB-20
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	25-FEB-20
WG3280548-2 LCS								
F2 (C10-C16)			96.5		%		80-120	26-FEB-20
F3 (C16-C34)			101.0		%		80-120	26-FEB-20
F4 (C34-C50)			97.9		%		80-120	26-FEB-20
WG3280548-1 MB								
F2 (C10-C16)			<10		ug/g		10	25-FEB-20
F3 (C16-C34)			<50		ug/g		50	25-FEB-20
F4 (C34-C50)			<50		ug/g		50	25-FEB-20
Surrogate: 2-Bromobenzotrifluoride			71.7		%		60-140	25-FEB-20
WG3280548-4 MS		**WG3280548-5**						
F2 (C10-C16)			96.1		%		60-140	26-FEB-20
F3 (C16-C34)			95.7		%		60-140	26-FEB-20
F4 (C34-C50)			94.2		%		60-140	26-FEB-20
F4G-ADD-511-WT	**Soil**							
Batch R5011338								
WG3283902-2 LCS								
F4G-SG (GHH-Silica)			84.6		%		60-140	25-FEB-20
WG3283902-1 MB								

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Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F4G-ADD-511-WT	**Soil**							
Batch R5011338								
WG3283902-1 MB								
F4G-SG (GHH-Silica)			<250		ug/g		250	25-FEB-20
HG-200.2-CVAA-WT	**Soil**							
Batch R5004991								
WG3281001-2 CRM		**WT-CANMET-TILL2**						
Mercury (Hg)			113.5		%		70-130	25-FEB-20
WG3281001-6 DUP		**WG3281001-5**						
Mercury (Hg)		0.0262	0.0248		ug/g	5.7	40	25-FEB-20
WG3281001-3 LCS								
Mercury (Hg)			111.0		%		80-120	25-FEB-20
WG3281001-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	25-FEB-20
Batch R5004997								
WG3281003-2 CRM		**WT-CANMET-TILL2**						
Mercury (Hg)			109.4		%		70-130	25-FEB-20
WG3281003-6 DUP		**WG3281003-5**						
Mercury (Hg)		0.0240	0.0246		ug/g	2.8	40	25-FEB-20
WG3281003-3 LCS								
Mercury (Hg)			117.5		%		80-120	25-FEB-20
WG3281003-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	25-FEB-20
MET-200.2-CCMS-WT	**Soil**							
Batch R5005001								
WG3281003-2 CRM		**WT-CANMET-TILL2**						
Antimony (Sb)			100.7		%		70-130	25-FEB-20
Arsenic (As)			97.7		%		70-130	25-FEB-20
Barium (Ba)			95.4		%		70-130	25-FEB-20
Beryllium (Be)			98.6		%		70-130	25-FEB-20
Boron (B)			3.3		mg/kg		0-8.6	25-FEB-20
Cadmium (Cd)			96.1		%		70-130	25-FEB-20
Chromium (Cr)			96.0		%		70-130	25-FEB-20
Cobalt (Co)			97.2		%		70-130	25-FEB-20
Copper (Cu)			97.7		%		70-130	25-FEB-20
Lead (Pb)			94.1		%		70-130	25-FEB-20
Molybdenum (Mo)			98.3		%		70-130	25-FEB-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5005001								
WG3281003-2 CRM		**WT-CANMET-TILL2**						
Nickel (Ni)			98.1		%		70-130	25-FEB-20
Selenium (Se)			0.32		mg/kg		0.15-0.55	25-FEB-20
Silver (Ag)			0.26		mg/kg		0.16-0.36	25-FEB-20
Thallium (Tl)			93.5		%		70-130	25-FEB-20
Uranium (U)			91.2		%		70-130	25-FEB-20
Vanadium (V)			96.5		%		70-130	25-FEB-20
Zinc (Zn)			95.3		%		70-130	25-FEB-20
WG3281003-6 DUP		**WG3281003-5**						
Antimony (Sb)		0.28	0.34		ug/g	19	30	25-FEB-20
Arsenic (As)		5.32	5.64		ug/g	5.9	30	25-FEB-20
Barium (Ba)		74.6	79.2		ug/g	6.0	40	25-FEB-20
Beryllium (Be)		0.48	0.50		ug/g	3.5	30	25-FEB-20
Boron (B)		14.0	14.8		ug/g	5.2	30	25-FEB-20
Cadmium (Cd)		0.147	0.145		ug/g	1.1	30	25-FEB-20
Chromium (Cr)		17.1	17.9		ug/g	5.0	30	25-FEB-20
Cobalt (Co)		5.98	6.22		ug/g	4.0	30	25-FEB-20
Copper (Cu)		12.5	12.7		ug/g	1.4	30	25-FEB-20
Lead (Pb)		6.04	6.11		ug/g	1.2	40	25-FEB-20
Molybdenum (Mo)		3.41	3.57		ug/g	4.7	40	25-FEB-20
Nickel (Ni)		18.2	19.2		ug/g	5.0	30	25-FEB-20
Selenium (Se)		0.22	0.23		ug/g	4.1	30	25-FEB-20
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	25-FEB-20
Thallium (Tl)		0.151	0.152		ug/g	0.8	30	25-FEB-20
Uranium (U)		1.04	1.04		ug/g	0.5	30	25-FEB-20
Vanadium (V)		23.4	24.8		ug/g	5.8	30	25-FEB-20
Zinc (Zn)		32.1	32.3		ug/g	0.8	30	25-FEB-20
WG3281003-4 LCS								
Antimony (Sb)			107.3		%		80-120	25-FEB-20
Arsenic (As)			99.0		%		80-120	25-FEB-20
Barium (Ba)			99.4		%		80-120	25-FEB-20
Beryllium (Be)			102.6		%		80-120	25-FEB-20
Boron (B)			98.1		%		80-120	25-FEB-20
Cadmium (Cd)			98.1		%		80-120	25-FEB-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5005001								
WG3281003-4 LCS								
Chromium (Cr)			97.3		%		80-120	25-FEB-20
Cobalt (Co)			97.4		%		80-120	25-FEB-20
Copper (Cu)			96.7		%		80-120	25-FEB-20
Lead (Pb)			96.8		%		80-120	25-FEB-20
Molybdenum (Mo)			101.9		%		80-120	25-FEB-20
Nickel (Ni)			96.9		%		80-120	25-FEB-20
Selenium (Se)			98.8		%		80-120	25-FEB-20
Silver (Ag)			100.8		%		80-120	25-FEB-20
Thallium (Tl)			98.5		%		80-120	25-FEB-20
Uranium (U)			95.9		%		80-120	25-FEB-20
Vanadium (V)			99.9		%		80-120	25-FEB-20
Zinc (Zn)			96.7		%		80-120	25-FEB-20
WG3281003-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	25-FEB-20
Arsenic (As)			<0.10		mg/kg		0.1	25-FEB-20
Barium (Ba)			<0.50		mg/kg		0.5	25-FEB-20
Beryllium (Be)			<0.10		mg/kg		0.1	25-FEB-20
Boron (B)			<5.0		mg/kg		5	25-FEB-20
Cadmium (Cd)			<0.020		mg/kg		0.02	25-FEB-20
Chromium (Cr)			<0.50		mg/kg		0.5	25-FEB-20
Cobalt (Co)			<0.10		mg/kg		0.1	25-FEB-20
Copper (Cu)			<0.50		mg/kg		0.5	25-FEB-20
Lead (Pb)			<0.50		mg/kg		0.5	25-FEB-20
Molybdenum (Mo)			<0.10		mg/kg		0.1	25-FEB-20
Nickel (Ni)			<0.50		mg/kg		0.5	25-FEB-20
Selenium (Se)			<0.20		mg/kg		0.2	25-FEB-20
Silver (Ag)			<0.10		mg/kg		0.1	25-FEB-20
Thallium (Tl)			<0.050		mg/kg		0.05	25-FEB-20
Uranium (U)			<0.050		mg/kg		0.05	25-FEB-20
Vanadium (V)			<0.20		mg/kg		0.2	25-FEB-20
Zinc (Zn)			<2.0		mg/kg		2	25-FEB-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5005066								
WG3281001-2 CRM		**WT-CANMET-TILL2**						
Antimony (Sb)			83.0		%		70-130	25-FEB-20
Arsenic (As)			84.8		%		70-130	25-FEB-20
Barium (Ba)			87.2		%		70-130	25-FEB-20
Beryllium (Be)			82.4		%		70-130	25-FEB-20
Boron (B)			2.9		mg/kg		0-8.6	25-FEB-20
Cadmium (Cd)			81.0		%		70-130	25-FEB-20
Chromium (Cr)			87.5		%		70-130	25-FEB-20
Cobalt (Co)			86.2		%		70-130	25-FEB-20
Copper (Cu)			85.9		%		70-130	25-FEB-20
Lead (Pb)			84.2		%		70-130	25-FEB-20
Molybdenum (Mo)			88.2		%		70-130	25-FEB-20
Nickel (Ni)			87.4		%		70-130	25-FEB-20
Selenium (Se)			0.28		mg/kg		0.15-0.55	25-FEB-20
Silver (Ag)			0.22		mg/kg		0.16-0.36	25-FEB-20
Thallium (Tl)			85.8		%		70-130	25-FEB-20
Uranium (U)			83.9		%		70-130	25-FEB-20
Vanadium (V)			86.7		%		70-130	25-FEB-20
Zinc (Zn)			81.0		%		70-130	25-FEB-20
WG3281001-6 DUP		**WG3281001-5**						
Antimony (Sb)		0.37	0.42		ug/g	12	30	25-FEB-20
Arsenic (As)		5.96	6.16		ug/g	3.3	30	25-FEB-20
Barium (Ba)		76.9	79.6		ug/g	3.4	40	25-FEB-20
Beryllium (Be)		0.82	0.83		ug/g	0.9	30	25-FEB-20
Boron (B)		11.6	16.5	J	ug/g	4.9	10	25-FEB-20
Cadmium (Cd)		0.122	0.127		ug/g	4.1	30	25-FEB-20
Chromium (Cr)		26.0	27.0		ug/g	3.7	30	25-FEB-20
Cobalt (Co)		13.0	13.1		ug/g	0.7	30	25-FEB-20
Copper (Cu)		10.7	10.7		ug/g	0.1	30	25-FEB-20
Lead (Pb)		17.8	17.8		ug/g	0.0	40	25-FEB-20
Molybdenum (Mo)		0.89	0.93		ug/g	4.0	40	25-FEB-20
Nickel (Ni)		26.3	26.6		ug/g	1.0	30	25-FEB-20
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	25-FEB-20
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	25-FEB-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5005066								
WG3281001-6 DUP		**WG3281001-5**						
Thallium (Tl)		0.128	0.143		ug/g	11	30	25-FEB-20
Uranium (U)		0.596	0.607		ug/g	1.8	30	25-FEB-20
Vanadium (V)		32.0	34.1		ug/g	6.5	30	25-FEB-20
Zinc (Zn)		72.6	75.4		ug/g	3.8	30	25-FEB-20
WG3281001-4 LCS								
Antimony (Sb)			100.1		%		80-120	25-FEB-20
Arsenic (As)			96.2		%		80-120	25-FEB-20
Barium (Ba)			100.7		%		80-120	25-FEB-20
Beryllium (Be)			91.4		%		80-120	25-FEB-20
Boron (B)			92.5		%		80-120	25-FEB-20
Cadmium (Cd)			92.6		%		80-120	25-FEB-20
Chromium (Cr)			103.5		%		80-120	25-FEB-20
Cobalt (Co)			100.7		%		80-120	25-FEB-20
Copper (Cu)			99.8		%		80-120	25-FEB-20
Lead (Pb)			99.95		%		80-120	25-FEB-20
Molybdenum (Mo)			102.0		%		80-120	25-FEB-20
Nickel (Ni)			99.8		%		80-120	25-FEB-20
Selenium (Se)			90.9		%		80-120	25-FEB-20
Silver (Ag)			93.6		%		80-120	25-FEB-20
Thallium (Tl)			98.7		%		80-120	25-FEB-20
Uranium (U)			97.3		%		80-120	25-FEB-20
Vanadium (V)			103.1		%		80-120	25-FEB-20
Zinc (Zn)			95.7		%		80-120	25-FEB-20
WG3281001-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	25-FEB-20
Arsenic (As)			<0.10		mg/kg		0.1	25-FEB-20
Barium (Ba)			<0.50		mg/kg		0.5	25-FEB-20
Beryllium (Be)			<0.10		mg/kg		0.1	25-FEB-20
Boron (B)			<5.0		mg/kg		5	25-FEB-20
Cadmium (Cd)			<0.020		mg/kg		0.02	25-FEB-20
Chromium (Cr)			<0.50		mg/kg		0.5	25-FEB-20
Cobalt (Co)			<0.10		mg/kg		0.1	25-FEB-20
Copper (Cu)			<0.50		mg/kg		0.5	25-FEB-20
Lead (Pb)			<0.50		mg/kg		0.5	25-FEB-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5005066								
WG3281001-1 MB								
Molybdenum (Mo)			<0.10		mg/kg		0.1	25-FEB-20
Nickel (Ni)			<0.50		mg/kg		0.5	25-FEB-20
Selenium (Se)			<0.20		mg/kg		0.2	25-FEB-20
Silver (Ag)			<0.10		mg/kg		0.1	25-FEB-20
Thallium (Tl)			<0.050		mg/kg		0.05	25-FEB-20
Uranium (U)			<0.050		mg/kg		0.05	25-FEB-20
Vanadium (V)			<0.20		mg/kg		0.2	25-FEB-20
Zinc (Zn)			<2.0		mg/kg		2	25-FEB-20
Batch R5005288								
WG3280990-2 CRM		**WT-CANMET-TILL2**						
Antimony (Sb)			96.1		%		70-130	25-FEB-20
Arsenic (As)			99.2		%		70-130	25-FEB-20
Barium (Ba)			100.5		%		70-130	25-FEB-20
Beryllium (Be)			87.9		%		70-130	25-FEB-20
Boron (B)			3.0		mg/kg		0-8.6	25-FEB-20
Cadmium (Cd)			89.9		%		70-130	25-FEB-20
Chromium (Cr)			99.9		%		70-130	25-FEB-20
Cobalt (Co)			99.2		%		70-130	25-FEB-20
Copper (Cu)			99.1		%		70-130	25-FEB-20
Lead (Pb)			94.9		%		70-130	25-FEB-20
Molybdenum (Mo)			99.4		%		70-130	25-FEB-20
Nickel (Ni)			100.5		%		70-130	25-FEB-20
Selenium (Se)			0.32		mg/kg		0.15-0.55	25-FEB-20
Silver (Ag)			0.24		mg/kg		0.16-0.36	25-FEB-20
Thallium (Tl)			95.4		%		70-130	25-FEB-20
Uranium (U)			91.0		%		70-130	25-FEB-20
Vanadium (V)			99.8		%		70-130	25-FEB-20
Zinc (Zn)			95.1		%		70-130	25-FEB-20
WG3280990-6 DUP		**WG3280990-5**						
Antimony (Sb)		0.28	0.29		ug/g	3.5	30	25-FEB-20
Arsenic (As)		4.71	4.69		ug/g	0.6	30	25-FEB-20
Barium (Ba)		58.6	59.0		ug/g	0.7	40	25-FEB-20
Beryllium (Be)		0.45	0.46		ug/g	2.7	30	25-FEB-20
Boron (B)		16.1	15.0		ug/g	7.2	30	25-FEB-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5005288								
WG3280990-6 DUP		**WG3280990-5**						
Cadmium (Cd)		0.145	0.142		ug/g	2.4	30	25-FEB-20
Chromium (Cr)		19.9	19.3		ug/g	3.0	30	25-FEB-20
Cobalt (Co)		6.98	7.03		ug/g	0.7	30	25-FEB-20
Copper (Cu)		13.3	13.2		ug/g	0.3	30	25-FEB-20
Lead (Pb)		5.94	5.89		ug/g	0.9	40	25-FEB-20
Molybdenum (Mo)		2.52	2.69		ug/g	6.5	40	25-FEB-20
Nickel (Ni)		20.3	20.1		ug/g	0.7	30	25-FEB-20
Selenium (Se)		<0.20	0.21	RPD-NA	ug/g	N/A	30	25-FEB-20
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	25-FEB-20
Thallium (Tl)		0.161	0.163		ug/g	1.4	30	25-FEB-20
Uranium (U)		1.30	1.29		ug/g	1.2	30	25-FEB-20
Vanadium (V)		27.2	26.0		ug/g	4.6	30	25-FEB-20
Zinc (Zn)		33.6	33.3		ug/g	0.9	30	25-FEB-20
WG3280990-4 LCS								
Antimony (Sb)			100.7		%		80-120	25-FEB-20
Arsenic (As)			97.2		%		80-120	25-FEB-20
Barium (Ba)			98.6		%		80-120	25-FEB-20
Beryllium (Be)			90.7		%		80-120	25-FEB-20
Boron (B)			88.3		%		80-120	25-FEB-20
Cadmium (Cd)			93.9		%		80-120	25-FEB-20
Chromium (Cr)			100.4		%		80-120	25-FEB-20
Cobalt (Co)			98.5		%		80-120	25-FEB-20
Copper (Cu)			97.4		%		80-120	25-FEB-20
Lead (Pb)			97.6		%		80-120	25-FEB-20
Molybdenum (Mo)			101.9		%		80-120	25-FEB-20
Nickel (Ni)			98.4		%		80-120	25-FEB-20
Selenium (Se)			94.5		%		80-120	25-FEB-20
Silver (Ag)			93.6		%		80-120	25-FEB-20
Thallium (Tl)			97.4		%		80-120	25-FEB-20
Uranium (U)			92.4		%		80-120	25-FEB-20
Vanadium (V)			101.1		%		80-120	25-FEB-20
Zinc (Zn)			95.8		%		80-120	25-FEB-20
WG3280990-1 MB								
							0.1	

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5005288								
WG3280990-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	25-FEB-20
Arsenic (As)			<0.10		mg/kg		0.1	25-FEB-20
Barium (Ba)			<0.50		mg/kg		0.5	25-FEB-20
Beryllium (Be)			<0.10		mg/kg		0.1	25-FEB-20
Boron (B)			<5.0		mg/kg		5	25-FEB-20
Cadmium (Cd)			<0.020		mg/kg		0.02	25-FEB-20
Chromium (Cr)			<0.50		mg/kg		0.5	25-FEB-20
Cobalt (Co)			<0.10		mg/kg		0.1	25-FEB-20
Copper (Cu)			<0.50		mg/kg		0.5	25-FEB-20
Lead (Pb)			<0.50		mg/kg		0.5	25-FEB-20
Molybdenum (Mo)			<0.10		mg/kg		0.1	25-FEB-20
Nickel (Ni)			<0.50		mg/kg		0.5	25-FEB-20
Selenium (Se)			<0.20		mg/kg		0.2	25-FEB-20
Silver (Ag)			<0.10		mg/kg		0.1	25-FEB-20
Thallium (Tl)			<0.050		mg/kg		0.05	25-FEB-20
Uranium (U)			<0.050		mg/kg		0.05	25-FEB-20
Vanadium (V)			<0.20		mg/kg		0.2	25-FEB-20
Zinc (Zn)			<2.0		mg/kg		2	25-FEB-20
MOISTURE-WT	**Soil**							
Batch R5001687								
WG3279958-3 DUP		**L2419680-1**						
% Moisture		9.39	9.84		%	4.7	20	23-FEB-20
WG3279958-2 LCS								
% Moisture			100.5		%		90-110	23-FEB-20
WG3279958-1 MB								
% Moisture			<0.25		%		0.25	23-FEB-20
Batch R5006167								
WG3281070-3 DUP		**L2420033-1**						
% Moisture		12.3	12.0		%	2.1	20	26-FEB-20
WG3281070-2 LCS								
% Moisture			100.0		%		90-110	26-FEB-20
WG3281070-1 MB								
% Moisture			<0.25		%		0.25	26-FEB-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MOISTURE-WT	**Soil**							
Batch R5006471								
WG3281729-3 DUP		**L2420795-2**						
% Moisture		5.42	5.37		%	1.0	20	26-FEB-20
WG3281729-2 LCS								
% Moisture			100.3		%		90-110	26-FEB-20
WG3281729-1 MB								
% Moisture			<0.25		%		0.25	26-FEB-20
PAH-511-WT	**Soil**							
Batch R5004428								
WG3279857-3 DUP		**WG3279857-5**						
1-Methylnaphthalene		0.163	0.158		ug/g	3.4	40	25-FEB-20
2-Methylnaphthalene		0.190	0.179		ug/g	5.7	40	25-FEB-20
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-FEB-20
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-FEB-20
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-FEB-20
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-FEB-20
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-FEB-20
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-FEB-20
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-FEB-20
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-FEB-20
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-FEB-20
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-FEB-20
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-FEB-20
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-FEB-20
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-FEB-20
Naphthalene		0.111	0.108		ug/g	2.9	40	25-FEB-20
Phenanthrene		<0.046	<0.046	RPD-NA	ug/g	N/A	40	25-FEB-20
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-FEB-20
WG3279857-2 LCS								
1-Methylnaphthalene			98.3		%		50-140	25-FEB-20
2-Methylnaphthalene			93.6		%		50-140	25-FEB-20
Acenaphthene			98.7		%		50-140	25-FEB-20
Acenaphthylene			97.4		%		50-140	25-FEB-20
Anthracene			97.0		%		50-140	25-FEB-20
Benzo(a)anthracene			97.8		%		50-140	25-FEB-20
Benzo(a)pyrene			95.4		%		50-140	25-FEB-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5004428								
WG3279857-2 LCS								
Benzo(b)fluoranthene			98.9		%		50-140	25-FEB-20
Benzo(g,h,i)perylene			103.0		%		50-140	25-FEB-20
Benzo(k)fluoranthene			97.9		%		50-140	25-FEB-20
Chrysene			109.8		%		50-140	25-FEB-20
Dibenzo(ah)anthracene			101.1		%		50-140	25-FEB-20
Fluoranthene			99.1		%		50-140	25-FEB-20
Fluorene			96.0		%		50-140	25-FEB-20
Indeno(1,2,3-cd)pyrene			97.6		%		50-140	25-FEB-20
Naphthalene			97.7		%		50-140	25-FEB-20
Phenanthrene			100.3		%		50-140	25-FEB-20
Pyrene			99.9		%		50-140	25-FEB-20
WG3279857-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	25-FEB-20
2-Methylnaphthalene			<0.030		ug/g		0.03	25-FEB-20
Acenaphthene			<0.050		ug/g		0.05	25-FEB-20
Acenaphthylene			<0.050		ug/g		0.05	25-FEB-20
Anthracene			<0.050		ug/g		0.05	25-FEB-20
Benzo(a)anthracene			<0.050		ug/g		0.05	25-FEB-20
Benzo(a)pyrene			<0.050		ug/g		0.05	25-FEB-20
Benzo(b)fluoranthene			<0.050		ug/g		0.05	25-FEB-20
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	25-FEB-20
Benzo(k)fluoranthene			<0.050		ug/g		0.05	25-FEB-20
Chrysene			<0.050		ug/g		0.05	25-FEB-20
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	25-FEB-20
Fluoranthene			<0.050		ug/g		0.05	25-FEB-20
Fluorene			<0.050		ug/g		0.05	25-FEB-20
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	25-FEB-20
Naphthalene			<0.013		ug/g		0.013	25-FEB-20
Phenanthrene			<0.046		ug/g		0.046	25-FEB-20
Pyrene			<0.050		ug/g		0.05	25-FEB-20
Surrogate: 2-Fluorobiphenyl			95.5		%		50-140	25-FEB-20
Surrogate: p-Terphenyl d14			94.9		%		50-140	25-FEB-20
WG3279857-4 MS		**WG3279857-5**						
1-Methylnaphthalene			96.5		%		50-140	25-FEB-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5004428								
WG3279857-4 MS		**WG3279857-5**						
2-Methylnaphthalene			92.0		%		50-140	25-FEB-20
Acenaphthene			94.8		%		50-140	25-FEB-20
Acenaphthylene			94.2		%		50-140	25-FEB-20
Anthracene			95.5		%		50-140	25-FEB-20
Benzo(a)anthracene			95.1		%		50-140	25-FEB-20
Benzo(a)pyrene			93.1		%		50-140	25-FEB-20
Benzo(b)fluoranthene			96.7		%		50-140	25-FEB-20
Benzo(g,h,i)perylene			98.5		%		50-140	25-FEB-20
Benzo(k)fluoranthene			93.5		%		50-140	25-FEB-20
Chrysene			105.8		%		50-140	25-FEB-20
Dibenzo(ah)anthracene			97.4		%		50-140	25-FEB-20
Fluoranthene			98.4		%		50-140	25-FEB-20
Fluorene			93.8		%		50-140	25-FEB-20
Indeno(1,2,3-cd)pyrene			101.6		%		50-140	25-FEB-20
Naphthalene			93.9		%		50-140	25-FEB-20
Phenanthrene			96.2		%		50-140	25-FEB-20
Pyrene			98.3		%		50-140	25-FEB-20
Batch R5005211								
WG3280511-3 DUP		**WG3280511-5**						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	25-FEB-20
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	25-FEB-20
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-FEB-20
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-FEB-20
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-FEB-20
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-FEB-20
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-FEB-20
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-FEB-20
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-FEB-20
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-FEB-20
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-FEB-20
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-FEB-20
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-FEB-20
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-FEB-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5005211								
WG3280511-3 DUP		**WG3280511-5**						
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-FEB-20
Naphthalene		<0.013	<0.013	RPD-NA	ug/g	N/A	40	25-FEB-20
Phenanthrene		<0.046	<0.046	RPD-NA	ug/g	N/A	40	25-FEB-20
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-FEB-20
WG3280511-2 LCS								
1-Methylnaphthalene			98.3		%		50-140	25-FEB-20
2-Methylnaphthalene			93.0		%		50-140	25-FEB-20
Acenaphthene			98.8		%		50-140	25-FEB-20
Acenaphthylene			97.4		%		50-140	25-FEB-20
Anthracene			95.7		%		50-140	25-FEB-20
Benzo(a)anthracene			96.5		%		50-140	25-FEB-20
Benzo(a)pyrene			94.4		%		50-140	25-FEB-20
Benzo(b)fluoranthene			96.0		%		50-140	25-FEB-20
Benzo(g,h,i)perylene			82.0		%		50-140	25-FEB-20
Benzo(k)fluoranthene			104.3		%		50-140	25-FEB-20
Chrysene			110.8		%		50-140	25-FEB-20
Dibenzo(ah)anthracene			78.2		%		50-140	25-FEB-20
Fluoranthene			96.2		%		50-140	25-FEB-20
Fluorene			95.6		%		50-140	25-FEB-20
Indeno(1,2,3-cd)pyrene			76.9		%		50-140	25-FEB-20
Naphthalene			97.0		%		50-140	25-FEB-20
Phenanthrene			99.9		%		50-140	25-FEB-20
Pyrene			97.2		%		50-140	25-FEB-20
WG3280511-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	25-FEB-20
2-Methylnaphthalene			<0.030		ug/g		0.03	25-FEB-20
Acenaphthene			<0.050		ug/g		0.05	25-FEB-20
Acenaphthylene			<0.050		ug/g		0.05	25-FEB-20
Anthracene			<0.050		ug/g		0.05	25-FEB-20
Benzo(a)anthracene			<0.050		ug/g		0.05	25-FEB-20
Benzo(a)pyrene			<0.050		ug/g		0.05	25-FEB-20
Benzo(b)fluoranthene			<0.050		ug/g		0.05	25-FEB-20
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	25-FEB-20
Benzo(k)fluoranthene			<0.050		ug/g		0.05	25-FEB-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5005211								
WG3280511-1 MB								
Chrysene			<0.050		ug/g		0.05	25-FEB-20
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	25-FEB-20
Fluoranthene			<0.050		ug/g		0.05	25-FEB-20
Fluorene			<0.050		ug/g		0.05	25-FEB-20
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	25-FEB-20
Naphthalene			<0.013		ug/g		0.013	25-FEB-20
Phenanthrene			<0.046		ug/g		0.046	25-FEB-20
Pyrene			<0.050		ug/g		0.05	25-FEB-20
Surrogate: 2-Fluorobiphenyl			117.1		%		50-140	25-FEB-20
Surrogate: p-Terphenyl d14			121.8		%		50-140	25-FEB-20
WG3280511-4 MS		**WG3280511-5**						
1-Methylnaphthalene			98.7		%		50-140	25-FEB-20
2-Methylnaphthalene			93.4		%		50-140	25-FEB-20
Acenaphthene			99.5		%		50-140	25-FEB-20
Acenaphthylene			97.9		%		50-140	25-FEB-20
Anthracene			96.5		%		50-140	25-FEB-20
Benzo(a)anthracene			98.5		%		50-140	25-FEB-20
Benzo(a)pyrene			96.7		%		50-140	25-FEB-20
Benzo(b)fluoranthene			101.5		%		50-140	25-FEB-20
Benzo(g,h,i)perylene			85.1		%		50-140	25-FEB-20
Benzo(k)fluoranthene			101.5		%		50-140	25-FEB-20
Chrysene			110.2		%		50-140	25-FEB-20
Dibenzo(ah)anthracene			81.7		%		50-140	25-FEB-20
Fluoranthene			96.7		%		50-140	25-FEB-20
Fluorene			97.2		%		50-140	25-FEB-20
Indeno(1,2,3-cd)pyrene			83.6		%		50-140	25-FEB-20
Naphthalene			96.3		%		50-140	25-FEB-20
Phenanthrene			99.95		%		50-140	25-FEB-20
Pyrene			97.2		%		50-140	25-FEB-20
SAR-R511-WT	**Soil**							
Batch R5004988								
WG3281014-4 DUP		**WG3281014-3**						
Calcium (Ca)		18.8	17.8		mg/L	5.5	30	25-FEB-20
Sodium (Na)		29.2	28.5		mg/L	2.4	30	25-FEB-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SAR-R511-WT	**Soil**							
Batch R5004988								
WG3281014-4 DUP		**WG3281014-3**						
Magnesium (Mg)		9.89	9.40		mg/L	5.1	30	25-FEB-20
WG3281014-2 IRM		**WT SAR3**						
Calcium (Ca)			97.9		%		70-130	25-FEB-20
Sodium (Na)			104.0		%		70-130	25-FEB-20
Magnesium (Mg)			104.6		%		70-130	25-FEB-20
WG3281014-5 LCS								
Calcium (Ca)			102.0		%		80-120	25-FEB-20
Sodium (Na)			101.6		%		80-120	25-FEB-20
Magnesium (Mg)			101.0		%		80-120	25-FEB-20
WG3281014-1 MB								
Calcium (Ca)			<0.50		mg/L		0.5	25-FEB-20
Sodium (Na)			<0.50		mg/L		0.5	25-FEB-20
Magnesium (Mg)			<0.50		mg/L		0.5	25-FEB-20
Batch R5006107								
WG3281021-4 DUP		**WG3281021-3**						
Calcium (Ca)		43.5	39.8		mg/L	8.9	30	25-FEB-20
Sodium (Na)		67.2	67.9		mg/L	1.0	30	25-FEB-20
Magnesium (Mg)		14.6	13.7		mg/L	6.4	30	25-FEB-20
WG3281021-2 IRM		**WT SAR3**						
Calcium (Ca)			102.1		%		70-130	25-FEB-20
Sodium (Na)			108.0		%		70-130	25-FEB-20
Magnesium (Mg)			110.1		%		70-130	25-FEB-20
WG3281021-5 LCS								
Calcium (Ca)			101.7		%		80-120	25-FEB-20
Sodium (Na)			100.6		%		80-120	25-FEB-20
Magnesium (Mg)			100.4		%		80-120	25-FEB-20
WG3281021-1 MB								
Calcium (Ca)			<0.50		mg/L		0.5	25-FEB-20
Sodium (Na)			<0.50		mg/L		0.5	25-FEB-20
Magnesium (Mg)			<0.50		mg/L		0.5	25-FEB-20
VOC-511-HS-WT	**Soil**							
Batch R5002212								
WG3279894-4 DUP		**WG3279894-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-FEB-20
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-FEB-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5002212								
WG3279894-4 DUP		**WG3279894-3**						
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-FEB-20
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-FEB-20
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-FEB-20
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-FEB-20
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-FEB-20
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-FEB-20
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-FEB-20
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-FEB-20
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-FEB-20
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-FEB-20
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	24-FEB-20
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	24-FEB-20
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-FEB-20
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-FEB-20
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-FEB-20
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-FEB-20
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-FEB-20
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-FEB-20
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-FEB-20
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	24-FEB-20
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-FEB-20
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-FEB-20
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	24-FEB-20
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-FEB-20
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-FEB-20
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-FEB-20
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	24-FEB-20
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	24-FEB-20
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	24-FEB-20
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	24-FEB-20
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-FEB-20
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-FEB-20
Toluene		<0.080	<0.080		ug/g			24-FEB-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5002212								
WG3279894-4 DUP		**WG3279894-3**						
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	24-FEB-20
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-FEB-20
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	24-FEB-20
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	24-FEB-20
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-FEB-20
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	24-FEB-20
WG3279894-2 LCS								
1,1,1,2-Tetrachloroethane			101.2		%		60-130	24-FEB-20
1,1,2,2-Tetrachloroethane			103.1		%		60-130	24-FEB-20
1,1,1-Trichloroethane			103.9		%		60-130	24-FEB-20
1,1,2-Trichloroethane			99.9		%		60-130	24-FEB-20
1,1-Dichloroethane			104.2		%		60-130	24-FEB-20
1,1-Dichloroethylene			95.1		%		60-130	24-FEB-20
1,2-Dibromoethane			101.7		%		70-130	24-FEB-20
1,2-Dichlorobenzene			105.9		%		70-130	24-FEB-20
1,2-Dichloroethane			103.4		%		60-130	24-FEB-20
1,2-Dichloropropane			103.1		%		70-130	24-FEB-20
1,3-Dichlorobenzene			106.0		%		70-130	24-FEB-20
1,4-Dichlorobenzene			107.3		%		70-130	24-FEB-20
Acetone			100.6		%		60-140	24-FEB-20
Benzene			106.8		%		70-130	24-FEB-20
Bromodichloromethane			105.0		%		50-140	24-FEB-20
Bromoform			104.2		%		70-130	24-FEB-20
Bromomethane			84.2		%		50-140	24-FEB-20
Carbon tetrachloride			105.8		%		70-130	24-FEB-20
Chlorobenzene			104.9		%		70-130	24-FEB-20
Chloroform			106.0		%		70-130	24-FEB-20
cis-1,2-Dichloroethylene			86.9		%		70-130	24-FEB-20
cis-1,3-Dichloropropene			104.8		%		70-130	24-FEB-20
Dibromochloromethane			97.9		%		60-130	24-FEB-20
Dichlorodifluoromethane			64.5		%		50-140	24-FEB-20
Ethylbenzene			102.0		%		70-130	24-FEB-20
n-Hexane			92.8		%		70-130	24-FEB-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5002212								
WG3279894-2 LCS								
Methylene Chloride			105.2		%		70-130	24-FEB-20
MTBE			104.0		%		70-130	24-FEB-20
m+p-Xylenes			103.5		%		70-130	24-FEB-20
Methyl Ethyl Ketone			106.4		%		60-140	24-FEB-20
Methyl Isobutyl Ketone			97.1		%		60-140	24-FEB-20
o-Xylene			110.1		%		70-130	24-FEB-20
Styrene			95.8		%		70-130	24-FEB-20
Tetrachloroethylene			106.1		%		60-130	24-FEB-20
Toluene			104.5		%		70-130	24-FEB-20
trans-1,2-Dichloroethylene			100.2		%		60-130	24-FEB-20
trans-1,3-Dichloropropene			107.0		%		70-130	24-FEB-20
Trichloroethylene			106.6		%		60-130	24-FEB-20
Trichlorofluoromethane			95.4		%		50-140	24-FEB-20
Vinyl chloride			101.3		%		60-140	24-FEB-20
WG3279894-1 MB								
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	24-FEB-20
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	24-FEB-20
1,1,1-Trichloroethane			<0.050		ug/g		0.05	24-FEB-20
1,1,2-Trichloroethane			<0.050		ug/g		0.05	24-FEB-20
1,1-Dichloroethane			<0.050		ug/g		0.05	24-FEB-20
1,1-Dichloroethylene			<0.050		ug/g		0.05	24-FEB-20
1,2-Dibromoethane			<0.050		ug/g		0.05	24-FEB-20
1,2-Dichlorobenzene			<0.050		ug/g		0.05	24-FEB-20
1,2-Dichloroethane			<0.050		ug/g		0.05	24-FEB-20
1,2-Dichloropropane			<0.050		ug/g		0.05	24-FEB-20
1,3-Dichlorobenzene			<0.050		ug/g		0.05	24-FEB-20
1,4-Dichlorobenzene			<0.050		ug/g		0.05	24-FEB-20
Acetone			<0.50		ug/g		0.5	24-FEB-20
Benzene			<0.0068		ug/g		0.0068	24-FEB-20
Bromodichloromethane			<0.050		ug/g		0.05	24-FEB-20
Bromoform			<0.050		ug/g		0.05	24-FEB-20
Bromomethane			<0.050		ug/g		0.05	24-FEB-20
Carbon tetrachloride			<0.050		ug/g		0.05	24-FEB-20
Chlorobenzene			<0.050		ug/g		0.05	24-FEB-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5002212								
WG3279894-1 MB								
Chloroform			<0.050		ug/g		0.05	24-FEB-20
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	24-FEB-20
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	24-FEB-20
Dibromochloromethane			<0.050		ug/g		0.05	24-FEB-20
Dichlorodifluoromethane			<0.050		ug/g		0.05	24-FEB-20
Ethylbenzene			<0.018		ug/g		0.018	24-FEB-20
n-Hexane			<0.050		ug/g		0.05	24-FEB-20
Methylene Chloride			<0.050		ug/g		0.05	24-FEB-20
MTBE			<0.050		ug/g		0.05	24-FEB-20
m+p-Xylenes			<0.030		ug/g		0.03	24-FEB-20
Methyl Ethyl Ketone			<0.50		ug/g		0.5	24-FEB-20
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	24-FEB-20
o-Xylene			<0.020		ug/g		0.02	24-FEB-20
Styrene			<0.050		ug/g		0.05	24-FEB-20
Tetrachloroethylene			<0.050		ug/g		0.05	24-FEB-20
Toluene			<0.080		ug/g		0.08	24-FEB-20
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	24-FEB-20
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	24-FEB-20
Trichloroethylene			<0.010		ug/g		0.01	24-FEB-20
Trichlorofluoromethane			<0.050		ug/g		0.05	24-FEB-20
Vinyl chloride			<0.020		ug/g		0.02	24-FEB-20
Surrogate: 1,4-Difluorobenzene			113.2		%		50-140	24-FEB-20
Surrogate: 4-Bromofluorobenzene			100.6		%		50-140	24-FEB-20
WG3279894-5 MS		**WG3279894-3**						
1,1,1,2-Tetrachloroethane			99.0		%		50-140	24-FEB-20
1,1,2,2-Tetrachloroethane			102.6		%		50-140	24-FEB-20
1,1,1-Trichloroethane			101.1		%		50-140	24-FEB-20
1,1,2-Trichloroethane			99.1		%		50-140	24-FEB-20
1,1-Dichloroethane			89.0		%		50-140	24-FEB-20
1,1-Dichloroethylene			92.4		%		50-140	24-FEB-20
1,2-Dibromoethane			101.1		%		50-140	24-FEB-20
1,2-Dichlorobenzene			102.8		%		50-140	24-FEB-20
1,2-Dichloroethane			102.4		%		50-140	24-FEB-20
1,2-Dichloropropane			101.0		%		50-140	24-FEB-20

Quality Control Report

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5002212								
WG3279894-5 MS		**WG3279894-3**						
1,3-Dichlorobenzene			102.5		%		50-140	24-FEB-20
1,4-Dichlorobenzene			104.1		%		50-140	24-FEB-20
Acetone			103.3		%		50-140	24-FEB-20
Benzene			104.8		%		50-140	24-FEB-20
Bromodichloromethane			103.6		%		50-140	24-FEB-20
Bromoform			103.5		%		50-140	24-FEB-20
Bromomethane			81.2		%		50-140	24-FEB-20
Carbon tetrachloride			103.0		%		50-140	24-FEB-20
Chlorobenzene			102.6		%		50-140	24-FEB-20
Chloroform			104.1		%		50-140	24-FEB-20
cis-1,2-Dichloroethylene			99.4		%		50-140	24-FEB-20
cis-1,3-Dichloropropene			100.4		%		50-140	24-FEB-20
Dibromochloromethane			96.7		%		50-140	24-FEB-20
Dichlorodifluoromethane			62.1		%		50-140	24-FEB-20
Ethylbenzene			99.1		%		50-140	24-FEB-20
n-Hexane			90.2		%		50-140	24-FEB-20
Methylene Chloride			103.6		%		50-140	24-FEB-20
MTBE			102.0		%		50-140	24-FEB-20
m+p-Xylenes			100.5		%		50-140	24-FEB-20
Methyl Ethyl Ketone			98.4		%		50-140	24-FEB-20
Methyl Isobutyl Ketone			95.4		%		50-140	24-FEB-20
o-Xylene			107.0		%		50-140	24-FEB-20
Styrene			92.8		%		50-140	24-FEB-20
Tetrachloroethylene			103.1		%		50-140	24-FEB-20
Toluene			102.1		%		50-140	24-FEB-20
trans-1,2-Dichloroethylene			97.4		%		50-140	24-FEB-20
trans-1,3-Dichloropropene			102.3		%		50-140	24-FEB-20
Trichloroethylene			103.9		%		50-140	24-FEB-20
Trichlorofluoromethane			92.6		%		50-140	24-FEB-20
Vinyl chloride			97.8		%		50-140	24-FEB-20
Batch R5006956								
WG3281118-4 DUP		**WG3281118-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-FEB-20
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-FEB-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5006956								
WG3281118-4 DUP		**WG3281118-3**						
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-FEB-20
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-FEB-20
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-FEB-20
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-FEB-20
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-FEB-20
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-FEB-20
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-FEB-20
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-FEB-20
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-FEB-20
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-FEB-20
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	26-FEB-20
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	26-FEB-20
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-FEB-20
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-FEB-20
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-FEB-20
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-FEB-20
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-FEB-20
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-FEB-20
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-FEB-20
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	26-FEB-20
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-FEB-20
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-FEB-20
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	26-FEB-20
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-FEB-20
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-FEB-20
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-FEB-20
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	26-FEB-20
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	26-FEB-20
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	26-FEB-20
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-FEB-20
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-FEB-20
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-FEB-20
Toluene		<0.080	<0.080		ug/g			26-FEB-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5006956								
WG3281118-4 DUP		**WG3281118-3**						
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	26-FEB-20
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-FEB-20
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	26-FEB-20
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	26-FEB-20
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	26-FEB-20
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-FEB-20
WG3281118-2 LCS								
1,1,1,2-Tetrachloroethane			102.2		%		60-130	26-FEB-20
1,1,2,2-Tetrachloroethane			97.3		%		60-130	26-FEB-20
1,1,1-Trichloroethane			107.7		%		60-130	26-FEB-20
1,1,2-Trichloroethane			97.5		%		60-130	26-FEB-20
1,1-Dichloroethane			102.8		%		60-130	26-FEB-20
1,1-Dichloroethylene			97.4		%		60-130	26-FEB-20
1,2-Dibromoethane			97.9		%		70-130	26-FEB-20
1,2-Dichlorobenzene			108.8		%		70-130	26-FEB-20
1,2-Dichloroethane			100.7		%		60-130	26-FEB-20
1,2-Dichloropropane			102.7		%		70-130	26-FEB-20
1,3-Dichlorobenzene			112.0		%		70-130	26-FEB-20
1,4-Dichlorobenzene			112.9		%		70-130	26-FEB-20
Acetone			91.4		%		60-140	26-FEB-20
Benzene			108.6		%		70-130	26-FEB-20
Bromodichloromethane			104.5		%		50-140	26-FEB-20
Bromoform			100.0		%		70-130	26-FEB-20
Bromomethane			83.8		%		50-140	26-FEB-20
Carbon tetrachloride			109.9		%		70-130	26-FEB-20
Chlorobenzene			107.9		%		70-130	26-FEB-20
Chloroform			107.3		%		70-130	26-FEB-20
cis-1,2-Dichloroethylene			87.7		%		70-130	26-FEB-20
cis-1,3-Dichloropropene			105.1		%		70-130	26-FEB-20
Dibromochloromethane			96.1		%		60-130	26-FEB-20
Dichlorodifluoromethane			60.7		%		50-140	26-FEB-20
Ethylbenzene			106.6		%		70-130	26-FEB-20
n-Hexane			95.5		%		70-130	26-FEB-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5006956								
WG3281118-2 LCS								
Methylene Chloride			104.7		%		70-130	26-FEB-20
MTBE			106.3		%		70-130	26-FEB-20
m+p-Xylenes			108.5		%		70-130	26-FEB-20
Methyl Ethyl Ketone			98.0		%		60-140	26-FEB-20
Methyl Isobutyl Ketone			88.3		%		60-140	26-FEB-20
o-Xylene			114.3		%		70-130	26-FEB-20
Styrene			98.4		%		70-130	26-FEB-20
Tetrachloroethylene			111.3		%		60-130	26-FEB-20
Toluene			108.2		%		70-130	26-FEB-20
trans-1,2-Dichloroethylene			102.7		%		60-130	26-FEB-20
trans-1,3-Dichloropropene			106.6		%		70-130	26-FEB-20
Trichloroethylene			109.9		%		60-130	26-FEB-20
Trichlorofluoromethane			98.0		%		50-140	26-FEB-20
Vinyl chloride			100.6		%		60-140	26-FEB-20
WG3281118-1 MB								
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	26-FEB-20
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	26-FEB-20
1,1,1-Trichloroethane			<0.050		ug/g		0.05	26-FEB-20
1,1,2-Trichloroethane			<0.050		ug/g		0.05	26-FEB-20
1,1-Dichloroethane			<0.050		ug/g		0.05	26-FEB-20
1,1-Dichloroethylene			<0.050		ug/g		0.05	26-FEB-20
1,2-Dibromoethane			<0.050		ug/g		0.05	26-FEB-20
1,2-Dichlorobenzene			<0.050		ug/g		0.05	26-FEB-20
1,2-Dichloroethane			<0.050		ug/g		0.05	26-FEB-20
1,2-Dichloropropane			<0.050		ug/g		0.05	26-FEB-20
1,3-Dichlorobenzene			<0.050		ug/g		0.05	26-FEB-20
1,4-Dichlorobenzene			<0.050		ug/g		0.05	26-FEB-20
Acetone			<0.50		ug/g		0.5	26-FEB-20
Benzene			<0.0068		ug/g		0.0068	26-FEB-20
Bromodichloromethane			<0.050		ug/g		0.05	26-FEB-20
Bromoform			<0.050		ug/g		0.05	26-FEB-20
Bromomethane			<0.050		ug/g		0.05	26-FEB-20
Carbon tetrachloride			<0.050		ug/g		0.05	26-FEB-20
Chlorobenzene			<0.050		ug/g		0.05	26-FEB-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5006956								
WG3281118-1 MB								
Chloroform			<0.050		ug/g		0.05	26-FEB-20
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	26-FEB-20
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	26-FEB-20
Dibromochloromethane			<0.050		ug/g		0.05	26-FEB-20
Dichlorodifluoromethane			<0.050		ug/g		0.05	26-FEB-20
Ethylbenzene			<0.018		ug/g		0.018	26-FEB-20
n-Hexane			<0.050		ug/g		0.05	26-FEB-20
Methylene Chloride			<0.050		ug/g		0.05	26-FEB-20
MTBE			<0.050		ug/g		0.05	26-FEB-20
m+p-Xylenes			<0.030		ug/g		0.03	26-FEB-20
Methyl Ethyl Ketone			<0.50		ug/g		0.5	26-FEB-20
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	26-FEB-20
o-Xylene			<0.020		ug/g		0.02	26-FEB-20
Styrene			<0.050		ug/g		0.05	26-FEB-20
Tetrachloroethylene			<0.050		ug/g		0.05	26-FEB-20
Toluene			<0.080		ug/g		0.08	26-FEB-20
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	26-FEB-20
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	26-FEB-20
Trichloroethylene			<0.010		ug/g		0.01	26-FEB-20
Trichlorofluoromethane			<0.050		ug/g		0.05	26-FEB-20
Vinyl chloride			<0.020		ug/g		0.02	26-FEB-20
Surrogate: 1,4-Difluorobenzene			108.6		%		50-140	26-FEB-20
Surrogate: 4-Bromofluorobenzene			94.9		%		50-140	26-FEB-20
WG3281118-5 MS		**WG3281118-3**						
1,1,1,2-Tetrachloroethane			103.5		%		50-140	26-FEB-20
1,1,2,2-Tetrachloroethane			104.0		%		50-140	26-FEB-20
1,1,1-Trichloroethane			107.8		%		50-140	26-FEB-20
1,1,2-Trichloroethane			100.6		%		50-140	26-FEB-20
1,1-Dichloroethane			105.3		%		50-140	26-FEB-20
1,1-Dichloroethylene			98.2		%		50-140	26-FEB-20
1,2-Dibromoethane			101.3		%		50-140	26-FEB-20
1,2-Dichlorobenzene			108.5		%		50-140	26-FEB-20
1,2-Dichloroethane			104.1		%		50-140	26-FEB-20
1,2-Dichloropropane			104.8		%		50-140	26-FEB-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5006956								
WG3281118-5 MS		**WG3281118-3**						
1,3-Dichlorobenzene			108.3		%		50-140	26-FEB-20
1,4-Dichlorobenzene			109.4		%		50-140	26-FEB-20
Acetone			100.3		%		50-140	26-FEB-20
Benzene			109.8		%		50-140	26-FEB-20
Bromodichloromethane			106.8		%		50-140	26-FEB-20
Bromoform			104.4		%		50-140	26-FEB-20
Bromomethane			83.3		%		50-140	26-FEB-20
Carbon tetrachloride			109.6		%		50-140	26-FEB-20
Chlorobenzene			108.0		%		50-140	26-FEB-20
Chloroform			108.9		%		50-140	26-FEB-20
cis-1,2-Dichloroethylene			88.3		%		50-140	26-FEB-20
cis-1,3-Dichloropropene			102.2		%		50-140	26-FEB-20
Dibromochloromethane			98.6		%		50-140	26-FEB-20
Dichlorodifluoromethane			64.6		%		50-140	26-FEB-20
Ethylbenzene			105.3		%		50-140	26-FEB-20
n-Hexane			97.1		%		50-140	26-FEB-20
Methylene Chloride			106.6		%		50-140	26-FEB-20
MTBE			107.0		%		50-140	26-FEB-20
m+p-Xylenes			107.1		%		50-140	26-FEB-20
Methyl Ethyl Ketone			94.7		%		50-140	26-FEB-20
Methyl Isobutyl Ketone			94.2		%		50-140	26-FEB-20
o-Xylene			113.5		%		50-140	26-FEB-20
Styrene			97.8		%		50-140	26-FEB-20
Tetrachloroethylene			109.0		%		50-140	26-FEB-20
Toluene			107.9		%		50-140	26-FEB-20
trans-1,2-Dichloroethylene			102.4		%		50-140	26-FEB-20
trans-1,3-Dichloropropene			102.5		%		50-140	26-FEB-20
Trichloroethylene			109.2		%		50-140	26-FEB-20
Trichlorofluoromethane			98.8		%		50-140	26-FEB-20
Vinyl chloride			101.9		%		50-140	26-FEB-20
Batch R5009106								
WG3281921-4 DUP		**WG3281921-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-FEB-20
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-FEB-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5009106								
WG3281921-4 DUP		**WG3281921-3**						
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-FEB-20
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-FEB-20
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-FEB-20
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-FEB-20
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-FEB-20
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-FEB-20
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-FEB-20
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-FEB-20
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-FEB-20
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-FEB-20
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	27-FEB-20
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	27-FEB-20
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-FEB-20
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-FEB-20
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-FEB-20
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-FEB-20
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-FEB-20
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-FEB-20
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-FEB-20
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	27-FEB-20
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-FEB-20
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-FEB-20
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	27-FEB-20
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-FEB-20
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-FEB-20
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-FEB-20
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	27-FEB-20
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	27-FEB-20
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	27-FEB-20
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	27-FEB-20
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-FEB-20
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-FEB-20
Toluene		<0.080	<0.080		ug/g			27-FEB-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5009106								
WG3281921-4 DUP		**WG3281921-3**						
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	27-FEB-20
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-FEB-20
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	27-FEB-20
Trichloroethylene		0.308	0.311		ug/g	1.2	40	27-FEB-20
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-FEB-20
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	27-FEB-20
WG3281921-2 LCS								
1,1,1,2-Tetrachloroethane			94.8		%		60-130	27-FEB-20
1,1,2,2-Tetrachloroethane			89.8		%		60-130	27-FEB-20
1,1,1-Trichloroethane			97.3		%		60-130	27-FEB-20
1,1,2-Trichloroethane			91.7		%		60-130	27-FEB-20
1,1-Dichloroethane			81.4		%		60-130	27-FEB-20
1,1-Dichloroethylene			89.7		%		60-130	27-FEB-20
1,2-Dibromoethane			89.7		%		70-130	27-FEB-20
1,2-Dichlorobenzene			100.9		%		70-130	27-FEB-20
1,2-Dichloroethane			95.3		%		60-130	27-FEB-20
1,2-Dichloropropane			96.1		%		70-130	27-FEB-20
1,3-Dichlorobenzene			99.4		%		70-130	27-FEB-20
1,4-Dichlorobenzene			101.2		%		70-130	27-FEB-20
Acetone			97.9		%		60-140	27-FEB-20
Benzene			100.2		%		70-130	27-FEB-20
Bromodichloromethane			96.6		%		50-140	27-FEB-20
Bromoform			93.3		%		70-130	27-FEB-20
Bromomethane			83.2		%		50-140	27-FEB-20
Carbon tetrachloride			99.5		%		70-130	27-FEB-20
Chlorobenzene			98.3		%		70-130	27-FEB-20
Chloroform			99.5		%		70-130	27-FEB-20
cis-1,2-Dichloroethylene			97.1		%		70-130	27-FEB-20
cis-1,3-Dichloropropene			97.3		%		70-130	27-FEB-20
Dibromochloromethane			89.1		%		60-130	27-FEB-20
Dichlorodifluoromethane			69.2		%		50-140	27-FEB-20
Ethylbenzene			94.3		%		70-130	27-FEB-20
n-Hexane			87.1		%		70-130	27-FEB-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5009106								
WG3281921-2 LCS								
Methylene Chloride			100.2		%		70-130	27-FEB-20
MTBE			98.9		%		70-130	27-FEB-20
m+p-Xylenes			96.5		%		70-130	27-FEB-20
Methyl Ethyl Ketone			97.2		%		60-140	27-FEB-20
Methyl Isobutyl Ketone			90.0		%		60-140	27-FEB-20
o-Xylene			102.3		%		70-130	27-FEB-20
Styrene			91.7		%		70-130	27-FEB-20
Tetrachloroethylene			106.0		%		60-130	27-FEB-20
Toluene			104.8		%		70-130	27-FEB-20
trans-1,2-Dichloroethylene			93.9		%		60-130	27-FEB-20
trans-1,3-Dichloropropene			90.9		%		70-130	27-FEB-20
Trichloroethylene			99.7		%		60-130	27-FEB-20
Trichlorofluoromethane			92.3		%		50-140	27-FEB-20
Vinyl chloride			101.8		%		60-140	27-FEB-20
WG3281921-1 MB								
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	27-FEB-20
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	27-FEB-20
1,1,1-Trichloroethane			<0.050		ug/g		0.05	27-FEB-20
1,1,2-Trichloroethane			<0.050		ug/g		0.05	27-FEB-20
1,1-Dichloroethane			<0.050		ug/g		0.05	27-FEB-20
1,1-Dichloroethylene			<0.050		ug/g		0.05	27-FEB-20
1,2-Dibromoethane			<0.050		ug/g		0.05	27-FEB-20
1,2-Dichlorobenzene			<0.050		ug/g		0.05	27-FEB-20
1,2-Dichloroethane			<0.050		ug/g		0.05	27-FEB-20
1,2-Dichloropropane			<0.050		ug/g		0.05	27-FEB-20
1,3-Dichlorobenzene			<0.050		ug/g		0.05	27-FEB-20
1,4-Dichlorobenzene			<0.050		ug/g		0.05	27-FEB-20
Acetone			<0.50		ug/g		0.5	27-FEB-20
Benzene			<0.0068		ug/g		0.0068	27-FEB-20
Bromodichloromethane			<0.050		ug/g		0.05	27-FEB-20
Bromoform			<0.050		ug/g		0.05	27-FEB-20
Bromomethane			<0.050		ug/g		0.05	27-FEB-20
Carbon tetrachloride			<0.050		ug/g		0.05	27-FEB-20
Chlorobenzene			<0.050		ug/g		0.05	27-FEB-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5009106								
WG3281921-1 MB								
Chloroform			<0.050		ug/g		0.05	27-FEB-20
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	27-FEB-20
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	27-FEB-20
Dibromochloromethane			<0.050		ug/g		0.05	27-FEB-20
Dichlorodifluoromethane			<0.050		ug/g		0.05	27-FEB-20
Ethylbenzene			<0.018		ug/g		0.018	27-FEB-20
n-Hexane			<0.050		ug/g		0.05	27-FEB-20
Methylene Chloride			<0.050		ug/g		0.05	27-FEB-20
MTBE			<0.050		ug/g		0.05	27-FEB-20
m+p-Xylenes			<0.030		ug/g		0.03	27-FEB-20
Methyl Ethyl Ketone			<0.50		ug/g		0.5	27-FEB-20
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	27-FEB-20
o-Xylene			<0.020		ug/g		0.02	27-FEB-20
Styrene			<0.050		ug/g		0.05	27-FEB-20
Tetrachloroethylene			<0.050		ug/g		0.05	27-FEB-20
Toluene			<0.080		ug/g		0.08	27-FEB-20
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	27-FEB-20
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	27-FEB-20
Trichloroethylene			<0.010		ug/g		0.01	27-FEB-20
Trichlorofluoromethane			<0.050		ug/g		0.05	27-FEB-20
Vinyl chloride			<0.020		ug/g		0.02	27-FEB-20
Surrogate: 1,4-Difluorobenzene			103.6		%		50-140	27-FEB-20
Surrogate: 4-Bromofluorobenzene			88.7		%		50-140	27-FEB-20
WG3281921-5 MS		**WG3281921-3**						
1,1,1,2-Tetrachloroethane			101.9		%		50-140	27-FEB-20
1,1,2,2-Tetrachloroethane			97.9		%		50-140	27-FEB-20
1,1,1-Trichloroethane			103.5		%		50-140	27-FEB-20
1,1,2-Trichloroethane			100.7		%		50-140	27-FEB-20
1,1-Dichloroethane			70.7		%		50-140	27-FEB-20
1,1-Dichloroethylene			96.2		%		50-140	27-FEB-20
1,2-Dibromoethane			97.9		%		50-140	27-FEB-20
1,2-Dichlorobenzene			105.9		%		50-140	27-FEB-20
1,2-Dichloroethane			103.3		%		50-140	27-FEB-20
1,2-Dichloropropane			103.1		%		50-140	27-FEB-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: MICHAEL SHIRY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5009106								
WG3281921-5 MS		**WG3281921-3**						
1,3-Dichlorobenzene			111.8		%		50-140	27-FEB-20
1,4-Dichlorobenzene			111.0		%		50-140	27-FEB-20
Acetone			110.1		%		50-140	27-FEB-20
Benzene			107.1		%		50-140	27-FEB-20
Bromodichloromethane			104.5		%		50-140	27-FEB-20
Bromoform			96.9		%		50-140	27-FEB-20
Bromomethane			89.5		%		50-140	27-FEB-20
Carbon tetrachloride			105.2		%		50-140	27-FEB-20
Chlorobenzene			104.8		%		50-140	27-FEB-20
Chloroform			105.9		%		50-140	27-FEB-20
cis-1,2-Dichloroethylene			102.6		%		50-140	27-FEB-20
cis-1,3-Dichloropropene			101.7		%		50-140	27-FEB-20
Dibromochloromethane			96.5		%		50-140	27-FEB-20
Dichlorodifluoromethane			82.2		%		50-140	27-FEB-20
Ethylbenzene			99.3		%		50-140	27-FEB-20
n-Hexane			94.4		%		50-140	27-FEB-20
Methylene Chloride			108.4		%		50-140	27-FEB-20
MTBE			104.1		%		50-140	27-FEB-20
m+p-Xylenes			100.5		%		50-140	27-FEB-20
Methyl Ethyl Ketone			103.6		%		50-140	27-FEB-20
Methyl Isobutyl Ketone			95.3		%		50-140	27-FEB-20
o-Xylene			109.4		%		50-140	27-FEB-20
Styrene			94.2		%		50-140	27-FEB-20
Tetrachloroethylene			111.3		%		50-140	27-FEB-20
Toluene			110.6		%		50-140	27-FEB-20
trans-1,2-Dichloroethylene			99.8		%		50-140	27-FEB-20
trans-1,3-Dichloropropene			96.1		%		50-140	27-FEB-20
Trichloroethylene			96.3		%		50-140	27-FEB-20
Trichlorofluoromethane			99.9		%		50-140	27-FEB-20
Vinyl chloride			110.6		%		50-140	27-FEB-20

Quality Control Report

Workorder: L2419793 Report Date: 16-MAR-20

Client: CH2M HILL CANADA LIMITED
CH2M HILL CANADA LIMITED 72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9
Contact: MICHAEL SHIRY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
LCS-L	Lab Control Sample recovery was below ALS DQO. Reference Material and/or Matrix Spike results were acceptable. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.
SURQC	Surrogate recovery marginally exceeded DQO in QC sample (MB, LCS, RM, or MS). Surrogates are less important for QC samples than for test samples. Refer to regular (non-surrogate) analyte results in affected QC sample for assessment of potential impacts to those analytes.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

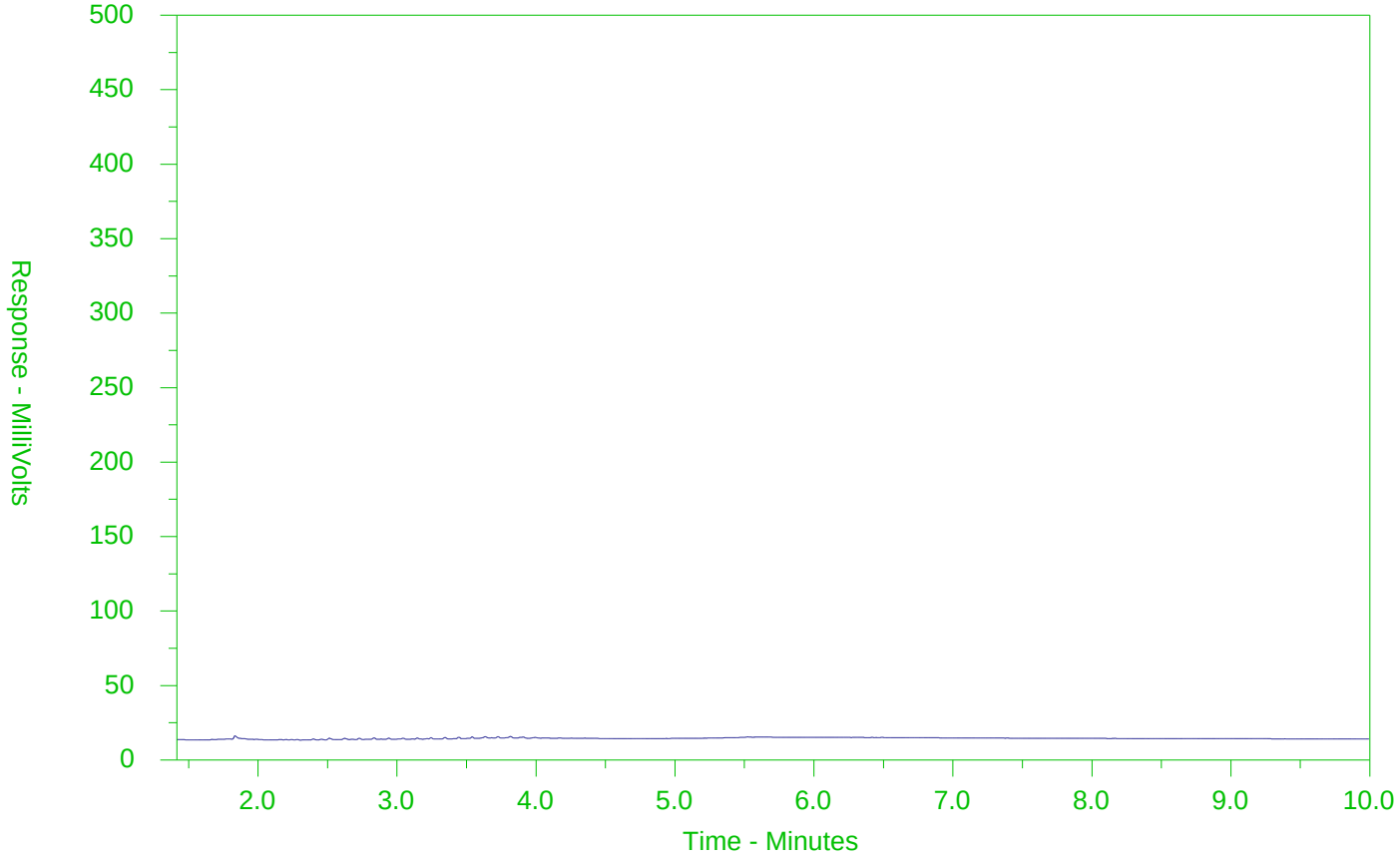
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2419793-1
Client Sample ID: TP20-324-1-1.5'



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

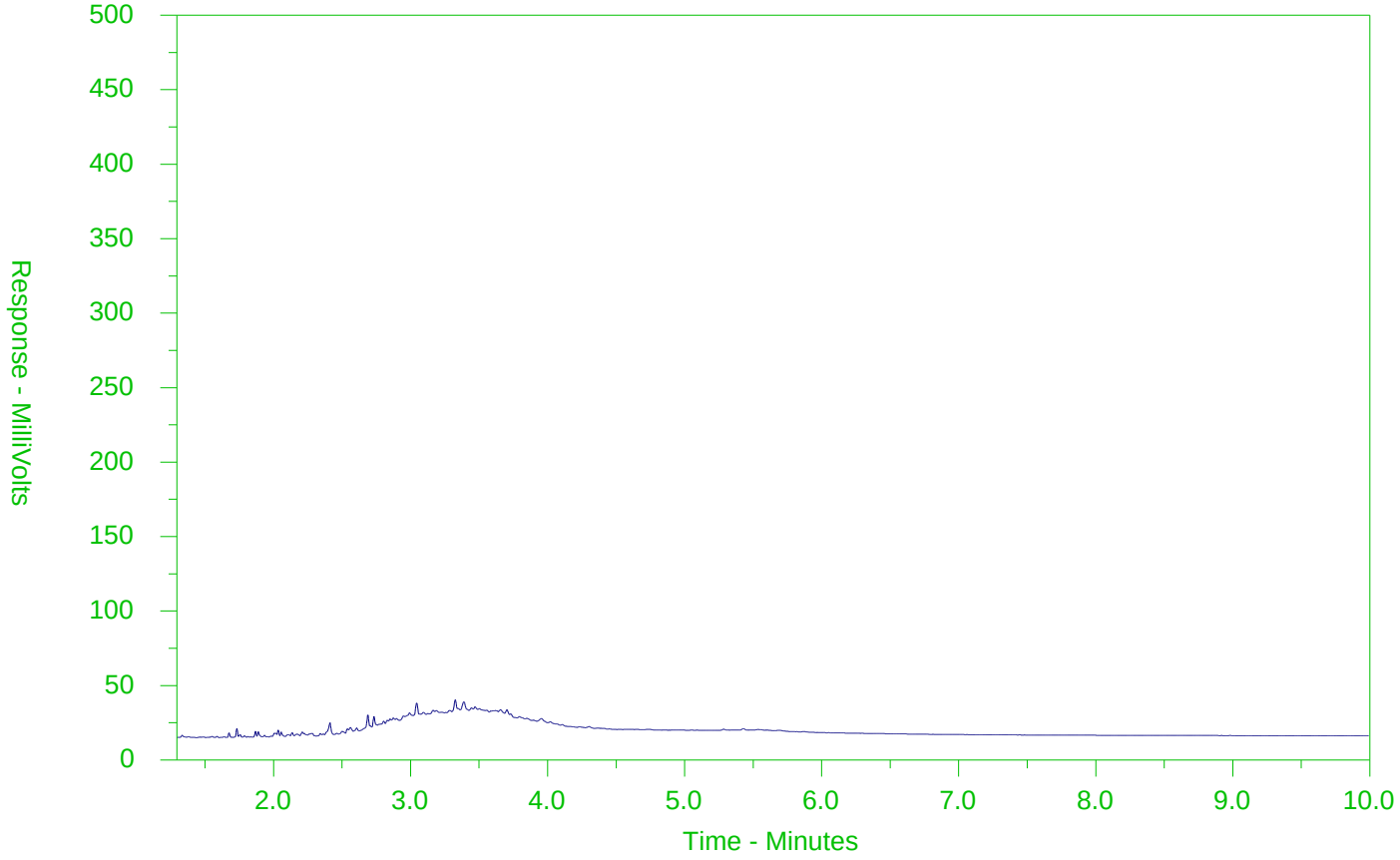
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2419793-5
Client Sample ID: TP20-322-2-2.5'



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

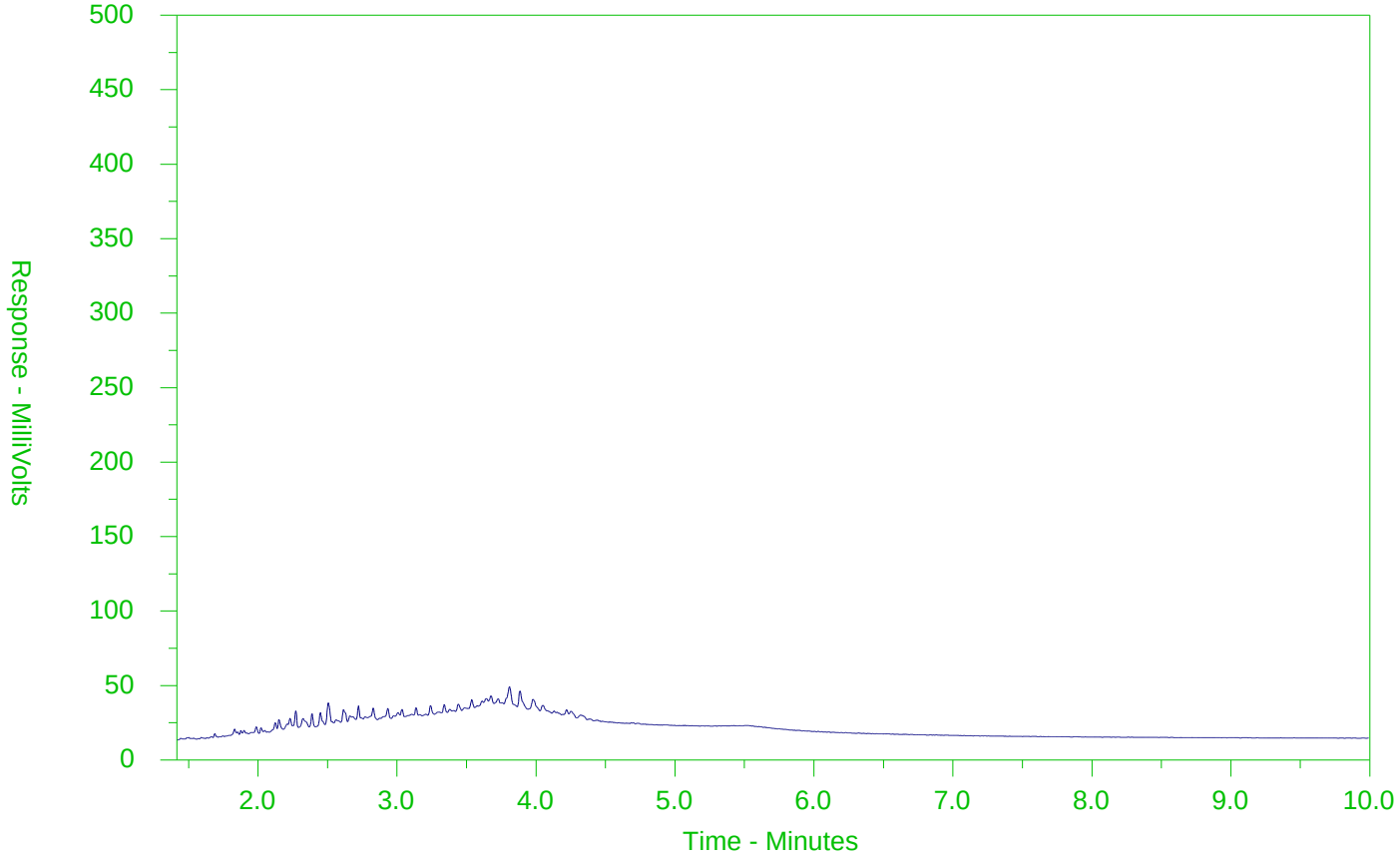
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2419793-7
Client Sample ID: TP20-321-2.75-3.25'



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

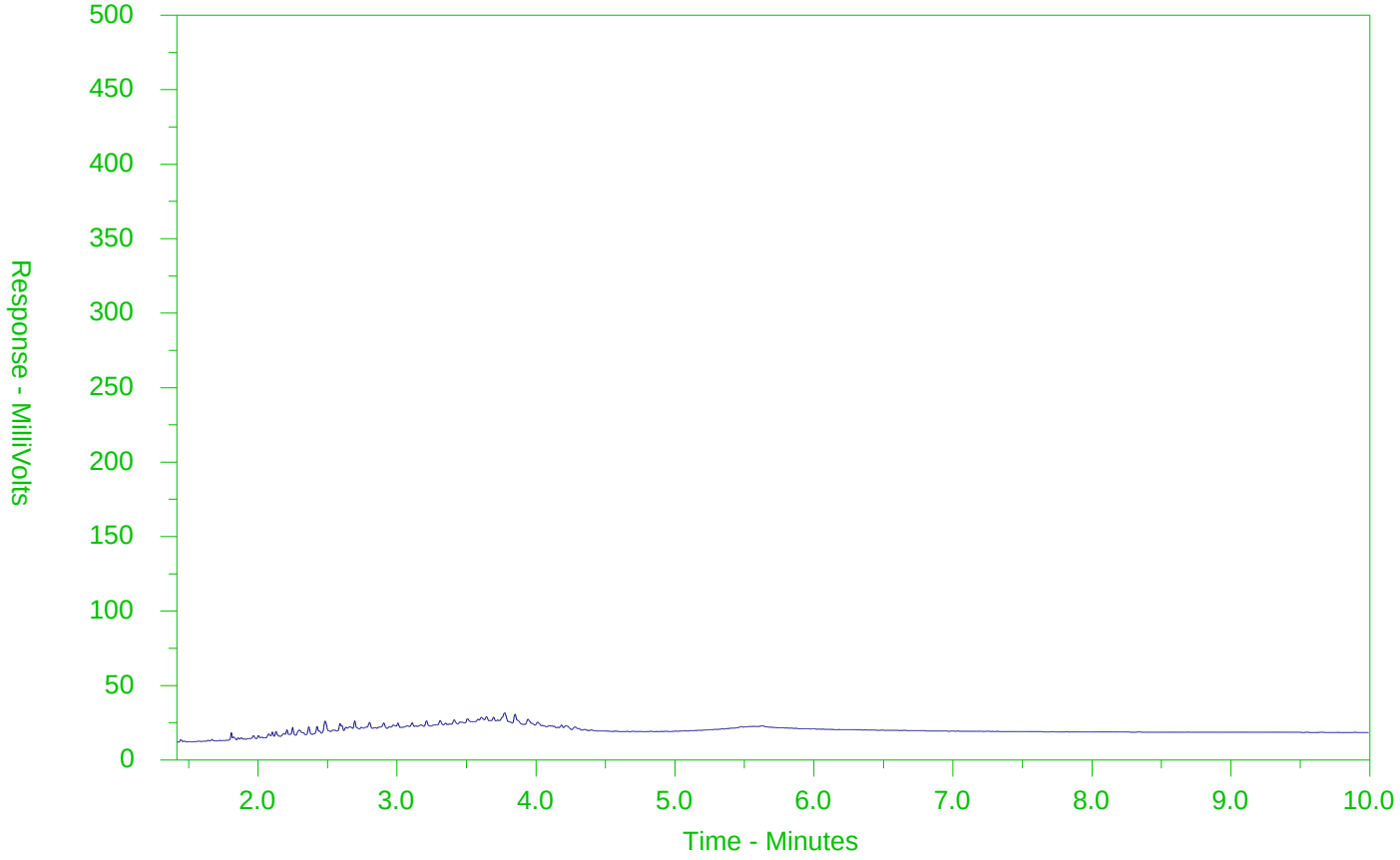
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2419793-8
Client Sample ID: TP20-321-4.5-5'



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

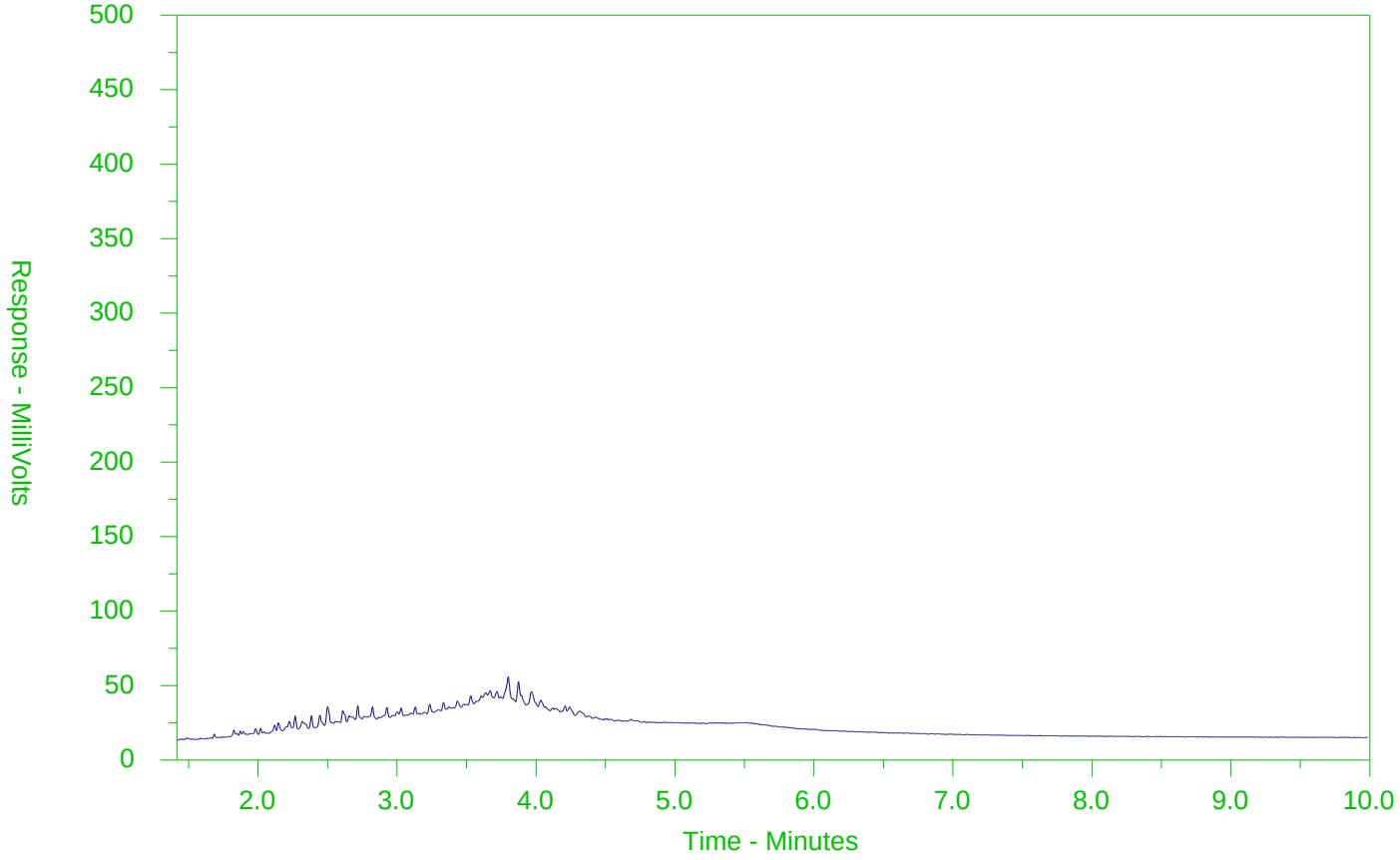
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2419793-9
Client Sample ID: TP20-320-2.5-3'



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

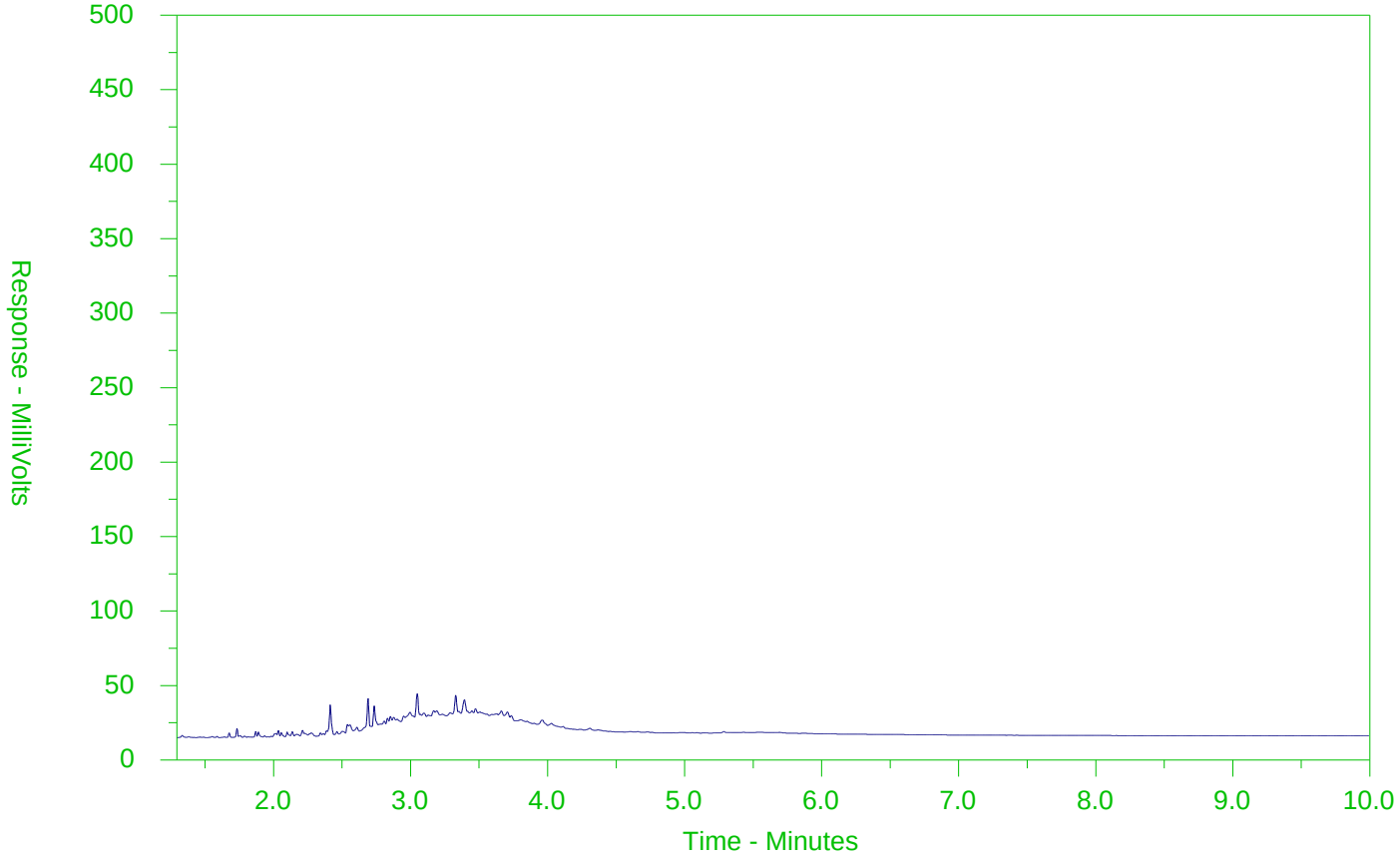
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2419793-11
Client Sample ID: DUP1



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

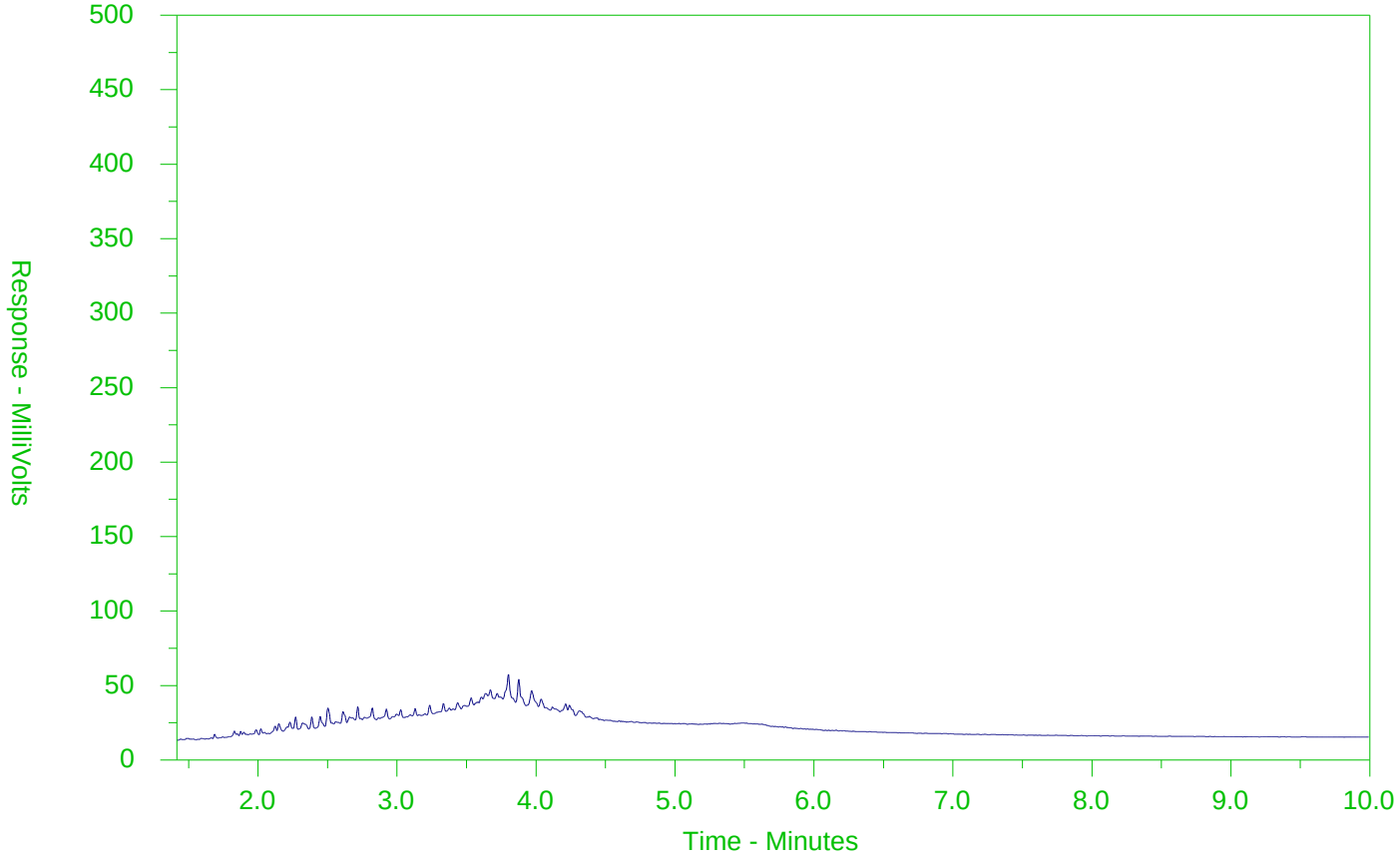
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2419793-12
Client Sample ID: DUP2



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

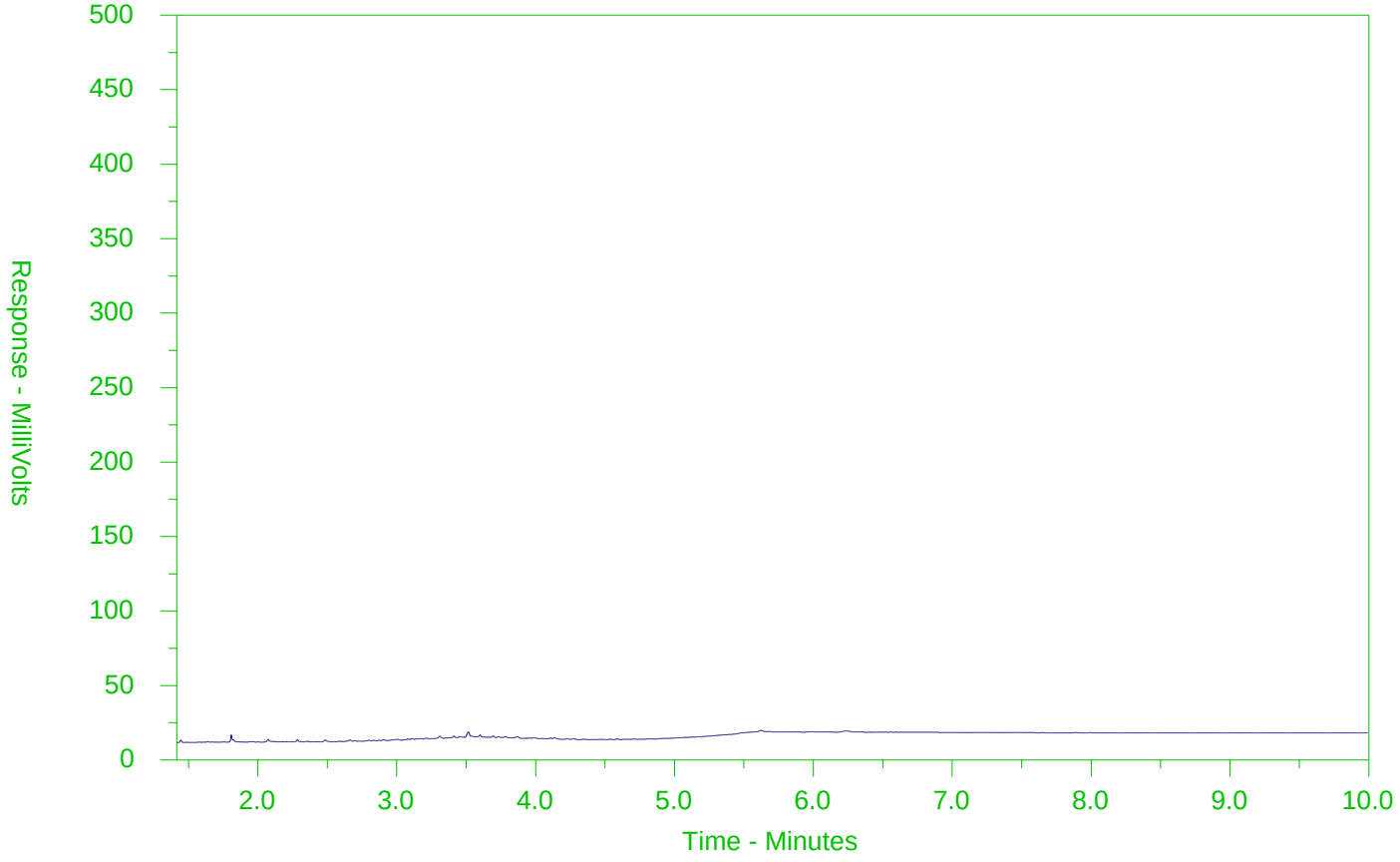
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2419793-18
Client Sample ID: BH20-212-0.5-2



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

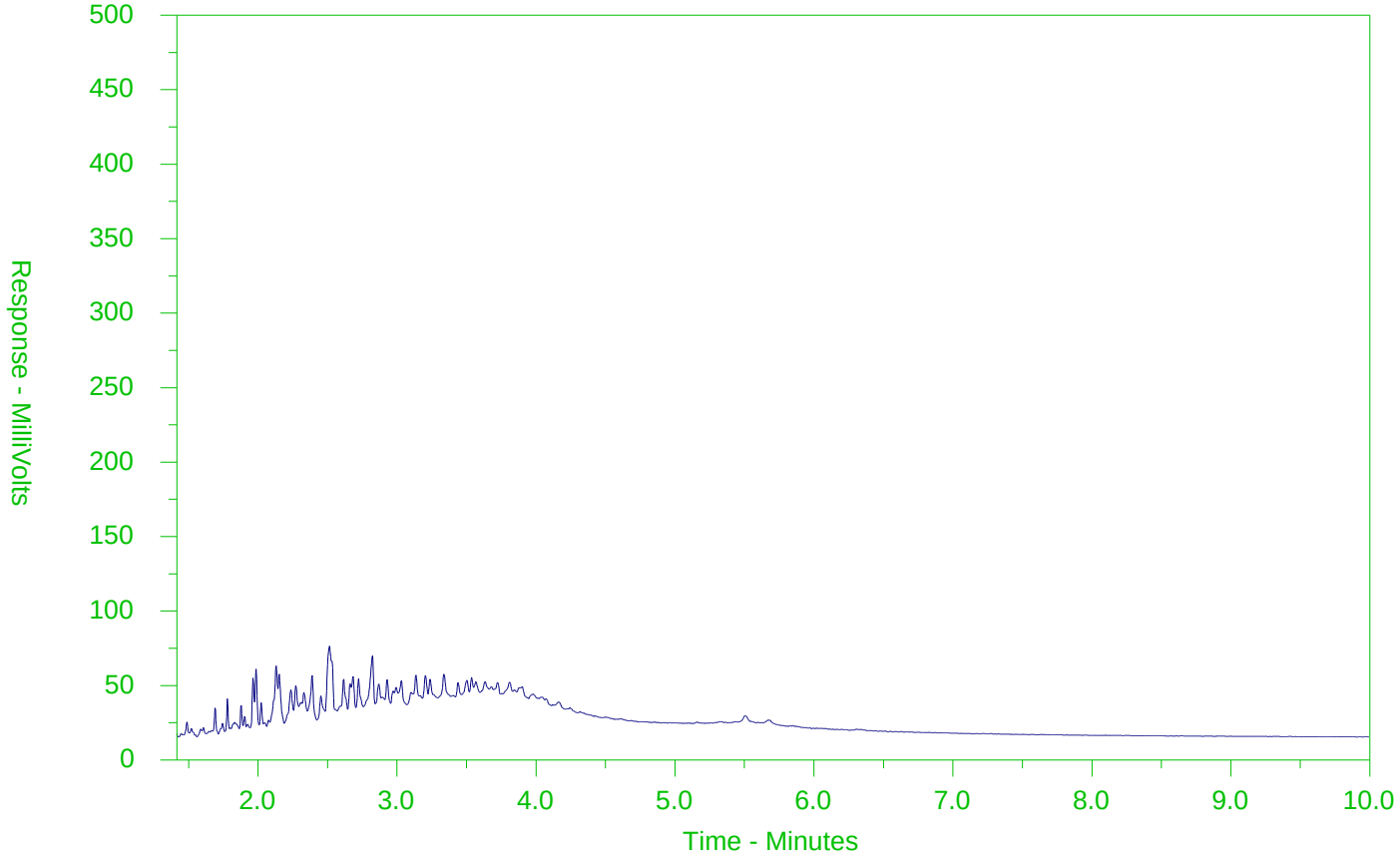
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2419793-20
Client Sample ID: BH20-214-0.5-2



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

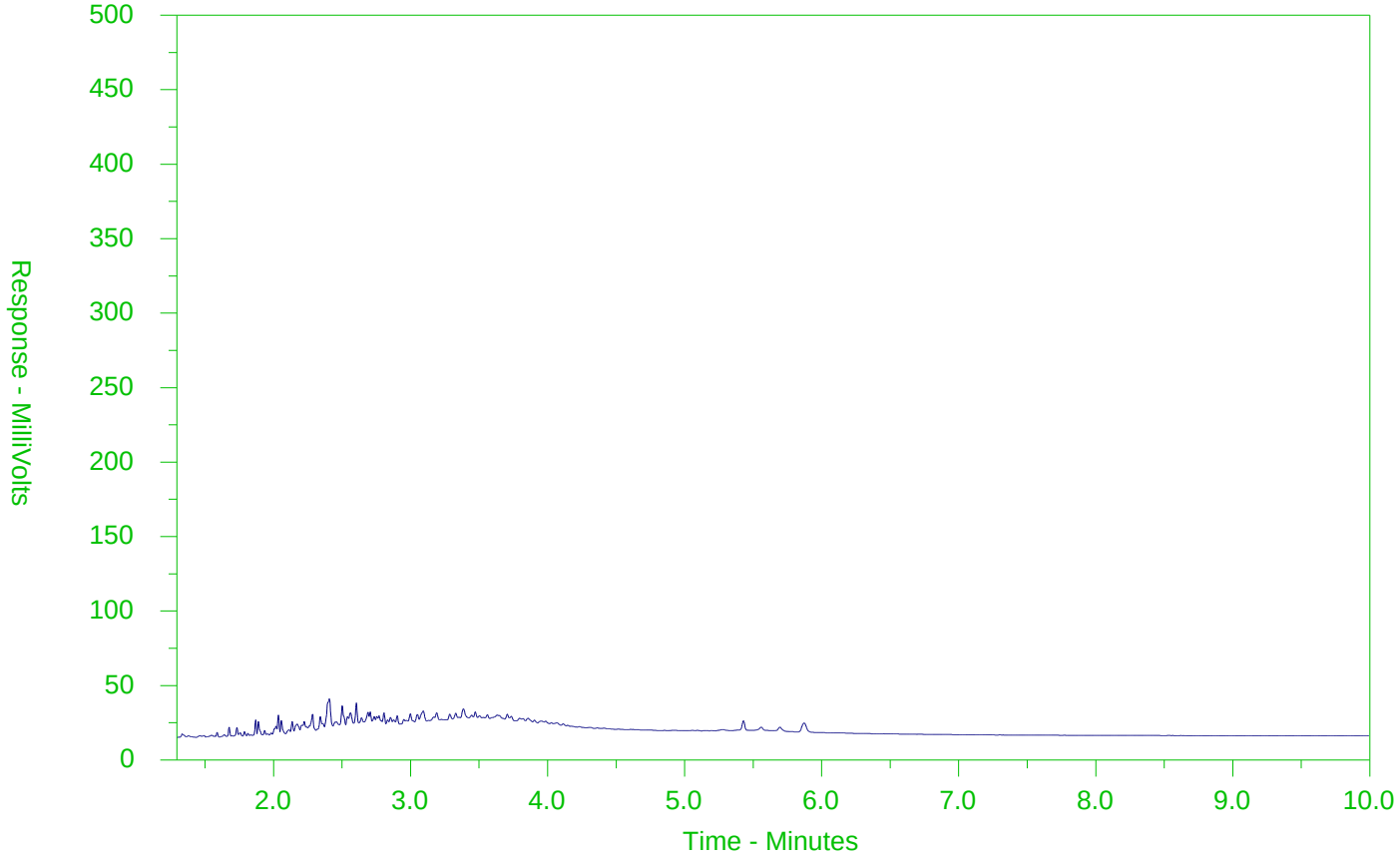
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2419793-21
Client Sample ID: BH20-214-2.5-3



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2419793-COFC

re

COC Number: 17 - 795231

Page 1 of

MG

Report To	Contact and company name below will appear on the final report
Company:	Jacobs
Contact:	Michael Shiry
Phone:	519-579-3500
	Company address below will appear on the final report
Street:	72 Victoria St. S, Suite 300
City/Province:	Kitchener, ON
Postal Code:	N2G 4Y9
Invoice To	Same as Report To [X] YES [ ] NO
	Copy of Invoice with Report [X] YES [ ] NO
Company:	Jacobs
Contact:	Accounts Payable

Report Distribution

Select Report Format: [X] PDF [X] EXCEL [X] EDD (DIGITAL)
Quality Control (QC) Report with Report [X] YES [ ] NO
[ ] Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax michael.shiry@jacobs.com
Email 2 ed.taves@jacobs.com
Email 3 tania.mccarthy@jacobs.com

Invoice Distribution

Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax
Email 2

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] [X] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] [ ]; 3 day [P3-25%] [ ]; 2 day [P2-50%] [ ]
EMERGENCY: 1 Business day [E - 100%] [ ]; Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] [ ]

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q78833
Job #: 694757CH
PO / AFE:
LSD: 21B

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2419793 MG
ALS Contact: E. Hansen
Sampler: V. Peters

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	O. Reg 153 Metals (Hg)	PAHs	PHCs	VOCs	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
									P		
1	TP20-324-1-1.5'	2020/02/20	9:00	Soil	5	X	X	X	X		
2	TP20-324-6.5-7'		9:30		5	X	X	X	X	Yes	
3	TP20-323-2-2.5'		10:07		2	X	X				
4	TP20-323-5.5-6'		10:40		2	X	X			Yes	
5	TP20-322-2-2.5'		11:10		5	X	X	X	X		
6	TP20-322-4.5-5'		12:30		5	X	X	X	X	Yes	
7	TP20-321-2.75-3.25'		12:00		5	X	X	X	X		
8	TP20-321-4.5-5'		12:15		5	X	X	X	X		
9	TP20-320-2.5-3'		13:00		5	X	X	X	X		
10	TP20-320-5-5.5'		13:20		5	X	X	X	X	Yes	
11	DUP1		—		5	X	X	X	X		
12	DUP2	2020/02/20	—	Soil	5	X	X	X	X		

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] YES [X] NO
Are samples for human consumption/ use? [ ] YES [X] NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

No pH for any samples

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] SIF Observations Yes [ ] No [ ]
Ice Packs [✓] Ice Cubes [✓] Custody seal intact Yes [ ] No [ ]
Cooling Initiated [ ]

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				9.3	8.7		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: V. Peters	Date: 2020/02/21	Time: 17:20	Received by:	Date:	Time:	Received by: MG	Date: Feb 21/20	Time: 17:20

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2018 FRONT

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

SIF

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

L2419793-COFC

Canada Toll Free: 1 800 668 9878

COC Number: 17 - 795255

Report To	Contact and company name below will appear on the final report
Company:	Jacobs
Contact:	Michael Shiry
Phone:	519-579-3560
Company address below will appear on the final report	
Street:	72 Victoria St. S, Suite 300
City/Province:	Kitchener, ON
Postal Code:	N2G 4Y9
Invoice To	Same as Report To [X] YES [ ] NO
	Copy of Invoice with Report [X] YES [ ] NO
Company:	Jacobs
Contact:	Accounts Payable

Report Format / Distribution

Select Report Format: [X] PDF [X] EXCEL [X] EDD (DIGITAL)
Quality Control (QC) Report with Report [X] YES [ ] NO
[ ] Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax: michael.shiry@jacobs.com
Email 2: ed.taves@jacobs.com
Email 3: tania.mccarthy@jacobs.com

Invoice Distribution

Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax
Email 2

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] [X] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
4 day [P4-20%]	[ ]	1 Business day [E - 100%]	[ ]
3 day [P3-25%]	[ ]	Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)]	[ ]
2 day [P2-50%]	[ ]		

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q78833
Job #: 694757CH
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2419793 ma
ALS Contact: E. Hansen
Sampler: V. Peters

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	O.Reg 153 Metals + Hg	PAHs	PHCs	VOCs	SVOCs	Metals Only									SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
								P												
13	BH20-213-0.5-2.5	02-21-20	14:30	Soil	X		X		X											
14	BH20-213-5-7	02-21-20	15:00		X		X		X										Yes	
15	BH18-207i-0.5-2.5	02-21-20	09:55			X		X												
16	BH18-207i-5-7	02-21-20	10:20			H	H	H		X									X PAC VOC H	
17	BH18-207i-7.5-9.5	02-21-20	10:40			H	H	H		X									Yes PAC PHC, VOC	
18	BH20-212-0.5-2	02-21-20	~~10:40~~ 12:15		X	X	X	X												
19	BH20-212-5.6-7	02-21-20	~~12:15~~ 12:30		X	X	X	X											ALL	
20	BH20-214-0.5-2	02-21-20	13:30		X	X	X	X											Yes	
21	BH20-214-2.5-3	02-21-20	13:45	Soil	X	X	X	X												
22	TB-001	—	—	QC				X												

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] YES [X] NO
Are samples for human consumption/ use? [ ] YES [X] NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

No pH for ANY sample
limited quantity in all

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] SIF Observations Yes [ ] No [ ]
Ice Packs [X] Ice Cubes [X] Custody seal intact Yes [ ] No [ ]
Cooling Initiated [ ]

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				9.3	8.7		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Vicki Peters	Date: 2020/02/21	Time: 17:20	Received by:	Date:	Time:	Received by:	Date: Feb 21/20	Time: 17:20

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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JUNE 2018 FRONT

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

CH2M HILL CANADA LIMITED
ATTN: Michael Shiry
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 25-FEB-20
Report Date: 03-MAR-20 08:28 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2420861

Project P.O. #: NOT SUBMITTED
Job Reference: 694757CH
C of C Numbers: 17-795244, 17-795253, 17-795254
Legal Site Desc:

Emily Hansen
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-1	MW18-115S									
Sampled By:	V.PETERS/A.CASEY on 24-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	27-FEB-20	2700			
	Benzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	27-FEB-20	2			
	Bromoform	<5.0		5.0	ug/L	27-FEB-20	5			
	Bromomethane	<0.50		0.50	ug/L	27-FEB-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	27-FEB-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	27-FEB-20	2			
	Chloroform	<1.0		1.0	ug/L	27-FEB-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	27-FEB-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	27-FEB-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	27-FEB-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	27-FEB-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	27-FEB-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	27-FEB-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	27-FEB-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	27-FEB-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	27-FEB-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	27-FEB-20	640			
	MTBE	<2.0		2.0	ug/L	27-FEB-20	15			
	Styrene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	27-FEB-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Toluene	<0.50		0.50	ug/L	27-FEB-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	27-FEB-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	27-FEB-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	27-FEB-20				
	m+p-Xylenes	<0.40		0.40	ug/L	27-FEB-20				
	Xylenes (Total)	<0.50		0.50	ug/L	27-FEB-20	72			
	Surrogate: 4-Bromofluorobenzene	96.4		70-130	%	27-FEB-20				
	Surrogate: 1,4-Difluorobenzene	102.1		70-130	%	27-FEB-20				
Hydrocarbons										
	F1 (C6-C10)	<25		25	ug/L	27-FEB-20	420			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-1	MW18-115S									
Sampled By:	V.PETERS/A.CASEY on 24-FEB-2									
Matrix:	WATER						#1			
Hydrocarbons										
	F1-BTEX	<25		25	ug/L	27-FEB-20	420			
	F2 (C10-C16)	<100		100	ug/L	26-FEB-20	150			
	F2-Naphth	<100		100	ug/L	27-FEB-20				
	F3 (C16-C34)	<250		250	ug/L	26-FEB-20	500			
	F3-PAH	<250		250	ug/L	27-FEB-20				
	F4 (C34-C50)	<250		250	ug/L	26-FEB-20	500			
	Total Hydrocarbons (C6-C50)	<370		370	ug/L	27-FEB-20				
	Chrom. to baseline at nC50	YES			No Unit	26-FEB-20				
	Surrogate: 2-Bromobenzotrifluoride	87.1		60-140	%	26-FEB-20				
	Surrogate: 3,4-Dichlorotoluene	72.8		60-140	%	27-FEB-20				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.020		0.020	ug/L	27-FEB-20	4.1			
	Acenaphthylene	<0.020		0.020	ug/L	27-FEB-20	1			
	Anthracene	<0.020		0.020	ug/L	27-FEB-20	0.1			
	Benzo(a)anthracene	<0.020		0.020	ug/L	27-FEB-20	0.2			
	Benzo(a)pyrene	<0.010		0.010	ug/L	27-FEB-20	0.01			
	Benzo(b)fluoranthene	<0.020		0.020	ug/L	27-FEB-20	0.1			
	Benzo(g,h,i)perylene	<0.020		0.020	ug/L	27-FEB-20	0.2			
	Benzo(k)fluoranthene	<0.020		0.020	ug/L	27-FEB-20	0.1			
	Chrysene	<0.020		0.020	ug/L	27-FEB-20	0.1			
	Dibenzo(ah)anthracene	<0.020		0.020	ug/L	27-FEB-20	0.2			
	Fluoranthene	<0.020		0.020	ug/L	27-FEB-20	0.4			
	Fluorene	<0.020		0.020	ug/L	27-FEB-20	120			
	Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	27-FEB-20	0.2			
	1+2-Methylnaphthalenes	<0.028		0.028	ug/L	27-FEB-20	2			
	1-Methylnaphthalene	<0.020		0.020	ug/L	27-FEB-20	2			
	2-Methylnaphthalene	<0.020		0.020	ug/L	27-FEB-20	2			
	Naphthalene	<0.050		0.050	ug/L	27-FEB-20	7			
	Phenanthrene	<0.020		0.020	ug/L	27-FEB-20	0.1			
	Pyrene	<0.020		0.020	ug/L	27-FEB-20	0.2			
	Surrogate: d10-Acenaphthene	117.3		60-140	%	27-FEB-20				
	Surrogate: d12-Chrysene	105.8		60-140	%	27-FEB-20				
	Surrogate: d8-Naphthalene	113.0		60-140	%	27-FEB-20				
	Surrogate: d10-Phenanthrene	105.0		60-140	%	27-FEB-20				
L2420861-2	MW18-115D									
Sampled By:	V.PETERS/A.CASEY on 24-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	26-FEB-20	2700			
	Benzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Bromoform	<5.0		5.0	ug/L	26-FEB-20	5			
	Bromomethane	<0.50		0.50	ug/L	26-FEB-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	26-FEB-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

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Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-2	MW18-115D									
Sampled By:	V.PETERS/A.CASEY on 24-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Dibromochloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Chloroform	<1.0		1.0	ug/L	26-FEB-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	26-FEB-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	26-FEB-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,2-Dichloroethylene	0.83		0.50	ug/L	26-FEB-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	26-FEB-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	26-FEB-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	26-FEB-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	26-FEB-20	640			
	MTBE	<2.0		2.0	ug/L	26-FEB-20	15			
	Styrene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Toluene	<0.50		0.50	ug/L	26-FEB-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	26-FEB-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	26-FEB-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	26-FEB-20				
	m+p-Xylenes	<0.40		0.40	ug/L	26-FEB-20				
	Xylenes (Total)	<0.50		0.50	ug/L	26-FEB-20	72			
	Surrogate: 4-Bromofluorobenzene	95.5		70-130	%	26-FEB-20				
	Surrogate: 1,4-Difluorobenzene	101.2		70-130	%	26-FEB-20				
L2420861-4	MW18-124S									
Sampled By:	V.PETERS/A.CASEY on 24-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	26-FEB-20	2700			
	Benzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Bromoform	<5.0		5.0	ug/L	26-FEB-20	5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
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T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

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Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-4	MW18-124S									
Sampled By:	V.PETERS/A.CASEY on 24-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Bromomethane	<0.50		0.50	ug/L	26-FEB-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	26-FEB-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Chloroform	<1.0		1.0	ug/L	26-FEB-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	26-FEB-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	26-FEB-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	26-FEB-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	26-FEB-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	26-FEB-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	26-FEB-20	640			
	MTBE	<2.0		2.0	ug/L	26-FEB-20	15			
	Styrene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Toluene	<0.50		0.50	ug/L	26-FEB-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	26-FEB-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	26-FEB-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	26-FEB-20				
	m+p-Xylenes	<0.40		0.40	ug/L	26-FEB-20				
	Xylenes (Total)	<0.50		0.50	ug/L	26-FEB-20	72			
	Surrogate: 4-Bromofluorobenzene	96.1		70-130	%	26-FEB-20				
	Surrogate: 1,4-Difluorobenzene	100.8		70-130	%	26-FEB-20				
L2420861-5	MW17-106S									
Sampled By:	V.PETERS/A.CASEY on 24-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	26-FEB-20	2700			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-5	MW17-106S									
Sampled By:	V.PETERS/A.CASEY on 24-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Benzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Bromoform	<5.0		5.0	ug/L	26-FEB-20	5			
	Bromomethane	<0.50		0.50	ug/L	26-FEB-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	26-FEB-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Chloroform	<1.0		1.0	ug/L	26-FEB-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	26-FEB-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	26-FEB-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	26-FEB-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	26-FEB-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	26-FEB-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	26-FEB-20	640			
	MTBE	<2.0		2.0	ug/L	26-FEB-20	15			
	Styrene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Toluene	<0.50		0.50	ug/L	26-FEB-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	26-FEB-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	26-FEB-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	26-FEB-20				
	m+p-Xylenes	<0.40		0.40	ug/L	26-FEB-20				
	Xylenes (Total)	<0.50		0.50	ug/L	26-FEB-20	72			
	Surrogate: 4-Bromofluorobenzene	96.2		70-130	%	26-FEB-20				
	Surrogate: 1,4-Difluorobenzene	101.1		70-130	%	26-FEB-20				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.020		0.020	ug/L	28-FEB-20	4.1			
	Acenaphthylene	<0.020		0.020	ug/L	28-FEB-20	1			

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T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-5	MW17-106S									
Sampled By:	V.PETERS/A.CASEY on 24-FEB-2									
Matrix:	WATER						#1			
Polycyclic Aromatic Hydrocarbons										
	Anthracene	<0.020		0.020	ug/L	28-FEB-20	0.1			
	Benzo(a)anthracene	<0.020		0.020	ug/L	28-FEB-20	0.2			
	Benzo(a)pyrene	<0.010		0.010	ug/L	28-FEB-20	0.01			
	Benzo(b)fluoranthene	<0.020		0.020	ug/L	28-FEB-20	0.1			
	Benzo(g,h,i)perylene	<0.020		0.020	ug/L	28-FEB-20	0.2			
	Benzo(k)fluoranthene	<0.020		0.020	ug/L	28-FEB-20	0.1			
	Chrysene	<0.020		0.020	ug/L	28-FEB-20	0.1			
	Dibenzo(ah)anthracene	<0.020		0.020	ug/L	28-FEB-20	0.2			
	Fluoranthene	<0.020		0.020	ug/L	28-FEB-20	0.4			
	Fluorene	<0.020		0.020	ug/L	28-FEB-20	120			
	Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	28-FEB-20	0.2			
	1+2-Methylnaphthalenes	<0.028		0.028	ug/L	02-MAR-20	2			
	1-Methylnaphthalene	<0.020		0.020	ug/L	28-FEB-20	2			
	2-Methylnaphthalene	<0.020		0.020	ug/L	28-FEB-20	2			
	Naphthalene	<0.050		0.050	ug/L	28-FEB-20	7			
	Phenanthrene	<0.020		0.020	ug/L	28-FEB-20	0.1			
	Pyrene	<0.020		0.020	ug/L	28-FEB-20	0.2			
	Surrogate: 2-Fluorobiphenyl	108.3		50-140	%	28-FEB-20				
	Surrogate: d14-Terphenyl	121.9		60-140	%	28-FEB-20				
Semi-Volatile Organics										
	Biphenyl	<0.40		0.40	ug/L	02-MAR-20	0.5			
	4-Chloroaniline	<0.40		0.40	ug/L	02-MAR-20	10			
	Bis(2-chloroethyl)ether	<0.40		0.40	ug/L	02-MAR-20	5			
	Bis(2-chloroisopropyl)ether	<0.40		0.40	ug/L	02-MAR-20	120			
	2-Chlorophenol	<0.30		0.30	ug/L	02-MAR-20	8.9			
	3,3'-Dichlorobenzidine	<0.40		0.40	ug/L	02-MAR-20	0.5			
	2,4-Dichlorophenol	<0.30		0.30	ug/L	02-MAR-20	20			
	Diethylphthalate	<0.20		0.20	ug/L	02-MAR-20	30			
	Dimethylphthalate	<0.20		0.20	ug/L	02-MAR-20	30			
	2,4-Dimethylphenol	<0.50		0.50	ug/L	02-MAR-20	10			
	2,4-Dinitrophenol	<1.0		1.0	ug/L	02-MAR-20	10			
	2,4-Dinitrotoluene	<0.40		0.40	ug/L	02-MAR-20				
	2,6-Dinitrotoluene	<0.40		0.40	ug/L	02-MAR-20				
	2,4+2,6-Dinitrotoluene	<0.57		0.57	ug/L	02-MAR-20	5			
	Bis(2-ethylhexyl)phthalate	<2.0		2.0	ug/L	02-MAR-20	10			
	Pentachlorophenol	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Phenol	<0.50		0.50	ug/L	02-MAR-20	5			
	1,2,4-Trichlorobenzene	<0.40		0.40	ug/L	02-MAR-20	0.5			
	2,4,5-Trichlorophenol	<0.20		0.20	ug/L	02-MAR-20	0.2			
	2,4,6-Trichlorophenol	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Surrogate: 2-Fluorobiphenyl	113.1		50-140	%	02-MAR-20				
	Surrogate: Nitrobenzene d5	133.5		50-140	%	02-MAR-20				
	Surrogate: p-Terphenyl d14	125.5		60-140	%	02-MAR-20				
	Surrogate: 2,4,6-Tribromophenol	132.0		50-140	%	02-MAR-20				

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T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-6	MW17-106D									
Sampled By:	V.PETERS/A.CASEY on 24-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	26-FEB-20	2700			
	Benzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Bromoform	<5.0		5.0	ug/L	26-FEB-20	5			
	Bromomethane	<0.50		0.50	ug/L	26-FEB-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	26-FEB-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Chloroform	<1.0		1.0	ug/L	26-FEB-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	26-FEB-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	26-FEB-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	26-FEB-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	26-FEB-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	26-FEB-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	26-FEB-20	640			
	MTBE	<2.0		2.0	ug/L	26-FEB-20	15			
	Styrene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Toluene	<0.50		0.50	ug/L	26-FEB-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	26-FEB-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	26-FEB-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	26-FEB-20				
	m+p-Xylenes	<0.40		0.40	ug/L	26-FEB-20				
	Xylenes (Total)	<0.50		0.50	ug/L	26-FEB-20	72			
	Surrogate: 4-Bromofluorobenzene	94.9		70-130	%	26-FEB-20				
	Surrogate: 1,4-Difluorobenzene	101.0		70-130	%	26-FEB-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-7	MW17-100S									
Sampled By:	V.PETERS/A.CASEY on 24-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	26-FEB-20	2700			
	Benzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Bromoform	<5.0		5.0	ug/L	26-FEB-20	5			
	Bromomethane	<0.50		0.50	ug/L	26-FEB-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	26-FEB-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Chloroform	<1.0		1.0	ug/L	26-FEB-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	26-FEB-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	26-FEB-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	26-FEB-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	26-FEB-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	26-FEB-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	26-FEB-20	640			
	MTBE	<2.0		2.0	ug/L	26-FEB-20	15			
	Styrene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Toluene	<0.50		0.50	ug/L	26-FEB-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	26-FEB-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	26-FEB-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	26-FEB-20				
	m+p-Xylenes	<0.40		0.40	ug/L	26-FEB-20				
	Xylenes (Total)	<0.50		0.50	ug/L	26-FEB-20	72			
	Surrogate: 4-Bromofluorobenzene	100.7		70-130	%	26-FEB-20				
	Surrogate: 1,4-Difluorobenzene	100.4		70-130	%	26-FEB-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-8	MW18-113D									
Sampled By:	V.PETERS/A.CASEY on 24-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	26-FEB-20	2700			
	Benzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Bromoform	<5.0		5.0	ug/L	26-FEB-20	5			
	Bromomethane	<0.50		0.50	ug/L	26-FEB-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	26-FEB-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Chloroform	<1.0		1.0	ug/L	26-FEB-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	26-FEB-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	26-FEB-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,2-Dichloroethylene	1.02		0.50	ug/L	26-FEB-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	26-FEB-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	26-FEB-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	26-FEB-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	26-FEB-20	640			
	MTBE	<2.0		2.0	ug/L	26-FEB-20	15			
	Styrene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Toluene	<0.50		0.50	ug/L	26-FEB-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	26-FEB-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	26-FEB-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	26-FEB-20				
	m+p-Xylenes	<0.40		0.40	ug/L	26-FEB-20				
	Xylenes (Total)	<0.50		0.50	ug/L	26-FEB-20	72			
	Surrogate: 4-Bromofluorobenzene	98.6		70-130	%	26-FEB-20				
	Surrogate: 1,4-Difluorobenzene	99.8		70-130	%	26-FEB-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-9	MW18-113S									
Sampled By:	V.PETERS/A.CASEY on 24-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	26-FEB-20	2700			
	Benzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Bromoform	<5.0		5.0	ug/L	26-FEB-20	5			
	Bromomethane	<0.50		0.50	ug/L	26-FEB-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	26-FEB-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Chloroform	<1.0		1.0	ug/L	26-FEB-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	26-FEB-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	26-FEB-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	26-FEB-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	26-FEB-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	26-FEB-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	26-FEB-20	640			
	MTBE	<2.0		2.0	ug/L	26-FEB-20	15			
	Styrene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Toluene	<0.50		0.50	ug/L	26-FEB-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	26-FEB-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	26-FEB-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	26-FEB-20				
	m+p-Xylenes	<0.40		0.40	ug/L	26-FEB-20				
	Xylenes (Total)	<0.50		0.50	ug/L	26-FEB-20	72			
	Surrogate: 4-Bromofluorobenzene	100.2		70-130	%	26-FEB-20				
	Surrogate: 1,4-Difluorobenzene	100.1		70-130	%	26-FEB-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-10	MW18-114S									
Sampled By:	V.PETERS/A.CASEY on 24-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	26-FEB-20	2700			
	Benzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Bromoform	<5.0		5.0	ug/L	26-FEB-20	5			
	Bromomethane	<0.50		0.50	ug/L	26-FEB-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	26-FEB-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Chloroform	<1.0		1.0	ug/L	26-FEB-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	26-FEB-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	26-FEB-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	26-FEB-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	26-FEB-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	26-FEB-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	26-FEB-20	640			
	MTBE	<2.0		2.0	ug/L	26-FEB-20	15			
	Styrene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Toluene	0.87		0.50	ug/L	26-FEB-20	*0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	26-FEB-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	26-FEB-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	26-FEB-20				
	m+p-Xylenes	<0.40		0.40	ug/L	26-FEB-20				
	Xylenes (Total)	<0.50		0.50	ug/L	26-FEB-20	72			
	Surrogate: 4-Bromofluorobenzene	99.1		70-130	%	26-FEB-20				
	Surrogate: 1,4-Difluorobenzene	100.9		70-130	%	26-FEB-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-11	MW18-117S									
Sampled By:	V.PETERS/A.CASEY on 24-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	26-FEB-20	2700			
	Benzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Bromoform	<5.0		5.0	ug/L	26-FEB-20	5			
	Bromomethane	<0.50		0.50	ug/L	26-FEB-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	26-FEB-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Chloroform	<1.0		1.0	ug/L	26-FEB-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	26-FEB-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	26-FEB-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	26-FEB-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	26-FEB-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	26-FEB-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	26-FEB-20	640			
	MTBE	<2.0		2.0	ug/L	26-FEB-20	15			
	Styrene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Toluene	<0.50		0.50	ug/L	26-FEB-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	26-FEB-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	26-FEB-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	26-FEB-20				
	m+p-Xylenes	<0.40		0.40	ug/L	26-FEB-20				
	Xylenes (Total)	<0.50		0.50	ug/L	26-FEB-20	72			
	Surrogate: 4-Bromofluorobenzene	98.9		70-130	%	26-FEB-20				
	Surrogate: 1,4-Difluorobenzene	100.2		70-130	%	26-FEB-20				
Hydrocarbons										
	F1 (C6-C10)	<25		25	ug/L	26-FEB-20	420			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-11	MW18-117S									
Sampled By:	V.PETERS/A.CASEY on 24-FEB-2									
Matrix:	WATER						#1			
Hydrocarbons										
	F1-BTEX	<25		25	ug/L	27-FEB-20	420			
	F2 (C10-C16)	<100		100	ug/L	26-FEB-20	150			
	F3 (C16-C34)	<250		250	ug/L	26-FEB-20	500			
	F4 (C34-C50)	<250		250	ug/L	26-FEB-20	500			
	Total Hydrocarbons (C6-C50)	<370		370	ug/L	27-FEB-20				
	Chrom. to baseline at nC50	YES			No Unit	26-FEB-20				
	Surrogate: 2-Bromobenzotrifluoride	83.0		60-140	%	26-FEB-20				
	Surrogate: 3,4-Dichlorotoluene	97.2		60-140	%	26-FEB-20				
L2420861-12	MW18-114D									
Sampled By:	V.PETERS/A.CASEY on 24-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	26-FEB-20	2700			
	Benzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Bromoform	<5.0		5.0	ug/L	26-FEB-20	5			
	Bromomethane	<0.50		0.50	ug/L	26-FEB-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	26-FEB-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Chloroform	<1.0		1.0	ug/L	26-FEB-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	26-FEB-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	26-FEB-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,2-Dichloroethylene	1.71		0.50	ug/L	26-FEB-20	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	26-FEB-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	26-FEB-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	26-FEB-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	26-FEB-20	640			
	MTBE	<2.0		2.0	ug/L	26-FEB-20	15			
	Styrene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-12	MW18-114D									
Sampled By:	V.PETERS/A.CASEY on 24-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Toluene	<0.50		0.50	ug/L	26-FEB-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	26-FEB-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	26-FEB-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	26-FEB-20				
	m+p-Xylenes	<0.40		0.40	ug/L	26-FEB-20				
	Xylenes (Total)	<0.50		0.50	ug/L	26-FEB-20	72			
	Surrogate: 4-Bromofluorobenzene	100.2		70-130	%	26-FEB-20				
	Surrogate: 1,4-Difluorobenzene	100.4		70-130	%	26-FEB-20				
L2420861-13	MW18-118S									
Sampled By:	V.PETERS/A.CASEY on 24-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	26-FEB-20	2700			
	Benzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Bromoform	<5.0		5.0	ug/L	26-FEB-20	5			
	Bromomethane	<0.50		0.50	ug/L	26-FEB-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	26-FEB-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Chloroform	<1.0		1.0	ug/L	26-FEB-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	26-FEB-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	26-FEB-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	26-FEB-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	26-FEB-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	26-FEB-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	26-FEB-20	640			
	MTBE	<2.0		2.0	ug/L	26-FEB-20	15			
	Styrene	<0.50		0.50	ug/L	26-FEB-20	0.5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-13	MW18-118S									
Sampled By:	V.PETERS/A.CASEY on 24-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Toluene	<0.50		0.50	ug/L	26-FEB-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	26-FEB-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	26-FEB-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	26-FEB-20				
	m+p-Xylenes	<0.40		0.40	ug/L	26-FEB-20				
	Xylenes (Total)	<0.50		0.50	ug/L	26-FEB-20	72			
	Surrogate: 4-Bromofluorobenzene	98.9		70-130	%	26-FEB-20				
	Surrogate: 1,4-Difluorobenzene	100.1		70-130	%	26-FEB-20				
L2420861-14	DUP1									
Sampled By:	V.PETERS/A.CASEY on 24-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	26-FEB-20	2700			
	Benzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Bromoform	<5.0		5.0	ug/L	26-FEB-20	5			
	Bromomethane	<0.50		0.50	ug/L	26-FEB-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	26-FEB-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Chloroform	<1.0		1.0	ug/L	26-FEB-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	26-FEB-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	26-FEB-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	26-FEB-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	26-FEB-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	26-FEB-20	400			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-14	DUP1									
Sampled By:	V.PETERS/A.CASEY on 24-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Methyl Isobutyl Ketone	<20		20	ug/L	26-FEB-20	640			
	MTBE	<2.0		2.0	ug/L	26-FEB-20	15			
	Styrene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Toluene	<0.50		0.50	ug/L	26-FEB-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	26-FEB-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	26-FEB-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	26-FEB-20				
	m+p-Xylenes	<0.40		0.40	ug/L	26-FEB-20				
	Xylenes (Total)	<0.50		0.50	ug/L	26-FEB-20	72			
	Surrogate: 4-Bromofluorobenzene	99.4		70-130	%	26-FEB-20				
	Surrogate: 1,4-Difluorobenzene	99.4		70-130	%	26-FEB-20				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.020		0.020	ug/L	28-FEB-20	4.1			
	Acenaphthylene	<0.020		0.020	ug/L	28-FEB-20	1			
	Anthracene	<0.020		0.020	ug/L	28-FEB-20	0.1			
	Benzo(a)anthracene	<0.020		0.020	ug/L	28-FEB-20	0.2			
	Benzo(a)pyrene	<0.010		0.010	ug/L	28-FEB-20	0.01			
	Benzo(b)fluoranthene	<0.020		0.020	ug/L	28-FEB-20	0.1			
	Benzo(g,h,i)perylene	<0.020		0.020	ug/L	28-FEB-20	0.2			
	Benzo(k)fluoranthene	<0.020		0.020	ug/L	28-FEB-20	0.1			
	Chrysene	<0.020		0.020	ug/L	28-FEB-20	0.1			
	Dibenzo(ah)anthracene	<0.020		0.020	ug/L	28-FEB-20	0.2			
	Fluoranthene	<0.020		0.020	ug/L	28-FEB-20	0.4			
	Fluorene	<0.020		0.020	ug/L	28-FEB-20	120			
	Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	28-FEB-20	0.2			
	1+2-Methylnaphthalenes	<0.028		0.028	ug/L	02-MAR-20	2			
	1-Methylnaphthalene	<0.020		0.020	ug/L	28-FEB-20	2			
	2-Methylnaphthalene	<0.020		0.020	ug/L	28-FEB-20	2			
	Naphthalene	<0.050		0.050	ug/L	28-FEB-20	7			
	Phenanthrene	<0.020		0.020	ug/L	28-FEB-20	0.1			
	Pyrene	<0.020		0.020	ug/L	28-FEB-20	0.2			
	Surrogate: 2-Fluorobiphenyl	94.8		50-140	%	28-FEB-20				
	Surrogate: d14-Terphenyl	116.3		60-140	%	28-FEB-20				
Semi-Volatile Organics										
	Biphenyl	<0.40		0.40	ug/L	02-MAR-20	0.5			
	4-Chloroaniline	<0.40		0.40	ug/L	02-MAR-20	10			
	Bis(2-chloroethyl)ether	<0.40		0.40	ug/L	02-MAR-20	5			
	Bis(2-chloroisopropyl)ether	<0.40		0.40	ug/L	02-MAR-20	120			
	2-Chlorophenol	<0.30		0.30	ug/L	02-MAR-20	8.9			
	3,3'-Dichlorobenzidine	<0.40		0.40	ug/L	02-MAR-20	0.5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-14 DUP1									
Sampled By: V.PETERS/A.CASEY on 24-FEB-2									
Matrix: WATER						#1			
Semi-Volatile Organics									
2,4-Dichlorophenol	<0.30		0.30	ug/L	02-MAR-20	20			
Diethylphthalate	<0.20		0.20	ug/L	02-MAR-20	30			
Dimethylphthalate	<0.20		0.20	ug/L	02-MAR-20	30			
2,4-Dimethylphenol	<0.50		0.50	ug/L	02-MAR-20	10			
2,4-Dinitrophenol	<1.0		1.0	ug/L	02-MAR-20	10			
2,4-Dinitrotoluene	<0.40		0.40	ug/L	02-MAR-20				
2,6-Dinitrotoluene	<0.40		0.40	ug/L	02-MAR-20				
2,4+2,6-Dinitrotoluene	<0.57		0.57	ug/L	02-MAR-20	5			
Bis(2-ethylhexyl)phthalate	<2.0		2.0	ug/L	02-MAR-20	10			
Pentachlorophenol	<0.50		0.50	ug/L	02-MAR-20	0.5			
Phenol	<0.50		0.50	ug/L	02-MAR-20	5			
1,2,4-Trichlorobenzene	<0.40		0.40	ug/L	02-MAR-20	0.5			
2,4,5-Trichlorophenol	<0.20		0.20	ug/L	02-MAR-20	0.2			
2,4,6-Trichlorophenol	<0.20		0.20	ug/L	02-MAR-20	0.2			
Surrogate: 2-Fluorobiphenyl	96.5		50-140	%	02-MAR-20				
Surrogate: Nitrobenzene d5	113.2		50-140	%	02-MAR-20				
Surrogate: p-Terphenyl d14	124.8		60-140	%	02-MAR-20				
Surrogate: 2,4,6-Tribromophenol	117.4		50-140	%	02-MAR-20				
L2420861-15 DUP2									
Sampled By: V.PETERS/A.CASEY on 24-FEB-2									
Matrix: WATER						#1			
Volatile Organic Compounds									
Acetone	<30		30	ug/L	26-FEB-20	2700			
Benzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
Bromodichloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
Bromoform	<5.0		5.0	ug/L	26-FEB-20	5			
Bromomethane	<0.50		0.50	ug/L	26-FEB-20	0.89			
Carbon tetrachloride	<0.20		0.20	ug/L	26-FEB-20	0.2			
Chlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
Dibromochloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
Chloroform	<1.0		1.0	ug/L	26-FEB-20	2			
1,2-Dibromoethane	<0.20		0.20	ug/L	26-FEB-20	0.2			
1,2-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
1,3-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
1,4-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
Dichlorodifluoromethane	<2.0		2.0	ug/L	26-FEB-20	590			
1,1-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
1,2-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
1,1-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
Methylene Chloride	<5.0		5.0	ug/L	26-FEB-20	5			
1,2-Dichloropropane	<0.50		0.50	ug/L	26-FEB-20	0.5			
cis-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
trans-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				

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* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-15	DUP2									
Sampled By:	V.PETERS/A.CASEY on 24-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	26-FEB-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	26-FEB-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	26-FEB-20	640			
	MTBE	<2.0		2.0	ug/L	26-FEB-20	15			
	Styrene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Toluene	<0.50		0.50	ug/L	26-FEB-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	26-FEB-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	26-FEB-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	26-FEB-20				
	m+p-Xylenes	<0.40		0.40	ug/L	26-FEB-20				
	Xylenes (Total)	<0.50		0.50	ug/L	26-FEB-20	72			
	Surrogate: 4-Bromofluorobenzene	98.7		70-130	%	26-FEB-20				
	Surrogate: 1,4-Difluorobenzene	99.9		70-130	%	26-FEB-20				
Hydrocarbons										
	F1 (C6-C10)	<25		25	ug/L	26-FEB-20	420			
	F1-BTEX	<25		25	ug/L	27-FEB-20	420			
	F2 (C10-C16)	<100		100	ug/L	27-FEB-20	150			
	F2-Naphth	<100		100	ug/L	27-FEB-20				
	F3 (C16-C34)	<250		250	ug/L	27-FEB-20	500			
	F3-PAH	<250		250	ug/L	27-FEB-20				
	F4 (C34-C50)	<250		250	ug/L	27-FEB-20	500			
	Total Hydrocarbons (C6-C50)	<370		370	ug/L	27-FEB-20				
	Chrom. to baseline at nC50	YES			No Unit	27-FEB-20				
	Surrogate: 2-Bromobenzotrifluoride	105.3		60-140	%	27-FEB-20				
	Surrogate: 3,4-Dichlorotoluene	96.0		60-140	%	26-FEB-20				
Polycyclic Aromatic Hydrocarbons										
	Acenaphthene	<0.020		0.020	ug/L	27-FEB-20	4.1			
	Acenaphthylene	<0.020		0.020	ug/L	27-FEB-20	1			
	Anthracene	<0.020		0.020	ug/L	27-FEB-20	0.1			
	Benzo(a)anthracene	<0.020		0.020	ug/L	27-FEB-20	0.2			
	Benzo(a)pyrene	<0.010		0.010	ug/L	27-FEB-20	0.01			
	Benzo(b)fluoranthene	<0.020		0.020	ug/L	27-FEB-20	0.1			
	Benzo(g,h,i)perylene	<0.020		0.020	ug/L	27-FEB-20	0.2			
	Benzo(k)fluoranthene	<0.020		0.020	ug/L	27-FEB-20	0.1			
	Chrysene	<0.020		0.020	ug/L	27-FEB-20	0.1			
	Dibenzo(ah)anthracene	<0.020		0.020	ug/L	27-FEB-20	0.2			
	Fluoranthene	<0.020		0.020	ug/L	27-FEB-20	0.4			
	Fluorene	<0.020		0.020	ug/L	27-FEB-20	120			

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T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-15	DUP2									
Sampled By:	V.PETERS/A.CASEY on 24-FEB-2									
Matrix:	WATER						#1			
Polycyclic Aromatic Hydrocarbons										
	Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	27-FEB-20	0.2			
	1+2-Methylnaphthalenes	<0.028		0.028	ug/L	27-FEB-20	2			
	1-Methylnaphthalene	<0.020		0.020	ug/L	27-FEB-20	2			
	2-Methylnaphthalene	<0.020		0.020	ug/L	27-FEB-20	2			
	Naphthalene	<0.050		0.050	ug/L	27-FEB-20	7			
	Phenanthrene	<0.020		0.020	ug/L	27-FEB-20	0.1			
	Pyrene	<0.020		0.020	ug/L	27-FEB-20	0.2			
	Surrogate: d10-Acenaphthene	118.6		60-140	%	27-FEB-20				
	Surrogate: d12-Chrysene	101.0		60-140	%	27-FEB-20				
	Surrogate: d8-Naphthalene	113.8		60-140	%	27-FEB-20				
	Surrogate: d10-Phenanthrene	105.1		60-140	%	27-FEB-20				
L2420861-16	MW18-112S									
Sampled By:	V.PETERS/A.CASEY on 25-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	26-FEB-20	2700			
	Benzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Bromoform	<5.0		5.0	ug/L	26-FEB-20	5			
	Bromomethane	<0.50		0.50	ug/L	26-FEB-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	26-FEB-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Chloroform	<1.0		1.0	ug/L	26-FEB-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	26-FEB-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	26-FEB-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	26-FEB-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	26-FEB-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	26-FEB-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	26-FEB-20	640			
	MTBE	<2.0		2.0	ug/L	26-FEB-20	15			
	Styrene	<0.50		0.50	ug/L	26-FEB-20	0.5			

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* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-16	MW18-112S									
Sampled By:	V.PETERS/A.CASEY on 25-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Toluene	<0.50		0.50	ug/L	26-FEB-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	26-FEB-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	26-FEB-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	26-FEB-20				
	m+p-Xylenes	<0.40		0.40	ug/L	26-FEB-20				
	Xylenes (Total)	<0.50		0.50	ug/L	26-FEB-20	72			
	Surrogate: 4-Bromofluorobenzene	99.1		70-130	%	26-FEB-20				
	Surrogate: 1,4-Difluorobenzene	99.5		70-130	%	26-FEB-20				
L2420861-17	MW18-112G									
Sampled By:	V.PETERS/A.CASEY on 25-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	26-FEB-20	2700			
	Benzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Bromoform	<5.0		5.0	ug/L	26-FEB-20	5			
	Bromomethane	<0.50		0.50	ug/L	26-FEB-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	26-FEB-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Chloroform	<1.0		1.0	ug/L	26-FEB-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	26-FEB-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	26-FEB-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,2-Dichloroethylene	1.57		0.50	ug/L	26-FEB-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	26-FEB-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	26-FEB-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	26-FEB-20	400			

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T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-17	MW18-112G									
Sampled By:	V.PETERS/A.CASEY on 25-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Methyl Isobutyl Ketone	<20		20	ug/L	26-FEB-20	640			
	MTBE	<2.0		2.0	ug/L	26-FEB-20	15			
	Styrene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Toluene	<0.50		0.50	ug/L	26-FEB-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	26-FEB-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	26-FEB-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	26-FEB-20				
	m+p-Xylenes	<0.40		0.40	ug/L	26-FEB-20				
	Xylenes (Total)	<0.50		0.50	ug/L	26-FEB-20	72			
	Surrogate: 4-Bromofluorobenzene	98.5		70-130	%	26-FEB-20				
	Surrogate: 1,4-Difluorobenzene	99.0		70-130	%	26-FEB-20				
L2420861-18	MW18-112D									
Sampled By:	V.PETERS/A.CASEY on 25-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	27-FEB-20	2700			
	Benzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	27-FEB-20	2			
	Bromoform	<5.0		5.0	ug/L	27-FEB-20	5			
	Bromomethane	<0.50		0.50	ug/L	27-FEB-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	27-FEB-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	27-FEB-20	2			
	Chloroform	<1.0		1.0	ug/L	27-FEB-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	27-FEB-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	27-FEB-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	27-FEB-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	27-FEB-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	27-FEB-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	27-FEB-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	27-FEB-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	27-FEB-20	0.5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-18	MW18-112D									
Sampled By:	V.PETERS/A.CASEY on 25-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Ethylbenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	27-FEB-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	27-FEB-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	27-FEB-20	640			
	MTBE	<2.0		2.0	ug/L	27-FEB-20	15			
	Styrene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	27-FEB-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Toluene	<0.50		0.50	ug/L	27-FEB-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	27-FEB-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	27-FEB-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	27-FEB-20				
	m+p-Xylenes	<0.40		0.40	ug/L	27-FEB-20				
	Xylenes (Total)	<0.50		0.50	ug/L	27-FEB-20	72			
	Surrogate: 4-Bromofluorobenzene	96.5		70-130	%	27-FEB-20				
	Surrogate: 1,4-Difluorobenzene	101.3		70-130	%	27-FEB-20				
L2420861-19	OW16									
Sampled By:	V.PETERS/A.CASEY on 25-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	26-FEB-20	2700			
	Benzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Bromoform	<5.0		5.0	ug/L	26-FEB-20	5			
	Bromomethane	<0.50		0.50	ug/L	26-FEB-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	26-FEB-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Chloroform	<1.0		1.0	ug/L	26-FEB-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	26-FEB-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	26-FEB-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	26-FEB-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	26-FEB-20	0.5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-19 OW16										
Sampled By: V.PETERS/A.CASEY on 25-FEB-2										
Matrix: WATER							#1			
Volatile Organic Compounds										
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	26-FEB-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	26-FEB-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	26-FEB-20	640			
	MTBE	<2.0		2.0	ug/L	26-FEB-20	15			
	Styrene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Toluene	<0.50		0.50	ug/L	26-FEB-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	26-FEB-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	26-FEB-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	26-FEB-20				
	m+p-Xylenes	<0.40		0.40	ug/L	26-FEB-20				
	Xylenes (Total)	<0.50		0.50	ug/L	26-FEB-20	72			
	Surrogate: 4-Bromofluorobenzene	98.2		70-130	%	26-FEB-20				
	Surrogate: 1,4-Difluorobenzene	99.2		70-130	%	26-FEB-20				
L2420861-20 OW15										
Sampled By: V.PETERS/A.CASEY on 25-FEB-2										
Matrix: WATER							#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	26-FEB-20	2700			
	Benzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Bromoform	<5.0		5.0	ug/L	26-FEB-20	5			
	Bromomethane	<0.50		0.50	ug/L	26-FEB-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	26-FEB-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Chloroform	<1.0		1.0	ug/L	26-FEB-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	26-FEB-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	26-FEB-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-20 OW15										
Sampled By: V.PETERS/A.CASEY on 25-FEB-2										
Matrix: WATER							#1			
Volatile Organic Compounds										
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	26-FEB-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	26-FEB-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	26-FEB-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	26-FEB-20	640			
	MTBE	<2.0		2.0	ug/L	26-FEB-20	15			
	Styrene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Toluene	<0.50		0.50	ug/L	26-FEB-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	26-FEB-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	26-FEB-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	26-FEB-20				
	m+p-Xylenes	<0.40		0.40	ug/L	26-FEB-20				
	Xylenes (Total)	<0.50		0.50	ug/L	26-FEB-20	72			
	Surrogate: 4-Bromofluorobenzene	97.8		70-130	%	26-FEB-20				
	Surrogate: 1,4-Difluorobenzene	99.9		70-130	%	26-FEB-20				
L2420861-21 MW18-119S										
Sampled By: V.PETERS/A.CASEY on 25-FEB-2										
Matrix: WATER							#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	26-FEB-20	2700			
	Benzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Bromoform	<5.0		5.0	ug/L	26-FEB-20	5			
	Bromomethane	<0.50		0.50	ug/L	26-FEB-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	26-FEB-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Chloroform	<1.0		1.0	ug/L	26-FEB-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	26-FEB-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	26-FEB-20	590			
	1,1-Dichloroethane	5.83		0.50	ug/L	26-FEB-20	*0.5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-21	MW18-119S									
Sampled By:	V.PETERS/A.CASEY on 25-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	1,2-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	26-FEB-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	26-FEB-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	26-FEB-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	26-FEB-20	640			
	MTBE	<2.0		2.0	ug/L	26-FEB-20	15			
	Styrene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Toluene	<0.50		0.50	ug/L	26-FEB-20	0.8			
	1,1,1-Trichloroethane	12.4		0.50	ug/L	26-FEB-20	*0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	26-FEB-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	26-FEB-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	26-FEB-20				
	m+p-Xylenes	<0.40		0.40	ug/L	26-FEB-20				
	Xylenes (Total)	<0.50		0.50	ug/L	26-FEB-20	72			
	Surrogate: 4-Bromofluorobenzene	99.2		70-130	%	26-FEB-20				
	Surrogate: 1,4-Difluorobenzene	100.0		70-130	%	26-FEB-20				
L2420861-22	MW18-119D									
Sampled By:	V.PETERS/A.CASEY on 25-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	26-FEB-20	2700			
	Benzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Bromoform	<5.0		5.0	ug/L	26-FEB-20	5			
	Bromomethane	<0.50		0.50	ug/L	26-FEB-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	26-FEB-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Chloroform	<1.0		1.0	ug/L	26-FEB-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	26-FEB-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-22	MW18-119D									
Sampled By:	V.PETERS/A.CASEY on 25-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	26-FEB-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,2-Dichloroethylene	0.66		0.50	ug/L	26-FEB-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	26-FEB-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	n-Hexane	0.71		0.50	ug/L	26-FEB-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	26-FEB-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	26-FEB-20	640			
	MTBE	<2.0		2.0	ug/L	26-FEB-20	15			
	Styrene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Toluene	<0.50		0.50	ug/L	26-FEB-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	26-FEB-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	26-FEB-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	26-FEB-20				
	m+p-Xylenes	<0.40		0.40	ug/L	26-FEB-20				
	Xylenes (Total)	<0.50		0.50	ug/L	26-FEB-20	72			
	Surrogate: 4-Bromofluorobenzene	98.6		70-130	%	26-FEB-20				
	Surrogate: 1,4-Difluorobenzene	99.5		70-130	%	26-FEB-20				
L2420861-23	OW11-I									
Sampled By:	V.PETERS/A.CASEY on 25-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	26-FEB-20	2700			
	Benzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Bromoform	<5.0		5.0	ug/L	26-FEB-20	5			
	Bromomethane	<0.50		0.50	ug/L	26-FEB-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	26-FEB-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Chloroform	<1.0		1.0	ug/L	26-FEB-20	2			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-23	OW11-I									
Sampled By:	V.PETERS/A.CASEY on 25-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	1,2-Dibromoethane	<0.20		0.20	ug/L	26-FEB-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	26-FEB-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	26-FEB-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	26-FEB-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	26-FEB-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	26-FEB-20	640			
	MTBE	<2.0		2.0	ug/L	26-FEB-20	15			
	Styrene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Toluene	<0.50		0.50	ug/L	26-FEB-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	26-FEB-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	26-FEB-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	26-FEB-20				
	m+p-Xylenes	<0.40		0.40	ug/L	26-FEB-20				
	Xylenes (Total)	<0.50		0.50	ug/L	26-FEB-20	72			
	Surrogate: 4-Bromofluorobenzene	97.7		70-130	%	26-FEB-20				
	Surrogate: 1,4-Difluorobenzene	100.0		70-130	%	26-FEB-20				
L2420861-24	OW11-II									
Sampled By:	V.PETERS/A.CASEY on 25-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	26-FEB-20	2700			
	Benzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Bromoform	<5.0		5.0	ug/L	26-FEB-20	5			
	Bromomethane	<0.50		0.50	ug/L	26-FEB-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	26-FEB-20	0.2			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-24	OW11-II									
Sampled By:	V.PETERS/A.CASEY on 25-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Chlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Chloroform	<1.0		1.0	ug/L	26-FEB-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	26-FEB-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	26-FEB-20	590			
	1,1-Dichloroethane	22.6		0.50	ug/L	26-FEB-20	*0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1-Dichloroethylene	0.75		0.50	ug/L	26-FEB-20	*0.5			
	cis-1,2-Dichloroethylene	<1.4	DLQ	1.4	ug/L	26-FEB-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	26-FEB-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	26-FEB-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	26-FEB-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	26-FEB-20	640			
	MTBE	<2.0		2.0	ug/L	26-FEB-20	15			
	Styrene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Toluene	<0.50		0.50	ug/L	26-FEB-20	0.8			
	1,1,1-Trichloroethane	27.1		0.50	ug/L	26-FEB-20	*0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	26-FEB-20	150			
	Vinyl chloride	0.86		0.50	ug/L	26-FEB-20	*0.5			
	o-Xylene	<0.30		0.30	ug/L	26-FEB-20				
	m+p-Xylenes	<0.40		0.40	ug/L	26-FEB-20				
	Xylenes (Total)	<0.50		0.50	ug/L	26-FEB-20	72			
	Surrogate: 4-Bromofluorobenzene	99.4		70-130	%	26-FEB-20				
	Surrogate: 1,4-Difluorobenzene	100.2		70-130	%	26-FEB-20				
L2420861-25	MW18-122G									
Sampled By:	V.PETERS/A.CASEY on 25-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	26-FEB-20	2700			
	Benzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	26-FEB-20	2			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-25	MW18-122G									
Sampled By:	V.PETERS/A.CASEY on 25-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Bromoform	<5.0		5.0	ug/L	26-FEB-20	5			
	Bromomethane	<0.50		0.50	ug/L	26-FEB-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	26-FEB-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	26-FEB-20	2			
	Chloroform	<1.0		1.0	ug/L	26-FEB-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	26-FEB-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	26-FEB-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,2-Dichloroethylene	0.53		0.50	ug/L	26-FEB-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	26-FEB-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	26-FEB-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	26-FEB-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	26-FEB-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	26-FEB-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	26-FEB-20	640			
	MTBE	<2.0		2.0	ug/L	26-FEB-20	15			
	Styrene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Toluene	<0.50		0.50	ug/L	26-FEB-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	26-FEB-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	26-FEB-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	26-FEB-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	26-FEB-20				
	m+p-Xylenes	<0.40		0.40	ug/L	26-FEB-20				
	Xylenes (Total)	<0.50		0.50	ug/L	26-FEB-20	72			
	Surrogate: 4-Bromofluorobenzene	99.4		70-130	%	26-FEB-20				
	Surrogate: 1,4-Difluorobenzene	99.3		70-130	%	26-FEB-20				
L2420861-26	MW18-122D									
Sampled By:	V.PETERS/A.CASEY on 25-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-26	MW18-122D									
Sampled By:	V.PETERS/A.CASEY on 25-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	27-FEB-20	2700			
	Benzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	27-FEB-20	2			
	Bromoform	<5.0		5.0	ug/L	27-FEB-20	5			
	Bromomethane	<0.50		0.50	ug/L	27-FEB-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	27-FEB-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	27-FEB-20	2			
	Chloroform	<1.0		1.0	ug/L	27-FEB-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	27-FEB-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	27-FEB-20	590			
	1,1-Dichloroethane	5.89		0.50	ug/L	27-FEB-20	*0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	cis-1,2-Dichloroethylene	1.82		0.50	ug/L	27-FEB-20	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	27-FEB-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	27-FEB-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	27-FEB-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	27-FEB-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	27-FEB-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	27-FEB-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	27-FEB-20	640			
	MTBE	<2.0		2.0	ug/L	27-FEB-20	15			
	Styrene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	27-FEB-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Toluene	<0.50		0.50	ug/L	27-FEB-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	27-FEB-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	27-FEB-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	27-FEB-20				
	m+p-Xylenes	<0.40		0.40	ug/L	27-FEB-20				
	Xylenes (Total)	<0.50		0.50	ug/L	27-FEB-20	72			
	Surrogate: 4-Bromofluorobenzene	98.4		70-130	%	27-FEB-20				
	Surrogate: 1,4-Difluorobenzene	99.5		70-130	%	27-FEB-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-27	OW12									
Sampled By:	V.PETERS/A.CASEY on 25-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	27-FEB-20	2700			
	Benzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	27-FEB-20	2			
	Bromoform	<5.0		5.0	ug/L	27-FEB-20	5			
	Bromomethane	<0.50		0.50	ug/L	27-FEB-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	27-FEB-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	27-FEB-20	2			
	Chloroform	<1.0		1.0	ug/L	27-FEB-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	27-FEB-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	27-FEB-20	590			
	1,1-Dichloroethane	0.91		0.50	ug/L	27-FEB-20	*0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	27-FEB-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	27-FEB-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	27-FEB-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	27-FEB-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	27-FEB-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	27-FEB-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	27-FEB-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	27-FEB-20	640			
	MTBE	<2.0		2.0	ug/L	27-FEB-20	15			
	Styrene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	27-FEB-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Toluene	<0.50		0.50	ug/L	27-FEB-20	0.8			
	1,1,1-Trichloroethane	5.80		0.50	ug/L	27-FEB-20	*0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	27-FEB-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	27-FEB-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	27-FEB-20				
	m+p-Xylenes	<0.40		0.40	ug/L	27-FEB-20				
	Xylenes (Total)	<0.50		0.50	ug/L	27-FEB-20	72			
	Surrogate: 4-Bromofluorobenzene	95.4		70-130	%	27-FEB-20				
	Surrogate: 1,4-Difluorobenzene	100.1		70-130	%	27-FEB-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-28	MW18-120D									
Sampled By:	V.PETERS/A.CASEY on 25-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	27-FEB-20	2700			
	Benzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	27-FEB-20	2			
	Bromoform	<5.0		5.0	ug/L	27-FEB-20	5			
	Bromomethane	<0.50		0.50	ug/L	27-FEB-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	27-FEB-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	27-FEB-20	2			
	Chloroform	<1.0		1.0	ug/L	27-FEB-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	27-FEB-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	27-FEB-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	27-FEB-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	27-FEB-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	27-FEB-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	27-FEB-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	27-FEB-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	27-FEB-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	27-FEB-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	27-FEB-20	640			
	MTBE	<2.0		2.0	ug/L	27-FEB-20	15			
	Styrene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	27-FEB-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Toluene	<0.50		0.50	ug/L	27-FEB-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	27-FEB-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	27-FEB-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	27-FEB-20				
	m+p-Xylenes	<0.40		0.40	ug/L	27-FEB-20				
	Xylenes (Total)	<0.50		0.50	ug/L	27-FEB-20	72			
	Surrogate: 4-Bromofluorobenzene	97.0		70-130	%	27-FEB-20				
	Surrogate: 1,4-Difluorobenzene	100.8		70-130	%	27-FEB-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-29	DUP3									
Sampled By:	V.PETERS/A.CASEY on 25-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	27-FEB-20	2700			
	Benzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	27-FEB-20	2			
	Bromoform	<5.0		5.0	ug/L	27-FEB-20	5			
	Bromomethane	<0.50		0.50	ug/L	27-FEB-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	27-FEB-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	27-FEB-20	2			
	Chloroform	<1.0		1.0	ug/L	27-FEB-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	27-FEB-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	27-FEB-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	27-FEB-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	27-FEB-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	27-FEB-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	27-FEB-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	27-FEB-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	27-FEB-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	27-FEB-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	27-FEB-20	640			
	MTBE	<2.0		2.0	ug/L	27-FEB-20	15			
	Styrene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	27-FEB-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Toluene	<0.50		0.50	ug/L	27-FEB-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	27-FEB-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	27-FEB-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	27-FEB-20				
	m+p-Xylenes	<0.40		0.40	ug/L	27-FEB-20				
	Xylenes (Total)	<0.50		0.50	ug/L	27-FEB-20	72			
	Surrogate: 4-Bromofluorobenzene	97.5		70-130	%	27-FEB-20				
	Surrogate: 1,4-Difluorobenzene	99.9		70-130	%	27-FEB-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-30	TB001									
Sampled By:	V.PETERS/A.CASEY on 25-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	27-FEB-20	2700			
	Benzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	27-FEB-20	2			
	Bromoform	<5.0		5.0	ug/L	27-FEB-20	5			
	Bromomethane	<0.50		0.50	ug/L	27-FEB-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	27-FEB-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	27-FEB-20	2			
	Chloroform	<1.0		1.0	ug/L	27-FEB-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	27-FEB-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	27-FEB-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	27-FEB-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	27-FEB-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	27-FEB-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	27-FEB-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	27-FEB-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	27-FEB-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	27-FEB-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	27-FEB-20	640			
	MTBE	<2.0		2.0	ug/L	27-FEB-20	15			
	Styrene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	27-FEB-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Toluene	<0.50		0.50	ug/L	27-FEB-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	27-FEB-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	27-FEB-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	27-FEB-20				
	m+p-Xylenes	<0.40		0.40	ug/L	27-FEB-20				
	Xylenes (Total)	<0.50		0.50	ug/L	27-FEB-20	72			
	Surrogate: 4-Bromofluorobenzene	96.6		70-130	%	27-FEB-20				
	Surrogate: 1,4-Difluorobenzene	99.9		70-130	%	27-FEB-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2420861-31	MW17-111S									
Sampled By:	V.PETERS/A.CASEY on 25-FEB-2									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	27-FEB-20	2700			
	Benzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	27-FEB-20	2			
	Bromoform	<5.0		5.0	ug/L	27-FEB-20	5			
	Bromomethane	<0.50		0.50	ug/L	27-FEB-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	27-FEB-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	27-FEB-20	2			
	Chloroform	<1.0		1.0	ug/L	27-FEB-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	27-FEB-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	27-FEB-20	590			
	1,1-Dichloroethane	2.04		0.50	ug/L	27-FEB-20	*0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	27-FEB-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	27-FEB-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	27-FEB-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	27-FEB-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	27-FEB-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	27-FEB-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	27-FEB-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	27-FEB-20	640			
	MTBE	<2.0		2.0	ug/L	27-FEB-20	15			
	Styrene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	27-FEB-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Toluene	<0.50		0.50	ug/L	27-FEB-20	0.8			
	1,1,1-Trichloroethane	5.29		0.50	ug/L	27-FEB-20	*0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	27-FEB-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	27-FEB-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	27-FEB-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	27-FEB-20				
	m+p-Xylenes	<0.40		0.40	ug/L	27-FEB-20				
	Xylenes (Total)	<0.50		0.50	ug/L	27-FEB-20	72			
	Surrogate: 4-Bromofluorobenzene	96.4		70-130	%	27-FEB-20				
	Surrogate: 1,4-Difluorobenzene	100.5		70-130	%	27-FEB-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

Reference Information

Sample Parameter Qualifier key listed:

Qualifier	Description
DLQ	Detection Limit raised due to co-eluting interference. GCMS qualifier ion ratio did not meet acceptance criteria.

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference***
625-511-WT	Water	ABN,CP,PAH-O.Reg 153/04	SW846 8270 (511)

Ground water sample extraction is carried out at a pH <2 (acid extractables) and pH>11 (base neutral extractables). Extracts are dried, concentrated and exchanged into a solvent compatible with the cleanup. Analysis is by GC/MS. Depending on the analytical GC/MS column used benzo(j)fluoranthene may chromatographically co-elute with benzo(b)fluoranthene or benzo(k)fluoranthene.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

DINITROTOL-CALC-WT	Water	ABN-Calculated Parameters	SW846 8270
F1-F4-511-CALC-WT	Water	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-L

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Water	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Water	F2-F4-O.Reg 153/04 (July 2011)	EPA 3511/CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from water using a hexane micro-extraction technique. Instrumental analysis is by GC-FID, as per the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Tier 1 Method, CCME, 2001.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT	Water	PAH-Calculated Parameters	SW846 8270
PAH-511-WT	Water	PAH-O. Reg 153/04 (July 2011)	SW846 3510/8270

Aqueous samples, fortified with surrogates, are extracted using liquid/liquid extraction technique. The sample extracts are concentrated and then analyzed using GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

VOC-1,3-DCP-CALC-WT	Water	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Water	VOC by GCMS HS O.Reg 153/04 (July 2011)	SW846 8260

Liquid samples are analyzed by headspace GC/MSD.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

Reference Information

XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

*** ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody numbers:

17-795244 17-795253 17-795254

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA		

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Quality Control Report

Workorder: L2420861 Report Date: 03-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Water**							
Batch R5011272								
WG3282669-2 LCS								
1,2,4-Trichlorobenzene			59.5		%		50-140	02-MAR-20
2-Chlorophenol			89.2		%		50-140	02-MAR-20
2,4-Dichlorophenol			95.3		%		50-140	02-MAR-20
2,4-Dimethylphenol			43.8		%		30-130	02-MAR-20
2,4-Dinitrophenol			112.2		%		50-140	02-MAR-20
2,4-Dinitrotoluene			120.8		%		50-140	02-MAR-20
2,4,5-Trichlorophenol			104.7		%		50-140	02-MAR-20
2,4,6-Trichlorophenol			100.7		%		50-140	02-MAR-20
2,6-Dinitrotoluene			105.8		%		50-140	02-MAR-20
3,3'-Dichlorobenzidine			34.9		%		30-130	02-MAR-20
4-Chloroaniline			18.6	RRQC	%		30-130	02-MAR-20
Biphenyl			88.7		%		50-140	02-MAR-20
Bis(2-chloroethyl)ether			94.0		%		50-140	02-MAR-20
Bis(2-chloroisopropyl)ether			88.4		%		50-140	02-MAR-20
Bis(2-ethylhexyl)phthalate			116.8		%		50-140	02-MAR-20
Diethylphthalate			96.6		%		50-140	02-MAR-20
Dimethylphthalate			96.3		%		50-140	02-MAR-20
Pentachlorophenol			115.2		%		50-140	02-MAR-20
Phenol			92.6		%		30-130	02-MAR-20
COMMENTS: RRQC: Recoveries are outside ALS control limits. Associated non-detect sample results have not been affected.								
WG3282669-1 MB								
1,2,4-Trichlorobenzene			<0.40		ug/L		0.4	02-MAR-20
2-Chlorophenol			<0.30		ug/L		0.3	02-MAR-20
2,4-Dichlorophenol			<0.30		ug/L		0.3	02-MAR-20
2,4-Dimethylphenol			<0.50		ug/L		0.5	02-MAR-20
2,4-Dinitrophenol			<1.0		ug/L		1	02-MAR-20
2,4-Dinitrotoluene			<0.40		ug/L		0.4	02-MAR-20
2,4,5-Trichlorophenol			<0.20		ug/L		0.2	02-MAR-20
2,4,6-Trichlorophenol			<0.20		ug/L		0.2	02-MAR-20
2,6-Dinitrotoluene			<0.40		ug/L		0.4	02-MAR-20
3,3'-Dichlorobenzidine			<0.40		ug/L		0.4	02-MAR-20
4-Chloroaniline			<0.40		ug/L		0.4	02-MAR-20
Biphenyl			<0.40		ug/L		0.4	02-MAR-20
Bis(2-chloroethyl)ether			<0.40		ug/L		0.4	02-MAR-20

Quality Control Report

Workorder: L2420861 Report Date: 03-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Water**							
Batch R5011272								
WG3282669-1 MB								
Bis(2-chloroisopropyl)ether			<0.40		ug/L		0.4	02-MAR-20
Bis(2-ethylhexyl)phthalate			<2.0		ug/L		2	02-MAR-20
Diethylphthalate			<0.20		ug/L		0.2	02-MAR-20
Dimethylphthalate			<0.20		ug/L		0.2	02-MAR-20
Pentachlorophenol			<0.50		ug/L		0.5	02-MAR-20
Phenol			<0.50		ug/L		0.5	02-MAR-20
Surrogate: 2-Fluorobiphenyl			108.0		%		50-140	02-MAR-20
Surrogate: 2,4,6-Tribromophenol			88.0		%		50-140	02-MAR-20
Surrogate: Nitrobenzene d5			111.5		%		50-140	02-MAR-20
Surrogate: p-Terphenyl d14			136.5		%		60-140	02-MAR-20
F1-HS-511-WT	**Water**							
Batch R5007132								
WG3281771-4 DUP		**WG3281771-3**						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	26-FEB-20
WG3281771-1 LCS								
F1 (C6-C10)			92.6		%		80-120	26-FEB-20
WG3281771-2 MB								
F1 (C6-C10)			<25		ug/L		25	26-FEB-20
Surrogate: 3,4-Dichlorotoluene			96.4		%		60-140	26-FEB-20
WG3281771-5 MS		**WG3281771-3**						
F1 (C6-C10)			87.4		%		60-140	26-FEB-20
Batch R5009329								
WG3278555-4 DUP		**WG3278555-3**						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	27-FEB-20
WG3278555-1 LCS								
F1 (C6-C10)			84.4		%		80-120	27-FEB-20
WG3278555-2 MB								
F1 (C6-C10)			<25		ug/L		25	27-FEB-20
Surrogate: 3,4-Dichlorotoluene			94.7		%		60-140	27-FEB-20
WG3278555-5 MS		**WG3278555-3**						
F1 (C6-C10)			87.3		%		60-140	27-FEB-20
F2-F4-511-WT	**Water**							

Quality Control Report

Workorder: L2420861 Report Date: 03-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-511-WT	**Water**							
Batch R5009517								
WG3281885-2 LCS								
F2 (C10-C16)			108.3		%		70-130	26-FEB-20
F3 (C16-C34)			109.1		%		70-130	26-FEB-20
F4 (C34-C50)			110.6		%		70-130	26-FEB-20
WG3281885-1 MB								
F2 (C10-C16)			<100		ug/L		100	26-FEB-20
F3 (C16-C34)			<250		ug/L		250	26-FEB-20
F4 (C34-C50)			<250		ug/L		250	26-FEB-20
Surrogate: 2-Bromobenzotrifluoride			83.5		%		60-140	26-FEB-20
Batch R5010828								
WG3282571-2 LCS								
F2 (C10-C16)			114.2		%		70-130	27-FEB-20
F3 (C16-C34)			115.6		%		70-130	27-FEB-20
F4 (C34-C50)			122.8		%		70-130	27-FEB-20
WG3282571-1 MB								
F2 (C10-C16)			<100		ug/L		100	27-FEB-20
F3 (C16-C34)			<250		ug/L		250	27-FEB-20
F4 (C34-C50)			<250		ug/L		250	27-FEB-20
Surrogate: 2-Bromobenzotrifluoride			99.8		%		60-140	27-FEB-20
PAH-511-WT	**Water**							
Batch R5010626								
WG3281885-2 LCS								
1-Methylnaphthalene			100.8		%		50-140	27-FEB-20
2-Methylnaphthalene			96.6		%		50-140	27-FEB-20
Acenaphthene			107.2		%		50-140	27-FEB-20
Acenaphthylene			94.5		%		50-140	27-FEB-20
Anthracene			89.4		%		50-140	27-FEB-20
Benzo(a)anthracene			105.3		%		50-140	27-FEB-20
Benzo(a)pyrene			104.9		%		50-140	27-FEB-20
Benzo(b)fluoranthene			118.6		%		50-140	27-FEB-20
Benzo(g,h,i)perylene			100.5		%		50-140	27-FEB-20
Benzo(k)fluoranthene			106.1		%		50-140	27-FEB-20
Chrysene			98.2		%		50-140	27-FEB-20
Dibenzo(ah)anthracene			94.2		%		50-140	27-FEB-20
Fluoranthene			96.1		%		50-140	27-FEB-20

Quality Control Report

Workorder: L2420861 Report Date: 03-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R5010626								
WG3281885-2 LCS								
Fluorene			95.4		%		50-140	27-FEB-20
Indeno(1,2,3-cd)pyrene			106.5		%		50-140	27-FEB-20
Naphthalene			101.1		%		50-140	27-FEB-20
Phenanthrene			96.2		%		50-140	27-FEB-20
Pyrene			95.8		%		50-140	27-FEB-20
WG3281885-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	27-FEB-20
2-Methylnaphthalene			<0.020		ug/L		0.02	27-FEB-20
Acenaphthene			<0.020		ug/L		0.02	27-FEB-20
Acenaphthylene			<0.020		ug/L		0.02	27-FEB-20
Anthracene			<0.020		ug/L		0.02	27-FEB-20
Benzo(a)anthracene			<0.020		ug/L		0.02	27-FEB-20
Benzo(a)pyrene			<0.010		ug/L		0.01	27-FEB-20
Benzo(b)fluoranthene			<0.020		ug/L		0.02	27-FEB-20
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	27-FEB-20
Benzo(k)fluoranthene			<0.020		ug/L		0.02	27-FEB-20
Chrysene			<0.020		ug/L		0.02	27-FEB-20
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	27-FEB-20
Fluoranthene			<0.020		ug/L		0.02	27-FEB-20
Fluorene			<0.020		ug/L		0.02	27-FEB-20
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	27-FEB-20
Naphthalene			<0.050		ug/L		0.05	27-FEB-20
Phenanthrene			<0.020		ug/L		0.02	27-FEB-20
Pyrene			<0.020		ug/L		0.02	27-FEB-20
Surrogate: d8-Naphthalene			107.7		%		60-140	27-FEB-20
Surrogate: d10-Phenanthrene			102.6		%		60-140	27-FEB-20
Surrogate: d12-Chrysene			103.5		%		60-140	27-FEB-20
Surrogate: d10-Acenaphthene			111.6		%		60-140	27-FEB-20
Batch R5010970								
WG3282669-2 LCS								
1-Methylnaphthalene			82.4		%		50-140	28-FEB-20
2-Methylnaphthalene			72.9		%		50-140	28-FEB-20
Acenaphthene			81.5		%		50-140	28-FEB-20
Acenaphthylene			76.1		%		50-140	28-FEB-20

Quality Control Report

Workorder: L2420861 Report Date: 03-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R5010970								
WG3282669-2 LCS								
Anthracene			78.8		%		50-140	28-FEB-20
Benzo(a)anthracene			85.9		%		50-140	28-FEB-20
Benzo(a)pyrene			78.2		%		50-140	28-FEB-20
Benzo(b)fluoranthene			80.4		%		50-140	28-FEB-20
Benzo(g,h,i)perylene			79.9		%		50-140	28-FEB-20
Benzo(k)fluoranthene			85.1		%		50-140	28-FEB-20
Chrysene			93.9		%		50-140	28-FEB-20
Dibenzo(ah)anthracene			80.9		%		50-140	28-FEB-20
Fluoranthene			85.2		%		50-140	28-FEB-20
Fluorene			85.1		%		50-140	28-FEB-20
Indeno(1,2,3-cd)pyrene			81.2		%		50-140	28-FEB-20
Naphthalene			71.1		%		50-140	28-FEB-20
Phenanthrene			84.1		%		50-140	28-FEB-20
Pyrene			84.1		%		50-140	28-FEB-20
WG3282669-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	28-FEB-20
2-Methylnaphthalene			<0.020		ug/L		0.02	28-FEB-20
Acenaphthene			<0.020		ug/L		0.02	28-FEB-20
Acenaphthylene			<0.020		ug/L		0.02	28-FEB-20
Anthracene			<0.020		ug/L		0.02	28-FEB-20
Benzo(a)anthracene			<0.020		ug/L		0.02	28-FEB-20
Benzo(a)pyrene			<0.010		ug/L		0.01	28-FEB-20
Benzo(b)fluoranthene			<0.020		ug/L		0.02	28-FEB-20
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	28-FEB-20
Benzo(k)fluoranthene			<0.020		ug/L		0.02	28-FEB-20
Chrysene			<0.020		ug/L		0.02	28-FEB-20
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	28-FEB-20
Fluoranthene			<0.020		ug/L		0.02	28-FEB-20
Fluorene			<0.020		ug/L		0.02	28-FEB-20
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	28-FEB-20
Naphthalene			<0.050		ug/L		0.05	28-FEB-20
Phenanthrene			<0.020		ug/L		0.02	28-FEB-20
Pyrene			<0.020		ug/L		0.02	28-FEB-20
Surrogate: 2-Fluorobiphenyl			105.2		%		50-140	28-FEB-20

Quality Control Report

Workorder: L2420861 Report Date: 03-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R5010970								
WG3282669-1 MB								
Surrogate: d14-Terphenyl			113.9		%		60-140	28-FEB-20
VOC-511-HS-WT	**Water**							
Batch R5007132								
WG3281771-4 DUP		**WG3281771-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	26-FEB-20
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	26-FEB-20
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	26-FEB-20
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	26-FEB-20
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	26-FEB-20
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	26-FEB-20
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	26-FEB-20
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	26-FEB-20
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	26-FEB-20
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	26-FEB-20
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	26-FEB-20

Quality Control Report

Workorder: L2420861 Report Date: 03-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5007132								
WG3281771-4 DUP		**WG3281771-3**						
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	26-FEB-20
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	26-FEB-20
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	26-FEB-20
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	26-FEB-20
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	26-FEB-20
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	26-FEB-20
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
WG3281771-1 LCS								
1,1,1,2-Tetrachloroethane			92.6		%		70-130	26-FEB-20
1,1,2,2-Tetrachloroethane			93.0		%		70-130	26-FEB-20
1,1,1-Trichloroethane			93.6		%		70-130	26-FEB-20
1,1,2-Trichloroethane			87.2		%		70-130	26-FEB-20
1,1-Dichloroethane			91.9		%		70-130	26-FEB-20
1,1-Dichloroethylene			89.8		%		70-130	26-FEB-20
1,2-Dibromoethane			89.7		%		70-130	26-FEB-20
1,2-Dichlorobenzene			95.3		%		70-130	26-FEB-20
1,2-Dichloroethane			91.9		%		70-130	26-FEB-20
1,2-Dichloropropane			92.4		%		70-130	26-FEB-20
1,3-Dichlorobenzene			97.4		%		70-130	26-FEB-20
1,4-Dichlorobenzene			97.9		%		70-130	26-FEB-20
Acetone			100.7		%		60-140	26-FEB-20
Benzene			89.9		%		70-130	26-FEB-20
Bromodichloromethane			94.9		%		70-130	26-FEB-20
Bromoform			89.1		%		70-130	26-FEB-20
Bromomethane			85.7		%		60-140	26-FEB-20
Carbon tetrachloride			95.3		%		70-130	26-FEB-20
Chlorobenzene			90.1		%		70-130	26-FEB-20
Chloroform			94.8		%		70-130	26-FEB-20

Quality Control Report

Workorder: L2420861 Report Date: 03-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5007132								
WG3281771-1 LCS								
cis-1,2-Dichloroethylene			91.9		%		70-130	26-FEB-20
cis-1,3-Dichloropropene			88.4		%		70-130	26-FEB-20
Dibromochloromethane			85.6		%		70-130	26-FEB-20
Dichlorodifluoromethane			112.1		%		50-140	26-FEB-20
Ethylbenzene			91.8		%		70-130	26-FEB-20
n-Hexane			88.6		%		70-130	26-FEB-20
m+p-Xylenes			93.6		%		70-130	26-FEB-20
Methyl Ethyl Ketone			85.2		%		60-140	26-FEB-20
Methyl Isobutyl Ketone			93.0		%		60-140	26-FEB-20
Methylene Chloride			95.7		%		70-130	26-FEB-20
MTBE			93.9		%		70-130	26-FEB-20
o-Xylene			98.4		%		70-130	26-FEB-20
Styrene			90.0		%		70-130	26-FEB-20
Tetrachloroethylene			93.7		%		70-130	26-FEB-20
Toluene			93.9		%		70-130	26-FEB-20
trans-1,2-Dichloroethylene			91.6		%		70-130	26-FEB-20
trans-1,3-Dichloropropene			93.0		%		70-130	26-FEB-20
Trichloroethylene			92.2		%		70-130	26-FEB-20
Trichlorofluoromethane			95.2		%		60-140	26-FEB-20
Vinyl chloride			116.9		%		60-140	26-FEB-20
WG3281771-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	26-FEB-20
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	26-FEB-20
1,1,1-Trichloroethane			<0.50		ug/L		0.5	26-FEB-20
1,1,2-Trichloroethane			<0.50		ug/L		0.5	26-FEB-20
1,1-Dichloroethane			<0.50		ug/L		0.5	26-FEB-20
1,1-Dichloroethylene			<0.50		ug/L		0.5	26-FEB-20
1,2-Dibromoethane			<0.20		ug/L		0.2	26-FEB-20
1,2-Dichlorobenzene			<0.50		ug/L		0.5	26-FEB-20
1,2-Dichloroethane			<0.50		ug/L		0.5	26-FEB-20
1,2-Dichloropropane			<0.50		ug/L		0.5	26-FEB-20
1,3-Dichlorobenzene			<0.50		ug/L		0.5	26-FEB-20
1,4-Dichlorobenzene			<0.50		ug/L		0.5	26-FEB-20
Acetone			<30		ug/L		30	26-FEB-20

Quality Control Report

Workorder: L2420861 Report Date: 03-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5007132								
WG3281771-2 MB								
Benzene			<0.50		ug/L		0.5	26-FEB-20
Bromodichloromethane			<2.0		ug/L		2	26-FEB-20
Bromoform			<5.0		ug/L		5	26-FEB-20
Bromomethane			<0.50		ug/L		0.5	26-FEB-20
Carbon tetrachloride			<0.20		ug/L		0.2	26-FEB-20
Chlorobenzene			<0.50		ug/L		0.5	26-FEB-20
Chloroform			<1.0		ug/L		1	26-FEB-20
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	26-FEB-20
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	26-FEB-20
Dibromochloromethane			<2.0		ug/L		2	26-FEB-20
Dichlorodifluoromethane			<2.0		ug/L		2	26-FEB-20
Ethylbenzene			<0.50		ug/L		0.5	26-FEB-20
n-Hexane			<0.50		ug/L		0.5	26-FEB-20
m+p-Xylenes			<0.40		ug/L		0.4	26-FEB-20
Methyl Ethyl Ketone			<20		ug/L		20	26-FEB-20
Methyl Isobutyl Ketone			<20		ug/L		20	26-FEB-20
Methylene Chloride			<5.0		ug/L		5	26-FEB-20
MTBE			<2.0		ug/L		2	26-FEB-20
o-Xylene			<0.30		ug/L		0.3	26-FEB-20
Styrene			<0.50		ug/L		0.5	26-FEB-20
Tetrachloroethylene			<0.50		ug/L		0.5	26-FEB-20
Toluene			<0.50		ug/L		0.5	26-FEB-20
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	26-FEB-20
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	26-FEB-20
Trichloroethylene			<0.50		ug/L		0.5	26-FEB-20
Trichlorofluoromethane			<5.0		ug/L		5	26-FEB-20
Vinyl chloride			<0.50		ug/L		0.5	26-FEB-20
Surrogate: 1,4-Difluorobenzene			100.1		%		70-130	26-FEB-20
Surrogate: 4-Bromofluorobenzene			98.4		%		70-130	26-FEB-20
WG3281771-5 MS		**WG3281771-3**						
1,1,1,2-Tetrachloroethane			93.1		%		50-140	26-FEB-20
1,1,2,2-Tetrachloroethane			96.3		%		50-140	26-FEB-20
1,1,1-Trichloroethane			90.7		%		50-140	26-FEB-20
1,1,2-Trichloroethane			91.3		%		50-140	26-FEB-20

Quality Control Report

Workorder: L2420861 Report Date: 03-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5007132								
WG3281771-5 MS		**WG3281771-3**						
1,1-Dichloroethane			91.6		%		50-140	26-FEB-20
1,1-Dichloroethylene			84.8		%		50-140	26-FEB-20
1,2-Dibromoethane			94.6		%		50-140	26-FEB-20
1,2-Dichlorobenzene			95.1		%		50-140	26-FEB-20
1,2-Dichloroethane			97.3		%		50-140	26-FEB-20
1,2-Dichloropropane			95.5		%		50-140	26-FEB-20
1,3-Dichlorobenzene			96.7		%		50-140	26-FEB-20
1,4-Dichlorobenzene			97.6		%		50-140	26-FEB-20
Acetone			106.2		%		50-140	26-FEB-20
Benzene			90.0		%		50-140	26-FEB-20
Bromodichloromethane			98.5		%		50-140	26-FEB-20
Bromoform			91.9		%		50-140	26-FEB-20
Bromomethane			82.7		%		50-140	26-FEB-20
Carbon tetrachloride			91.7		%		50-140	26-FEB-20
Chlorobenzene			90.2		%		50-140	26-FEB-20
Chloroform			96.1		%		50-140	26-FEB-20
cis-1,2-Dichloroethylene			93.0		%		50-140	26-FEB-20
cis-1,3-Dichloropropene			92.8		%		50-140	26-FEB-20
Dibromochloromethane			87.8		%		50-140	26-FEB-20
Dichlorodifluoromethane			93.5		%		50-140	26-FEB-20
Ethylbenzene			89.4		%		50-140	26-FEB-20
n-Hexane			80.8		%		50-140	26-FEB-20
m+p-Xylenes			91.4		%		50-140	26-FEB-20
Methyl Ethyl Ketone			97.9		%		50-140	26-FEB-20
Methyl Isobutyl Ketone			103.0		%		50-140	26-FEB-20
Methylene Chloride			97.2		%		50-140	26-FEB-20
MTBE			93.8		%		50-140	26-FEB-20
o-Xylene			97.3		%		50-140	26-FEB-20
Styrene			90.3		%		50-140	26-FEB-20
Tetrachloroethylene			89.4		%		50-140	26-FEB-20
Toluene			92.2		%		50-140	26-FEB-20
trans-1,2-Dichloroethylene			89.4		%		50-140	26-FEB-20
trans-1,3-Dichloropropene			97.3		%		50-140	26-FEB-20

Quality Control Report

Workorder: L2420861 Report Date: 03-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5007132								
WG3281771-5 MS		**WG3281771-3**						
Trichloroethylene			90.8		%		50-140	26-FEB-20
Trichlorofluoromethane			87.2		%		50-140	26-FEB-20
Vinyl chloride			106.2		%		50-140	26-FEB-20
Batch R5007306								
WG3281769-4 DUP		**WG3281769-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	26-FEB-20
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	26-FEB-20
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	26-FEB-20
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	26-FEB-20
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	26-FEB-20
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	26-FEB-20
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	26-FEB-20
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	26-FEB-20
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	26-FEB-20
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	26-FEB-20
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	26-FEB-20

Quality Control Report

Workorder: L2420861 Report Date: 03-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5007306								
WG3281769-4 DUP		**WG3281769-3**						
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	26-FEB-20
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	26-FEB-20
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	26-FEB-20
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	26-FEB-20
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	26-FEB-20
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	26-FEB-20
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	26-FEB-20
WG3281769-1 LCS								
1,1,1,2-Tetrachloroethane			93.1		%		70-130	26-FEB-20
1,1,2,2-Tetrachloroethane			89.2		%		70-130	26-FEB-20
1,1,1-Trichloroethane			96.5		%		70-130	26-FEB-20
1,1,2-Trichloroethane			99.9		%		70-130	26-FEB-20
1,1-Dichloroethane			96.4		%		70-130	26-FEB-20
1,1-Dichloroethylene			89.6		%		70-130	26-FEB-20
1,2-Dibromoethane			98.5		%		70-130	26-FEB-20
1,2-Dichlorobenzene			95.5		%		70-130	26-FEB-20
1,2-Dichloroethane			86.0		%		70-130	26-FEB-20
1,2-Dichloropropane			89.3		%		70-130	26-FEB-20
1,3-Dichlorobenzene			94.8		%		70-130	26-FEB-20
1,4-Dichlorobenzene			93.6		%		70-130	26-FEB-20
Acetone			90.3		%		60-140	26-FEB-20
Benzene			93.6		%		70-130	26-FEB-20
Bromodichloromethane			90.8		%		70-130	26-FEB-20
Bromoform			89.9		%		70-130	26-FEB-20
Bromomethane			90.2		%		60-140	26-FEB-20
Carbon tetrachloride			92.9		%		70-130	26-FEB-20
Chlorobenzene			94.2		%		70-130	26-FEB-20
Chloroform			92.8		%		70-130	26-FEB-20

Quality Control Report

Workorder: L2420861 Report Date: 03-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5007306								
WG3281769-1 LCS								
cis-1,2-Dichloroethylene			92.3		%		70-130	26-FEB-20
cis-1,3-Dichloropropene			82.4		%		70-130	26-FEB-20
Dibromochloromethane			97.4		%		70-130	26-FEB-20
Dichlorodifluoromethane			117.9		%		50-140	26-FEB-20
Ethylbenzene			90.8		%		70-130	26-FEB-20
n-Hexane			88.7		%		70-130	26-FEB-20
m+p-Xylenes			90.6		%		70-130	26-FEB-20
Methyl Ethyl Ketone			99.7		%		60-140	26-FEB-20
Methyl Isobutyl Ketone			82.6		%		60-140	26-FEB-20
Methylene Chloride			100.6		%		70-130	26-FEB-20
MTBE			95.8		%		70-130	26-FEB-20
o-Xylene			99.0		%		70-130	26-FEB-20
Styrene			88.9		%		70-130	26-FEB-20
Tetrachloroethylene			94.7		%		70-130	26-FEB-20
Toluene			95.2		%		70-130	26-FEB-20
trans-1,2-Dichloroethylene			88.6		%		70-130	26-FEB-20
trans-1,3-Dichloropropene			90.8		%		70-130	26-FEB-20
Trichloroethylene			99.6		%		70-130	26-FEB-20
Trichlorofluoromethane			100.4		%		60-140	26-FEB-20
Vinyl chloride			119.0		%		60-140	26-FEB-20
WG3281769-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	26-FEB-20
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	26-FEB-20
1,1,1-Trichloroethane			<0.50		ug/L		0.5	26-FEB-20
1,1,2-Trichloroethane			<0.50		ug/L		0.5	26-FEB-20
1,1-Dichloroethane			<0.50		ug/L		0.5	26-FEB-20
1,1-Dichloroethylene			<0.50		ug/L		0.5	26-FEB-20
1,2-Dibromoethane			<0.20		ug/L		0.2	26-FEB-20
1,2-Dichlorobenzene			<0.50		ug/L		0.5	26-FEB-20
1,2-Dichloroethane			<0.50		ug/L		0.5	26-FEB-20
1,2-Dichloropropane			<0.50		ug/L		0.5	26-FEB-20
1,3-Dichlorobenzene			<0.50		ug/L		0.5	26-FEB-20
1,4-Dichlorobenzene			<0.50		ug/L		0.5	26-FEB-20
Acetone			<30		ug/L		30	26-FEB-20

Quality Control Report

Workorder: L2420861 Report Date: 03-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5007306								
WG3281769-2 MB								
Benzene			<0.50		ug/L		0.5	26-FEB-20
Bromodichloromethane			<2.0		ug/L		2	26-FEB-20
Bromoform			<5.0		ug/L		5	26-FEB-20
Bromomethane			<0.50		ug/L		0.5	26-FEB-20
Carbon tetrachloride			<0.20		ug/L		0.2	26-FEB-20
Chlorobenzene			<0.50		ug/L		0.5	26-FEB-20
Chloroform			<1.0		ug/L		1	26-FEB-20
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	26-FEB-20
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	26-FEB-20
Dibromochloromethane			<2.0		ug/L		2	26-FEB-20
Dichlorodifluoromethane			<2.0		ug/L		2	26-FEB-20
Ethylbenzene			<0.50		ug/L		0.5	26-FEB-20
n-Hexane			<0.50		ug/L		0.5	26-FEB-20
m+p-Xylenes			<0.40		ug/L		0.4	26-FEB-20
Methyl Ethyl Ketone			<20		ug/L		20	26-FEB-20
Methyl Isobutyl Ketone			<20		ug/L		20	26-FEB-20
Methylene Chloride			<5.0		ug/L		5	26-FEB-20
MTBE			<2.0		ug/L		2	26-FEB-20
o-Xylene			<0.30		ug/L		0.3	26-FEB-20
Styrene			<0.50		ug/L		0.5	26-FEB-20
Tetrachloroethylene			<0.50		ug/L		0.5	26-FEB-20
Toluene			<0.50		ug/L		0.5	26-FEB-20
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	26-FEB-20
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	26-FEB-20
Trichloroethylene			<0.50		ug/L		0.5	26-FEB-20
Trichlorofluoromethane			<5.0		ug/L		5	26-FEB-20
Vinyl chloride			<0.50		ug/L		0.5	26-FEB-20
Surrogate: 1,4-Difluorobenzene			100.9		%		70-130	26-FEB-20
Surrogate: 4-Bromofluorobenzene			96.3		%		70-130	26-FEB-20
WG3281769-5 MS		**WG3281769-3**						
1,1,1,2-Tetrachloroethane			93.9		%		50-140	26-FEB-20
1,1,2,2-Tetrachloroethane			80.4		%		50-140	26-FEB-20
1,1,1-Trichloroethane			100.2		%		50-140	26-FEB-20
1,1,2-Trichloroethane			92.9		%		50-140	26-FEB-20

Quality Control Report

Workorder: L2420861 Report Date: 03-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5007306								
WG3281769-5 MS		**WG3281769-3**						
1,1-Dichloroethane			91.1		%		50-140	26-FEB-20
1,1-Dichloroethylene			89.8		%		50-140	26-FEB-20
1,2-Dibromoethane			88.6		%		50-140	26-FEB-20
1,2-Dichlorobenzene			94.3		%		50-140	26-FEB-20
1,2-Dichloroethane			77.9		%		50-140	26-FEB-20
1,2-Dichloropropane			85.9		%		50-140	26-FEB-20
1,3-Dichlorobenzene			95.4		%		50-140	26-FEB-20
1,4-Dichlorobenzene			92.4		%		50-140	26-FEB-20
Acetone			81.5		%		50-140	26-FEB-20
Benzene			92.8		%		50-140	26-FEB-20
Bromodichloromethane			88.1		%		50-140	26-FEB-20
Bromoform			83.2		%		50-140	26-FEB-20
Bromomethane			81.5		%		50-140	26-FEB-20
Carbon tetrachloride			97.8		%		50-140	26-FEB-20
Chlorobenzene			93.8		%		50-140	26-FEB-20
Chloroform			92.4		%		50-140	26-FEB-20
cis-1,2-Dichloroethylene			90.4		%		50-140	26-FEB-20
cis-1,3-Dichloropropene			69.7		%		50-140	26-FEB-20
Dibromochloromethane			92.4		%		50-140	26-FEB-20
Dichlorodifluoromethane			108.2		%		50-140	26-FEB-20
Ethylbenzene			94.4		%		50-140	26-FEB-20
n-Hexane			89.7		%		50-140	26-FEB-20
m+p-Xylenes			93.3		%		50-140	26-FEB-20
Methyl Ethyl Ketone			71.0		%		50-140	26-FEB-20
Methyl Isobutyl Ketone			66.6		%		50-140	26-FEB-20
Methylene Chloride			94.2		%		50-140	26-FEB-20
MTBE			95.7		%		50-140	26-FEB-20
o-Xylene			101.4		%		50-140	26-FEB-20
Styrene			86.7		%		50-140	26-FEB-20
Tetrachloroethylene			100.0		%		50-140	26-FEB-20
Toluene			98.1		%		50-140	26-FEB-20
trans-1,2-Dichloroethylene			85.5		%		50-140	26-FEB-20
trans-1,3-Dichloropropene			74.3		%		50-140	26-FEB-20

Quality Control Report

Workorder: L2420861 Report Date: 03-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5007306								
WG3281769-5 MS		**WG3281769-3**						
Trichloroethylene			101.7		%		50-140	26-FEB-20
Trichlorofluoromethane			101.6		%		50-140	26-FEB-20
Vinyl chloride			112.2		%		50-140	26-FEB-20
Batch R5009266								
WG3281922-4 DUP		**WG3281922-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
1,1-Dichloroethane		5.89	5.53		ug/L	6.3	30	27-FEB-20
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	27-FEB-20
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	27-FEB-20
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	27-FEB-20
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	27-FEB-20
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	27-FEB-20
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	27-FEB-20
cis-1,2-Dichloroethylene		1.82	1.69		ug/L	7.4	30	27-FEB-20
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	27-FEB-20
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	27-FEB-20
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	27-FEB-20
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	27-FEB-20
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	27-FEB-20

Quality Control Report

Workorder: L2420861 Report Date: 03-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5009266								
WG3281922-4 DUP		**WG3281922-3**						
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	27-FEB-20
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	27-FEB-20
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	27-FEB-20
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	27-FEB-20
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	27-FEB-20
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	27-FEB-20
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
WG3281922-1 LCS								
1,1,1,2-Tetrachloroethane			93.7		%		70-130	26-FEB-20
1,1,2,2-Tetrachloroethane			98.8		%		70-130	26-FEB-20
1,1,1-Trichloroethane			92.8		%		70-130	26-FEB-20
1,1,2-Trichloroethane			91.7		%		70-130	26-FEB-20
1,1-Dichloroethane			92.0		%		70-130	26-FEB-20
1,1-Dichloroethylene			88.3		%		70-130	26-FEB-20
1,2-Dibromoethane			95.0		%		70-130	26-FEB-20
1,2-Dichlorobenzene			95.4		%		70-130	26-FEB-20
1,2-Dichloroethane			97.3		%		70-130	26-FEB-20
1,2-Dichloropropane			95.2		%		70-130	26-FEB-20
1,3-Dichlorobenzene			95.4		%		70-130	26-FEB-20
1,4-Dichlorobenzene			96.1		%		70-130	26-FEB-20
Acetone			113.7		%		60-140	26-FEB-20
Benzene			90.5		%		70-130	26-FEB-20
Bromodichloromethane			98.4		%		70-130	26-FEB-20
Bromoform			93.2		%		70-130	26-FEB-20
Bromomethane			84.8		%		60-140	26-FEB-20
Carbon tetrachloride			94.5		%		70-130	26-FEB-20
Chlorobenzene			90.0		%		70-130	26-FEB-20
Chloroform			96.5		%		70-130	26-FEB-20

Quality Control Report

Workorder: L2420861 Report Date: 03-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5009266								
WG3281922-1 LCS								
cis-1,2-Dichloroethylene			93.0		%		70-130	26-FEB-20
cis-1,3-Dichloropropene			88.4		%		70-130	26-FEB-20
Dibromochloromethane			88.6		%		70-130	26-FEB-20
Dichlorodifluoromethane			103.9		%		50-140	26-FEB-20
Ethylbenzene			89.8		%		70-130	26-FEB-20
n-Hexane			86.1		%		70-130	26-FEB-20
m+p-Xylenes			91.3		%		70-130	26-FEB-20
Methyl Ethyl Ketone			96.5		%		60-140	26-FEB-20
Methyl Isobutyl Ketone			103.0		%		60-140	26-FEB-20
Methylene Chloride			98.2		%		70-130	26-FEB-20
MTBE			94.7		%		70-130	26-FEB-20
o-Xylene			97.1		%		70-130	26-FEB-20
Styrene			89.5		%		70-130	26-FEB-20
Tetrachloroethylene			90.9		%		70-130	26-FEB-20
Toluene			92.5		%		70-130	26-FEB-20
trans-1,2-Dichloroethylene			90.1		%		70-130	26-FEB-20
trans-1,3-Dichloropropene			91.6		%		70-130	26-FEB-20
Trichloroethylene			91.6		%		70-130	26-FEB-20
Trichlorofluoromethane			93.4		%		60-140	26-FEB-20
Vinyl chloride			113.5		%		60-140	26-FEB-20
WG3281922-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	27-FEB-20
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	27-FEB-20
1,1,1-Trichloroethane			<0.50		ug/L		0.5	27-FEB-20
1,1,2-Trichloroethane			<0.50		ug/L		0.5	27-FEB-20
1,1-Dichloroethane			<0.50		ug/L		0.5	27-FEB-20
1,1-Dichloroethylene			<0.50		ug/L		0.5	27-FEB-20
1,2-Dibromoethane			<0.20		ug/L		0.2	27-FEB-20
1,2-Dichlorobenzene			<0.50		ug/L		0.5	27-FEB-20
1,2-Dichloroethane			<0.50		ug/L		0.5	27-FEB-20
1,2-Dichloropropane			<0.50		ug/L		0.5	27-FEB-20
1,3-Dichlorobenzene			<0.50		ug/L		0.5	27-FEB-20
1,4-Dichlorobenzene			<0.50		ug/L		0.5	27-FEB-20
Acetone			<30		ug/L		30	27-FEB-20

Quality Control Report

Workorder: L2420861 Report Date: 03-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5009266								
WG3281922-2 MB								
Benzene			<0.50		ug/L		0.5	27-FEB-20
Bromodichloromethane			<2.0		ug/L		2	27-FEB-20
Bromoform			<5.0		ug/L		5	27-FEB-20
Bromomethane			<0.50		ug/L		0.5	27-FEB-20
Carbon tetrachloride			<0.20		ug/L		0.2	27-FEB-20
Chlorobenzene			<0.50		ug/L		0.5	27-FEB-20
Chloroform			<1.0		ug/L		1	27-FEB-20
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	27-FEB-20
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	27-FEB-20
Dibromochloromethane			<2.0		ug/L		2	27-FEB-20
Dichlorodifluoromethane			<2.0		ug/L		2	27-FEB-20
Ethylbenzene			<0.50		ug/L		0.5	27-FEB-20
n-Hexane			<0.50		ug/L		0.5	27-FEB-20
m+p-Xylenes			<0.40		ug/L		0.4	27-FEB-20
Methyl Ethyl Ketone			<20		ug/L		20	27-FEB-20
Methyl Isobutyl Ketone			<20		ug/L		20	27-FEB-20
Methylene Chloride			<5.0		ug/L		5	27-FEB-20
MTBE			<2.0		ug/L		2	27-FEB-20
o-Xylene			<0.30		ug/L		0.3	27-FEB-20
Styrene			<0.50		ug/L		0.5	27-FEB-20
Tetrachloroethylene			<0.50		ug/L		0.5	27-FEB-20
Toluene			<0.50		ug/L		0.5	27-FEB-20
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	27-FEB-20
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	27-FEB-20
Trichloroethylene			<0.50		ug/L		0.5	27-FEB-20
Trichlorofluoromethane			<5.0		ug/L		5	27-FEB-20
Vinyl chloride			<0.50		ug/L		0.5	27-FEB-20
Surrogate: 1,4-Difluorobenzene			100.3		%		70-130	27-FEB-20
Surrogate: 4-Bromofluorobenzene			99.5		%		70-130	27-FEB-20
WG3281922-5 MS		**WG3281922-3**						
1,1,1,2-Tetrachloroethane			94.7		%		50-140	27-FEB-20
1,1,2,2-Tetrachloroethane			91.5		%		50-140	27-FEB-20
1,1,1-Trichloroethane			96.1		%		50-140	27-FEB-20
1,1,2-Trichloroethane			87.4		%		50-140	27-FEB-20

Quality Control Report

Workorder: L2420861 Report Date: 03-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5009266								
WG3281922-5 MS		**WG3281922-3**						
1,1-Dichloroethane			91.8		%		50-140	27-FEB-20
1,1-Dichloroethylene			90.1		%		50-140	27-FEB-20
1,2-Dibromoethane			88.6		%		50-140	27-FEB-20
1,2-Dichlorobenzene			95.2		%		50-140	27-FEB-20
1,2-Dichloroethane			91.3		%		50-140	27-FEB-20
1,2-Dichloropropane			93.1		%		50-140	27-FEB-20
1,3-Dichlorobenzene			96.8		%		50-140	27-FEB-20
1,4-Dichlorobenzene			96.5		%		50-140	27-FEB-20
Acetone			97.9		%		50-140	27-FEB-20
Benzene			89.9		%		50-140	27-FEB-20
Bromodichloromethane			95.9		%		50-140	27-FEB-20
Bromoform			87.2		%		50-140	27-FEB-20
Bromomethane			80.9		%		50-140	27-FEB-20
Carbon tetrachloride			98.2		%		50-140	27-FEB-20
Chlorobenzene			90.4		%		50-140	27-FEB-20
Chloroform			96.4		%		50-140	27-FEB-20
cis-1,2-Dichloroethylene			91.9		%		50-140	27-FEB-20
cis-1,3-Dichloropropene			80.8		%		50-140	27-FEB-20
Dibromochloromethane			85.9		%		50-140	27-FEB-20
Dichlorodifluoromethane			100.6		%		50-140	27-FEB-20
Ethylbenzene			92.9		%		50-140	27-FEB-20
n-Hexane			88.1		%		50-140	27-FEB-20
m+p-Xylenes			93.9		%		50-140	27-FEB-20
Methyl Ethyl Ketone			78.5		%		50-140	27-FEB-20
Methyl Isobutyl Ketone			88.7		%		50-140	27-FEB-20
Methylene Chloride			95.1		%		50-140	27-FEB-20
MTBE			94.3		%		50-140	27-FEB-20
o-Xylene			99.7		%		50-140	27-FEB-20
Styrene			88.6		%		50-140	27-FEB-20
Tetrachloroethylene			93.9		%		50-140	27-FEB-20
Toluene			94.9		%		50-140	27-FEB-20
trans-1,2-Dichloroethylene			89.7		%		50-140	27-FEB-20
trans-1,3-Dichloropropene			84.3		%		50-140	27-FEB-20

Quality Control Report

Workorder: L2420861 Report Date: 03-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5009266								
WG3281922-5 MS		**WG3281922-3**						
Trichloroethylene			92.8		%		50-140	27-FEB-20
Trichlorofluoromethane			95.0		%		50-140	27-FEB-20
Vinyl chloride			111.1		%		50-140	27-FEB-20
Batch R5009329								
WG3278555-4 DUP		**WG3278555-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	27-FEB-20
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	27-FEB-20
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	27-FEB-20
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	27-FEB-20
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	27-FEB-20
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	27-FEB-20
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	27-FEB-20
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	27-FEB-20
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	27-FEB-20
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	27-FEB-20
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	27-FEB-20

Quality Control Report

Workorder: L2420861 Report Date: 03-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5009329								
WG3278555-4 DUP		**WG3278555-3**						
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	27-FEB-20
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	27-FEB-20
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	27-FEB-20
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	27-FEB-20
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	27-FEB-20
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	27-FEB-20
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	27-FEB-20
WG3278555-1 LCS								
1,1,1,2-Tetrachloroethane			92.0		%		70-130	27-FEB-20
1,1,2,2-Tetrachloroethane			84.0		%		70-130	27-FEB-20
1,1,1-Trichloroethane			97.6		%		70-130	27-FEB-20
1,1,2-Trichloroethane			96.2		%		70-130	27-FEB-20
1,1-Dichloroethane			87.0		%		70-130	27-FEB-20
1,1-Dichloroethylene			89.2		%		70-130	27-FEB-20
1,2-Dibromoethane			93.8		%		70-130	27-FEB-20
1,2-Dichlorobenzene			95.4		%		70-130	27-FEB-20
1,2-Dichloroethane			81.7		%		70-130	27-FEB-20
1,2-Dichloropropane			87.2		%		70-130	27-FEB-20
1,3-Dichlorobenzene			95.8		%		70-130	27-FEB-20
1,4-Dichlorobenzene			94.9		%		70-130	27-FEB-20
Acetone			86.3		%		60-140	27-FEB-20
Benzene			92.9		%		70-130	27-FEB-20
Bromodichloromethane			88.5		%		70-130	27-FEB-20
Bromoform			85.7		%		70-130	27-FEB-20
Bromomethane			89.6		%		60-140	27-FEB-20
Carbon tetrachloride			94.4		%		70-130	27-FEB-20
Chlorobenzene			93.4		%		70-130	27-FEB-20
Chloroform			91.9		%		70-130	27-FEB-20

Quality Control Report

Workorder: L2420861 Report Date: 03-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5009329								
WG3278555-1 LCS								
cis-1,2-Dichloroethylene			92.0		%		70-130	27-FEB-20
cis-1,3-Dichloropropene			79.5		%		70-130	27-FEB-20
Dibromochloromethane			93.3		%		70-130	27-FEB-20
Dichlorodifluoromethane			114.8		%		50-140	27-FEB-20
Ethylbenzene			90.7		%		70-130	27-FEB-20
n-Hexane			89.3		%		70-130	27-FEB-20
m+p-Xylenes			90.6		%		70-130	27-FEB-20
Methyl Ethyl Ketone			96.8		%		60-140	27-FEB-20
Methyl Isobutyl Ketone			74.7		%		60-140	27-FEB-20
Methylene Chloride			98.1		%		70-130	27-FEB-20
MTBE			96.0		%		70-130	27-FEB-20
o-Xylene			98.0		%		70-130	27-FEB-20
Styrene			86.3		%		70-130	27-FEB-20
Tetrachloroethylene			97.3		%		70-130	27-FEB-20
Toluene			95.4		%		70-130	27-FEB-20
trans-1,2-Dichloroethylene			86.9		%		70-130	27-FEB-20
trans-1,3-Dichloropropene			86.4		%		70-130	27-FEB-20
Trichloroethylene			101.7		%		70-130	27-FEB-20
Trichlorofluoromethane			101.4		%		60-140	27-FEB-20
Vinyl chloride			117.4		%		60-140	27-FEB-20
WG3278555-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	27-FEB-20
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	27-FEB-20
1,1,1-Trichloroethane			<0.50		ug/L		0.5	27-FEB-20
1,1,2-Trichloroethane			<0.50		ug/L		0.5	27-FEB-20
1,1-Dichloroethane			<0.50		ug/L		0.5	27-FEB-20
1,1-Dichloroethylene			<0.50		ug/L		0.5	27-FEB-20
1,2-Dibromoethane			<0.20		ug/L		0.2	27-FEB-20
1,2-Dichlorobenzene			<0.50		ug/L		0.5	27-FEB-20
1,2-Dichloroethane			<0.50		ug/L		0.5	27-FEB-20
1,2-Dichloropropane			<0.50		ug/L		0.5	27-FEB-20
1,3-Dichlorobenzene			<0.50		ug/L		0.5	27-FEB-20
1,4-Dichlorobenzene			<0.50		ug/L		0.5	27-FEB-20
Acetone			<30		ug/L		30	27-FEB-20

Quality Control Report

Workorder: L2420861 Report Date: 03-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5009329								
WG3278555-2 MB								
Benzene			<0.50		ug/L		0.5	27-FEB-20
Bromodichloromethane			<2.0		ug/L		2	27-FEB-20
Bromoform			<5.0		ug/L		5	27-FEB-20
Bromomethane			<0.50		ug/L		0.5	27-FEB-20
Carbon tetrachloride			<0.20		ug/L		0.2	27-FEB-20
Chlorobenzene			<0.50		ug/L		0.5	27-FEB-20
Chloroform			<1.0		ug/L		1	27-FEB-20
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	27-FEB-20
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	27-FEB-20
Dibromochloromethane			<2.0		ug/L		2	27-FEB-20
Dichlorodifluoromethane			<2.0		ug/L		2	27-FEB-20
Ethylbenzene			<0.50		ug/L		0.5	27-FEB-20
n-Hexane			<0.50		ug/L		0.5	27-FEB-20
m+p-Xylenes			<0.40		ug/L		0.4	27-FEB-20
Methyl Ethyl Ketone			<20		ug/L		20	27-FEB-20
Methyl Isobutyl Ketone			<20		ug/L		20	27-FEB-20
Methylene Chloride			<5.0		ug/L		5	27-FEB-20
MTBE			<2.0		ug/L		2	27-FEB-20
o-Xylene			<0.30		ug/L		0.3	27-FEB-20
Styrene			<0.50		ug/L		0.5	27-FEB-20
Tetrachloroethylene			<0.50		ug/L		0.5	27-FEB-20
Toluene			<0.50		ug/L		0.5	27-FEB-20
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	27-FEB-20
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	27-FEB-20
Trichloroethylene			<0.50		ug/L		0.5	27-FEB-20
Trichlorofluoromethane			<5.0		ug/L		5	27-FEB-20
Vinyl chloride			<0.50		ug/L		0.5	27-FEB-20
Surrogate: 1,4-Difluorobenzene			101.8		%		70-130	27-FEB-20
Surrogate: 4-Bromofluorobenzene			97.1		%		70-130	27-FEB-20
WG3278555-5 MS		**WG3278555-3**						
1,1,1,2-Tetrachloroethane			92.3		%		50-140	27-FEB-20
1,1,2,2-Tetrachloroethane			93.4		%		50-140	27-FEB-20
1,1,1-Trichloroethane			93.7		%		50-140	27-FEB-20
1,1,2-Trichloroethane			103.1		%		50-140	27-FEB-20

Quality Control Report

Workorder: L2420861 Report Date: 03-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5009329								
WG3278555-5 MS		**WG3278555-3**						
1,1-Dichloroethane			86.4		%		50-140	27-FEB-20
1,1-Dichloroethylene			83.3		%		50-140	27-FEB-20
1,2-Dibromoethane			102.7		%		50-140	27-FEB-20
1,2-Dichlorobenzene			95.3		%		50-140	27-FEB-20
1,2-Dichloroethane			89.4		%		50-140	27-FEB-20
1,2-Dichloropropane			90.7		%		50-140	27-FEB-20
1,3-Dichlorobenzene			93.7		%		50-140	27-FEB-20
1,4-Dichlorobenzene			93.1		%		50-140	27-FEB-20
Acetone			96.5		%		50-140	27-FEB-20
Benzene			93.4		%		50-140	27-FEB-20
Bromodichloromethane			93.2		%		50-140	27-FEB-20
Bromoform			94.2		%		50-140	27-FEB-20
Bromomethane			85.4		%		50-140	27-FEB-20
Carbon tetrachloride			90.0		%		50-140	27-FEB-20
Chlorobenzene			93.4		%		50-140	27-FEB-20
Chloroform			93.5		%		50-140	27-FEB-20
cis-1,2-Dichloroethylene			94.0		%		50-140	27-FEB-20
cis-1,3-Dichloropropene			85.0		%		50-140	27-FEB-20
Dibromochloromethane			98.6		%		50-140	27-FEB-20
Dichlorodifluoromethane			88.5		%		50-140	27-FEB-20
Ethylbenzene			86.9		%		50-140	27-FEB-20
n-Hexane			81.0		%		50-140	27-FEB-20
m+p-Xylenes			87.1		%		50-140	27-FEB-20
Methyl Ethyl Ketone			103.5		%		50-140	27-FEB-20
Methyl Isobutyl Ketone			89.1		%		50-140	27-FEB-20
Methylene Chloride			101.3		%		50-140	27-FEB-20
MTBE			95.8		%		50-140	27-FEB-20
o-Xylene			95.3		%		50-140	27-FEB-20
Styrene			86.5		%		50-140	27-FEB-20
Tetrachloroethylene			92.6		%		50-140	27-FEB-20
Toluene			92.2		%		50-140	27-FEB-20
trans-1,2-Dichloroethylene			85.5		%		50-140	27-FEB-20
trans-1,3-Dichloropropene			91.4		%		50-140	27-FEB-20

Quality Control Report

Workorder: L2420861 Report Date: 03-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5009329								
WG3278555-5 MS		**WG3278555-3**						
Trichloroethylene			100.8		%		50-140	27-FEB-20
Trichlorofluoromethane			91.6		%		50-140	27-FEB-20
Vinyl chloride			104.9		%		50-140	27-FEB-20

Quality Control Report

Workorder: L2420861 Report Date: 03-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9
Contact: Michael Shiry

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.
RRQC	Refer to report remarks for information regarding this QC result.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

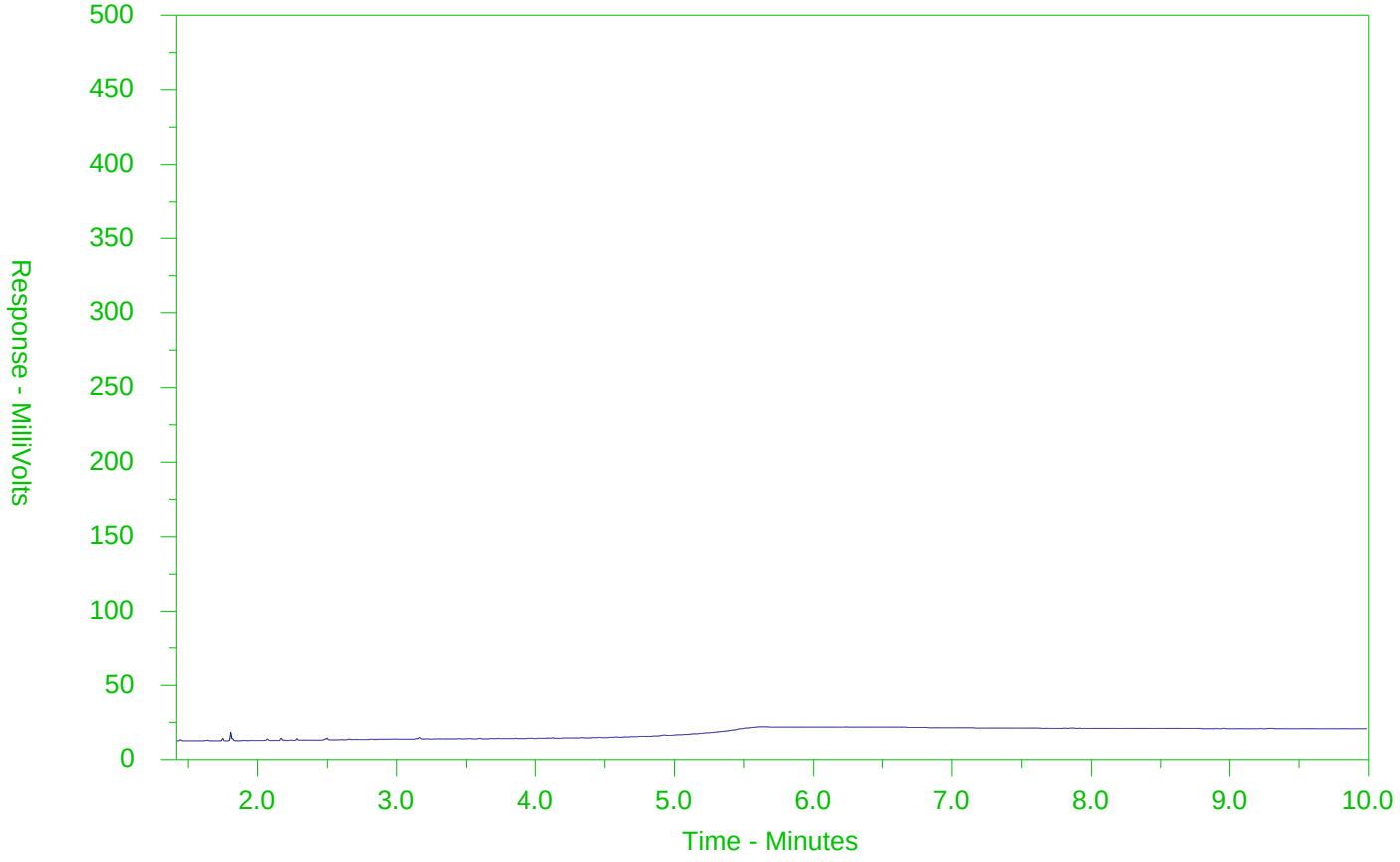
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2420861-1
Client Sample ID: MW18-115S



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

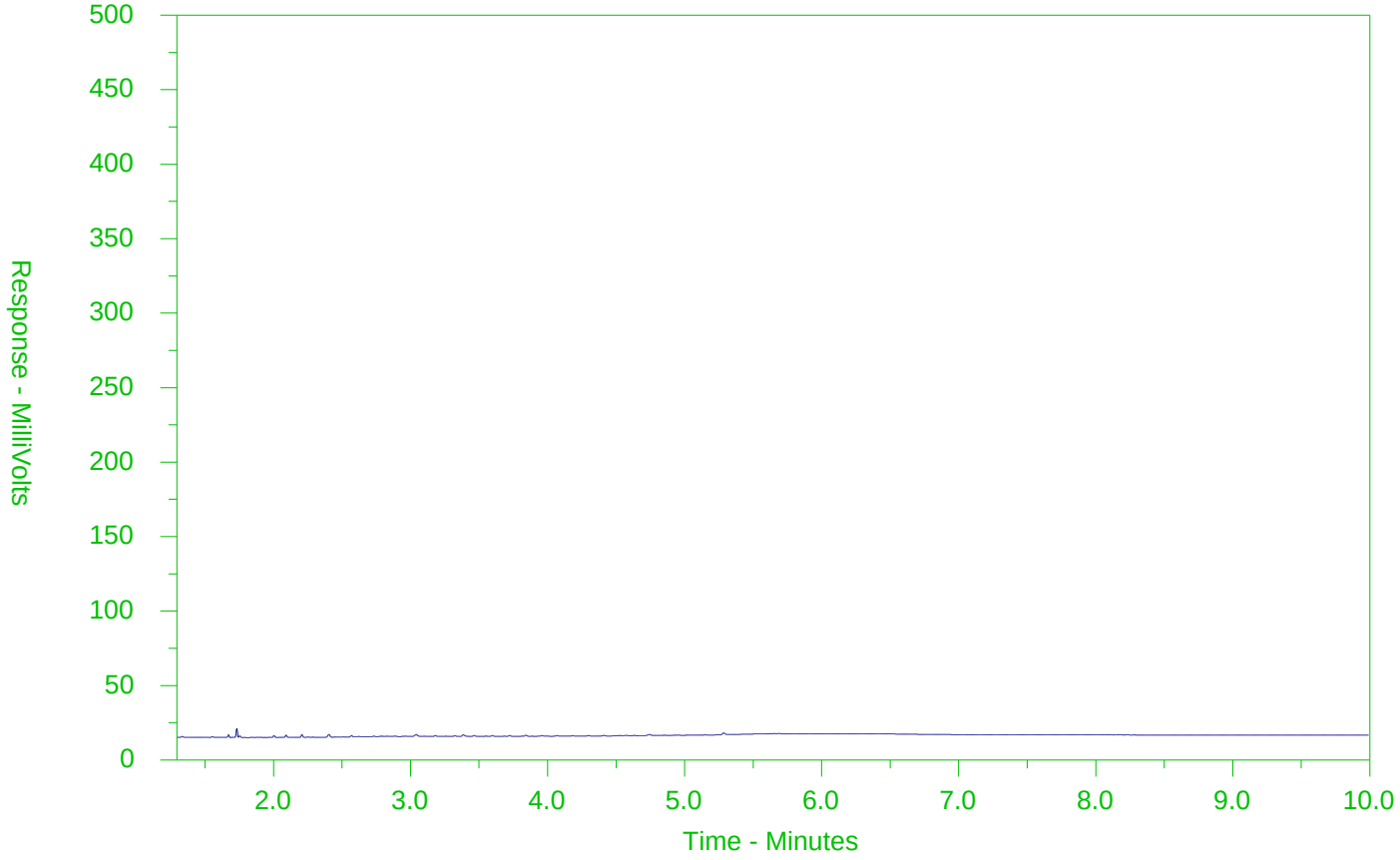
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2420861-11
Client Sample ID: MW18-117S



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

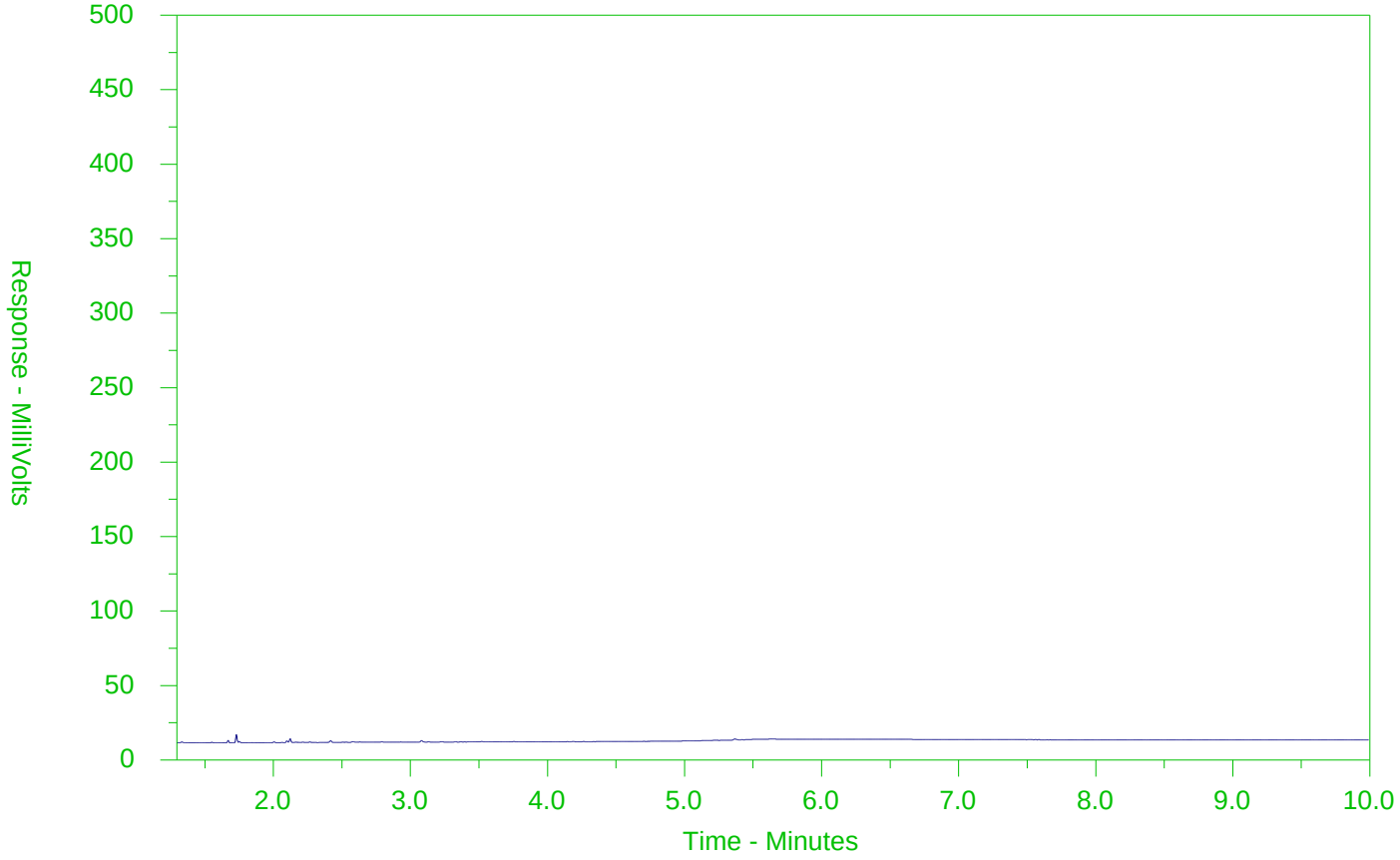
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2420861-15
Client Sample ID: DUP2



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

ALS Environmental

www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2420861-COFC

COC Number: 17 - 795244

Report To	Contact and company name below will appear on the final report
Company:	Jacobs
Contact:	Michael Shiny
Phone:	519-579-3500
Company address below will appear on the final report	
Street:	72 Victoria St. S. Suite 300
City/Province:	Kitchener, ON
Postal Code:	N2G 4Y9
Invoice To	Same as Report To [X] YES [ ] NO
	Copy of Invoice with Report [X] YES [ ] NO
Company:	Jacobs
Contact:	Accounts Payable

Report Format / Distribution

Select Report Format: [X] PDF [X] EXCEL [X] EDD (DIGITAL)

Quality Control (QC) Report with Report [X] YES [ ] NO

[ ] Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX

Email 1 or Fax michael.shiny@jacobs.com

Email 2 ed.taves@jacobs.com

Email 3 tania.mccarthy@jacobs.com

Invoice Distribution

Select Invoice Distribution: [ ] EMAIL [ ] MAIL [ ] FAX

Email 1 or Fax

Email 2

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] [X] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
4 day [P4-20%]	[ ]	1 Business day [E - 100%]	[ ]
3 day [P3-25%]	[ ]	Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)]	[ ]
2 day [P2-50%]	[ ]		

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q78833

Job #: 694757CH

PO / AFE:

LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#

Major/Minor Code: Routing Code:

Requisitioner:

Location:

ALS Lab Work Order # (lab use only): L2420861

ALS Contact: E. Hansen Sampler: V. Peters & A. Casey

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	VOCs (P)	PAHs (P)	DRCs (P)	SVOCs	PAH(B(a)P filter)	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	MW18-115S	24-02-20	9:55	water	6	X	X	X				
	MW18-115D		11:20			X						
	MW18-115S		9:55		2					H	Yes	
	MW18-124S		12:15		2	X						
	MW17-106S		14:00		3	X			X			
	MW17-106D		14:50		2	X						
	MW17-100S		15:40		2	X						
	MW18-113D		15:20		2	X						
	MW18-113S		14:25		2	X						
	MW18-114S		10:25		2	X						
	MW18-117S		12:25		4	X		X				
	MW18-114D	24-02-20	11:25	water	2	X						

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] YES [X] NO

Are samples for human consumption/ use? [ ] YES [X] NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

O. Reg. 153/04 Table 1
B(a)P Filter on HOLD

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] SIF Observations Yes [ ] No [ ]

Ice Packs [✓] Ice Cubes [✓] Custody seal intact Yes [ ] No [ ]

Cooling Initiated [ ]

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
			10.4		

SHIPMENT RELEASE (client use)

Released by: V. Peters Date: 2020/02/25 Time: 16:50

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by: MA Date: Feb 25/20 Time: 16:50

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2017 FRONT

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

ALS Environmental

www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2420861-COFC

COC Number: 17 - 795254

Report To — Contact and company name below will appear on the final report

Company:	Jacobs
Contact:	Michael Shiny
Phone:	519-579-3500
Company address below will appear on the final report	
Street:	72 Victoria St. S. Suite 300
City/Province:	Kitchener, ON
Postal Code:	N2G 4Y9
Invoice To	Same as Report To [X] YES [ ] NO
	Copy of Invoice with Report [X] YES [ ] NO
Company:	Jacobs
Contact:	Accounts Payable

Report Format / Distribution

Select Report Format: [X] PDF [X] EXCEL [X] EDD (DIGITAL)

Quality Control (QC) Report with Report [X] YES [ ] NO

[ ] Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX

Email 1 or Fax: michael.shiny@jacobs.com

Email 2: ed.taves@jacobs.com

Email 3: tania.mccarthy@jacobs.com

Invoice Distribution

Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX

Email 1 or Fax

Email 2

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] [X] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
4 day [P4-20%]	[ ]	1 Business day [E - 100%]	[ ]
3 day [P3-25%]	[ ]	Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)]	[ ]
2 day [P2-50%]	[ ]		

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #:	Q78833
Job #:	6947STCH
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Lab Work Order # (lab use only): L2420861 801

ALS Contact: E. Hansen

Sampler: V. Peters; A. Casey

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	VOCs (P)	PAHs (P)	PHCs (P)	SVOCs	PAH (B/a)P filter	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	MW18-118S	24-02-20	16:30	water	2	X						
	DUP1	24-02-20	—	water	3	X			X			
	DUP2	24-02-20	—	water	6	X	X	X				
	MW18-112S	25-02-20	9:00		2	X						
	MW18-112G		9:35		2	X						
	MW18-112D		10:25		2	X						
	OW16		11:15		2	X						
	OW15		12:10		2	X						
	MW18-119S		14:05		2	X						
	MW18-119D		15:15		2	X						
	OW11-I		9:15		2	X						
	OW11-II	25-02-20	10:20	water	2	X						

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] YES [X] NO

Are samples for human consumption/ use? [ ] YES [X] NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

O. Reg 153/04 Table 1

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	[ ]	SIF Observations	Yes [ ]	No [ ]	
Ice Packs	[✓]	Ice Cubes	[✓]	Custody seal intact	Yes [ ] No [ ]
Cooling Initiated	[ ]				

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				10.4			

SHIPMENT RELEASE (client use)

Released by: Vicki Peters Date: 2020/02/25 Time: 16:50

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by: MA Date: Feb 25/20 Time: 16:50

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2018 FRONT

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

ALS Environmental

www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2420861-COFC

COC Number: 17 - 795253

Report To	Contact and company name below will appear on the final report
Company:	Jacobs
Contact:	Michael Shiny
Phone:	519-579-3500
	Company address below will appear on the final report
Street:	72 Victoria St S. Suite 300
City/Province:	Kitchener, ON
Postal Code:	N2G 4Y9
Invoice To	Same as Report To [X] YES [ ] NO
	Copy of Invoice with Report [X] YES [ ] NO
Company:	Jacobs
Contact:	Accounts Payable

Report Format / Distribution

Select Report Format: [X] PDF [X] EXCEL [X] EDD (DIGITAL)

Quality Control (QC) Report with Report [X] YES [ ] NO

[ ] Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX

Email 1 or Fax michael.shiny@jacobs.com

Email 2 ed.faves@jacobs.com

Email 3 tania.mccarthy@jacobs.com

Invoice Distribution

Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX

Email 1 or Fax

Email 2

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] [X] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] [ ]; 3 day [P3-25%] [ ]; 2 day [P2-50%] [ ]

EMERGENCY: 1 Business day [E - 100%] [ ]; Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] [ ]

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q78833

Job #: 6947570H

PO / AFE:

LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#

Major/Minor Code: Routing Code:

Requisitioner:

Location:

ALS Lab Work Order # (lab use only): L2420861

ALS Contact: E. Harsen

Sampler: V. Peters / A. Lasey

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	VOCs (P)	PAHs (P)	PHCs (P)	SVOCs	PAH (Bio) P filter	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	MW18-122G	25-02-20	11:15	water	2	X						
	MW18-122D		12:05		2	X						
	OW12m		14:15		2	X						
	MW18-120D		15:00		2	X						
	DUP3	25-02-20	—	water	2	X						
	TB001	—	—	QC	2	X						
	MW17-111S	25-02-20	15:50	water	2	X						

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] YES [X] NO

Are samples for human consumption/ use? [ ] YES [X] NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

O. Reg. 153/04 Table 1

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] SIF Observations Yes [ ] No [ ]

Ice Packs [✓] Ice Cubes [✓] Custody seal intact Yes [ ] No [ ]

Cooling Initiated [ ]

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				16.4			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: V. Peters	Date: 2020/02/25	Time: 16:50	Received by:	Date:	Time:	Received by:	Date: Feb 25/20	Time: 16:50

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2018 FRONT

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

CH2M HILL CANADA LIMITED
ATTN: Michael Shiry
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 28-FEB-20
Report Date: 04-MAR-20 13:28 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2422349

Project P.O. #:	NOT SUBMITTED
Job Reference:	694757CH
C of C Numbers:	17-795245, 17-795246, 17-795247, 17-795248
Legal Site Desc:	

Emily Hansen
Account Manager

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ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-1	MW18-121S									
Sampled By:	VP/ AC on 26-FEB-20 @ 09:20									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	0.81		0.50	ug/L	02-MAR-20	*0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	02-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	96.7		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	102.0		70-130	%	02-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-2	MW18-121D									
Sampled By:	VP/ AC on 26-FEB-20 @ 10:10									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	1.16		0.50	ug/L	02-MAR-20	*0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	2.09		0.50	ug/L	02-MAR-20	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	03-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	0.63		0.50	ug/L	03-MAR-20	*0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	03-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	96.6		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	101.3		70-130	%	02-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-3	MW17-107S									
Sampled By:	VP/ AC on 26-FEB-20 @ 11:05									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	13.4		0.50	ug/L	02-MAR-20	*0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	0.62		0.50	ug/L	02-MAR-20	*0.5			
	cis-1,2-Dichloroethylene	1.78		0.50	ug/L	02-MAR-20	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	8.34		0.50	ug/L	02-MAR-20	*0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	1.43		0.50	ug/L	02-MAR-20	*0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	02-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	97.6		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	101.5		70-130	%	02-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-4	MW18-107D									
Sampled By:	VP/ AC on 26-FEB-20 @ 11:50									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	0.82		0.50	ug/L	02-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	02-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	97.2		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	102.3		70-130	%	02-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-5	MW18-116S									
Sampled By:	VP/ AC on 26-FEB-20 @ 14:00									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	0.72		0.50	ug/L	02-MAR-20	*0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	02-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	97.7		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	101.6		70-130	%	02-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-6	MW18-116D									
Sampled By:	VP/ AC on 26-FEB-20 @ 14:55									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	0.79		0.50	ug/L	02-MAR-20	*0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	0.98		0.50	ug/L	02-MAR-20	*0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	0.57		0.50	ug/L	02-MAR-20	*0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	02-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	96.3		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	101.7		70-130	%	02-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-7	MW17-102D									
Sampled By:	VP/ AC on 26-FEB-20 @ 16:00									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	1.30		0.50	ug/L	02-MAR-20	*0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	1.47		0.50	ug/L	02-MAR-20	*0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	5.40		0.50	ug/L	02-MAR-20	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	02-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	97.5		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	101.3		70-130	%	02-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-8	MW18-123D									
Sampled By:	VP/ AC on 26-FEB-20 @ 16:55									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	0.77		0.50	ug/L	02-MAR-20	*0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	2.05		0.50	ug/L	02-MAR-20	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	02-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	96.4		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	101.4		70-130	%	02-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-9	OW22D									
Sampled By:	VP/ AC on 26-FEB-20 @ 13:10									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	0.86		0.50	ug/L	02-MAR-20	*0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	02-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	97.1		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.6		70-130	%	02-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-10	OW22S									
Sampled By:	VP/ AC on 26-FEB-20 @ 14:00									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	02-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	95.6		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	101.1		70-130	%	02-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-11	MW18-123S									
Sampled By:	VP/ AC on 26-FEB-20 @ 17:00									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	03-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	03-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	1.19		0.50	ug/L	02-MAR-20	*0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	02-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	03-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	96.1		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	101.5		70-130	%	02-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-12	OW26D									
Sampled By:	VP/ AC on 26-FEB-20 @ 16:05									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	03-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	03-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	03-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	03-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	03-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	03-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	03-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	03-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	03-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	03-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	03-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	03-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	03-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	03-MAR-20	590			
	1,1-Dichloroethane	0.61		0.50	ug/L	03-MAR-20	*0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	03-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	03-MAR-20	0.5			
	cis-1,2-Dichloroethylene	1.16		0.50	ug/L	03-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	03-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	03-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	03-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	03-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	03-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	03-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	03-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	03-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	03-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	03-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	03-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	03-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	03-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	03-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	03-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	03-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	03-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	03-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	03-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	03-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	03-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	03-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	03-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	03-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	99.9		70-130	%	03-MAR-20				
	Surrogate: 1,4-Difluorobenzene	102.1		70-130	%	03-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-13	OW26S									
Sampled By:	VP/ AC on 26-FEB-20 @ 15:15									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	3.92		0.50	ug/L	02-MAR-20	*0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	0.65		0.50	ug/L	02-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	1.75		0.50	ug/L	02-MAR-20	*0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	02-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	96.3		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	101.5		70-130	%	02-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-14	DUP4									
Sampled By:	VP/ AC on 26-FEB-20									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	1.33		0.50	ug/L	02-MAR-20	*0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	2.12		0.50	ug/L	02-MAR-20	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	03-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	0.62		0.50	ug/L	03-MAR-20	*0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	03-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	97.0		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	101.3		70-130	%	02-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-15	MW18-136D									
Sampled By:	VP/ AC on 27-FEB-20 @ 09:55									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	0.86		0.50	ug/L	02-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	03-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	0.64		0.50	ug/L	03-MAR-20	*0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	03-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	96.4		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	101.6		70-130	%	02-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-16	MW18-136G									
Sampled By:	VP/ AC on 27-FEB-20 @ 10:30									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	0.69		0.50	ug/L	02-MAR-20	*0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	2.46		0.50	ug/L	02-MAR-20	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	02-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	96.6		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	101.0		70-130	%	02-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-17	MW18-134S									
Sampled By:	VP/ AC on 27-FEB-20 @ 11:45									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	02-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	95.6		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	101.2		70-130	%	02-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-18	MW18-134D									
Sampled By:	VP/ AC on 27-FEB-20 @ 12:25									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	6.34		0.50	ug/L	02-MAR-20	*0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	1.09		0.50	ug/L	02-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	03-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	0.89		0.50	ug/L	03-MAR-20	*0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	03-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	95.2		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.3		70-130	%	02-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-19	MW19-137S									
Sampled By:	VP/ AC on 27-FEB-20 @ 14:40									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	8.22		0.50	ug/L	02-MAR-20	*0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	02-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	95.6		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.4		70-130	%	02-MAR-20				
Hydrocarbons										
	F1 (C6-C10)	<25		25	ug/L	02-MAR-20	420			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-19	MW19-137S									
Sampled By:	VP/ AC on 27-FEB-20 @ 14:40									
Matrix:	WATER						#1			
Hydrocarbons										
	F1-BTEX	<25		25	ug/L	03-MAR-20	420			
	F2 (C10-C16)	<100		100	ug/L	02-MAR-20	150			
	F3 (C16-C34)	<250		250	ug/L	02-MAR-20	500			
	F4 (C34-C50)	<250		250	ug/L	02-MAR-20	500			
	Total Hydrocarbons (C6-C50)	<370		370	ug/L	03-MAR-20				
	Chrom. to baseline at nC50	YES			No Unit	02-MAR-20				
	Surrogate: 2-Bromobenzotrifluoride	100.2		60-140	%	02-MAR-20				
	Surrogate: 3,4-Dichlorotoluene	88.2		60-140	%	02-MAR-20				
L2422349-20	OW14									
Sampled By:	VP/ AC on 27-FEB-20 @ 15:35									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	11.1		0.50	ug/L	02-MAR-20	*1.6			
	trans-1,2-Dichloroethylene	0.89		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-20 OW14										
Sampled By: VP/ AC on 27-FEB-20 @ 15:35										
Matrix: WATER							#1			
Volatile Organic Compounds										
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	1.25		0.50	ug/L	02-MAR-20	*0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	02-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	95.4		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.4		70-130	%	02-MAR-20				
L2422349-21 OW07-34S										
Sampled By: VP/ AC on 27-FEB-20 @ 09:55										
Matrix: WATER							#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	1.07		0.50	ug/L	02-MAR-20	*0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-21	OW07-34S									
Sampled By:	VP/ AC on 27-FEB-20 @ 09:55									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	1.03		0.50	ug/L	02-MAR-20	*0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	02-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	100.3		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	102.0		70-130	%	02-MAR-20				
L2422349-22	OW07-34D									
Sampled By:	VP/ AC on 27-FEB-20 @ 10:45									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	0.57		0.50	ug/L	02-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-22 OW07-34D										
Sampled By: VP/ AC on 27-FEB-20 @ 10:45										
Matrix: WATER							#1			
Volatile Organic Compounds										
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	02-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	101.2		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	101.3		70-130	%	02-MAR-20				
L2422349-23 OW25										
Sampled By: VP/ AC on 27-FEB-20 @ 11:35										
Matrix: WATER							#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	0.63		0.50	ug/L	02-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-23	OW25									
Sampled By:	VP/ AC on 27-FEB-20 @ 11:35									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	1.40		0.50	ug/L	02-MAR-20	*0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	02-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	101.5		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	101.3		70-130	%	02-MAR-20				
L2422349-24	MW18-126D									
Sampled By:	VP/ AC on 27-FEB-20 @ 12:10									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	0.57		0.50	ug/L	02-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-24	MW18-126D									
Sampled By:	VP/ AC on 27-FEB-20 @ 12:10									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	1.55		0.50	ug/L	02-MAR-20	*0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	02-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	100.6		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	101.0		70-130	%	02-MAR-20				
L2422349-26	OW07-33									
Sampled By:	VP/ AC on 27-FEB-20 @ 14:45									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	0.94		0.50	ug/L	02-MAR-20	*0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-26 OW07-33										
Sampled By: VP/ AC on 27-FEB-20 @ 14:45										
Matrix: WATER							#1			
Volatile Organic Compounds										
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	1.18		0.50	ug/L	02-MAR-20	*0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	0.55		0.50	ug/L	02-MAR-20	*0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	02-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	100.0		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	101.3		70-130	%	02-MAR-20				
L2422349-27 MW18-125S										
Sampled By: VP/ AC on 27-FEB-20 @ 15:40										
Matrix: WATER							#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	0.77		0.50	ug/L	02-MAR-20	*0.5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-27	MW18-125S									
Sampled By:	VP/ AC on 27-FEB-20 @ 15:40									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	1.57		0.50	ug/L	02-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	0.88		0.50	ug/L	02-MAR-20	*0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	100.9		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	101.2		70-130	%	02-MAR-20				
L2422349-28	MW17-105S									
Sampled By:	VP/ AC on 28-FEB-20 @ 08:55									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	31.1		0.50	ug/L	02-MAR-20	*0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-28	MW17-105S									
Sampled By:	VP/ AC on 28-FEB-20 @ 08:55									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	3.49		0.50	ug/L	02-MAR-20	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Ethylbenzene	1.42		0.50	ug/L	02-MAR-20	*0.5			
	n-Hexane	0.57		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	0.85		0.50	ug/L	02-MAR-20	*0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	0.94		0.50	ug/L	02-MAR-20	*0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	11.0		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	11.0		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	100.6		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	99.9		70-130	%	02-MAR-20				
L2422349-29	MW17-105D									
Sampled By:	VP/ AC on 28-FEB-20 @ 09:40									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	1.80		0.50	ug/L	02-MAR-20	*0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-29	MW17-105D									
Sampled By:	VP/ AC on 28-FEB-20 @ 09:40									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	1.80		0.50	ug/L	02-MAR-20	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	1.23		0.50	ug/L	02-MAR-20	*0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	100.9		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	101.3		70-130	%	02-MAR-20				
L2422349-30	MW18-105G									
Sampled By:	VP/ AC on 28-FEB-20 @ 10:20									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-30 MW18-105G									
Sampled By: VP/ AC on 28-FEB-20 @ 10:20									
Matrix: WATER						#1			
Volatile Organic Compounds									
Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
1,1-Dichloroethane	0.78		0.50	ug/L	02-MAR-20	*0.5			
1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
cis-1,2-Dichloroethylene	2.11		0.50	ug/L	02-MAR-20	*1.6			
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
1,1,1-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
Trichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
Vinyl chloride	<0.50		0.50	ug/L	02-MAR-20	0.5			
o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
Surrogate: 4-Bromofluorobenzene	100.8		70-130	%	02-MAR-20				
Surrogate: 1,4-Difluorobenzene	101.1		70-130	%	02-MAR-20				
L2422349-31 OW13									
Sampled By: VP/ AC on 28-FEB-20 @ 09:10									
Matrix: WATER						#1			
Volatile Organic Compounds									
Acetone	<30		30	ug/L	02-MAR-20	2700			
Benzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
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T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-31 OW13										
Sampled By: VP/ AC on 28-FEB-20 @ 09:10										
Matrix: WATER							#1			
Volatile Organic Compounds										
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	2.26		0.50	ug/L	02-MAR-20	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	02-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	100.4		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.6		70-130	%	02-MAR-20				
L2422349-32 MW18-129D										
Sampled By: VP/ AC on 28-FEB-20 @ 09:45										
Matrix: WATER							#1			
Volatile Organic Compounds										

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-32	MW18-129D									
Sampled By:	VP/ AC on 28-FEB-20 @ 09:45									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	3.14		0.50	ug/L	02-MAR-20	*0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	3.67		0.50	ug/L	02-MAR-20	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	5.63		0.50	ug/L	02-MAR-20	*0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	100.3		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	101.3		70-130	%	02-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-33	OW09-I									
Sampled By:	VP/ AC on 28-FEB-20 @ 11:25									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	02-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	100.4		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	101.5		70-130	%	02-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-34	OW09-II									
Sampled By:	VP/ AC on 28-FEB-20 @ 10:45									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	2.20		0.50	ug/L	02-MAR-20	*0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	6.51		0.50	ug/L	02-MAR-20	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	6.07		0.50	ug/L	02-MAR-20	*0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	101.6		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.6		70-130	%	02-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-35	OW13-39S									
Sampled By:	VP/ AC on 28-FEB-20 @ 13:10									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	0.55		0.50	ug/L	02-MAR-20	*0.5			
	cis-1,2-Dichloroethylene	25.5		0.50	ug/L	02-MAR-20	*1.6			
	trans-1,2-Dichloroethylene	1.62		0.50	ug/L	02-MAR-20	*1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	66.8		0.50	ug/L	02-MAR-20	*0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	3.65		0.50	ug/L	02-MAR-20	*0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	100.6		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	101.2		70-130	%	02-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-36	OW13-39D									
Sampled By:	VP/ AC on 28-FEB-20 @ 13:45									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	5.02		0.50	ug/L	02-MAR-20	*0.5			
	cis-1,2-Dichloroethylene	69.9		0.50	ug/L	02-MAR-20	*1.6			
	trans-1,2-Dichloroethylene	7.83		0.50	ug/L	02-MAR-20	*1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	577		0.50	ug/L	02-MAR-20	*0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	10.5		0.50	ug/L	02-MAR-20	*0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	100.9		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.7		70-130	%	02-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-37	MW17-101S									
Sampled By:	VP/ AC on 28-FEB-20 @ 13:45									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	02-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	101.8		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.8		70-130	%	02-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-38	MW17-101D									
Sampled By:	VP/ AC on 28-FEB-20 @ 13:10									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	0.70		0.50	ug/L	02-MAR-20	*0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	1.80		0.50	ug/L	02-MAR-20	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	1.24		0.50	ug/L	02-MAR-20	*0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	99.9		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	101.1		70-130	%	02-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-39	DUP5									
Sampled By:	VP/ AC on 28-FEB-20									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	2.22		0.50	ug/L	02-MAR-20	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	02-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	100.1		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	101.4		70-130	%	02-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-40	DUP6									
Sampled By:	VP/ AC on 28-FEB-20									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	4.94		0.50	ug/L	02-MAR-20	*0.5			
	cis-1,2-Dichloroethylene	68.4		0.50	ug/L	02-MAR-20	*1.6			
	trans-1,2-Dichloroethylene	7.56		0.50	ug/L	02-MAR-20	*1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	562		0.50	ug/L	02-MAR-20	*0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	10.2		0.50	ug/L	02-MAR-20	*0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	101.2		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	101.5		70-130	%	02-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2422349-41	TB-002									
Sampled By:	VP/ AC on 28-FEB-20									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	02-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	02-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	02-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	02-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	02-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	02-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	02-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	02-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	02-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	02-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	02-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	02-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	02-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	02-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	02-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	02-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	02-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	02-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	02-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	02-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	02-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	99.6		70-130	%	02-MAR-20				
	Surrogate: 1,4-Difluorobenzene	101.8		70-130	%	02-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference***
F1-F4-511-CALC-WT	Water	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-L

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Water	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Water	F2-F4-O.Reg 153/04 (July 2011)	EPA 3511/CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from water using a hexane micro-extraction technique. Instrumental analysis is by GC-FID, as per the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Tier 1 Method, CCME, 2001.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

VOC-1,3-DCP-CALC-WT	Water	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Water	VOC by GCMS HS O.Reg 153/04 (July 2011)	SW846 8260

Liquid samples are analyzed by headspace GC/MSD.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

*** ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody numbers:

17-795245	17-795246	17-795247	17-795248

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA		

Reference Information

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Quality Control Report

Workorder: L2422349 Report Date: 04-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT	**Water**							
Batch	**R5012126**							
WG3282678-4	**DUP**	**WG3282678-3**						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	02-MAR-20
WG3282678-1	**LCS**							
F1 (C6-C10)			101.9		%		80-120	02-MAR-20
WG3282678-2	**MB**							
F1 (C6-C10)			<25		ug/L		25	02-MAR-20
Surrogate: 3,4-Dichlorotoluene			99.8		%		60-140	02-MAR-20
WG3282678-5	**MS**	**WG3282678-3**						
F1 (C6-C10)			91.1		%		60-140	02-MAR-20
F2-F4-511-WT	**Water**							
Batch	**R5012153**							
WG3284543-2	**LCS**							
F2 (C10-C16)			104.8		%		70-130	02-MAR-20
F3 (C16-C34)			104.1		%		70-130	02-MAR-20
F4 (C34-C50)			110.9		%		70-130	02-MAR-20
WG3284543-1	**MB**							
F2 (C10-C16)			<100		ug/L		100	02-MAR-20
F3 (C16-C34)			<250		ug/L		250	02-MAR-20
F4 (C34-C50)			<250		ug/L		250	02-MAR-20
Surrogate: 2-Bromobenzotrifluoride			102.4		%		60-140	02-MAR-20
VOC-511-HS-WT	**Water**							
Batch	**R5012033**							
WG3284547-6	**DUP**	**L2422349-21**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,1,1-Trichloroethane		1.03	0.92		ug/L	11	30	02-MAR-20
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,1-Dichloroethane		1.07	1.01		ug/L	5.8	30	02-MAR-20
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	02-MAR-20
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20

Quality Control Report

Workorder: L2422349 Report Date: 04-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5012033								
WG3284547-6 DUP		**L2422349-21**						
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	02-MAR-20
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	02-MAR-20
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	02-MAR-20
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	02-MAR-20
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	02-MAR-20
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	02-MAR-20
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	02-MAR-20
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	02-MAR-20
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	02-MAR-20
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	02-MAR-20
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	02-MAR-20
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	02-MAR-20
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	02-MAR-20
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	02-MAR-20
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	02-MAR-20
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	02-MAR-20
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
WG3284547-1 LCS								
1,1,1,2-Tetrachloroethane			95.1		%		70-130	02-MAR-20
1,1,2,2-Tetrachloroethane			96.1		%		70-130	02-MAR-20
1,1,1-Trichloroethane			93.6		%		70-130	02-MAR-20
1,1,2-Trichloroethane			90.3		%		70-130	02-MAR-20

Quality Control Report

Workorder: L2422349 Report Date: 04-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5012033								
WG3284547-1 LCS								
1,1-Dichloroethane			89.9		%		70-130	02-MAR-20
1,1-Dichloroethylene			87.1		%		70-130	02-MAR-20
1,2-Dibromoethane			93.4		%		70-130	02-MAR-20
1,2-Dichlorobenzene			94.9		%		70-130	02-MAR-20
1,2-Dichloroethane			95.2		%		70-130	02-MAR-20
1,2-Dichloropropane			92.7		%		70-130	02-MAR-20
1,3-Dichlorobenzene			95.8		%		70-130	02-MAR-20
1,4-Dichlorobenzene			96.9		%		70-130	02-MAR-20
Acetone			103.7		%		60-140	02-MAR-20
Benzene			88.8		%		70-130	02-MAR-20
Bromodichloromethane			97.5		%		70-130	02-MAR-20
Bromoform			92.4		%		70-130	02-MAR-20
Bromomethane			86.8		%		60-140	02-MAR-20
Carbon tetrachloride			97.3		%		70-130	02-MAR-20
Chlorobenzene			90.2		%		70-130	02-MAR-20
Chloroform			96.6		%		70-130	02-MAR-20
cis-1,2-Dichloroethylene			94.1		%		70-130	02-MAR-20
cis-1,3-Dichloropropene			92.4		%		70-130	02-MAR-20
Dibromochloromethane			89.1		%		70-130	02-MAR-20
Dichlorodifluoromethane			102.8		%		50-140	02-MAR-20
Ethylbenzene			87.6		%		70-130	02-MAR-20
n-Hexane			83.5		%		70-130	02-MAR-20
m+p-Xylenes			89.9		%		70-130	02-MAR-20
Methyl Ethyl Ketone			90.5		%		60-140	02-MAR-20
Methyl Isobutyl Ketone			94.3		%		60-140	02-MAR-20
Methylene Chloride			97.9		%		70-130	02-MAR-20
MTBE			93.2		%		70-130	02-MAR-20
o-Xylene			95.0		%		70-130	02-MAR-20
Styrene			87.4		%		70-130	02-MAR-20
Tetrachloroethylene			94.5		%		70-130	02-MAR-20
Toluene			90.7		%		70-130	02-MAR-20
trans-1,2-Dichloroethylene			89.4		%		70-130	02-MAR-20
trans-1,3-Dichloropropene			93.0		%		70-130	02-MAR-20

Quality Control Report

Workorder: L2422349 Report Date: 04-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5012033								
WG3284547-1 LCS								
Trichloroethylene			95.5		%		70-130	02-MAR-20
Trichlorofluoromethane			94.6		%		60-140	02-MAR-20
Vinyl chloride			110.6		%		60-140	02-MAR-20
WG3284547-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	02-MAR-20
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	02-MAR-20
1,1,1-Trichloroethane			<0.50		ug/L		0.5	02-MAR-20
1,1,2-Trichloroethane			<0.50		ug/L		0.5	02-MAR-20
1,1-Dichloroethane			<0.50		ug/L		0.5	02-MAR-20
1,1-Dichloroethylene			<0.50		ug/L		0.5	02-MAR-20
1,2-Dibromoethane			<0.20		ug/L		0.2	02-MAR-20
1,2-Dichlorobenzene			<0.50		ug/L		0.5	02-MAR-20
1,2-Dichloroethane			<0.50		ug/L		0.5	02-MAR-20
1,2-Dichloropropane			<0.50		ug/L		0.5	02-MAR-20
1,3-Dichlorobenzene			<0.50		ug/L		0.5	02-MAR-20
1,4-Dichlorobenzene			<0.50		ug/L		0.5	02-MAR-20
Acetone			<30		ug/L		30	02-MAR-20
Benzene			<0.50		ug/L		0.5	02-MAR-20
Bromodichloromethane			<2.0		ug/L		2	02-MAR-20
Bromoform			<5.0		ug/L		5	02-MAR-20
Bromomethane			<0.50		ug/L		0.5	02-MAR-20
Carbon tetrachloride			<0.20		ug/L		0.2	02-MAR-20
Chlorobenzene			<0.50		ug/L		0.5	02-MAR-20
Chloroform			<1.0		ug/L		1	02-MAR-20
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	02-MAR-20
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	02-MAR-20
Dibromochloromethane			<2.0		ug/L		2	02-MAR-20
Dichlorodifluoromethane			<2.0		ug/L		2	02-MAR-20
Ethylbenzene			<0.50		ug/L		0.5	02-MAR-20
n-Hexane			<0.50		ug/L		0.5	02-MAR-20
m+p-Xylenes			<0.40		ug/L		0.4	02-MAR-20
Methyl Ethyl Ketone			<20		ug/L		20	02-MAR-20
Methyl Isobutyl Ketone			<20		ug/L		20	02-MAR-20
Methylene Chloride			<5.0		ug/L		5	02-MAR-20

Quality Control Report

Workorder: L2422349 Report Date: 04-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5012033								
WG3284547-2 MB								
MTBE			<2.0		ug/L		2	02-MAR-20
o-Xylene			<0.30		ug/L		0.3	02-MAR-20
Styrene			<0.50		ug/L		0.5	02-MAR-20
Tetrachloroethylene			<0.50		ug/L		0.5	02-MAR-20
Toluene			<0.50		ug/L		0.5	02-MAR-20
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	02-MAR-20
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	02-MAR-20
Trichloroethylene			<0.50		ug/L		0.5	02-MAR-20
Trichlorofluoromethane			<5.0		ug/L		5	02-MAR-20
Vinyl chloride			<0.50		ug/L		0.5	02-MAR-20
Surrogate: 1,4-Difluorobenzene			101.7		%		70-130	02-MAR-20
Surrogate: 4-Bromofluorobenzene			100.0		%		70-130	02-MAR-20
WG3284547-5 MS		**L2422349-21**						
1,1,1,2-Tetrachloroethane			95.6		%		50-140	02-MAR-20
1,1,2,2-Tetrachloroethane			100.6		%		50-140	02-MAR-20
1,1,1-Trichloroethane			91.0		%		50-140	02-MAR-20
1,1,2-Trichloroethane			94.0		%		50-140	02-MAR-20
1,1-Dichloroethane			90.0		%		50-140	02-MAR-20
1,1-Dichloroethylene			83.1		%		50-140	02-MAR-20
1,2-Dibromoethane			99.0		%		50-140	02-MAR-20
1,2-Dichlorobenzene			95.1		%		50-140	02-MAR-20
1,2-Dichloroethane			100.6		%		50-140	02-MAR-20
1,2-Dichloropropane			95.8		%		50-140	02-MAR-20
1,3-Dichlorobenzene			94.5		%		50-140	02-MAR-20
1,4-Dichlorobenzene			95.7		%		50-140	02-MAR-20
Acetone			114.0		%		50-140	02-MAR-20
Benzene			89.3		%		50-140	02-MAR-20
Bromodichloromethane			101.1		%		50-140	02-MAR-20
Bromoform			96.6		%		50-140	02-MAR-20
Bromomethane			86.3		%		50-140	02-MAR-20
Carbon tetrachloride			93.7		%		50-140	02-MAR-20
Chlorobenzene			89.4		%		50-140	02-MAR-20
Chloroform			98.2		%		50-140	02-MAR-20
cis-1,2-Dichloroethylene			95.7		%		50-140	02-MAR-20

Quality Control Report

Workorder: L2422349 Report Date: 04-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5012033								
WG3284547-5 MS		**L2422349-21**						
cis-1,3-Dichloropropene			91.3		%		50-140	02-MAR-20
Dibromochloromethane			92.3		%		50-140	02-MAR-20
Dichlorodifluoromethane			102.1		%		50-140	02-MAR-20
Ethylbenzene			85.1		%		50-140	02-MAR-20
n-Hexane			75.9		%		50-140	02-MAR-20
m+p-Xylenes			87.2		%		50-140	02-MAR-20
Methyl Ethyl Ketone			105.0		%		50-140	02-MAR-20
Methyl Isobutyl Ketone			103.5		%		50-140	02-MAR-20
Methylene Chloride			100.6		%		50-140	02-MAR-20
MTBE			92.9		%		50-140	02-MAR-20
o-Xylene			93.2		%		50-140	02-MAR-20
Styrene			86.9		%		50-140	02-MAR-20
Tetrachloroethylene			89.7		%		50-140	02-MAR-20
Toluene			88.3		%		50-140	02-MAR-20
trans-1,2-Dichloroethylene			87.2		%		50-140	02-MAR-20
trans-1,3-Dichloropropene			94.0		%		50-140	02-MAR-20
Trichloroethylene			94.0		%		50-140	02-MAR-20
Trichlorofluoromethane			88.3		%		50-140	02-MAR-20
Vinyl chloride			105.6		%		50-140	02-MAR-20
Batch R5012126								
WG3282678-4 DUP		**WG3282678-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,1,1-Trichloroethane		0.81	0.85		ug/L	4.8	30	02-MAR-20
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	02-MAR-20
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20

Quality Control Report

Workorder: L2422349 Report Date: 04-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5012126								
WG3282678-4 DUP		**WG3282678-3**						
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	02-MAR-20
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	02-MAR-20
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	02-MAR-20
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	02-MAR-20
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	02-MAR-20
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	02-MAR-20
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	02-MAR-20
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	02-MAR-20
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	02-MAR-20
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	02-MAR-20
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	02-MAR-20
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	02-MAR-20
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	02-MAR-20
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	02-MAR-20
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	02-MAR-20
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	02-MAR-20
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
WG3282678-1 LCS								
1,1,1,2-Tetrachloroethane			92.1		%		70-130	02-MAR-20
1,1,2,2-Tetrachloroethane			90.8		%		70-130	02-MAR-20
1,1,1-Trichloroethane			94.1		%		70-130	02-MAR-20
1,1,2-Trichloroethane			100.6		%		70-130	02-MAR-20

Quality Control Report

Workorder: L2422349 Report Date: 04-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5012126								
WG3282678-1 LCS								
1,1-Dichloroethane			93.3		%		70-130	02-MAR-20
1,1-Dichloroethylene			86.0		%		70-130	02-MAR-20
1,2-Dibromoethane			99.6		%		70-130	02-MAR-20
1,2-Dichlorobenzene			95.3		%		70-130	02-MAR-20
1,2-Dichloroethane			84.3		%		70-130	02-MAR-20
1,2-Dichloropropane			88.1		%		70-130	02-MAR-20
1,3-Dichlorobenzene			94.0		%		70-130	02-MAR-20
1,4-Dichlorobenzene			93.3		%		70-130	02-MAR-20
Acetone			86.8		%		60-140	02-MAR-20
Benzene			93.1		%		70-130	02-MAR-20
Bromodichloromethane			90.2		%		70-130	02-MAR-20
Bromoform			92.0		%		70-130	02-MAR-20
Bromomethane			90.8		%		60-140	02-MAR-20
Carbon tetrachloride			91.6		%		70-130	02-MAR-20
Chlorobenzene			93.0		%		70-130	02-MAR-20
Chloroform			92.3		%		70-130	02-MAR-20
cis-1,2-Dichloroethylene			93.7		%		70-130	02-MAR-20
cis-1,3-Dichloropropene			81.9		%		70-130	02-MAR-20
Dibromochloromethane			97.0		%		70-130	02-MAR-20
Dichlorodifluoromethane			107.1		%		50-140	02-MAR-20
Ethylbenzene			86.9		%		70-130	02-MAR-20
n-Hexane			84.0		%		70-130	02-MAR-20
m+p-Xylenes			86.9		%		70-130	02-MAR-20
Methyl Ethyl Ketone			104.6		%		60-140	02-MAR-20
Methyl Isobutyl Ketone			79.3		%		60-140	02-MAR-20
Methylene Chloride			101.7		%		70-130	02-MAR-20
MTBE			95.1		%		70-130	02-MAR-20
o-Xylene			94.5		%		70-130	02-MAR-20
Styrene			85.8		%		70-130	02-MAR-20
Tetrachloroethylene			95.1		%		70-130	02-MAR-20
Toluene			92.4		%		70-130	02-MAR-20
trans-1,2-Dichloroethylene			86.0		%		70-130	02-MAR-20
trans-1,3-Dichloropropene			87.9		%		70-130	02-MAR-20

Quality Control Report

Workorder: L2422349 Report Date: 04-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5012126								
WG3282678-1 LCS								
Trichloroethylene			101.7		%		70-130	02-MAR-20
Trichlorofluoromethane			96.9		%		60-140	02-MAR-20
Vinyl chloride			114.0		%		60-140	02-MAR-20
WG3282678-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	02-MAR-20
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	02-MAR-20
1,1,1-Trichloroethane			<0.50		ug/L		0.5	02-MAR-20
1,1,2-Trichloroethane			<0.50		ug/L		0.5	02-MAR-20
1,1-Dichloroethane			<0.50		ug/L		0.5	02-MAR-20
1,1-Dichloroethylene			<0.50		ug/L		0.5	02-MAR-20
1,2-Dibromoethane			<0.20		ug/L		0.2	02-MAR-20
1,2-Dichlorobenzene			<0.50		ug/L		0.5	02-MAR-20
1,2-Dichloroethane			<0.50		ug/L		0.5	02-MAR-20
1,2-Dichloropropane			<0.50		ug/L		0.5	02-MAR-20
1,3-Dichlorobenzene			<0.50		ug/L		0.5	02-MAR-20
1,4-Dichlorobenzene			<0.50		ug/L		0.5	02-MAR-20
Acetone			<30		ug/L		30	02-MAR-20
Benzene			<0.50		ug/L		0.5	02-MAR-20
Bromodichloromethane			<2.0		ug/L		2	02-MAR-20
Bromoform			<5.0		ug/L		5	02-MAR-20
Bromomethane			<0.50		ug/L		0.5	02-MAR-20
Carbon tetrachloride			<0.20		ug/L		0.2	02-MAR-20
Chlorobenzene			<0.50		ug/L		0.5	02-MAR-20
Chloroform			<1.0		ug/L		1	02-MAR-20
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	02-MAR-20
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	02-MAR-20
Dibromochloromethane			<2.0		ug/L		2	02-MAR-20
Dichlorodifluoromethane			<2.0		ug/L		2	02-MAR-20
Ethylbenzene			<0.50		ug/L		0.5	02-MAR-20
n-Hexane			<0.50		ug/L		0.5	02-MAR-20
m+p-Xylenes			<0.40		ug/L		0.4	02-MAR-20
Methyl Ethyl Ketone			<20		ug/L		20	02-MAR-20
Methyl Isobutyl Ketone			<20		ug/L		20	02-MAR-20
Methylene Chloride			<5.0		ug/L		5	02-MAR-20

Quality Control Report

Workorder: L2422349 Report Date: 04-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch	**R5012126**							
WG3282678-2	**MB**							
MTBE			<2.0		ug/L		2	02-MAR-20
o-Xylene			<0.30		ug/L		0.3	02-MAR-20
Styrene			<0.50		ug/L		0.5	02-MAR-20
Tetrachloroethylene			<0.50		ug/L		0.5	02-MAR-20
Toluene			<0.50		ug/L		0.5	02-MAR-20
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	02-MAR-20
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	02-MAR-20
Trichloroethylene			<0.50		ug/L		0.5	02-MAR-20
Trichlorofluoromethane			<5.0		ug/L		5	02-MAR-20
Vinyl chloride			<0.50		ug/L		0.5	02-MAR-20
Surrogate: 1,4-Difluorobenzene			101.4		%		70-130	02-MAR-20
Surrogate: 4-Bromofluorobenzene			97.3		%		70-130	02-MAR-20
WG3282678-5	**MS**	**WG3282678-3**						
1,1,1,2-Tetrachloroethane			92.5		%		50-140	02-MAR-20
1,1,2,2-Tetrachloroethane			85.7		%		50-140	02-MAR-20
1,1,1-Trichloroethane			94.5		%		50-140	02-MAR-20
1,1,2-Trichloroethane			97.2		%		50-140	02-MAR-20
1,1-Dichloroethane			91.2		%		50-140	02-MAR-20
1,1-Dichloroethylene			85.5		%		50-140	02-MAR-20
1,2-Dibromoethane			95.9		%		50-140	02-MAR-20
1,2-Dichlorobenzene			94.7		%		50-140	02-MAR-20
1,2-Dichloroethane			80.8		%		50-140	02-MAR-20
1,2-Dichloropropane			86.0		%		50-140	02-MAR-20
1,3-Dichlorobenzene			95.3		%		50-140	02-MAR-20
1,4-Dichlorobenzene			94.2		%		50-140	02-MAR-20
Acetone			80.9		%		50-140	02-MAR-20
Benzene			91.9		%		50-140	02-MAR-20
Bromodichloromethane			88.9		%		50-140	02-MAR-20
Bromoform			89.5		%		50-140	02-MAR-20
Bromomethane			89.3		%		50-140	02-MAR-20
Carbon tetrachloride			91.9		%		50-140	02-MAR-20
Chlorobenzene			93.1		%		50-140	02-MAR-20
Chloroform			91.2		%		50-140	02-MAR-20
cis-1,2-Dichloroethylene			92.5		%		50-140	02-MAR-20

Quality Control Report

Workorder: L2422349 Report Date: 04-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5012126								
WG3282678-5 MS		**WG3282678-3**						
cis-1,3-Dichloropropene			79.9		%		50-140	02-MAR-20
Dibromochloromethane			95.7		%		50-140	02-MAR-20
Dichlorodifluoromethane			115.3		%		50-140	02-MAR-20
Ethylbenzene			88.1		%		50-140	02-MAR-20
n-Hexane			82.7		%		50-140	02-MAR-20
m+p-Xylenes			88.1		%		50-140	02-MAR-20
Methyl Ethyl Ketone			84.0		%		50-140	02-MAR-20
Methyl Isobutyl Ketone			71.8		%		50-140	02-MAR-20
Methylene Chloride			98.4		%		50-140	02-MAR-20
MTBE			94.3		%		50-140	02-MAR-20
o-Xylene			95.2		%		50-140	02-MAR-20
Styrene			85.7		%		50-140	02-MAR-20
Tetrachloroethylene			96.8		%		50-140	02-MAR-20
Toluene			92.9		%		50-140	02-MAR-20
trans-1,2-Dichloroethylene			84.7		%		50-140	02-MAR-20
trans-1,3-Dichloropropene			85.6		%		50-140	02-MAR-20
Trichloroethylene			102.0		%		50-140	02-MAR-20
Trichlorofluoromethane			96.8		%		50-140	02-MAR-20
Vinyl chloride			112.8		%		50-140	02-MAR-20
Batch R5012606								
WG3284732-4 DUP		**WG3284732-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-MAR-20
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-MAR-20
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-MAR-20
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-MAR-20
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-MAR-20
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-MAR-20
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	03-MAR-20
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-MAR-20
1,2-Dichloroethane		0.54	0.58		ug/L	7.1	30	03-MAR-20
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-MAR-20
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-MAR-20
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-MAR-20

Quality Control Report

Workorder: L2422349 Report Date: 04-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5012606								
WG3284732-4 DUP		**WG3284732-3**						
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	03-MAR-20
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-MAR-20
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	03-MAR-20
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	03-MAR-20
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-MAR-20
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	03-MAR-20
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-MAR-20
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	03-MAR-20
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-MAR-20
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	03-MAR-20
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	03-MAR-20
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	03-MAR-20
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-MAR-20
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-MAR-20
m+p-Xylenes		0.46	0.45		ug/L	2.2	30	03-MAR-20
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	03-MAR-20
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	03-MAR-20
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	03-MAR-20
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	04-MAR-20
o-Xylene		0.62	0.61		ug/L	1.6	30	03-MAR-20
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-MAR-20
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-MAR-20
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-MAR-20
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-MAR-20
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	03-MAR-20
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-MAR-20
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	03-MAR-20
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	03-MAR-20
WG3284732-1 LCS								
1,1,1,2-Tetrachloroethane			96.1		%		70-130	03-MAR-20
1,1,2,2-Tetrachloroethane			101.2		%		70-130	03-MAR-20
1,1,1-Trichloroethane			93.6		%		70-130	03-MAR-20
1,1,2-Trichloroethane			96.3		%		70-130	03-MAR-20

Quality Control Report

Workorder: L2422349 Report Date: 04-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5012606								
WG3284732-1 LCS								
1,1-Dichloroethane			91.2		%		70-130	03-MAR-20
1,1-Dichloroethylene			86.6		%		70-130	03-MAR-20
1,2-Dibromoethane			101.9		%		70-130	03-MAR-20
1,2-Dichlorobenzene			95.1		%		70-130	03-MAR-20
1,2-Dichloroethane			102.5		%		70-130	03-MAR-20
1,2-Dichloropropane			95.5		%		70-130	03-MAR-20
1,3-Dichlorobenzene			94.4		%		70-130	03-MAR-20
1,4-Dichlorobenzene			95.6		%		70-130	03-MAR-20
Acetone			119.9		%		60-140	03-MAR-20
Benzene			90.1		%		70-130	03-MAR-20
Bromodichloromethane			101.9		%		70-130	03-MAR-20
Bromoform			98.9		%		70-130	03-MAR-20
Bromomethane			92.2		%		60-140	03-MAR-20
Carbon tetrachloride			96.8		%		70-130	03-MAR-20
Chlorobenzene			90.3		%		70-130	03-MAR-20
Chloroform			99.2		%		70-130	03-MAR-20
cis-1,2-Dichloroethylene			97.0		%		70-130	03-MAR-20
cis-1,3-Dichloropropene			96.9		%		70-130	03-MAR-20
Dibromochloromethane			94.2		%		70-130	03-MAR-20
Dichlorodifluoromethane			116.7		%		50-140	03-MAR-20
Ethylbenzene			85.4		%		70-130	03-MAR-20
n-Hexane			82.3		%		70-130	03-MAR-20
m+p-Xylenes			87.2		%		70-130	03-MAR-20
Methyl Ethyl Ketone			113.1		%		60-140	03-MAR-20
Methyl Isobutyl Ketone			104.6		%		60-140	03-MAR-20
Methylene Chloride			103.9		%		70-130	03-MAR-20
MTBE			93.7		%		70-130	03-MAR-20
o-Xylene			92.9		%		70-130	03-MAR-20
Styrene			86.7		%		70-130	03-MAR-20
Tetrachloroethylene			91.8		%		70-130	03-MAR-20
Toluene			89.5		%		70-130	03-MAR-20
trans-1,2-Dichloroethylene			88.3		%		70-130	03-MAR-20
trans-1,3-Dichloropropene			97.5		%		70-130	03-MAR-20

Quality Control Report

Workorder: L2422349 Report Date: 04-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5012606								
WG3284732-1 LCS								
Trichloroethylene			95.0		%		70-130	03-MAR-20
Trichlorofluoromethane			95.7		%		60-140	03-MAR-20
Vinyl chloride			113.3		%		60-140	03-MAR-20
WG3284732-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	03-MAR-20
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	03-MAR-20
1,1,1-Trichloroethane			<0.50		ug/L		0.5	03-MAR-20
1,1,2-Trichloroethane			<0.50		ug/L		0.5	03-MAR-20
1,1-Dichloroethane			<0.50		ug/L		0.5	03-MAR-20
1,1-Dichloroethylene			<0.50		ug/L		0.5	03-MAR-20
1,2-Dibromoethane			<0.20		ug/L		0.2	03-MAR-20
1,2-Dichlorobenzene			<0.50		ug/L		0.5	03-MAR-20
1,2-Dichloroethane			<0.50		ug/L		0.5	03-MAR-20
1,2-Dichloropropane			<0.50		ug/L		0.5	03-MAR-20
1,3-Dichlorobenzene			<0.50		ug/L		0.5	03-MAR-20
1,4-Dichlorobenzene			<0.50		ug/L		0.5	03-MAR-20
Acetone			<30		ug/L		30	03-MAR-20
Benzene			<0.50		ug/L		0.5	03-MAR-20
Bromodichloromethane			<2.0		ug/L		2	03-MAR-20
Bromoform			<5.0		ug/L		5	03-MAR-20
Bromomethane			<0.50		ug/L		0.5	03-MAR-20
Carbon tetrachloride			<0.20		ug/L		0.2	03-MAR-20
Chlorobenzene			<0.50		ug/L		0.5	03-MAR-20
Chloroform			<1.0		ug/L		1	03-MAR-20
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	03-MAR-20
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	03-MAR-20
Dibromochloromethane			<2.0		ug/L		2	03-MAR-20
Dichlorodifluoromethane			<2.0		ug/L		2	03-MAR-20
Ethylbenzene			<0.50		ug/L		0.5	03-MAR-20
n-Hexane			<0.50		ug/L		0.5	03-MAR-20
m+p-Xylenes			<0.40		ug/L		0.4	03-MAR-20
Methyl Ethyl Ketone			<20		ug/L		20	03-MAR-20
Methyl Isobutyl Ketone			<20		ug/L		20	03-MAR-20
Methylene Chloride			<5.0		ug/L		5	03-MAR-20

Quality Control Report

Workorder: L2422349 Report Date: 04-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5012606								
WG3284732-2 MB								
MTBE			<2.0		ug/L		2	03-MAR-20
o-Xylene			<0.30		ug/L		0.3	03-MAR-20
Styrene			<0.50		ug/L		0.5	03-MAR-20
Tetrachloroethylene			<0.50		ug/L		0.5	03-MAR-20
Toluene			<0.50		ug/L		0.5	03-MAR-20
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	03-MAR-20
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	03-MAR-20
Trichloroethylene			<0.50		ug/L		0.5	03-MAR-20
Trichlorofluoromethane			<5.0		ug/L		5	03-MAR-20
Vinyl chloride			<0.50		ug/L		0.5	03-MAR-20
Surrogate: 1,4-Difluorobenzene			102.4		%		70-130	03-MAR-20
Surrogate: 4-Bromofluorobenzene			99.4		%		70-130	03-MAR-20
WG3284732-5 MS		**WG3284732-3**						
1,1,1,2-Tetrachloroethane			94.6		%		50-140	03-MAR-20
1,1,2,2-Tetrachloroethane			81.9		%		50-140	03-MAR-20
1,1,1-Trichloroethane			98.5		%		50-140	03-MAR-20
1,1,2-Trichloroethane			81.0		%		50-140	03-MAR-20
1,1-Dichloroethane			88.1		%		50-140	03-MAR-20
1,1-Dichloroethylene			89.3		%		50-140	03-MAR-20
1,2-Dibromoethane			81.7		%		50-140	03-MAR-20
1,2-Dichlorobenzene			95.8		%		50-140	03-MAR-20
1,2-Dichloroethane			84.4		%		50-140	03-MAR-20
1,2-Dichloropropane			87.0		%		50-140	03-MAR-20
1,3-Dichlorobenzene			101.4		%		50-140	03-MAR-20
1,4-Dichlorobenzene			100.8		%		50-140	03-MAR-20
Acetone			85.5		%		50-140	03-MAR-20
Benzene			87.2		%		50-140	03-MAR-20
Bromodichloromethane			92.1		%		50-140	03-MAR-20
Bromoform			81.9		%		50-140	03-MAR-20
Bromomethane			80.6		%		50-140	03-MAR-20
Carbon tetrachloride			104.5		%		50-140	03-MAR-20
Chlorobenzene			89.8		%		50-140	03-MAR-20
Chloroform			95.3		%		50-140	03-MAR-20
cis-1,2-Dichloroethylene			92.3		%		50-140	03-MAR-20

Quality Control Report

Workorder: L2422349 Report Date: 04-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5012606								
WG3284732-5 MS		**WG3284732-3**						
cis-1,3-Dichloropropene			84.6		%		50-140	03-MAR-20
Dibromochloromethane			82.8		%		50-140	03-MAR-20
Dichlorodifluoromethane			110.5		%		50-140	03-MAR-20
Ethylbenzene			92.1		%		50-140	03-MAR-20
n-Hexane			86.6		%		50-140	03-MAR-20
m+p-Xylenes			94.2		%		50-140	03-MAR-20
Methyl Ethyl Ketone			62.3		%		50-140	03-MAR-20
Methyl Isobutyl Ketone			71.8		%		50-140	03-MAR-20
Methylene Chloride			91.0		%		50-140	03-MAR-20
MTBE			93.3		%		50-140	03-MAR-20
o-Xylene			96.9		%		50-140	03-MAR-20
Styrene			85.4		%		50-140	03-MAR-20
Tetrachloroethylene			103.8		%		50-140	03-MAR-20
Toluene			92.9		%		50-140	03-MAR-20
trans-1,2-Dichloroethylene			89.8		%		50-140	03-MAR-20
trans-1,3-Dichloropropene			84.1		%		50-140	03-MAR-20
Trichloroethylene			99.5		%		50-140	03-MAR-20
Trichlorofluoromethane			100.1		%		50-140	03-MAR-20
Vinyl chloride			110.3		%		50-140	03-MAR-20

Quality Control Report

Workorder: L2422349 Report Date: 04-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9
Contact: Michael Shiry

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

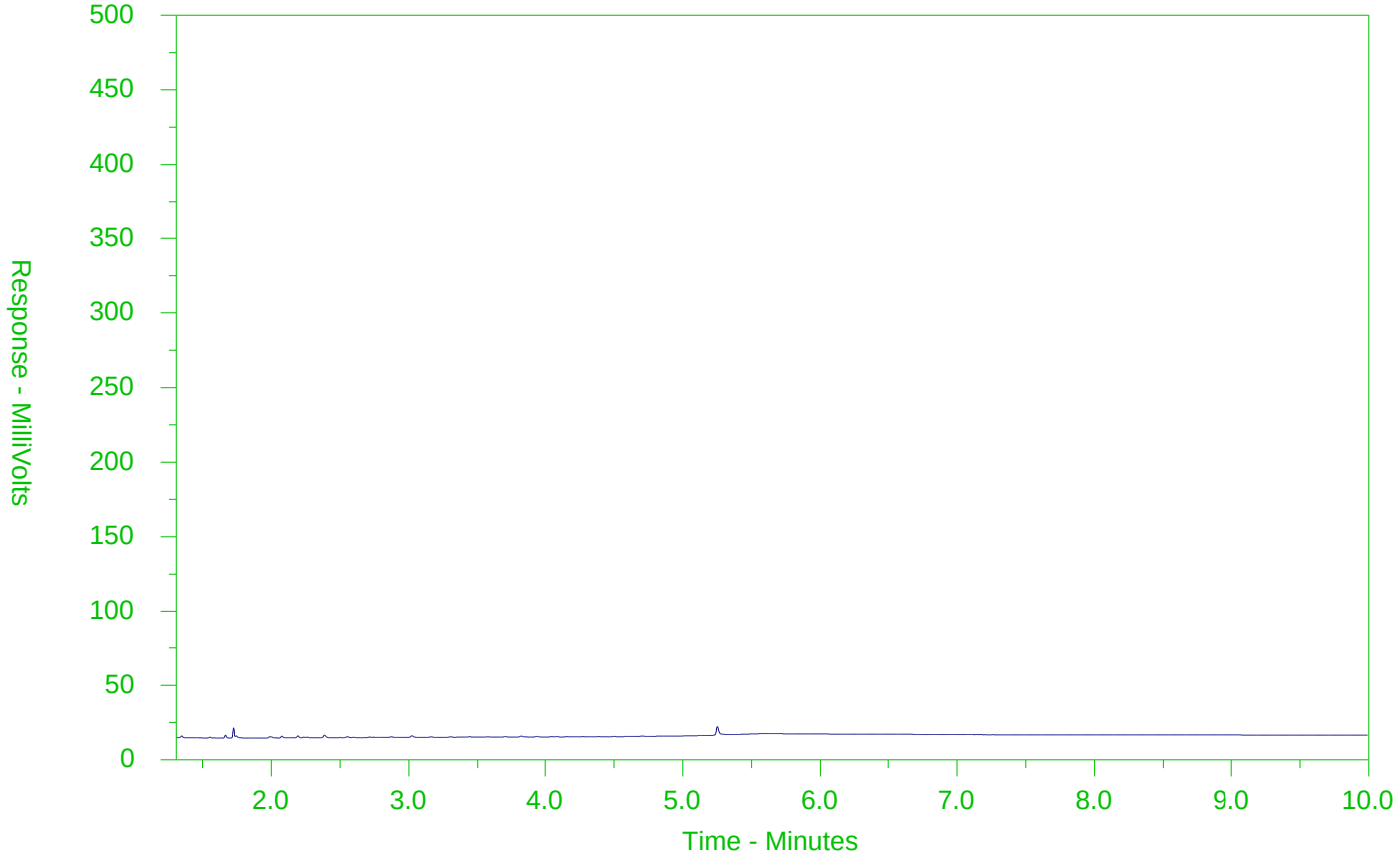
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2422349-19
Client Sample ID: MW19-137S



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

ALS Environmental

www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2422349-COFC

COC Number: 17 - 795245

Report To	Contact and company name below will appear on the final report
Company:	Jacobs
Contact:	Michael Shiry
Phone:	519-579-3500
Company address below will appear on the final report	
Street:	72 Victoria St-S Suite 300
City/Province:	Kitchener, ON
Postal Code:	N2G 4Y9
Invoice To	Same as Report To [X] YES [ ] NO
	Copy of Invoice with Report [X] YES [ ] NO
Company:	Jacobs
Contact:	Accounts Payable

Report Format / Distribution

Select Report Format: [X] PDF [X] EXCEL [X] EDD (DIGITAL)

Quality Control (QC) Report with Report [X] YES [ ] NO

[ ] Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX

Email 1 or Fax: michael.shiry@jacobs.com

Email 2: ed.taves@jacobs.com

Email 3: tania.mccarthy@jacobs.com

Invoice Distribution

Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX

Email 1 or Fax:

Email 2:

Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] [X] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
4 day [P4-20%]	[ ]	1 Business day [E - 100%]	[ ]
3 day [P3-25%]	[ ]	Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)]	[ ]
2 day [P2-50%]	[ ]		

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q78833

Job #: 6947577CH

PO / AFE:

LSD: 2-83

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#:

Major/Minor Code: Routing Code:

Requisitioner:

Location:

ALS Lab Work Order # (lab use only): L2422349

ALS Contact: E. Hansen

Sampler: V. Peters / A. Casey

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	VOCs (P)	PHCs (P)	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	MW18-121S	26-02-20	09:20	water	2	X			
	MW18-121D		10:10		2				
	MW17-107S		11:05		2				
	MW18-107D		11:50		2				
	MW18-116S		14:00		2				
	MW18-116D		14:55		2				
	MW17-102D		16:00		2				
	MW18-123D		16:55		2				
	OW22D		13:10		2				
	OW22S		14:00		2				
	MW18-123S		17:00		2				
	OW26D	26-02-20	16:05	water	2	X			

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] YES [X] NO

Are samples for human consumption/ use? [ ] YES [X] NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

O. Reg. 153/04 Table 1

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] SIF Observations Yes [ ] No [ ]

Ice Packs [ ] Ice Cubes [X] Custody seal intact Yes [ ] No [ ]

Cooling Initiated [ ]

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				4.3			

SHIPMENT RELEASE (client use)

Released by: V. Peters Date: 2020/02/28 Time: 15:05

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by: Date: 28-Feb-20 Time: 1505

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2018 FRONT

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analy Request Form

Canada Toll Free: 1 800 668 9878

L2422349-COFC

COC Number: 17 - 795246

Report To	Contact and company name below will appear on the final report
Company:	Jacobs
Contact:	Michael Shiny
Phone:	519-579-3500
	Company address below will appear on the final report
Street:	72 Victoria St S. Suite 300
City/Province:	Kitchener, ON
Postal Code:	N2G 4Y9
Invoice To	Same as Report To [X] YES [ ] NO
	Copy of Invoice with Report [X] YES [ ] NO
Company:	Jacobs
Contact:	Accounts Payable

Report Format / Distribution

Select Report Format: [X] PDF [X] EXCEL [X] EDD (DIGITAL)
Quality Control (QC) Report with Report [X] YES [ ] NO
[ ] Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax michael.shiny@jacobs.com
Email 2 ed.taves@jacobs.com
Email 3 tania.mccarthy@jacobs.com

Invoice Distribution

Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax
Email 2

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] [X] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
4 day [P4-20%]	[ ]	1 Business day [E - 100%]	[ ]
3 day [P3-25%]	[ ]	Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)]	[ ]
2 day [P2-50%]	[ ]		

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q78833
Job #: 6947570H
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2422349
ALS Contact: Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	VOCs (F)	PHCs (P)	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	OW26S	26-02-20	15:15	water	2	X			
	DUP 4	26-02-20	—		2				
	MW18-136D	27-02-20	9:55		2				
	MW18-136G		10:30		2				
	MW18-134S		11:45		2				
	MW18-134D		12:25		2				
	MW19-137S		14:40		4	X	X		
	OW14		15:35		2				
	OW07-34S		9:55		2				
	OW07-34D		10:45		2				
	OW25		11:35		2				
	MW18-126D	27-02-20	12:10	water	2	X			

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] YES [X] NO
Are samples for human consumption/ use? [ ] YES [X] NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

O.Reg. 153/04 Table 1

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] SIF Observations Yes [ ] No [ ]
Ice Packs [ ] Ice Cubes [X] Custody seal intact Yes [ ] No [ ]
Cooling Initiated [ ]

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				4.3			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Via Peters	Date: 2020/02/28	Time: 15:05	Received by:	Date:	Time:	Received by:	Date: 28-Feb-20	Time: 1505

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2018 FRONT

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

ALS Environmental

www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2422349-COFC

COC Number: 17 - 795247

Report To	Contact and company name below will appear on the final report
Company:	Jacobs
Contact:	Michael Shiry
Phone:	519-579-3500
	Company address below will appear on the final report
Street:	72 Victoria St S. Suite 300
City/Province:	Kitchener, ON
Postal Code:	N2G 4V9
Invoice To	Same as Report To [X] YES [ ] NO
	Copy of Invoice with Report [X] YES [ ] NO
Company:	Jacobs
Contact:	Accounts Payable

Report Format / Distribution

Select Report Format: [X] PDF [X] EXCEL [X] EDD (DIGITAL)

Quality Control (QC) Report with Report [X] YES [ ] NO

[ ] Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX

Email 1 or Fax michael.shiry@jacobs.com

Email 2 ed.taves@jacobs.com

Email 3 tania.mccarthy@jacobs.com

Invoice Distribution

Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX

Email 1 or Fax

Email 2

Project Information

ALS Account # / Quote #: Q78833

Job #: 694757CH

PO / AFE:

LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#

Major/Minor Code: Routing Code:

Requisitioner:

Location:

ALS Lab Work Order # (lab use only): L2422349

ALS Contact: E. Hansen

Sampler: A. (Casey) V. Peters

Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] [X] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] [ ] 3 day [P3-25%] [ ] 2 day [P2-50%] [ ]

EMERGENCY: 1 Business day [E - 100%] [ ] Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] [ ]

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selectad, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	VOCs (P)	PHCs (P)	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	MW18-126D	27-02-20	12:10	water	2	X			
	OW07-33	27-02-20	14:45	water	2	X			
	MW18-125S	27-02-20	15:40	water	2	X			
	MW17-105S	28-02-20	8:55		2	X			
	MW17-105D		9:40		2	X			
	MW18-105G		10:20		2	X			
	OW13		9:10		2	X			
	MW18-129D		9:45		2	X			
	OW09-I		12:25		2	X			
	OW09-II		10:45		2	X			
	OW13-39S		13:10		2	X			
	OW13-39D	28-02-20	13:45	water	2	X			

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] YES [X] NO

Are samples for human consumption/ use? [ ] YES [X] NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

O. Reg 153/04 Table 1

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] SIF Observations Yes [ ] No [ ]

Ice Packs [ ] Ice Cubes [X] Custody seal intact Yes [ ] No [ ]

Cooling Initiated [ ]

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
			4.3		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: V. Peters	Date: 2020/02/28	Time: 15:05	Received by:	Date:	Time:	Received by: SW	Date: 28-Feb-20	Time: 1505

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2018 FRONT

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analyt Request Form

Canada Toll Free: 1 800 668 9878

L2422349-COFC

COC Number: 17 - 795248

Report To	Contact and company name below will appear on the final report
Company:	Jacobs
Contact:	Michael Shiny
Phone:	519-579-3500
Company address below will appear on the final report	
Street:	72 Victoria St. S. Suite 300
City/Province:	Kitchener, ON
Postal Code:	N2G 4Y9
Invoice To	Same as Report To [X] YES [ ] NO
	Copy of Invoice with Report [X] YES [ ] NO
Company:	Jacobs
Contact:	Accounts Payable

Report Format / Distribution

Select Report Format: [X] PDF [X] EXCEL [X] EDD (DIGITAL)
Quality Control (QC) Report with Report [X] YES [ ] NO
[ ] Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax michael.shiny@jacobs.com
Email 2 ed.taves@jacobs.com
Email 3 tania.mccarthy@jacobs.com

Invoice Distribution

Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax
Email 2

Project Information

ALS Account # / Quote #: Q78833
Job #: 69475714
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2422349
ALS Contact: Ed Hansen
Sampler: V. Peters / A. Casey

Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] [X] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] [ ] 3 day [P3-25%] [ ] 2 day [P2-50%] [ ]

EMERGENCY: 1 Business day [E - 100%] [ ] Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] [ ]

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	VOCs (P)	PAHs (P)	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	MW17-101S	28-02-20	13:45	water	2	X			
	MW17-101D		13:10		2	X			
	DUP5		—		2	X			
	DUP16	28-02-20	—	water	2	X			
	TB-002	—	—	QC	2	X			

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] YES [X] NO
Are samples for human consumption/ use? [ ] YES [X] NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

O. Reg. 153/04 Table 1

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] SIF Observations Yes [ ] No [ ]
Ice Packs [ ] Ice Cubes [X] Custody seal intact Yes [ ] No [ ]
Cooling Initiated [ ]

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				4.3			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: V. Peters	Date: 2020/02/28	Time: 15:05	Received by:	Date:	Time:	Received by:	Date: 28 Feb 20	Time: 1505

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2018 FRONT

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

CH2M HILL CANADA LIMITED
ATTN: Michael Shiry
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 03-MAR-20
Report Date: 06-MAR-20 11:34 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2423564

Project P.O. #: NOT SUBMITTED
Job Reference: 694757CH
C of C Numbers: 17-795249, 17-795250, 17-795251
Legal Site Desc:

Emily Hansen
Account Manager

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ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-1	OW19									
Sampled By:	VP/AC on 02-MAR-20 @ 09:15									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	05-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	05-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	05-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	05-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	05-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	05-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	05-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	05-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	05-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	05-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	05-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	05-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Tetrachloroethylene	0.83		0.50	ug/L	05-MAR-20	*0.5			
	Toluene	<0.50		0.50	ug/L	05-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	05-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	05-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	05-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	05-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	05-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	93.5		70-130	%	05-MAR-20				
	Surrogate: 1,4-Difluorobenzene	101.5		70-130	%	05-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-2	MW18-130D									
Sampled By:	VP/AC on 02-MAR-20 @ 09:50									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	05-MAR-20	2700			
	Benzene	0.77		0.50	ug/L	05-MAR-20	*0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	05-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	05-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	05-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	05-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	05-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	05-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,2-Dichloroethylene	31.1		0.50	ug/L	05-MAR-20	*1.6			
	trans-1,2-Dichloroethylene	0.92		0.50	ug/L	05-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	05-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	05-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	05-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	05-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	05-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	05-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	05-MAR-20	150			
	Vinyl chloride	6.93		0.50	ug/L	05-MAR-20	*0.5			
	o-Xylene	<0.30		0.30	ug/L	05-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	05-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	05-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	94.2		70-130	%	05-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.6		70-130	%	05-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-3	MW18-132D									
Sampled By:	VP/AC on 02-MAR-20 @ 10:45									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	05-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	05-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	05-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	05-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	05-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	05-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	05-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,2-Dichloroethylene	12.8		0.50	ug/L	05-MAR-20	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	05-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	05-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	05-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	05-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	05-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	05-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	05-MAR-20	150			
	Vinyl chloride	3.05		0.50	ug/L	05-MAR-20	*0.5			
	o-Xylene	<0.30		0.30	ug/L	05-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	05-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	05-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	94.7		70-130	%	05-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.6		70-130	%	05-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-4	OW18-II									
Sampled By:	VP/AC on 02-MAR-20 @ 11:40									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	05-MAR-20	2700			
	Benzene	2.09		0.50	ug/L	05-MAR-20	*0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	05-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	05-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	05-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	05-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	05-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	05-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1-Dichloroethylene	1.85		0.50	ug/L	05-MAR-20	*0.5			
	cis-1,2-Dichloroethylene	105		0.50	ug/L	05-MAR-20	*1.6			
	trans-1,2-Dichloroethylene	2.42		0.50	ug/L	05-MAR-20	*1.6			
	Methylene Chloride	<5.0		5.0	ug/L	05-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	05-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	05-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	05-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	05-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	05-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichloroethylene	9.68		0.50	ug/L	05-MAR-20	*0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	05-MAR-20	150			
	Vinyl chloride	33.5		0.50	ug/L	05-MAR-20	*0.5			
	o-Xylene	<0.30		0.30	ug/L	05-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	05-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	05-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	92.6		70-130	%	05-MAR-20				
	Surrogate: 1,4-Difluorobenzene	99.7		70-130	%	05-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-5	OW18-I									
Sampled By:	VP/AC on 02-MAR-20 @ 12:25									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	05-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	05-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	05-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	05-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	05-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	05-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	05-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,2-Dichloroethylene	0.54		0.50	ug/L	05-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	05-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	05-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	05-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	05-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	05-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	05-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichloroethylene	7.65		0.50	ug/L	05-MAR-20	*0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	05-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	05-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	05-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	05-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	05-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	95.1		70-130	%	05-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.3		70-130	%	05-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-6	OW24S									
Sampled By:	VP/AC on 02-MAR-20 @ 14:15									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	05-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	05-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	05-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	05-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	05-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	05-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	05-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,2-Dichloroethylene	13.0		0.50	ug/L	05-MAR-20	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	05-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	05-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	05-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	05-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	05-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	05-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichloroethylene	144		0.50	ug/L	05-MAR-20	*0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	05-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	05-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	05-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	05-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	05-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	94.3		70-130	%	05-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.9		70-130	%	05-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-7	OW24D									
Sampled By:	VP/AC on 02-MAR-20 @ 15:00									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	05-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	05-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	05-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	05-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	05-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	05-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	05-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1-Dichloroethylene	6.41		0.50	ug/L	05-MAR-20	*0.5			
	cis-1,2-Dichloroethylene	141		0.50	ug/L	05-MAR-20	*1.6			
	trans-1,2-Dichloroethylene	12.2		0.50	ug/L	05-MAR-20	*1.6			
	Methylene Chloride	<5.0		5.0	ug/L	05-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	05-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	05-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	05-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	05-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	05-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichloroethylene	991	DLHC	5.0	ug/L	06-MAR-20	*0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	05-MAR-20	150			
	Vinyl chloride	3.46		0.50	ug/L	05-MAR-20	*0.5			
	o-Xylene	<0.30		0.30	ug/L	05-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	05-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	06-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	93.7		70-130	%	05-MAR-20				
	Surrogate: 1,4-Difluorobenzene	101.1		70-130	%	05-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-8	OW31									
Sampled By:	VP/AC on 02-MAR-20 @ 15:50									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	05-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	05-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	05-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	05-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	05-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	05-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	05-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,2-Dichloroethylene	1.39		0.50	ug/L	05-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	05-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	05-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	05-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	05-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	05-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Toluene	1.10		0.50	ug/L	05-MAR-20	*0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	05-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	05-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	05-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	05-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	05-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	94.2		70-130	%	05-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.1		70-130	%	05-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-9	MW18-131S									
Sampled By:	VP/AC on 02-MAR-20 @ 09:20									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	05-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	05-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	05-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	05-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	05-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	05-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	05-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,2-Dichloroethylene	1.28		0.50	ug/L	05-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	05-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	05-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	05-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	05-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	05-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	05-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichloroethylene	3.15		0.50	ug/L	05-MAR-20	*0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	05-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	05-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	05-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	05-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	05-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	93.7		70-130	%	05-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.3		70-130	%	05-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-10	OW07-38S									
Sampled By:	VP/AC on 02-MAR-20 @ 15:50									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	05-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	05-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	05-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	05-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	05-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	05-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	05-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	05-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	05-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	05-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	05-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	05-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	05-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	05-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	05-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	05-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	05-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	05-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	92.5		70-130	%	05-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.4		70-130	%	05-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-11	MW17-110S									
Sampled By:	VP/AC on 02-MAR-20 @ 15:00									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	05-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	05-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	05-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	05-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	05-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	05-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	05-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	05-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	05-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	05-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	05-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	05-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	05-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	05-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	05-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	05-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	05-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	05-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	94.1		70-130	%	05-MAR-20				
	Surrogate: 1,4-Difluorobenzene	99.9		70-130	%	05-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-12	OW17									
Sampled By:	VP/AC on 02-MAR-20 @ 14:15									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	05-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	05-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	05-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	05-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	05-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	05-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	05-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	05-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	05-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	05-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	05-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	05-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	05-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	05-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	05-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	05-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	05-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	05-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	93.7		70-130	%	05-MAR-20				
	Surrogate: 1,4-Difluorobenzene	99.7		70-130	%	05-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-13	MW17-109S									
Sampled By:	VP/AC on 02-MAR-20 @ 12:20									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	05-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	05-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	05-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	05-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	05-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	05-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	05-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	05-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Ethylbenzene	8.46		0.50	ug/L	05-MAR-20	*0.5			
	n-Hexane	<0.50		0.50	ug/L	05-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	05-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	05-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	05-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	05-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	05-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	05-MAR-20	0.5			
	o-Xylene	0.69		0.30	ug/L	05-MAR-20				
	m+p-Xylenes	0.89		0.40	ug/L	05-MAR-20				
	Xylenes (Total)	1.58		0.50	ug/L	05-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	93.0		70-130	%	05-MAR-20				
	Surrogate: 1,4-Difluorobenzene	99.1		70-130	%	05-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-14	MW17-104S									
Sampled By:	VP/AC on 02-MAR-20 @ 11:30									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30	OWP	30	ug/L	05-MAR-20	2700			
	Benzene	<0.50	OWP	0.50	ug/L	05-MAR-20	0.5			
	Bromodichloromethane	<2.0	OWP	2.0	ug/L	05-MAR-20	2			
	Bromoform	<5.0	OWP	5.0	ug/L	05-MAR-20	5			
	Bromomethane	<0.50	OWP	0.50	ug/L	05-MAR-20	0.89			
	Carbon tetrachloride	<0.20	OWP	0.20	ug/L	05-MAR-20	0.2			
	Chlorobenzene	<0.50	OWP	0.50	ug/L	05-MAR-20	0.5			
	Dibromochloromethane	<2.0	OWP	2.0	ug/L	05-MAR-20	2			
	Chloroform	<1.0	OWP	1.0	ug/L	05-MAR-20	2			
	1,2-Dibromoethane	<0.20	OWP	0.20	ug/L	05-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50	OWP	0.50	ug/L	05-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50	OWP	0.50	ug/L	05-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50	OWP	0.50	ug/L	05-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0	OWP	2.0	ug/L	05-MAR-20	590			
	1,1-Dichloroethane	<0.50	OWP	0.50	ug/L	05-MAR-20	0.5			
	1,2-Dichloroethane	<0.50	OWP	0.50	ug/L	05-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50	OWP	0.50	ug/L	05-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50	OWP	0.50	ug/L	05-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50	OWP	0.50	ug/L	05-MAR-20	1.6			
	Methylene Chloride	<5.0	OWP	5.0	ug/L	05-MAR-20	5			
	1,2-Dichloropropane	<0.50	OWP	0.50	ug/L	05-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30	OWP	0.30	ug/L	05-MAR-20				
	trans-1,3-Dichloropropene	<0.30	OWP	0.30	ug/L	05-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Ethylbenzene	<0.50	OWP	0.50	ug/L	05-MAR-20	0.5			
	n-Hexane	<0.50	OWP	0.50	ug/L	05-MAR-20	5			
	Methyl Ethyl Ketone	<20	OWP	20	ug/L	05-MAR-20	400			
	Methyl Isobutyl Ketone	<20	OWP	20	ug/L	05-MAR-20	640			
	MTBE	<2.0	OWP	2.0	ug/L	05-MAR-20	15			
	Styrene	<0.50	OWP	0.50	ug/L	05-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50	OWP	0.50	ug/L	05-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50	OWP	0.50	ug/L	05-MAR-20	0.5			
	Tetrachloroethylene	<0.50	OWP	0.50	ug/L	05-MAR-20	0.5			
	Toluene	<0.50	OWP	0.50	ug/L	05-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50	OWP	0.50	ug/L	05-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50	OWP	0.50	ug/L	05-MAR-20	0.5			
	Trichloroethylene	<0.50	OWP	0.50	ug/L	05-MAR-20	0.5			
	Trichlorofluoromethane	<5.0	OWP	5.0	ug/L	05-MAR-20	150			
	Vinyl chloride	<0.50	OWP	0.50	ug/L	05-MAR-20	0.5			
	o-Xylene	2.26	OWP	0.30	ug/L	05-MAR-20				
	m+p-Xylenes	0.85	OWP	0.40	ug/L	05-MAR-20				
	Xylenes (Total)	3.11		0.50	ug/L	05-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	93.0		70-130	%	05-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.1		70-130	%	05-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-15	MW17-104D									
Sampled By:	VP/AC on 02-MAR-20 @ 10:50									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	05-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	05-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	05-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	05-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	05-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	05-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	05-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	05-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	05-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	05-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	05-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	05-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	05-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	05-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	05-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	05-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	05-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	05-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	93.7		70-130	%	05-MAR-20				
	Surrogate: 1,4-Difluorobenzene	99.6		70-130	%	05-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-16	MW18-133D									
Sampled By:	VP/AC on 02-MAR-20 @ 10:00									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	05-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	05-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	05-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	05-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	05-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	05-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	05-MAR-20	590			
	1,1-Dichloroethane	0.97		0.50	ug/L	05-MAR-20	*0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,2-Dichloroethylene	2.97		0.50	ug/L	05-MAR-20	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	05-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	05-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	05-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	05-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	05-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	05-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	05-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	05-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	05-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	05-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	05-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	99.0		70-130	%	05-MAR-20				
	Surrogate: 1,4-Difluorobenzene	99.9		70-130	%	05-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-17	DUP8									
Sampled By:	VP/AC on 02-MAR-20									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	05-MAR-20	2700			
	Benzene	1.96		0.50	ug/L	05-MAR-20	*0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	05-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	05-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	05-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	05-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	05-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	05-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1-Dichloroethylene	1.88		0.50	ug/L	05-MAR-20	*0.5			
	cis-1,2-Dichloroethylene	98.6		0.50	ug/L	05-MAR-20	*1.6			
	trans-1,2-Dichloroethylene	2.61		0.50	ug/L	05-MAR-20	*1.6			
	Methylene Chloride	<5.0		5.0	ug/L	05-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	05-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	05-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	05-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	05-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	05-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.75	DLQ	0.75	ug/L	05-MAR-20	**0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichloroethylene	10.3		0.50	ug/L	05-MAR-20	*0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	05-MAR-20	150			
	Vinyl chloride	31.7		0.50	ug/L	05-MAR-20	*0.5			
	o-Xylene	<0.30		0.30	ug/L	05-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	05-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	05-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	98.0		70-130	%	05-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.4		70-130	%	05-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-18	DUP9									
Sampled By:	VP/AC on 02-MAR-20									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	05-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	05-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	05-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	05-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	05-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	05-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	05-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	05-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	05-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	05-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	05-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	05-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Tetrachloroethylene	0.79		0.50	ug/L	05-MAR-20	*0.5			
	Toluene	<0.50		0.50	ug/L	05-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	05-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	05-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	05-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	05-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	05-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	99.0		70-130	%	05-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.7		70-130	%	05-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-19	DUP10									
Sampled By:	VP/AC on 02-MAR-20									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	05-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	05-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	05-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	05-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	05-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	05-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	05-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1-Dichloroethylene	6.47		0.50	ug/L	05-MAR-20	*0.5			
	cis-1,2-Dichloroethylene	139		0.50	ug/L	05-MAR-20	*1.6			
	trans-1,2-Dichloroethylene	12.7		0.50	ug/L	05-MAR-20	*1.6			
	Methylene Chloride	<5.0		5.0	ug/L	05-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	05-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	05-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	05-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	05-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	05-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.65	DLQ	0.65	ug/L	05-MAR-20	**0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichloroethylene	861		0.50	ug/L	05-MAR-20	*0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	05-MAR-20	150			
	Vinyl chloride	3.36		0.50	ug/L	05-MAR-20	*0.5			
	o-Xylene	<0.30		0.30	ug/L	05-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	05-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	05-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	99.2		70-130	%	05-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.9		70-130	%	05-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-20	MW18-128D									
Sampled By:	VP/AC on 03-MAR-20 @ 08:55									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	05-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	05-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	05-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	05-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	05-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	05-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	05-MAR-20	590			
	1,1-Dichloroethane	0.93		0.50	ug/L	05-MAR-20	*0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,2-Dichloroethylene	3.53		0.50	ug/L	05-MAR-20	*1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	05-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	05-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	05-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	05-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	05-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	05-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichloroethylene	0.63		0.50	ug/L	05-MAR-20	*0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	05-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	05-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	05-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	05-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	05-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	99.3		70-130	%	05-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.6		70-130	%	05-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-21	OW23D									
Sampled By:	VP/AC on 03-MAR-20 @ 09:30									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	05-MAR-20	2700			
	Benzene	0.82		0.50	ug/L	05-MAR-20	*0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	05-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	05-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	05-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	05-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	05-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	05-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,2-Dichloroethylene	21.7		0.50	ug/L	05-MAR-20	*1.6			
	trans-1,2-Dichloroethylene	0.76		0.50	ug/L	05-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	05-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	05-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	05-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	05-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	05-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	05-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichloroethylene	5.44		0.50	ug/L	05-MAR-20	*0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	05-MAR-20	150			
	Vinyl chloride	2.37		0.50	ug/L	05-MAR-20	*0.5			
	o-Xylene	<0.30		0.30	ug/L	05-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	05-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	05-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	98.9		70-130	%	05-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.6		70-130	%	05-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-22	MW18-135D									
Sampled By:	VP/AC on 03-MAR-20 @ 10:10									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	05-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	05-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	05-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	05-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	05-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	05-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	05-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,2-Dichloroethylene	0.79		0.50	ug/L	05-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	05-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	05-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	05-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	05-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	05-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	05-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	05-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	05-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	05-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	05-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	05-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	99.7		70-130	%	05-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.3		70-130	%	05-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-23	OW10									
Sampled By:	VP/AC on 03-MAR-20 @ 11:05									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	05-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	05-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	05-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	05-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	05-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	05-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	05-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	05-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	05-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	05-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	05-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	05-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	05-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	05-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	05-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	05-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	05-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	05-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	99.1		70-130	%	05-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.3		70-130	%	05-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-24	MW18-127S									
Sampled By:	VP/AC on 03-MAR-20 @ 13:20									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	05-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	05-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	05-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	05-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	05-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	05-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	05-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	05-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	05-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	05-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	05-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	05-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	05-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	05-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	05-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	05-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	05-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	05-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	05-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	05-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	05-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	05-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	99.0		70-130	%	05-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.1		70-130	%	05-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-25	OW07-37									
Sampled By:	VP/AC on 03-MAR-20 @ 14:00									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	06-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	06-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	06-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	06-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	06-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	06-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	06-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	06-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	06-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	06-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	06-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	06-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	06-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	06-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	06-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	06-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	06-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	06-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	06-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	06-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	06-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	06-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	06-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	06-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	06-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	100.3		70-130	%	06-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.3		70-130	%	06-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-26	OW02									
Sampled By:	VP/AC on 03-MAR-20 @ 09:20									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	06-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	06-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	06-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	06-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	06-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	06-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	06-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	06-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	06-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	06-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	06-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	06-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	06-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	06-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	06-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	06-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	06-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	06-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	06-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	06-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	06-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	06-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	06-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	06-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	06-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	100.1		70-130	%	06-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.6		70-130	%	06-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-27	OW03-I									
Sampled By:	VP/AC on 03-MAR-20 @ 10:10									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	06-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	06-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	06-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	06-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	06-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	06-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	06-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	06-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	06-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	06-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	06-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	06-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	06-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	06-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	06-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	06-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	06-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	06-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	06-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	06-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	06-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	06-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	06-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	06-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	06-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	100.0		70-130	%	06-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.5		70-130	%	06-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-28	OW03-II									
Sampled By:	VP/AC on 03-MAR-20 @ 13:45									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	06-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	06-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	06-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	06-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	06-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	06-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	06-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	06-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	06-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	06-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	06-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	06-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	06-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	06-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	06-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	06-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	06-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	06-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	06-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	06-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	06-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	06-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	06-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	06-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	06-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	99.9		70-130	%	06-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.4		70-130	%	06-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-29	MW17-103S									
Sampled By:	VP/AC on 03-MAR-20 @ 11:20									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	06-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	06-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	06-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	06-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	06-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	06-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	06-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	06-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	06-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	06-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	06-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	06-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	06-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	06-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	06-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	06-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	06-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	06-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	06-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	06-MAR-20	0.8			
	1,1,1-Trichloroethane	2.94		0.50	ug/L	06-MAR-20	*0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	06-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	06-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	06-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	06-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	06-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	100.5		70-130	%	06-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.4		70-130	%	06-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-30	MW17-103D									
Sampled By:	VP/AC on 03-MAR-20 @ 10:50									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	06-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	06-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	06-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	06-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	06-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	06-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	06-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	06-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	06-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	06-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	06-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	06-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	06-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	06-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	06-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	06-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	06-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	06-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	06-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	06-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	06-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	06-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	06-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	06-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	06-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	99.7		70-130	%	06-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.9		70-130	%	06-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-31	OW07-32									
Sampled By:	VP/AC on 03-MAR-20 @ 14:30									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	06-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	06-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	06-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	06-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	06-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	06-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	06-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	06-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	06-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	06-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	06-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	06-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	06-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	06-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	06-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	06-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	06-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	06-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	06-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	06-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	06-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	06-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	06-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	06-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	06-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	99.9		70-130	%	06-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.2		70-130	%	06-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-32	DUP 7									
Sampled By:	VP/AC on 03-MAR-20									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	06-MAR-20	2700			
	Benzene	0.78		0.50	ug/L	06-MAR-20	*0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	06-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	06-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	06-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	06-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	06-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	06-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	06-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	06-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	cis-1,2-Dichloroethylene	23.7		0.50	ug/L	06-MAR-20	*1.6			
	trans-1,2-Dichloroethylene	0.69		0.50	ug/L	06-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	06-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	06-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	06-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	06-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	06-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	06-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	06-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	06-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	06-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Trichloroethylene	5.04		0.50	ug/L	06-MAR-20	*0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	06-MAR-20	150			
	Vinyl chloride	2.40		0.50	ug/L	06-MAR-20	*0.5			
	o-Xylene	<0.30		0.30	ug/L	06-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	06-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	06-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	100.6		70-130	%	06-MAR-20				
	Surrogate: 1,4-Difluorobenzene	99.7		70-130	%	06-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2423564-33	TB-003									
Sampled By:	VP/AC on 03-MAR-20									
Matrix:	WATER						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	06-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	06-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	06-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	06-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	06-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	06-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	06-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	06-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	06-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	06-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	06-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	06-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	06-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	06-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	06-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	06-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	06-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	06-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	06-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	06-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	06-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	06-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	06-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	06-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	06-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	06-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	98.6		70-130	%	06-MAR-20				
	Surrogate: 1,4-Difluorobenzene	99.5		70-130	%	06-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

Reference Information

Sample Parameter Qualifier key listed:

Qualifier	Description
DLQ	Detection Limit raised due to co-eluting interference. GCMS qualifier ion ratio did not meet acceptance criteria.
OWP	Organic water sample contained visible sediment (must be included as part of analysis). Measured concentrations of organic substances in water can be biased high due to presence of sediment.
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference***
VOC-1,3-DCP-CALC-WT	Water	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Water	VOC by GCMS HS O.Reg 153/04 (July 2011)	SW846 8260

Liquid samples are analyzed by headspace GC/MSD.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

*** ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody numbers:

17-795249 17-795250 17-795251

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA		

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Quality Control Report

Workorder: L2423564 Report Date: 06-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5016846								
WG3286027-4 DUP		**WG3286027-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	05-MAR-20
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	05-MAR-20
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	05-MAR-20
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	05-MAR-20
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	05-MAR-20
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	05-MAR-20
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	05-MAR-20
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	05-MAR-20
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	05-MAR-20
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	05-MAR-20
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	05-MAR-20
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	05-MAR-20
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	05-MAR-20
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	05-MAR-20
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	05-MAR-20
Styrene		<0.50	<0.50		ug/L			05-MAR-20

Quality Control Report

Workorder: L2423564 Report Date: 06-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5016846								
WG3286027-4 DUP		**WG3286027-3**						
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
Tetrachloroethylene		0.83	0.69		ug/L	18	30	05-MAR-20
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	05-MAR-20
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	05-MAR-20
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
WG3286027-1 LCS								
1,1,1,2-Tetrachloroethane			91.6		%		70-130	05-MAR-20
1,1,2,2-Tetrachloroethane			95.9		%		70-130	05-MAR-20
1,1,1-Trichloroethane			93.7		%		70-130	05-MAR-20
1,1,2-Trichloroethane			92.8		%		70-130	05-MAR-20
1,1-Dichloroethane			100.5		%		70-130	05-MAR-20
1,1-Dichloroethylene			90.9		%		70-130	05-MAR-20
1,2-Dibromoethane			92.1		%		70-130	05-MAR-20
1,2-Dichlorobenzene			96.8		%		70-130	05-MAR-20
1,2-Dichloroethane			97.4		%		70-130	05-MAR-20
1,2-Dichloropropane			94.6		%		70-130	05-MAR-20
1,3-Dichlorobenzene			96.4		%		70-130	05-MAR-20
1,4-Dichlorobenzene			96.8		%		70-130	05-MAR-20
Acetone			107.5		%		60-140	05-MAR-20
Benzene			99.96		%		70-130	05-MAR-20
Bromodichloromethane			95.3		%		70-130	05-MAR-20
Bromoform			85.5		%		70-130	05-MAR-20
Bromomethane			80.6		%		60-140	05-MAR-20
Carbon tetrachloride			100.7		%		70-130	05-MAR-20
Chlorobenzene			96.6		%		70-130	05-MAR-20
Chloroform			96.7		%		70-130	05-MAR-20
cis-1,2-Dichloroethylene			91.7		%		70-130	05-MAR-20
cis-1,3-Dichloropropene			87.8		%		70-130	05-MAR-20
Dibromochloromethane			87.1		%		70-130	05-MAR-20
Dichlorodifluoromethane			88.1		%		50-140	05-MAR-20

Quality Control Report

Workorder: L2423564 Report Date: 06-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5016846								
WG3286027-1 LCS								
Ethylbenzene			95.0		%		70-130	05-MAR-20
n-Hexane			89.3		%		70-130	05-MAR-20
m+p-Xylenes			94.8		%		70-130	05-MAR-20
Methyl Ethyl Ketone			100.1		%		60-140	05-MAR-20
Methyl Isobutyl Ketone			95.9		%		60-140	05-MAR-20
Methylene Chloride			98.5		%		70-130	05-MAR-20
MTBE			99.4		%		70-130	05-MAR-20
o-Xylene			103.2		%		70-130	05-MAR-20
Styrene			90.6		%		70-130	05-MAR-20
Tetrachloroethylene			95.7		%		70-130	05-MAR-20
Toluene			98.0		%		70-130	05-MAR-20
trans-1,2-Dichloroethylene			93.1		%		70-130	05-MAR-20
trans-1,3-Dichloropropene			87.5		%		70-130	05-MAR-20
Trichloroethylene			96.5		%		70-130	05-MAR-20
Trichlorofluoromethane			93.5		%		60-140	05-MAR-20
Vinyl chloride			107.4		%		60-140	05-MAR-20
WG3286027-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	05-MAR-20
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	05-MAR-20
1,1,1-Trichloroethane			<0.50		ug/L		0.5	05-MAR-20
1,1,2-Trichloroethane			<0.50		ug/L		0.5	05-MAR-20
1,1-Dichloroethane			<0.50		ug/L		0.5	05-MAR-20
1,1-Dichloroethylene			<0.50		ug/L		0.5	05-MAR-20
1,2-Dibromoethane			<0.20		ug/L		0.2	05-MAR-20
1,2-Dichlorobenzene			<0.50		ug/L		0.5	05-MAR-20
1,2-Dichloroethane			<0.50		ug/L		0.5	05-MAR-20
1,2-Dichloropropane			<0.50		ug/L		0.5	05-MAR-20
1,3-Dichlorobenzene			<0.50		ug/L		0.5	05-MAR-20
1,4-Dichlorobenzene			<0.50		ug/L		0.5	05-MAR-20
Acetone			<30		ug/L		30	05-MAR-20
Benzene			<0.50		ug/L		0.5	05-MAR-20
Bromodichloromethane			<2.0		ug/L		2	05-MAR-20
Bromoform			<5.0		ug/L		5	05-MAR-20
Bromomethane			<0.50		ug/L		0.5	05-MAR-20

Quality Control Report

Workorder: L2423564 Report Date: 06-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5016846								
WG3286027-2 MB								
Carbon tetrachloride			<0.20		ug/L		0.2	05-MAR-20
Chlorobenzene			<0.50		ug/L		0.5	05-MAR-20
Chloroform			<1.0		ug/L		1	05-MAR-20
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	05-MAR-20
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	05-MAR-20
Dibromochloromethane			<2.0		ug/L		2	05-MAR-20
Dichlorodifluoromethane			<2.0		ug/L		2	05-MAR-20
Ethylbenzene			<0.50		ug/L		0.5	05-MAR-20
n-Hexane			<0.50		ug/L		0.5	05-MAR-20
m+p-Xylenes			<0.40		ug/L		0.4	05-MAR-20
Methyl Ethyl Ketone			<20		ug/L		20	05-MAR-20
Methyl Isobutyl Ketone			<20		ug/L		20	05-MAR-20
Methylene Chloride			<5.0		ug/L		5	05-MAR-20
MTBE			<2.0		ug/L		2	05-MAR-20
o-Xylene			<0.30		ug/L		0.3	05-MAR-20
Styrene			<0.50		ug/L		0.5	05-MAR-20
Tetrachloroethylene			<0.50		ug/L		0.5	05-MAR-20
Toluene			<0.50		ug/L		0.5	05-MAR-20
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	05-MAR-20
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	05-MAR-20
Trichloroethylene			<0.50		ug/L		0.5	05-MAR-20
Trichlorofluoromethane			<5.0		ug/L		5	05-MAR-20
Vinyl chloride			<0.50		ug/L		0.5	05-MAR-20
Surrogate: 1,4-Difluorobenzene			100.1		%		70-130	05-MAR-20
Surrogate: 4-Bromofluorobenzene			93.7		%		70-130	05-MAR-20
WG3286027-5 MS		**WG3286027-3**						
1,1,1,2-Tetrachloroethane			90.3		%		50-140	05-MAR-20
1,1,2,2-Tetrachloroethane			90.9		%		50-140	05-MAR-20
1,1,1-Trichloroethane			94.8		%		50-140	05-MAR-20
1,1,2-Trichloroethane			91.8		%		50-140	05-MAR-20
1,1-Dichloroethane			98.9		%		50-140	05-MAR-20
1,1-Dichloroethylene			89.2		%		50-140	05-MAR-20
1,2-Dibromoethane			90.6		%		50-140	05-MAR-20
1,2-Dichlorobenzene			95.1		%		50-140	05-MAR-20

Quality Control Report

Workorder: L2423564 Report Date: 06-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5016846								
WG3286027-5 MS		**WG3286027-3**						
1,2-Dichloroethane			96.3		%		50-140	05-MAR-20
1,2-Dichloropropane			93.3		%		50-140	05-MAR-20
1,3-Dichlorobenzene			95.9		%		50-140	05-MAR-20
1,4-Dichlorobenzene			95.7		%		50-140	05-MAR-20
Acetone			100.3		%		50-140	05-MAR-20
Benzene			98.5		%		50-140	05-MAR-20
Bromodichloromethane			93.3		%		50-140	05-MAR-20
Bromoform			81.8		%		50-140	05-MAR-20
Bromomethane			77.9		%		50-140	05-MAR-20
Carbon tetrachloride			99.5		%		50-140	05-MAR-20
Chlorobenzene			95.3		%		50-140	05-MAR-20
Chloroform			95.7		%		50-140	05-MAR-20
cis-1,2-Dichloroethylene			90.1		%		50-140	05-MAR-20
cis-1,3-Dichloropropene			86.9		%		50-140	05-MAR-20
Dibromochloromethane			85.5		%		50-140	05-MAR-20
Dichlorodifluoromethane			81.8		%		50-140	05-MAR-20
Ethylbenzene			94.6		%		50-140	05-MAR-20
n-Hexane			87.1		%		50-140	05-MAR-20
m+p-Xylenes			94.0		%		50-140	05-MAR-20
Methyl Ethyl Ketone			93.6		%		50-140	05-MAR-20
Methyl Isobutyl Ketone			88.9		%		50-140	05-MAR-20
Methylene Chloride			97.5		%		50-140	05-MAR-20
MTBE			98.2		%		50-140	05-MAR-20
o-Xylene			102.4		%		50-140	05-MAR-20
Styrene			89.0		%		50-140	05-MAR-20
Tetrachloroethylene			95.2		%		50-140	05-MAR-20
Toluene			97.5		%		50-140	05-MAR-20
trans-1,2-Dichloroethylene			91.7		%		50-140	05-MAR-20
trans-1,3-Dichloropropene			85.9		%		50-140	05-MAR-20
Trichloroethylene			95.6		%		50-140	05-MAR-20
Trichlorofluoromethane			91.2		%		50-140	05-MAR-20
Vinyl chloride			103.3		%		50-140	05-MAR-20

Quality Control Report

Workorder: L2423564 Report Date: 06-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5017088								
WG3286042-4 DUP		**WG3286042-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	05-MAR-20
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	05-MAR-20
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	05-MAR-20
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	05-MAR-20
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	05-MAR-20
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	05-MAR-20
cis-1,2-Dichloroethylene		0.79	0.79		ug/L	0.0	30	05-MAR-20
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	05-MAR-20
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	05-MAR-20
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	05-MAR-20
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	05-MAR-20
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	05-MAR-20
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	05-MAR-20
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	05-MAR-20
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	05-MAR-20
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	05-MAR-20
Styrene		<0.50	<0.50		ug/L			05-MAR-20

Quality Control Report

Workorder: L2423564 Report Date: 06-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5017088								
WG3286042-4 DUP		**WG3286042-3**						
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	05-MAR-20
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	05-MAR-20
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-20
WG3286042-1 LCS								
1,1,1,2-Tetrachloroethane			96.1		%		70-130	04-MAR-20
1,1,2,2-Tetrachloroethane			92.6		%		70-130	04-MAR-20
1,1,1-Trichloroethane			99.99		%		70-130	04-MAR-20
1,1,2-Trichloroethane			94.3		%		70-130	04-MAR-20
1,1-Dichloroethane			95.3		%		70-130	04-MAR-20
1,1-Dichloroethylene			92.3		%		70-130	04-MAR-20
1,2-Dibromoethane			94.4		%		70-130	04-MAR-20
1,2-Dichlorobenzene			98.8		%		70-130	04-MAR-20
1,2-Dichloroethane			95.8		%		70-130	04-MAR-20
1,2-Dichloropropane			96.7		%		70-130	04-MAR-20
1,3-Dichlorobenzene			99.8		%		70-130	04-MAR-20
1,4-Dichlorobenzene			99.4		%		70-130	04-MAR-20
Acetone			100.3		%		60-140	04-MAR-20
Benzene			98.9		%		70-130	04-MAR-20
Bromodichloromethane			100.0		%		70-130	04-MAR-20
Bromoform			94.0		%		70-130	04-MAR-20
Bromomethane			85.6		%		60-140	04-MAR-20
Carbon tetrachloride			99.7		%		70-130	04-MAR-20
Chlorobenzene			96.5		%		70-130	04-MAR-20
Chloroform			100.1		%		70-130	04-MAR-20
cis-1,2-Dichloroethylene			96.5		%		70-130	04-MAR-20
cis-1,3-Dichloropropene			91.6		%		70-130	04-MAR-20
Dibromochloromethane			94.1		%		70-130	04-MAR-20
Dichlorodifluoromethane			102.3		%		50-140	04-MAR-20

Quality Control Report

Workorder: L2423564 Report Date: 06-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5017088								
WG3286042-1 LCS								
Ethylbenzene			95.2		%		70-130	04-MAR-20
n-Hexane			92.8		%		70-130	04-MAR-20
m+p-Xylenes			95.4		%		70-130	04-MAR-20
Methyl Ethyl Ketone			98.1		%		60-140	04-MAR-20
Methyl Isobutyl Ketone			88.3		%		60-140	04-MAR-20
Methylene Chloride			99.9		%		70-130	04-MAR-20
MTBE			96.0		%		70-130	04-MAR-20
o-Xylene			103.2		%		70-130	04-MAR-20
Styrene			91.0		%		70-130	04-MAR-20
Tetrachloroethylene			96.6		%		70-130	04-MAR-20
Toluene			96.7		%		70-130	04-MAR-20
trans-1,2-Dichloroethylene			94.3		%		70-130	04-MAR-20
trans-1,3-Dichloropropene			88.7		%		70-130	04-MAR-20
Trichloroethylene			100.0		%		70-130	04-MAR-20
Trichlorofluoromethane			88.8		%		60-140	04-MAR-20
Vinyl chloride			105.7		%		60-140	04-MAR-20
WG3286042-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	05-MAR-20
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	05-MAR-20
1,1,1-Trichloroethane			<0.50		ug/L		0.5	05-MAR-20
1,1,2-Trichloroethane			<0.50		ug/L		0.5	05-MAR-20
1,1-Dichloroethane			<0.50		ug/L		0.5	05-MAR-20
1,1-Dichloroethylene			<0.50		ug/L		0.5	05-MAR-20
1,2-Dibromoethane			<0.20		ug/L		0.2	05-MAR-20
1,2-Dichlorobenzene			<0.50		ug/L		0.5	05-MAR-20
1,2-Dichloroethane			<0.50		ug/L		0.5	05-MAR-20
1,2-Dichloropropane			<0.50		ug/L		0.5	05-MAR-20
1,3-Dichlorobenzene			<0.50		ug/L		0.5	05-MAR-20
1,4-Dichlorobenzene			<0.50		ug/L		0.5	05-MAR-20
Acetone			<30		ug/L		30	05-MAR-20
Benzene			<0.50		ug/L		0.5	05-MAR-20
Bromodichloromethane			<2.0		ug/L		2	05-MAR-20
Bromoform			<5.0		ug/L		5	05-MAR-20
Bromomethane			<0.50		ug/L		0.5	05-MAR-20

Quality Control Report

Workorder: L2423564 Report Date: 06-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5017088								
WG3286042-2 MB								
Carbon tetrachloride			<0.20		ug/L		0.2	05-MAR-20
Chlorobenzene			<0.50		ug/L		0.5	05-MAR-20
Chloroform			<1.0		ug/L		1	05-MAR-20
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	05-MAR-20
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	05-MAR-20
Dibromochloromethane			<2.0		ug/L		2	05-MAR-20
Dichlorodifluoromethane			<2.0		ug/L		2	05-MAR-20
Ethylbenzene			<0.50		ug/L		0.5	05-MAR-20
n-Hexane			<0.50		ug/L		0.5	05-MAR-20
m+p-Xylenes			<0.40		ug/L		0.4	05-MAR-20
Methyl Ethyl Ketone			<20		ug/L		20	05-MAR-20
Methyl Isobutyl Ketone			<20		ug/L		20	05-MAR-20
Methylene Chloride			<5.0		ug/L		5	05-MAR-20
MTBE			<2.0		ug/L		2	05-MAR-20
o-Xylene			<0.30		ug/L		0.3	05-MAR-20
Styrene			<0.50		ug/L		0.5	05-MAR-20
Tetrachloroethylene			<0.50		ug/L		0.5	05-MAR-20
Toluene			<0.50		ug/L		0.5	05-MAR-20
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	05-MAR-20
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	05-MAR-20
Trichloroethylene			<0.50		ug/L		0.5	05-MAR-20
Trichlorofluoromethane			<5.0		ug/L		5	05-MAR-20
Vinyl chloride			<0.50		ug/L		0.5	05-MAR-20
Surrogate: 1,4-Difluorobenzene			100.4		%		70-130	05-MAR-20
Surrogate: 4-Bromofluorobenzene			97.2		%		70-130	05-MAR-20
WG3286042-5 MS		**WG3286042-3**						
1,1,1,2-Tetrachloroethane			94.8		%		50-140	05-MAR-20
1,1,2,2-Tetrachloroethane			91.9		%		50-140	05-MAR-20
1,1,1-Trichloroethane			100.3		%		50-140	05-MAR-20
1,1,2-Trichloroethane			92.3		%		50-140	05-MAR-20
1,1-Dichloroethane			95.3		%		50-140	05-MAR-20
1,1-Dichloroethylene			92.4		%		50-140	05-MAR-20
1,2-Dibromoethane			92.0		%		50-140	05-MAR-20
1,2-Dichlorobenzene			97.8		%		50-140	05-MAR-20

Quality Control Report

Workorder: L2423564 Report Date: 06-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5017088								
WG3286042-5 MS		**WG3286042-3**						
1,2-Dichloroethane			94.9		%		50-140	05-MAR-20
1,2-Dichloropropane			96.4		%		50-140	05-MAR-20
1,3-Dichlorobenzene			99.4		%		50-140	05-MAR-20
1,4-Dichlorobenzene			99.1		%		50-140	05-MAR-20
Acetone			93.2		%		50-140	05-MAR-20
Benzene			98.5		%		50-140	05-MAR-20
Bromodichloromethane			99.3		%		50-140	05-MAR-20
Bromoform			92.2		%		50-140	05-MAR-20
Bromomethane			86.5		%		50-140	05-MAR-20
Carbon tetrachloride			100.2		%		50-140	05-MAR-20
Chlorobenzene			92.0		%		50-140	05-MAR-20
Chloroform			100.1		%		50-140	05-MAR-20
cis-1,2-Dichloroethylene			96.6		%		50-140	05-MAR-20
cis-1,3-Dichloropropene			93.1		%		50-140	05-MAR-20
Dibromochloromethane			92.4		%		50-140	05-MAR-20
Dichlorodifluoromethane			111.8		%		50-140	05-MAR-20
Ethylbenzene			94.6		%		50-140	05-MAR-20
n-Hexane			92.3		%		50-140	05-MAR-20
m+p-Xylenes			95.1		%		50-140	05-MAR-20
Methyl Ethyl Ketone			87.8		%		50-140	05-MAR-20
Methyl Isobutyl Ketone			86.4		%		50-140	05-MAR-20
Methylene Chloride			98.8		%		50-140	05-MAR-20
MTBE			96.0		%		50-140	05-MAR-20
o-Xylene			102.1		%		50-140	05-MAR-20
Styrene			89.5		%		50-140	05-MAR-20
Tetrachloroethylene			97.1		%		50-140	05-MAR-20
Toluene			95.4		%		50-140	05-MAR-20
trans-1,2-Dichloroethylene			95.1		%		50-140	05-MAR-20
trans-1,3-Dichloropropene			89.2		%		50-140	05-MAR-20
Trichloroethylene			100.3		%		50-140	05-MAR-20
Trichlorofluoromethane			89.7		%		50-140	05-MAR-20
Vinyl chloride			108.1		%		50-140	05-MAR-20

Quality Control Report

Workorder: L2423564 Report Date: 06-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5018066								
WG3286751-4 DUP		**WG3286751-3**						
Trichloroethylene		2.19	2.19		ug/L	0.0	30	06-MAR-20
WG3286751-1 LCS								
Trichloroethylene			104.7		%		70-130	06-MAR-20
WG3286751-2 MB								
Trichloroethylene			<0.50		ug/L		0.5	06-MAR-20
WG3286751-5 MS		**WG3286751-3**						
Trichloroethylene			98.8		%		50-140	06-MAR-20
Batch R5018096								
WG3280592-4 DUP		**WG3280592-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-MAR-20
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-MAR-20
1,1,1-Trichloroethane		2.94	2.84		ug/L	3.5	30	06-MAR-20
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-MAR-20
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-MAR-20
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-MAR-20
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	06-MAR-20
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-MAR-20
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-MAR-20
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-MAR-20
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-MAR-20
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-MAR-20
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	06-MAR-20
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-MAR-20
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	06-MAR-20
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	06-MAR-20
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-MAR-20
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	06-MAR-20
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-MAR-20
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	06-MAR-20
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-MAR-20
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	06-MAR-20
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	06-MAR-20
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	06-MAR-20
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-MAR-20

Quality Control Report

Workorder: L2423564 Report Date: 06-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5018096								
WG3280592-4 DUP		**WG3280592-3**						
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-MAR-20
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	06-MAR-20
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	06-MAR-20
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	06-MAR-20
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	06-MAR-20
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	06-MAR-20
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	06-MAR-20
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-MAR-20
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-MAR-20
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-MAR-20
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-MAR-20
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	06-MAR-20
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-MAR-20
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	06-MAR-20
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	06-MAR-20
WG3280592-1 LCS								
1,1,1,2-Tetrachloroethane			98.3		%		70-130	06-MAR-20
1,1,2,2-Tetrachloroethane			93.1		%		70-130	06-MAR-20
1,1,1-Trichloroethane			99.5		%		70-130	06-MAR-20
1,1,2-Trichloroethane			100.6		%		70-130	06-MAR-20
1,1-Dichloroethane			109.0		%		70-130	06-MAR-20
1,1-Dichloroethylene			98.9		%		70-130	06-MAR-20
1,2-Dibromoethane			101.4		%		70-130	06-MAR-20
1,2-Dichlorobenzene			101.2		%		70-130	06-MAR-20
1,2-Dichloroethane			100.2		%		70-130	06-MAR-20
1,2-Dichloropropane			100.4		%		70-130	06-MAR-20
1,3-Dichlorobenzene			102.4		%		70-130	06-MAR-20
1,4-Dichlorobenzene			103.7		%		70-130	06-MAR-20
Acetone			114.8		%		60-140	06-MAR-20
Benzene			101.4		%		70-130	06-MAR-20
Bromodichloromethane			98.0		%		70-130	06-MAR-20
Bromoform			97.0		%		70-130	06-MAR-20
Bromomethane			90.9		%		60-140	06-MAR-20

Quality Control Report

Workorder: L2423564 Report Date: 06-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5018096								
WG3280592-1 LCS								
Carbon tetrachloride			101.1		%		70-130	06-MAR-20
Chlorobenzene			102.4		%		70-130	06-MAR-20
Chloroform			102.2		%		70-130	06-MAR-20
cis-1,2-Dichloroethylene			108.3		%		70-130	06-MAR-20
cis-1,3-Dichloropropene			96.5		%		70-130	06-MAR-20
Dibromochloromethane			98.1		%		70-130	06-MAR-20
Dichlorodifluoromethane			112.0		%		50-140	06-MAR-20
Ethylbenzene			101.1		%		70-130	06-MAR-20
n-Hexane			98.8		%		70-130	06-MAR-20
m+p-Xylenes			101.5		%		70-130	06-MAR-20
Methyl Ethyl Ketone			103.4		%		60-140	06-MAR-20
Methyl Isobutyl Ketone			96.2		%		60-140	06-MAR-20
Methylene Chloride			104.6		%		70-130	06-MAR-20
MTBE			101.2		%		70-130	06-MAR-20
o-Xylene			108.5		%		70-130	06-MAR-20
Styrene			95.7		%		70-130	06-MAR-20
Tetrachloroethylene			103.9		%		70-130	06-MAR-20
Toluene			103.6		%		70-130	06-MAR-20
trans-1,2-Dichloroethylene			100.0		%		70-130	06-MAR-20
trans-1,3-Dichloropropene			102.6		%		70-130	06-MAR-20
Trichloroethylene			100.8		%		70-130	06-MAR-20
Trichlorofluoromethane			101.8		%		60-140	06-MAR-20
Vinyl chloride			117.7		%		60-140	06-MAR-20
WG3280592-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	06-MAR-20
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	06-MAR-20
1,1,1-Trichloroethane			<0.50		ug/L		0.5	06-MAR-20
1,1,2-Trichloroethane			<0.50		ug/L		0.5	06-MAR-20
1,1-Dichloroethane			<0.50		ug/L		0.5	06-MAR-20
1,1-Dichloroethylene			<0.50		ug/L		0.5	06-MAR-20
1,2-Dibromoethane			<0.20		ug/L		0.2	06-MAR-20
1,2-Dichlorobenzene			<0.50		ug/L		0.5	06-MAR-20
1,2-Dichloroethane			<0.50		ug/L		0.5	06-MAR-20
1,2-Dichloropropane			<0.50		ug/L		0.5	06-MAR-20

Quality Control Report

Workorder: L2423564 Report Date: 06-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5018096								
WG3280592-2 MB								
1,3-Dichlorobenzene			<0.50		ug/L		0.5	06-MAR-20
1,4-Dichlorobenzene			<0.50		ug/L		0.5	06-MAR-20
Acetone			<30		ug/L		30	06-MAR-20
Benzene			<0.50		ug/L		0.5	06-MAR-20
Bromodichloromethane			<2.0		ug/L		2	06-MAR-20
Bromoform			<5.0		ug/L		5	06-MAR-20
Bromomethane			<0.50		ug/L		0.5	06-MAR-20
Carbon tetrachloride			<0.20		ug/L		0.2	06-MAR-20
Chlorobenzene			<0.50		ug/L		0.5	06-MAR-20
Chloroform			<1.0		ug/L		1	06-MAR-20
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	06-MAR-20
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	06-MAR-20
Dibromochloromethane			<2.0		ug/L		2	06-MAR-20
Dichlorodifluoromethane			<2.0		ug/L		2	06-MAR-20
Ethylbenzene			<0.50		ug/L		0.5	06-MAR-20
n-Hexane			<0.50		ug/L		0.5	06-MAR-20
m+p-Xylenes			<0.40		ug/L		0.4	06-MAR-20
Methyl Ethyl Ketone			<20		ug/L		20	06-MAR-20
Methyl Isobutyl Ketone			<20		ug/L		20	06-MAR-20
Methylene Chloride			<5.0		ug/L		5	06-MAR-20
MTBE			<2.0		ug/L		2	06-MAR-20
o-Xylene			<0.30		ug/L		0.3	06-MAR-20
Styrene			<0.50		ug/L		0.5	06-MAR-20
Tetrachloroethylene			<0.50		ug/L		0.5	06-MAR-20
Toluene			<0.50		ug/L		0.5	06-MAR-20
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	06-MAR-20
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	06-MAR-20
Trichloroethylene			<0.50		ug/L		0.5	06-MAR-20
Trichlorofluoromethane			<5.0		ug/L		5	06-MAR-20
Vinyl chloride			<0.50		ug/L		0.5	06-MAR-20
Surrogate: 1,4-Difluorobenzene			100.7		%		70-130	06-MAR-20
Surrogate: 4-Bromofluorobenzene			99.4		%		70-130	06-MAR-20
WG3280592-5 MS		**WG3280592-3**						
1,1,1,2-Tetrachloroethane			98.2		%		50-140	06-MAR-20

Quality Control Report

Workorder: L2423564 Report Date: 06-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5018096								
WG3280592-5 MS		**WG3280592-3**						
1,1,2,2-Tetrachloroethane			98.7		%		50-140	06-MAR-20
1,1,1-Trichloroethane			98.1		%		50-140	06-MAR-20
1,1,2-Trichloroethane			103.1		%		50-140	06-MAR-20
1,1-Dichloroethane			99.0		%		50-140	06-MAR-20
1,1-Dichloroethylene			95.7		%		50-140	06-MAR-20
1,2-Dibromoethane			104.2		%		50-140	06-MAR-20
1,2-Dichlorobenzene			101.0		%		50-140	06-MAR-20
1,2-Dichloroethane			103.1		%		50-140	06-MAR-20
1,2-Dichloropropane			101.1		%		50-140	06-MAR-20
1,3-Dichlorobenzene			101.1		%		50-140	06-MAR-20
1,4-Dichlorobenzene			102.5		%		50-140	06-MAR-20
Acetone			113.9		%		50-140	06-MAR-20
Benzene			101.1		%		50-140	06-MAR-20
Bromodichloromethane			99.6		%		50-140	06-MAR-20
Bromoform			100.7		%		50-140	06-MAR-20
Bromomethane			89.5		%		50-140	06-MAR-20
Carbon tetrachloride			99.1		%		50-140	06-MAR-20
Chlorobenzene			101.9		%		50-140	06-MAR-20
Chloroform			102.6		%		50-140	06-MAR-20
cis-1,2-Dichloroethylene			96.5		%		50-140	06-MAR-20
cis-1,3-Dichloropropene			97.3		%		50-140	06-MAR-20
Dibromochloromethane			99.3		%		50-140	06-MAR-20
Dichlorodifluoromethane			117.4		%		50-140	06-MAR-20
Ethylbenzene			98.7		%		50-140	06-MAR-20
n-Hexane			93.6		%		50-140	06-MAR-20
m+p-Xylenes			99.6		%		50-140	06-MAR-20
Methyl Ethyl Ketone			110.1		%		50-140	06-MAR-20
Methyl Isobutyl Ketone			103.0		%		50-140	06-MAR-20
Methylene Chloride			103.1		%		50-140	06-MAR-20
MTBE			100.4		%		50-140	06-MAR-20
o-Xylene			107.5		%		50-140	06-MAR-20
Styrene			96.2		%		50-140	06-MAR-20
Tetrachloroethylene			100.5		%		50-140	06-MAR-20

Quality Control Report

Workorder: L2423564 Report Date: 06-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5018096								
WG3280592-5 MS		**WG3280592-3**						
Toluene			100.7		%		50-140	06-MAR-20
trans-1,2-Dichloroethylene			97.9		%		50-140	06-MAR-20
trans-1,3-Dichloropropene			102.4		%		50-140	06-MAR-20
Trichloroethylene			99.3		%		50-140	06-MAR-20
Trichlorofluoromethane			98.9		%		50-140	06-MAR-20
Vinyl chloride			116.8		%		50-140	06-MAR-20

Quality Control Report

Workorder: L2423564 Report Date: 06-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9
Contact: Michael Shiry

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2423564-COFC

COC Number: 17 - 795249

Report To	Contact and company name below will appear on the final report
Company:	Jacobs
Contact:	Michael Shiry
Phone:	519-579-3500
Company address below will appear on the final report	
Street:	72 Victoria St S. Suite 300
City/Province:	Kitchener, ON
Postal Code:	N2G 4Y9
Invoice To	Same as Report To [X] YES [ ] NO
	Copy of Invoice with Report [X] YES [ ] NO
Company:	Jacobs
Contact:	Accounts Payable

Report Format / Distribution

Select Report Format: [X] PDF [X] EXCEL [X] EDD (DIGITAL)
Quality Control (QC) Report with Report [X] YES [ ] NO
[ ] Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax: michael.shiry@jacobs.com
Email 2: ed.taves@jacobs.com
Email 3: tania.mccarthy@jacobs.com

Invoice Distribution

Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax
Email 2

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] [X] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] [ ]; 3 day [P3-25%] [ ]; 2 day [P2-50%] [ ]

EMERGENCY: 1 Business day [E - 100%] [ ]; Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] [ ]

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q78833
Job #: 6947STCH
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2423564 RD
ALS Contact: E. Hansen
Sampler: V. Peters / A. Lasay

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	VOCs	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	OW19	02-03-20	9:15	water	2	X		
	MW18-130D		9:50		2			
	MW18-132D		10:45		2			
	OW18-II		11:40		2			
	OW18-I		12:25		2			
	OW24S		1415		2			
	OW24D		15:00		2			
	OW31		15:50		2			
	MW18-131S		9:20		2			
	OW07-38S		15:50		2			
	MW17-110S		15:00		2			
	OW17	02-03-20	14:15	water	2	X		

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] YES [X] NO
Are samples for human consumption/ use? [ ] YES [X] NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

O. Reg. 153/04 Table 1

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] SIF Observations Yes [ ] No [ ]
Ice Packs [ ] Ice Cubes [X] Custody seal intact Yes [ ] No [ ]
Cooling Initiated [ ]

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				7.8			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Vicki Peters	Date: 2020/03/03	Time: 15:40	Received by:	Date:	Time:	Received by:	Date: 3-3-2020	Time: 15:40

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2018 FRONT

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

ALS Environmental

www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

L2423564-COFC

Canada Toll Free: 1 800 668 9878

COC Number: 17 - 795250

Report To	Contact and company name below will appear on the final report
Company:	Jacobs
Contact:	Michael Shiny
Phone:	519-579-3500
	Company address below will appear on the final report
Street:	72 Victoria St S Suite 300
City/Province:	Kitchener, ON
Postal Code:	N2G 4Y9
Invoice To	Same as Report To [X] YES [ ] NO
	Copy of Invoice with Report [X] YES [ ] NO
Company:	Jacobs
Contact:	Accounts Payable

Report Format / Distribution

Select Report Format: [X] PDF [X] EXCEL [X] EDD (DIGITAL)

Quality Control (QC) Report with Report [X] YES [ ] NO

[ ] Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: [ ] EMAIL [ ] MAIL [ ] FAX

Email 1 or Fax michael.shiny@jacobs.com

Email 2 ed.taves@jacobs.com

Email 3 tania.mccarthy@jacobs.com

Invoice Distribution

Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX

Email 1 or Fax

Email 2

Project Information

ALS Account # / Quote #: Q78833

Job #: 694757CH

PO / AFE:

LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#

Major/Minor Code: Routing Code:

Requisitioner:

Location:

ALS Lab Work Order # (lab use only):

ALS Contact: E. Hansen

Sampler: V. Peters / A. Casey

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] [X] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] [ ] 3 day [P3-25%] [ ] 2 day [P2-50%] [ ]

EMERGENCY: 1 Business day [E - 100%] [ ] Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] [ ]

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	VOCs	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	MW17-109S	02-03-20	12:20	water	2	X		
	MW17-104S	|	11:30	|	2	|		
	MW17-104D	|	10:50	|	2	|		
	MW18-133D	02-03-20	10:00	water	2	X		
	DUP8	|	—	water	2	X		
	DUP9	|	—	water	2	X		
	DUP10	02-03-20	—	water	2	X		
	MW18-128D	03-03-20	8:55	water	2	|		
	OW23D	|	9:30	|	2	|		
	MW18-135D	|	10:10	|	2	|		
	OW10	|	11:05	|	2	|		
	MW18-127S	03-03-20	13:20	water	2	X		

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] YES [X] NO

Are samples for human consumption/ use? [ ] YES [X] NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

D. Reg 153/04 Table 1

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] SIF Observations Yes [ ] No [ ]

Ice Packs [ ] Ice Cubes [X] Custody seal intact Yes [ ] No [ ]

Cooling Initiated [ ]

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				7.8			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Vince Peters	Date: 2020/03/03	Time: 15:40	Received by:	Date:	Time:	Received by:	Date: 3-3-2020	Time: 1540

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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JUNE 2018 FRONT

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analyti Request Form

L2423564-COFC

Canada Toll Free: 1 800 668 9878

COC Number: 17 - 795251

Report To	Contact and company name below will appear on the final report
Company:	Jacobs
Contact:	Michael Shiny
Phone:	519-579-3500
Company address below will appear on the final report	
Street:	72 Victoria St. S Suite 300
City/Province:	Kitchener, ON
Postal Code:	N2G 4Y9
Invoice To	Same as Report To [X] YES [ ] NO
	Copy of Invoice with Report [X] YES [ ] NO
Company:	Jacobs
Contact:	Accounts Payable

Report Format / Distribution

Select Report Format: [X] PDF [X] EXCEL [X] EDD (DIGITAL)
Quality Control (QC) Report with Report [X] YES [ ] NO
[ ] Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax michael.shiny@jacobs.com
Email 2 ed.taves@jacobs.com
Email 3 tania.mccarthy@jacobs.com

Invoice Distribution

Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax
Email 2

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] [X] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] [ ]; 3 day [P3-25%] [ ]; 2 day [P2-50%] [ ]

EMERGENCY: 1 Business day [E - 100%] [ ]; Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] [ ]

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q78833
Job #: 6947STCH
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only):
ALS Contact: E. Hansen
Sampler: V. Peters/ A. Carey

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	VOCs (P)	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	OW07-37	03-03-20	14:00	Water	2	X		
	OW02		9:20		2	X		
	OW03-I		10:10		2			
	OW03-II		13:45		2			
	MW17-103S		11:20		2			
	MW17-103D		10:50		2			
	OW07-32		14:30		2			
	DUP7	03-03-20	—	Water	2	X		
	TB-003	—	—	QC	2	X		

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] YES [X] NO
Are samples for human consumption/ use? [ ] YES [X] NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

O. Reg 153/04 Table 1

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] SIF Observations Yes [ ] No [ ]
Ice Packs [ ] Ice Cubes [X] Custody seal intact Yes [ ] No [ ]
Cooling Initiated [ ]

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
	7.8

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date: 2020/03/03	Time: 15:40	Received by:	Date:	Time:	Received by:	Date: 3-3-2020	Time: 1540

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2018 FRONT

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

CH2M HILL CANADA LIMITED
ATTN: Michael Shiry
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Date Received: 11-MAR-20
Report Date: 13-MAR-20 12:29 (MT)
Version: FINAL

Client Phone: 519-579-3500

Certificate of Analysis

Lab Work Order #: L2426955

Project P.O. #: NOT SUBMITTED
Job Reference: 694757CH
C of C Numbers: 17-795252
Legal Site Desc:

Emily Hansen
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2426955-1	MW19-137S									
Sampled By:	V.PETERS on 11-MAR-20 @ 08:45									
Matrix:	CLIENT						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	13-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	13-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	13-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	13-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	13-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	13-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	13-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	13-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	13-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	13-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	13-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	13-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	13-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	13-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	13-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	13-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	13-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	13-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	13-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	13-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Trichloroethylene	0.55		0.50	ug/L	13-MAR-20	*0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	13-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	13-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	13-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	13-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	13-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	98.3		70-130	%	13-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.6		70-130	%	13-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2426955-2	MW18-113S									
Sampled By:	V.PETERS on 11-MAR-20 @ 12:2(									
Matrix:	CLIENT						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	13-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	13-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	13-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	13-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	13-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	13-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	13-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	13-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	13-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	13-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	13-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	13-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	13-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	13-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	13-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	13-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	13-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	13-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	13-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	13-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	13-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	13-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	13-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	13-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	13-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	97.5		70-130	%	13-MAR-20				
	Surrogate: 1,4-Difluorobenzene	99.6		70-130	%	13-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2426955-3	MW18-114S									
Sampled By:	V.PETERS on 11-MAR-20 @ 10:45									
Matrix:	CLIENT						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	13-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	13-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	13-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	13-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	13-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	13-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	13-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	13-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	13-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	13-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	13-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	13-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	13-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	13-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	13-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	13-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	13-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	13-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	13-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Toluene	1.12		0.50	ug/L	13-MAR-20	*0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	13-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	13-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	13-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	13-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	13-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	96.5		70-130	%	13-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.2		70-130	%	13-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2426955-4	MW18-115S									
Sampled By:	V.PETERS on 11-MAR-20 @ 10:05									
Matrix:	CLIENT						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	13-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	13-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	13-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	13-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	13-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	13-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	13-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	13-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	13-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	13-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	13-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	13-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	13-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	13-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	13-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	13-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	13-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	13-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	13-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Toluene	0.56		0.50	ug/L	13-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	13-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	13-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	13-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	13-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	13-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	98.9		70-130	%	13-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.2		70-130	%	13-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2426955-5	MW18-117S									
Sampled By:	V.PETERS on 11-MAR-20 @ 11:25									
Matrix:	CLIENT						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	13-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	13-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	13-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	13-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	13-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	13-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	13-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	13-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	13-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	13-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	13-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	13-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	13-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	13-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	13-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	13-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	13-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	13-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	13-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	13-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	13-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	13-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	13-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	13-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	13-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	97.6		70-130	%	13-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.5		70-130	%	13-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2426955-6	MW18-124S									
Sampled By:	V.PETERS on 11-MAR-20 @ 09:3(									
Matrix:	CLIENT						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	13-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	13-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	13-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	13-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	13-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	13-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	13-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	13-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	13-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	13-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	13-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	13-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	13-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	13-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	13-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	13-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	13-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	13-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	13-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	13-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	13-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	13-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	13-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	13-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	13-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	98.3		70-130	%	13-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.9		70-130	%	13-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2426955-7	DUP1									
Sampled By:	V.PETERS on 11-MAR-20									
Matrix:	CLIENT						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	13-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	13-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	13-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	13-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	13-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	13-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	13-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	13-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	13-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	13-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	13-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	13-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	13-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	13-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	13-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	13-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	13-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	13-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	13-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	13-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	13-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	13-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	13-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	13-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	13-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	98.2		70-130	%	13-MAR-20				
	Surrogate: 1,4-Difluorobenzene	100.7		70-130	%	13-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

694757CH

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2426955-8	TB-001									
Sampled By:	V.PETERS on 11-MAR-20									
Matrix:	CLIENT						#1			
Volatile Organic Compounds										
	Acetone	<30		30	ug/L	13-MAR-20	2700			
	Benzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Bromodichloromethane	<2.0		2.0	ug/L	13-MAR-20	2			
	Bromoform	<5.0		5.0	ug/L	13-MAR-20	5			
	Bromomethane	<0.50		0.50	ug/L	13-MAR-20	0.89			
	Carbon tetrachloride	<0.20		0.20	ug/L	13-MAR-20	0.2			
	Chlorobenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Dibromochloromethane	<2.0		2.0	ug/L	13-MAR-20	2			
	Chloroform	<1.0		1.0	ug/L	13-MAR-20	2			
	1,2-Dibromoethane	<0.20		0.20	ug/L	13-MAR-20	0.2			
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Dichlorodifluoromethane	<2.0		2.0	ug/L	13-MAR-20	590			
	1,1-Dichloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,2-Dichloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,1-Dichloroethylene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	13-MAR-20	1.6			
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	13-MAR-20	1.6			
	Methylene Chloride	<5.0		5.0	ug/L	13-MAR-20	5			
	1,2-Dichloropropane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	13-MAR-20				
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	13-MAR-20				
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Ethylbenzene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	n-Hexane	<0.50		0.50	ug/L	13-MAR-20	5			
	Methyl Ethyl Ketone	<20		20	ug/L	13-MAR-20	400			
	Methyl Isobutyl Ketone	<20		20	ug/L	13-MAR-20	640			
	MTBE	<2.0		2.0	ug/L	13-MAR-20	15			
	Styrene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	13-MAR-20	1.1			
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Tetrachloroethylene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Toluene	<0.50		0.50	ug/L	13-MAR-20	0.8			
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Trichloroethylene	<0.50		0.50	ug/L	13-MAR-20	0.5			
	Trichlorofluoromethane	<5.0		5.0	ug/L	13-MAR-20	150			
	Vinyl chloride	<0.50		0.50	ug/L	13-MAR-20	0.5			
	o-Xylene	<0.30		0.30	ug/L	13-MAR-20				
	m+p-Xylenes	<0.40		0.40	ug/L	13-MAR-20				
	Xylenes (Total)	<0.50		0.50	ug/L	13-MAR-20	72			
	Surrogate: 4-Bromofluorobenzene	98.5		70-130	%	13-MAR-20				
	Surrogate: 1,4-Difluorobenzene	101.4		70-130	%	13-MAR-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T1-Ground Water-All Types of Property Uses

#1: T1-Ground Water-All Types of Property Uses

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference***
VOC-1,3-DCP-CALC-WT	Water	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Water	VOC by GCMS HS O.Reg 153/04 (July 2011)	SW846 8260

Liquid samples are analyzed by headspace GC/MSD.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

*** ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody numbers:

17-795252

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA		

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Quality Control Report

Workorder: L2426955 Report Date: 13-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5023926								
WG3290969-4 DUP		**WG3290969-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-MAR-20
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-MAR-20
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-MAR-20
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-MAR-20
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-MAR-20
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-MAR-20
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	13-MAR-20
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-MAR-20
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-MAR-20
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-MAR-20
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-MAR-20
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-MAR-20
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	13-MAR-20
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-MAR-20
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	13-MAR-20
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	13-MAR-20
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-MAR-20
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	13-MAR-20
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-MAR-20
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	13-MAR-20
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-MAR-20
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	13-MAR-20
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	13-MAR-20
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	13-MAR-20
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-MAR-20
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-MAR-20
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	13-MAR-20
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	13-MAR-20
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	13-MAR-20
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	13-MAR-20
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	13-MAR-20
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	13-MAR-20
Styrene		<0.50	<0.50		ug/L			13-MAR-20

Quality Control Report

Workorder: L2426955 Report Date: 13-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5023926								
WG3290969-4 DUP		**WG3290969-3**						
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-MAR-20
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-MAR-20
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-MAR-20
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-MAR-20
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	13-MAR-20
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-MAR-20
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	13-MAR-20
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-MAR-20
WG3290969-1 LCS								
1,1,1,2-Tetrachloroethane			89.0		%		70-130	12-MAR-20
1,1,2,2-Tetrachloroethane			83.9		%		70-130	12-MAR-20
1,1,1-Trichloroethane			88.5		%		70-130	12-MAR-20
1,1,2-Trichloroethane			87.1		%		70-130	12-MAR-20
1,1-Dichloroethane			85.8		%		70-130	12-MAR-20
1,1-Dichloroethylene			81.3		%		70-130	12-MAR-20
1,2-Dibromoethane			88.1		%		70-130	12-MAR-20
1,2-Dichlorobenzene			90.0		%		70-130	12-MAR-20
1,2-Dichloroethane			86.1		%		70-130	12-MAR-20
1,2-Dichloropropane			84.6		%		70-130	12-MAR-20
1,3-Dichlorobenzene			91.0		%		70-130	12-MAR-20
1,4-Dichlorobenzene			90.6		%		70-130	12-MAR-20
Acetone			82.7		%		60-140	12-MAR-20
Benzene			86.5		%		70-130	12-MAR-20
Bromodichloromethane			88.9		%		70-130	12-MAR-20
Bromoform			88.2		%		70-130	12-MAR-20
Bromomethane			76.7		%		60-140	12-MAR-20
Carbon tetrachloride			91.4		%		70-130	12-MAR-20
Chlorobenzene			88.8		%		70-130	12-MAR-20
Chloroform			88.9		%		70-130	12-MAR-20
cis-1,2-Dichloroethylene			85.6		%		70-130	12-MAR-20
cis-1,3-Dichloropropene			84.0		%		70-130	12-MAR-20
Dibromochloromethane			87.3		%		70-130	12-MAR-20
Dichlorodifluoromethane			101.2		%		50-140	12-MAR-20

Quality Control Report

Workorder: L2426955 Report Date: 13-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5023926								
WG3290969-1 LCS								
Ethylbenzene			85.8		%		70-130	12-MAR-20
n-Hexane			78.8		%		70-130	12-MAR-20
m+p-Xylenes			86.2		%		70-130	12-MAR-20
Methyl Ethyl Ketone			66.4		%		60-140	12-MAR-20
Methyl Isobutyl Ketone			78.5		%		60-140	12-MAR-20
Methylene Chloride			88.5		%		70-130	12-MAR-20
MTBE			90.4		%		70-130	12-MAR-20
o-Xylene			93.8		%		70-130	12-MAR-20
Styrene			82.6		%		70-130	12-MAR-20
Tetrachloroethylene			88.7		%		70-130	12-MAR-20
Toluene			87.0		%		70-130	12-MAR-20
trans-1,2-Dichloroethylene			81.5		%		70-130	12-MAR-20
trans-1,3-Dichloropropene			85.1		%		70-130	12-MAR-20
Trichloroethylene			88.5		%		70-130	12-MAR-20
Trichlorofluoromethane			88.0		%		60-140	12-MAR-20
Vinyl chloride			101.9		%		60-140	12-MAR-20
WG3290969-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	13-MAR-20
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	13-MAR-20
1,1,1-Trichloroethane			<0.50		ug/L		0.5	13-MAR-20
1,1,2-Trichloroethane			<0.50		ug/L		0.5	13-MAR-20
1,1-Dichloroethane			<0.50		ug/L		0.5	13-MAR-20
1,1-Dichloroethylene			<0.50		ug/L		0.5	13-MAR-20
1,2-Dibromoethane			<0.20		ug/L		0.2	13-MAR-20
1,2-Dichlorobenzene			<0.50		ug/L		0.5	13-MAR-20
1,2-Dichloroethane			<0.50		ug/L		0.5	13-MAR-20
1,2-Dichloropropane			<0.50		ug/L		0.5	13-MAR-20
1,3-Dichlorobenzene			<0.50		ug/L		0.5	13-MAR-20
1,4-Dichlorobenzene			<0.50		ug/L		0.5	13-MAR-20
Acetone			<30		ug/L		30	13-MAR-20
Benzene			<0.50		ug/L		0.5	13-MAR-20
Bromodichloromethane			<2.0		ug/L		2	13-MAR-20
Bromoform			<5.0		ug/L		5	13-MAR-20
Bromomethane			<0.50		ug/L		0.5	13-MAR-20

Quality Control Report

Workorder: L2426955 Report Date: 13-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5023926								
WG3290969-2 MB								
Carbon tetrachloride			<0.20		ug/L		0.2	13-MAR-20
Chlorobenzene			<0.50		ug/L		0.5	13-MAR-20
Chloroform			<1.0		ug/L		1	13-MAR-20
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	13-MAR-20
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	13-MAR-20
Dibromochloromethane			<2.0		ug/L		2	13-MAR-20
Dichlorodifluoromethane			<2.0		ug/L		2	13-MAR-20
Ethylbenzene			<0.50		ug/L		0.5	13-MAR-20
n-Hexane			<0.50		ug/L		0.5	13-MAR-20
m+p-Xylenes			<0.40		ug/L		0.4	13-MAR-20
Methyl Ethyl Ketone			<20		ug/L		20	13-MAR-20
Methyl Isobutyl Ketone			<20		ug/L		20	13-MAR-20
Methylene Chloride			<5.0		ug/L		5	13-MAR-20
MTBE			<2.0		ug/L		2	13-MAR-20
o-Xylene			<0.30		ug/L		0.3	13-MAR-20
Styrene			<0.50		ug/L		0.5	13-MAR-20
Tetrachloroethylene			<0.50		ug/L		0.5	13-MAR-20
Toluene			<0.50		ug/L		0.5	13-MAR-20
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	13-MAR-20
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	13-MAR-20
Trichloroethylene			<0.50		ug/L		0.5	13-MAR-20
Trichlorofluoromethane			<5.0		ug/L		5	13-MAR-20
Vinyl chloride			<0.50		ug/L		0.5	13-MAR-20
Surrogate: 1,4-Difluorobenzene			100.5		%		70-130	13-MAR-20
Surrogate: 4-Bromofluorobenzene			98.1		%		70-130	13-MAR-20
WG3290969-5 MS		**WG3290969-3**						
1,1,1,2-Tetrachloroethane			88.8		%		50-140	13-MAR-20
1,1,2,2-Tetrachloroethane			80.2		%		50-140	13-MAR-20
1,1,1-Trichloroethane			89.2		%		50-140	13-MAR-20
1,1,2-Trichloroethane			85.4		%		50-140	13-MAR-20
1,1-Dichloroethane			85.9		%		50-140	13-MAR-20
1,1-Dichloroethylene			81.7		%		50-140	13-MAR-20
1,2-Dibromoethane			85.8		%		50-140	13-MAR-20
1,2-Dichlorobenzene			90.7		%		50-140	13-MAR-20

Quality Control Report

Workorder: L2426955 Report Date: 13-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9

Contact: Michael Shiry

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5023926								
WG3290969-5 MS		**WG3290969-3**						
1,2-Dichloroethane			84.7		%		50-140	13-MAR-20
1,2-Dichloropropane			83.9		%		50-140	13-MAR-20
1,3-Dichlorobenzene			93.3		%		50-140	13-MAR-20
1,4-Dichlorobenzene			92.5		%		50-140	13-MAR-20
Acetone			78.8		%		50-140	13-MAR-20
Benzene			86.7		%		50-140	13-MAR-20
Bromodichloromethane			87.6		%		50-140	13-MAR-20
Bromoform			84.9		%		50-140	13-MAR-20
Bromomethane			73.7		%		50-140	13-MAR-20
Carbon tetrachloride			92.5		%		50-140	13-MAR-20
Chlorobenzene			88.6		%		50-140	13-MAR-20
Chloroform			88.3		%		50-140	13-MAR-20
cis-1,2-Dichloroethylene			84.9		%		50-140	13-MAR-20
cis-1,3-Dichloropropene			81.0		%		50-140	13-MAR-20
Dibromochloromethane			85.7		%		50-140	13-MAR-20
Dichlorodifluoromethane			98.8		%		50-140	13-MAR-20
Ethylbenzene			86.5		%		50-140	13-MAR-20
n-Hexane			79.4		%		50-140	13-MAR-20
m+p-Xylenes			87.2		%		50-140	13-MAR-20
Methyl Ethyl Ketone			59.7		%		50-140	13-MAR-20
Methyl Isobutyl Ketone			75.0		%		50-140	13-MAR-20
Methylene Chloride			87.1		%		50-140	13-MAR-20
MTBE			90.7		%		50-140	13-MAR-20
o-Xylene			94.0		%		50-140	13-MAR-20
Styrene			82.0		%		50-140	13-MAR-20
Tetrachloroethylene			90.3		%		50-140	13-MAR-20
Toluene			87.9		%		50-140	13-MAR-20
trans-1,2-Dichloroethylene			82.0		%		50-140	13-MAR-20
trans-1,3-Dichloropropene			81.1		%		50-140	13-MAR-20
Trichloroethylene			88.9		%		50-140	13-MAR-20
Trichlorofluoromethane			88.7		%		50-140	13-MAR-20
Vinyl chloride			101.3		%		50-140	13-MAR-20

Quality Control Report

Workorder: L2426955 Report Date: 13-MAR-20

Client: CH2M HILL CANADA LIMITED
72 VICTORIA ST S, SUITE 300
KITCHENER ON N2G 4Y9
Contact: Michael Shiry

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

ALS Environmental

www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2426955-COFC

COC Number: 17 - 795252

Page 1 of 1

Report To	Contact and company name below will appear on the final report	Report Format / D.	Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)
Company:	Jacobs	Select Report Format: [X] PDF [X] EXCEL [X] EDD (DIGITAL)	Regular [R] [X] Standard TAT if received by 3 pm - business days - no surcharges apply
Contact:	Michael Shiny	Quality Control (QC) Report with Report [X] YES [ ] NO	PRIORITY (Business Days): 4 day [P4-20%] [ ]; 3 day [P3-25%] [ ]; 2 day [P2-50%] [ ]
Phone:	519-579-3580	[ ] Compare Results to Criteria on Report - provide details below if box checked	EMERGENCY: 1 Business day [E - 100%] [ ]; Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] [ ]
	Company address below will appear on the final report	Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX	
Street:	72 Victoria St. S Suite 300	Email 1 or Fax: michael.shiny@jacobs.com	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
City/Province:	Kitchener, ON	Email 2: ed.taves@jacobs.com	For tests that can not be performed according to the service level selected, you will be contacted.
Postal Code:	N2G 4Y9	Email 3: tadia.mccarthy@jacobs.com	
Invoice To	Same as Report To [X] YES [ ] NO	**Invoice Distribution**	**Analysis Request**
	Copy of Invoice with Report [X] YES [ ] NO	Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below
Company:	Jacobs	Email 1 or Fax	
Contact:	Accounts Payable	Email 2	
Project Information		**Oil and Gas Required Fields (client use)**	
ALS Account # / Quote #:	Q78833	AFE/Cost Center: / PO#	
Job #:	694757CH	Major/Minor Code: / Routing Code:	
PO / AFE:		Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (lab use only):	L2426955	ALS Contact: E. Hansen	Sampler: V. Peters

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	P													SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
						VOCs														
	MW19-137S	11-03-20	8:45	water	2	X														
	MW18-113S		12:20		2															
	MW18-114S		10:45		2															
	MW18-115S		10:05		2															
	MW18-117S		11:25		2															
	MW18-124S		9:30		2															
	DUP1	11-03-20	—	water	2															
	TB-001	—	—	QC	2	X														

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)	SAMPLE CONDITION AS RECEIVED (lab use only)
Are samples taken from a Regulated DW System? [ ] YES [X] NO	O. Reg. 153/04 Table 1	Frozen [ ] SIF Observations Yes [ ] No [ ]
Are samples for human consumption/ use? [ ] YES [X] NO		Ice Packs [ ] Ice Cubes [X] Custody seal intact Yes [ ] No [ ]
		Cooling Initiated [ ]
		INITIAL COOLER TEMPERATURES °C:
		FINAL COOLER TEMPERATURES °C: 6.9

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: V. Peters	Date: 2020/03/11	Time: 15:30	Received by:	Date:	Time:	Received by:	Date: Mar 11/20	Time: 15:30

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2019 FRONT

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

Appendix H
Data Quality and Evaluation Report

Jacobs

Technical Memorandum

www.jacobs.com

Subject	**Data Quality Evaluation**	**Project Name**	IMICO Phase II ESA
Attention		**Project No.**	694757CH
From	Jay Bilyk		
Date	May 5, 2020		

Introduction

This data quality evaluation (DQE) report assesses the quality of analytical results for soil, rock, and groundwater samples collected in Ontario, Canada and submitted to ALS Environmental. Jacobs collected samples from the IMICO site between August 29, 2017 and March 11, 2020 as part of the Phase II Environmental Site Assessment (ESA).

Guidance for this DQE report came from the Ontario Regulation 153/04 Protocols; the Environmental Protection Act (June 2016); professional judgment based on the U.S. Environmental Protection Agency (USEPA) National Functional Guidelines (NFG) for Organic Superfund Methods Data Review, January 2017; professional judgment based on the USEPA NFG for Inorganic Superfund Methods Data Review, January 2017; and, individual method requirements.

The analytical results were evaluated using the criteria of precision, accuracy, representativeness, comparability, and completeness (PARCC) as described in the USEPA guidance documents.

Analytical Data

This DQE report covers 394 (154 soil, 6 rock and 234 groundwater) normal (N) samples, 57 (22 soil and 35 groundwater) field duplicate (FD) samples, and 31 (3 soil and 28 water) trip blank (TB) samples. The samples were reported in the Certificates of Analysis (COAs) listed below.

Table 1. Laboratory COAs

Laboratory Work Order	Matrix	Sample Dates	Sample Count
L1983964	GW	August 29-30, 2017	7N, 1TB
L1985429	GW	August 31 - September 1, 2017	8N, 3FD, 2TB
L1986110	GW	September 5, 2017	6N, 1TB
L1988005	GW	September 6-7, 2017	13N, 1FD, 2TB
L1988476	GW	September 8, 2017	1N, 1FD, 1TB
L2003037	SO	October 4-5, 2017	17N, 5FD, 1TB
L2007635	SO	October 10-12, 2017	27N, 3FD, 1TB
L2010780	SO	October 16-18, 2017	8N, 1FD, 1TB
L2015398	SO	October 20-26, 2017	15N, 1FD, 1TB
L2015412	RK	October 27, 2017	6N
L2015415	SO	October 27, 2017	1N
L2017929	GW	October 31 - November 3, 2017	17N, 5FD, 1TB

Table 1. Laboratory COAs

Laboratory Work Order	Matrix	Sample Dates	Sample Count
L2070926	GW	March 20-21, 2018	12N, 1FD, 1TB
L2080020	GW	April 13, 2018	5N, 1FD
L2118212	SO	June 21, 2018	1N
L2120855	SO	June 27, 2018	2N, 1TB
L2125177	SO	July 5-6, 2018	23N, 2FD, 1TB
L2134047	SO	July 20, 2018	4N, 1FD, 1TB
L2136825	SO	July 23, 2018	8N, 3FD
L2136911	SO	July 25, 2018	4N, 2FD, 1TB
L2139225	GW	July 30-31, 2018	12N, 1FD, 1TB
L2140486	SO	July 26-31, 2018	8N, 1FD
L2140617	SO	August 1, 2018	1N
L2141576	GW	August 2-3, 2018	17N, 2FD
L2182846	GW	October 17, 2018	9N, 2FD, 1TB
L2200634	GW	November 22, 2018	1N
L2203734	GW	November 29, 2018	1N, 1TB
L2204937	GW	December 3, 2018	1N, 1TB
L2205658	SO	November 15, 2018	2N
L2209635	GW	December 12, 2018	1N
L2209758	GW	December 10-12, 2018	13N, 2FD, 1TB
L2211509	GW	December 17, 2018	1N
L2213740	GW	December 21, 2018	3N, 1TB
L2250326	GW	March 27, 2019	7N, 5FD, 1TB
L2252977	SO	April 3, 2019	4N, 1TB
L2259873	SO, GW	April 16-17, 2019	11N, 1FD, 1TB
L2419793	SO	February 20-21, 2020	19N, 2FD, 1TB
L2420861	GW	February 24-25, 2020	27N, 3FD, 1TB
L2422349	GW	February 26-28, 2020	37N, 3FD, 1TB
L2423564	GW	March 2-3, 2020	28N, 4FD, 1TB
L2426955	GW	March 11, 2020	6N, 1FD, 1TB

Notes:

FD = field duplicate sample
GW = groundwater
N = normal sample
RK = rock
SO = soil
TB = trip blank sample

Samples were collected and delivered to ALS Environmental in Waterloo, Ontario for chemical analysis and were analyzed by one or more of the methods listed in Table 2.

Table 2. Analytical Parameter

Parameter	Laboratory Method	Reference Method
Boron (Hot Water Extraction) O.Reg. 153/04	B-HWS-R511-WT	EPA 6010B
Cyanide (Weak Acid Dissociated) O.Reg. 153/04	CN-WAD-R511-WT	MOE 3015/ APHA 4500CN I-WAD
Hexavalent Chromium	CR-CR6-IC-WT	SW846 3060A/7199
Electrical Conductivity	EC-WT	MOEE E3138
F1-F4 Hydrocarbon Calculated	F1-F4-511-CALC-WT	CCME CWS-PHC DEC-2000
F1-O.Reg. 153/04 (July 2011)	F1-HS-511-WT	E3398/CCME TIER 1-HS
F2-F4-O.Reg. 153/04 (July 2011)	F2-F4-511-WT	MOE DECPH-E3398/ CCME Tier 1
Dissolved. Metals in Water by ICPMS	MET-D-UG/L-MS-WT	EPA 200.8
Dissolved Metals in Water by Collision/Reaction Cells ICPMS	MET-D-CCMS-WT	APHA 3030B/6020A
PAH-Calculated Parameters	METHYLNAPS-CALC-WT	SW846 8270
PAH-O. Reg. 153/04 (July 2011)	PAH-511-WT	SW846 3510/8270
PCB-O. Reg. 153/04	PCB-511-WT	SW846 3510/8082
pH	PH-WT	MOEE E3137A
Mercury by CVAAS	HG-200.2-CVAA-WT	EPA 200.2/1631E
VOC-O.Reg. 153	VOC-1,3-DCP-CALC-WT	SW8260B/SW8270C
Sodium Adsorption Ratio-O.Reg. 153/04	SAR-R511-WT	SW846 6010C
VOC by GC/MS HS O.Reg 153/04 (July 2011)	VOC-511-HS-WT	SW846 8260
Sum of Xylene Isomer Concentrations	XYLENES-SUM-CALCWT	Calculation

Notes:

APHA = American Public Health Association

CCME = Canadian Council of Ministers of the Environment

CVAAS = cold vapour atomic absorption spectroscopy

CWS = Canada Wide Standard

EPA = United States Environmental Protection Agency

GC/MS = gas chromatography/mass spectroscopy

ICPMS = inductively-coupled plasma mass spectroscopy

MOE = Ministry of the Environment

O. Reg. = Ontario Regulation

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyl

VOC = volatile organic compound

Each report was assessed by reviewing the:

- Chain-of-custody (CoC) documentation
- Holding-time compliance
- Field duplicates and field blanks
- Method blanks
- Laboratory control samples
- Matrix spike
- Surrogate spike recoveries
- Laboratory general comments

Data flags are assigned using the NFG as guidance, and are defined as follows:

- J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- U = The analyte was analyzed for but was not detected above the reported sample quantitation limit.
- UJ = The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

The overall summary of the data validation is contained in the following sections. A list of qualified data is included in Table 4.

Sample Preservation and Holding Times

All samples collected for laboratory analysis were shipped in sample coolers accompanied by chain-of-custody (CoC) forms. All CoC forms were properly filled out.

Upon receipt, sample temperatures were recorded by the laboratory. All samples were recorded as less than the required 10°C, or cooling was initiated for those samples delivered on the same day as sampling.

All method recommended holding time and preservation criteria were met, with the following exception:

- In work order L2003037, soil sample TP17-306-5-6 was analyzed for cyanide beyond the recommended 14 day hold time. As a result, the results were qualified as estimated.

Field QC Samples

Trip Blanks

Thirty-one trip blank samples were analyzed for VOCs throughout this project. These samples accompanied normal samples collected as part of these sampling events. All trip blanks reported VOC concentrations below the associated detection limits.

Field Duplicates

Fifty-seven field duplicate samples were submitted and analyzed throughout this project. For each set of results, a relative percent difference (RPD) was calculated to evaluate the level of precision obtained in the field and laboratory. However, RPDs were not calculated where one or more results were within five times the reporting limit (RL). Should the RPD exceed the control limit (30 percent for groundwater or 50 percent for soil), data qualifiers may be applied to the results. Data qualifiers may also be applied where the difference between duplicate concentrations is greater than two times the RL for groundwater or four times the RL for soil. All field duplicates reported in this DQE met acceptance criteria, with the following exceptions:

Table 3. Field Duplicates Failing Acceptance Criteria

Lab Work Order	Parent Sample ID	Field Duplicate Sample ID	Analytes
L2003037	TP17-302-1-3	DUP-1	Calcium
L2003037	TP17-303-4-5	DUP 5	Barium, conductivity, calcium, chromium, copper, lead, vanadium and zinc
L2007635	MW17-107S-0.5-2	DUP 7	Benzene
L2015398	MW17-101S/D-4-5.5	DUP 10	F3 (C16-C34) and total hydrocarbons (C6-C50)
L2125177	TP18-314-6	TP18-DUP1	Lead and zinc
L2141576	MW18-113S	DUP3	Dissolved copper and dissolved lead
L2182846	OW25	DUP2	Benzo(a)pyrene

Detected results associated with the RPD exceedances above were flagged "J" and non-detect results were flagged "UJ". All results are considered estimates.

Laboratory QC samples

Method blanks (MB) were analyzed at the required frequency and were free of contamination, with the following exception:

- In COA L2419793, one of the four surrogates in the MB (p-terphenyl-d14) reported a recovery greater than the upper control limit. However, no results required data qualifiers.

Laboratory control samples (LCS) and LCS duplicate (LCSD) samples were analyzed as required. All accuracy and precision criteria were met, with the following exceptions:

- Dichlorodifluoromethane in thirty-three samples from six COAs reported recoveries less than the lower control limits in the associated LCSs.
- n-Hexane in sample MW18-120D from COA L2139225 reported a recovery less than the lower control limit in the associated LCS.
- PCB parameters aroclor 1242 and aroclor 1248 in sample TCLP from COA L2140617 reported recoveries less than the lower control limits in the associated LCSs.
- Vinyl chloride in the LCS from COA L2259873 reported a recovery below the lower control limit.
- 3,3'-Dichlorobenzidine in the LCS from COA L2419793 reported a recovery below the lower control limit.

Non-detect results associated with the LCS recoveries above were flagged "UJ" and are considered estimates.

All laboratory matrix spike (MS) samples analyzed on Jacobs samples reported recoveries within the required control limits, with the following exceptions:

- Acenaphthene and fluorene in sample TP17-306-5-6 from COA L2003037 reported recoveries less than the lower control limits in the associated MS.

- Dichlorodifluoromethane in sample MW17-108S-9-9.5 from COA L2007635 reported a recovery less than the lower control limit in the associated MS.
- Anthracene in sample TCLP from COA L2140617 reported a recovery less than the lower control in the associated MS.

Detected and non-detect results associated with the MS recoveries above were flagged "J" and "UJ", respectively, and are considered estimates.

Surrogates were added to all samples as determined by method requirements. All acceptance criteria were met, with the following exception:

- F1 (C6-C10) result in sample MW17-108S-9-9.5 from COA L2007635 reported a surrogate recovery less than the lower control limit.

The single non-detect result associated with the surrogate recovery above was flagged "UJ" and is considered an estimate.

Laboratory duplicates were performed as required by the analytical methods. All RPDs were within the acceptance criteria, with the following exceptions:

- Acenaphthene, anthracene, benzo(a)anthracene, benzo(k)fluoranthene, chrysene, fluoranthene, fluorene, phenanthrene, and pyrene in TP17-306-5-6 from COA L2003037 reported an RPD greater than the laboratory criteria.
- 1-Methylnaphthalene, 2-methylnaphthalene, and naphthalene in sample TP17-301-1-3 from COA L2003037 reported an RPD greater than the laboratory criteria

Detected results associated with the RPD exceedances above were flagged "J" and are considered estimates.

Additionally, the following data issues were reported:

- Sodium adsorption ratio (SAR) results in nine samples from four COAs were qualified due to non-detection of calcium and/or magnesium. In these cases, the detection limit for each parameter was used to calculate SAR.
- Thirty-one PAH sample results and one VOC sample result from nine COAs were qualified as estimated due ion-abundance or GC/MS qualifier ion ratio did not meet criteria.
- Nine dioxin and furan analytical results from sample TP17-300-0-1 in COA L2003037 were qualified due to results less than the reportable detection limit (RDL) but greater than the estimated detection limit (EDL).
- cis-1,2-Dichloroethylene results in three samples from COA L1985429 were qualified as estimate results due to suspected interference.

Detected and non-detect results associated with the QC issues above were flagged "J" and "UJ", respectively and are considered estimated.

Overall Assessment

The goal of this assessment is to demonstrate that a sufficient number of representative samples were collected, and the resulting analytical data can be used to support the decision-making process.

The following summary highlights the PARCC findings for the above-defined event:

- Precision of the data was verified through the review of the laboratory data quality indicators that include laboratory duplicate and FD samples. The precision reported in this DQE was affected by RPD exceedance for seventeen analytical results in seven FD pairs. There were also twelve analytical results from two samples that were qualified due to exceedance of the RPD criteria in the laboratory duplicates. However, the overall precision level is considered acceptable.
- Accuracy of the data was verified through the review of the LCS, matrix spike and surrogate recoveries, as well as the evaluation of method and trip blank data. The overall accuracy reported in this DQE is considered acceptable, however, several laboratory QC issues were observed that can affect accuracy; thirty-six sample results from thirty-five samples were qualified due to LCS recovery; four sample results from three samples were qualified due to MS recovery and one sample result due to surrogate recovery. Additionally, accuracy was affected by nine dioxin and furan that were qualified due to results between the RDL and EDL; three VOC results qualified due to suspected interference; thirty-two organic (PAH or VOC) results qualified due to ion ratio not meeting criteria and nine SAR results qualified in cases where the detection limits were used in calculations due to non-detections.
- Representativeness of the data was verified through the samples' collection, storage, and preservation procedures and the verification of holding-time compliance. All samples were analyzed within the recommended holding time except one WAD cyanide analysis. Temperature and holding at arrival met criteria.
- Comparability of the data was ensured through the use of standard analytical procedures and standard units for reporting. Results obtained are comparable to industry standards in that the collection and analytical techniques followed approved, documented procedures.
- Completeness is a measure of the number of valid measurements obtained in relation to the total number of measurements planned. Valid data are defined as all data that are not rejected for project use. No data are rejected. All data are considered valid.

The groundwater and soil analytical data evaluated herein is considered valid, taking into consideration the data qualifiers listed below in Table 4. All results can be used to support the project decision making process.

Table 4. Applicable Data Qualifiers

Laboratory Work Order	Matrix	Sample ID	Analyte	Final Result	Units	Validation Flag	Validation Reason
L1985429	GW	DUP1	cis-1,2-Dichloroethylene	0.57	ug/L	J	EMPC
L1985429	GW	OW07-33	cis-1,2-Dichloroethylene	0.6	ug/L	J	EMPC
L1985429	GW	OW26S	cis-1,2-Dichloroethylene	0.52	ug/L	J	EMPC
L2017929	GW	DUP 1	Acenaphthene	<0.040	ug/L	UJ	IonRatio
L2017929	GW	MW17-101S	Acenaphthylene	<0.100	ug/L	UJ	IonRatio
L2017929	GW	MW17-101S	Anthracene	<0.090	ug/L	UJ	IonRatio
L2017929	GW	MW17-101S	Naphthalene	<0.135	ug/L	UJ	IonRatio
L2017929	GW	MW17-101S	Phenanthrene	<0.030	ug/L	UJ	IonRatio
L2015398	SO	MW17-101S/D-4-5.5	3,3'-Dichlorobenzidine	<0.3	ug/g	UJ	IonRatio

Table 4. Applicable Data Qualifiers

Laboratory Work Order	Matrix	Sample ID	Analyte	Final Result	Units	Validation Flag	Validation Reason
L2015398	SO	MW17-101S/D-4-5.5	Benzo(a)anthracene	<0.06	ug/g	UJ	IonRatio
L2017929	GW	MW17-104D	Anthracene	<0.045	ug/L	UJ	IonRatio
L2017929	GW	MW17-104S	Naphthalene	<15.0	ug/L	UJ	IonRatio
L2017929	GW	MW17-108S	Acenaphthene	<0.035	ug/L	UJ	IonRatio
L2017929	GW	MW17-109S	Naphthalene	<0.800	ug/L	UJ	IonRatio
L2141576	GW	MW18-125S	Benzo(b)-fluoranthene	<2.00	ug/L	UJ	IonRatio
L2141576	GW	MW18-125S	Benzo(k)-fluoranthene	<2.00	ug/L	UJ	IonRatio
L1986110	GW	OW12	cis-1,2-Dichloroethylene	<0.95	ug/L	UJ	IonRatio
L1986110	GW	OW17	Naphthalene	<0.060	ug/L	UJ	IonRatio
L1988005	GW	OW19	Acenaphthylene	<0.035	ug/L	UJ	IonRatio
L1988005	GW	OW19	Anthracene	<0.065	ug/L	UJ	IonRatio
L1988005	GW	OW19	Naphthalene	<0.075	ug/L	UJ	IonRatio
L1988005	GW	OW19	Phenanthrene	<0.075	ug/L	UJ	IonRatio
L1988005	GW	OW22S	2-Methylnaphthalene	<0.110	ug/L	UJ	IonRatio
L1988005	GW	OW22S	Acenaphthylene	<0.290	ug/L	UJ	IonRatio
L1988005	GW	OW22S	Anthracene	<1.20	ug/L	UJ	IonRatio
L1988005	GW	OW22S	Benzo(a)anthracene	<0.580	ug/L	UJ	IonRatio
L1988005	GW	OW22S	Chrysene	<1.35	ug/L	UJ	IonRatio
L1988005	GW	OW22S	Naphthalene	<0.25	ug/L	UJ	IonRatio
L1988005	GW	OW22S	Phenanthrene	<1.40	ug/L	UJ	IonRatio
L2003037	SO	DUP 2	Benzo(a)anthracene	1.27	ug/g	J	IonRatio
L2070926	GW	MW17-1085	Acenaphthene	0.026	ug/L	J	IonRatio
L2010780	SO	MW17-110S-0-2	Acenaphthene	0.098	ug/g	J	IonRatio
L2141576	GW	MW18-125S	Acenaphthene	0.041	ug/L	J	IonRatio
L1983964	GW	OW10	Anthracene	0.03	ug/L	J	IonRatio
L2003037	SO	TP17-301-1-3	Benzo(a)anthracene	0.92	ug/g	J	IonRatio
L2003037	SO	TP17-301-1-3	1-Methylnaphthalene	1.08	ug/g	J	LabDup> RPD
L2003037	SO	TP17-301-1-3	2-Methylnaphthalene	0.918	ug/g	J	LabDup> RPD
L2003037	SO	TP17-301-1-3	Naphthalene	0.46	ug/g	J	LabDup> RPD
L2003037	SO	TP17-306-5-6	Acenaphthene	0.349	ug/g	J	LabDup> RPD

Table 4. Applicable Data Qualifiers

Laboratory Work Order	Matrix	Sample ID	Analyte	Final Result	Units	Validation Flag	Validation Reason
L2003037	SO	TP17-306-5-6	Anthracene	0.887	ug/g	J	LabDup> RPD
L2003037	SO	TP17-306-5-6	Benzo(a)anthracene	2.19	ug/g	J	LabDup> RPD
L2003037	SO	TP17-306-5-6	Benzo(k)fluoranthene	1.16	ug/g	J	LabDup> RPD
L2003037	SO	TP17-306-5-6	Chrysene	2.1	ug/g	J	LabDup> RPD
L2003037	SO	TP17-306-5-6	Fluoranthene	4.18	ug/g	J	LabDup> RPD
L2003037	SO	TP17-306-5-6	Fluorene	0.395	ug/g	J	LabDup> RPD
L2003037	SO	TP17-306-5-6	Phenanthrene	3.75	ug/g	J	LabDup> RPD
L2003037	SO	TP17-306-5-6	Pyrene	3.31	ug/g	J	LabDup> RPD
L2003037	SO	DUP 1	Calcium (Ca)	6.7	mg/L	J	FD>RPD
L2015398	SO	DUP 10	F3 (C16-C34)	90	ug/g	J	FD>RPD
L2015398	SO	DUP 10	Total Hydrocarbons (C6-C50)	90	ug/g	J	FD>RPD
L2003037	SO	DUP 5	Barium (Ba)	43.6	ug/g	J	FD>RPD
L2003037	SO	DUP 5	Calcium (Ca)	5.9	mg/L	J	FD>RPD
L2003037	SO	DUP 5	Chromium (Cr)	10.6	ug/g	J	FD>RPD
L2003037	SO	DUP 5	Conductivity	0.157	mS/cm	J	FD>RPD
L2003037	SO	DUP 5	Copper (Cu)	11.2	ug/g	J	FD>RPD
L2003037	SO	DUP 5	Lead (Pb)	20.4	ug/g	J	FD>RPD
L2003037	SO	DUP 5	Vanadium (V)	23.7	ug/g	J	FD>RPD
L2003037	SO	DUP 5	Zinc (Zn)	43.8	ug/g	J	FD>RPD
L2007635	SO	DUP 7	Benzene	0.0109	ug/g	J	FD>RPD
L2182846	GW	DUP2	Benzo(a)pyrene	0.034	ug/L	J	FD>RPD
L2141576	GW	DUP3	Copper (Cu)-Dissolved	1.04	ug/L	J	FD>RPD
L2141576	GW	DUP3	Lead (Pb)-Dissolved	2.65	ug/L	J	FD>RPD
L2015398	SO	MW17-101S/D-4-5.5	F3 (C16-C34)	727	ug/g	J	FD>RPD
L2015398	SO	MW17-101S/D-4-5.5	Total Hydrocarbons (C6-C50)	934	ug/g	J	FD>RPD

Table 4. Applicable Data Qualifiers

Laboratory Work Order	Matrix	Sample ID	Analyte	Final Result	Units	Validation Flag	Validation Reason
L2007635	SO	MW17-107S-0.5-2	Benzene	0.0452	ug/g	J	FD>RPD
L2141576	GW	MW18-113S	Copper (Cu)-Dissolved	0.48	ug/L	J	FD>RPD
L2141576	GW	MW18-113S	Lead (Pb)-Dissolved	3.78	ug/L	J	FD>RPD
L2182846	GW	OW25	Benzo(a)pyrene	<0.010	ug/L	UJ	FD>RPD
L2003037	SO	TP17-302-1-3	Calcium (Ca)	13	mg/L	J	FD>RPD
L2003037	SO	TP17-303-4-5	Barium (Ba)	93	ug/g	J	FD>RPD
L2003037	SO	TP17-303-4-5	Calcium (Ca)	1.8	mg/L	J	FD>RPD
L2003037	SO	TP17-303-4-5	Chromium (Cr)	6.2	ug/g	J	FD>RPD
L2003037	SO	TP17-303-4-5	Conductivity	0.0763	mS/cm	J	FD>RPD
L2003037	SO	TP17-303-4-5	Copper (Cu)	25.9	ug/g	J	FD>RPD
L2003037	SO	TP17-303-4-5	Lead (Pb)	46.8	ug/g	J	FD>RPD
L2003037	SO	TP17-303-4-5	Vanadium (V)	48	ug/g	J	FD>RPD
L2003037	SO	TP17-303-4-5	Zinc (Zn)	665	ug/g	J	FD>RPD
L2125177	SO	TP18-314-6	Lead (Pb)	42.6	ug/g	J	FD>RPD
L2125177	SO	TP18-314-6	Zinc (Zn)	438	ug/g	J	FD>RPD
L2125177	SO	TP18-DUP1	Lead (Pb)	20.1	ug/g	J	FD>RPD
L2125177	SO	TP18-DUP1	Zinc (Zn)	223	ug/g	J	FD>RPD
L2003037	GW	TP17-306-5-6	Cyanide, WAD	<0.050	ug/L	UJ	HT>UCL
L2003037	SO	TP17-300-0-1	1,2,3,4,7,8,9-HpCDF	0.94	pg/g	J	EDL
L2003037	SO	TP17-300-0-1	1,2,3,4,7,8-HxCDD	0.81	pg/g	J	EDL
L2003037	SO	TP17-300-0-1	1,2,3,4,7,8-HxCDF	2.01	pg/g	J	EDL
L2003037	SO	TP17-300-0-1	1,2,3,6,7,8-HxCDF	1.83	pg/g	J	EDL
L2003037	SO	TP17-300-0-1	1,2,3,7,8,9-HxCDD	2.12	pg/g	J	EDL
L2003037	SO	TP17-300-0-1	1,2,3,7,8,9-HxCDF	0.61	pg/g	J	EDL
L2003037	SO	TP17-300-0-1	1,2,3,7,8-PeCDD	0.966	pg/g	J	EDL
L2003037	SO	TP17-300-0-1	1,2,3,7,8-PeCDF	0.68	pg/g	J	EDL
L2003037	SO	TP17-300-0-1	2,3,7,8-TCDD	0.157	pg/g	J	EDL
L2007635	SO	BH17-200-3.5-4	Dichlorodifluoro-methane	<0.050	ug/g	UJ	LCS<LCL
L2007635	SO	BH17-200-6-6.5	Dichlorodifluoro-methane	<0.050	ug/g	UJ	LCS<LCL
L2007635	SO	BH17-202-2-4	Dichlorodifluoro-methane	<0.050	ug/g	UJ	LCS<LCL
L2007635	SO	BH17-202-6-7	Dichlorodifluoro-methane	<0.050	ug/g	UJ	LCS<LCL
L2007635	SO	BH17-203-0-2	Dichlorodifluoro-methane	<0.050	ug/g	UJ	LCS<LCL

Table 4. Applicable Data Qualifiers

Laboratory Work Order	Matrix	Sample ID	Analyte	Final Result	Units	Validation Flag	Validation Reason
L2010780	SO	BH17-204-0.5-2	Dichlorodifluoro-methane	<0.050	ug/g	UJ	LCS<LCL
L2070926	GW	DUP 1	Dichlorodifluoro-methane	<2.0	ug/L	UJ	LCS<LCL
L2007635	SO	DUP 7	Dichlorodifluoro-methane	<0.050	ug/g	UJ	LCS<LCL
L2010780	SO	DUP9	Dichlorodifluoro-methane	<0.050	ug/g	UJ	LCS<LCL
L2007635	SO	MW17-100S-6-7	Dichlorodifluoro-methane	<0.050	ug/g	UJ	LCS<LCL
L2015398	SO	MW17-101S/D-4-5.5	Dichlorodifluoro-methane	<0.050	ug/g	UJ	LCS<LCL
L2015412	SO	MW17-101S/D-8.5	Dichlorodifluoro-methane	<0.050	ug/g	UJ	LCS<LCL
L2010780	SO	MW17-104S/D-4-6	Dichlorodifluoro-methane	<0.050	ug/g	UJ	LCS<LCL
L2015412	SO	MW17-104S/D-9	Dichlorodifluoro-methane	<0.050	ug/g	UJ	LCS<LCL
L2015412	SO	MW17-105S/D-13.25	Dichlorodifluoro-methane	<0.050	ug/g	UJ	LCS<LCL
L2015398	SO	MW17-105S/D-4-6	Dichlorodifluoro-methane	<0.050	ug/g	UJ	LCS<LCL
L2015398	SO	MW17-105S/D-6-7	Dichlorodifluoro-methane	<0.050	ug/g	UJ	LCS<LCL
L2007635	SO	MW17-107S-0.5-2	Dichlorodifluoro-methane	<0.050	ug/g	UJ	LCS<LCL
L2007635	SO	MW17-107S-4.5-5.5	Dichlorodifluoro-methane	<0.050	ug/g	UJ	LCS<LCL
L2070926	GW	MW17-1085	Dichlorodifluoro-methane	<2.0	ug/L	UJ	LCS<LCL
L2007635	SO	MW17-108S-10-10.5	Dichlorodifluoro-methane	<0.050	ug/g	UJ	LCS<LCL
L2007635	SO	MW17-108S-9-9.5	Dichlorodifluoro-methane	<0.050	ug/g	UJ	LCS<LCL
L2015412	SO	MW17-109S-13.25	Dichlorodifluoro-methane	<0.050	ug/g	UJ	LCS<LCL
L2010780	SO	MW17-109S-4-5	Dichlorodifluoro-methane	<0.050	ug/g	UJ	LCS<LCL
L2010780	SO	MW17-110S-4-6	Dichlorodifluoro-methane	<0.050	ug/g	UJ	LCS<LCL
L2007635	SO	MW17-111S-2-4	Dichlorodifluoro-methane	<0.050	ug/g	UJ	LCS<LCL
L2007635	SO	MW17-111S-6-7	Dichlorodifluoro-methane	<0.050	ug/g	UJ	LCS<LCL

Table 4. Applicable Data Qualifiers

Laboratory Work Order	Matrix	Sample ID	Analyte	Final Result	Units	Validation Flag	Validation Reason
L2139225	GW	MW18-120D	n-Hexane	<0.50	ug/L	UJ	LCS<LCL
L2070926	GW	OW12	Dichlorodifluoro-methane	<2.0	ug/L	UJ	LCS<LCL
L2070926	GW	OW13	Dichlorodifluoro-methane	<2.0	ug/L	UJ	LCS<LCL
L2070926	GW	OW14	Dichlorodifluoro-methane	<2.0	ug/L	UJ	LCS<LCL
L2070926	GW	OW19	Dichlorodifluoro-methane	<2.0	ug/L	UJ	LCS<LCL
L2070926	GW	OW235	Dichlorodifluoro-methane	<2.0	ug/L	UJ	LCS<LCL
L2140617	SO	TCLP	Aroclor 1242	<0.0002	mg/L	UJ	LCS<LCL
L2140617	SO	TCLP	Aroclor 1248	<0.0002	mg/L	UJ	LCS<LCL
L2003037	SO	TP17-307-7-8	Dichlorodifluoro-methane	<0.050	ug/g	UJ	LCS<LCL
L2007635	SO	MW17-108S-9-9.5	Dichlorodifluoro-methane	<0.050	ug/g	UJ	MS<LCL
L2140617	SO	TCLP	Anthracene	<0.0050	mg/L	UJ	MS<LCL
L2003037	SO	TP17-306-5-6	Acenaphthene	0.349	ug/g	J	MS<LCL
L2003037	SO	TP17-306-5-6	Fluorene	0.395	ug/g	J	MS<LCL
L2010780	SO	BH17-204-0.5-2	SAR	0.43	SAR	J	SAR:M
L2007635	SO	DUP 8	SAR	0.22	SAR	J	SAR:M
L2015398	SO	MW17-102D-4-5.5	SAR	0.24	SAR	J	SAR:M
L2015398	SO	MW17-102D-6-7	SAR	0.65	SAR	J	SAR:M
L2015398	SO	MW17-103S/D-4-6	SAR	0.45	SAR	J	SAR:M
L2015398	SO	MW17-105S/D-4-6	SAR	0.34	SAR	J	SAR:M
L2010780	SO	MW17-109S-0-2	SAR	0.31	SAR	J	SAR:M
L2007635	SO	MW17-111S-0-2	SAR	0.21	SAR	J	SAR:M
L2003037	SO	TP17-306-5-6	SAR	0.15	SAR	J	SAR:M
L2007635	SO	MW17-108S-9-9.5	F1 (C6-C10)	<5	ug/g	UJ	Surr<LCL
L2259873	SO	BH19-209-2.5	Vinyl Chloride	<0.020	ug/g	UJ	LCS<LCL
L2259873	SO	BH19-209-7	Vinyl Chloride	<0.020	ug/g	UJ	LCS<LCL
L2259873	SO	BH19-209-9.5	Vinyl Chloride	<0.020	ug/g	UJ	LCS<LCL
L2259873	SO	BH19-210-2.5	Vinyl Chloride	<0.020	ug/g	UJ	LCS<LCL
L2259873	SO	BH19-210-6	Vinyl Chloride	<0.020	ug/g	UJ	LCS<LCL

Table 4. Applicable Data Qualifiers

Laboratory Work Order	Matrix	Sample ID	Analyte	Final Result	Units	Validation Flag	Validation Reason
L2259873	SO	BH19-210-7.5	Vinyl Chloride	<0.020	ug/g	UJ	LCS<LCL
L2259873	SO	BH19-210-9.5	Vinyl Chloride	<0.020	ug/g	UJ	LCS<LCL
L2259873	SO	BH19-211-2.5	Vinyl Chloride	<0.020	ug/g	UJ	LCS<LCL
L2259873	SO	BH19-211-4	Vinyl Chloride	<0.020	ug/g	UJ	LCS<LCL
L2259873	SO	BH19-211-10	Vinyl Chloride	<0.020	ug/g	UJ	LCS<LCL
L2259873	SO	SOIL-DUP1	Vinyl Chloride	<0.020	ug/g	UJ	LCS<LCL
L2419793	SO	TP20-322-2-2.5′	Benzo(b)-fluoranthene	0.295	ug/g	J	FD>RPD
L2419793	SO	TP20-322-2-2.5′	Fluoranthene	0.398	ug/g	J	FD>RPD
L2419793	SO	TP20-322-2-2.5′	Pyrene	0.319	ug/g	J	FD>RPD
L2419793	SO	BH20-213-0.5-2.5	3,3'-Dichlorobenzidine	<0.10	ug/g	UJ	LCS<LCL
L2420861	WG	All Samples	All VOC and PHC Parameters	Various	ug/g	UJ/J	Temp>10C
L2420861	WG	DUP1	4-Chloroaniline	<0.40	ug/g	UJ	LCS<LCL
L2420861	WG	MW17-106S	4-Chloroaniline	<0.40	ug/g	UJ	LCS<LCL

Notes:

mg/L = milligrams per liter

mS/cm = milliSiemens per centimeter

PHC = petroleum hydrocarbon

pg/g = picograms per gram

SAR = sodium adsorption ratio

ug/L = microgram per liter

ug/g = microgram per gram

VOC = volatile organic compound

Validation Reasons:

EDL: Concentration less than RDL and greater than EDL

EMPC: Estimate maximum potential concentration

FD>RPD: Relative percent difference greater than criteria

HT>UCL: Analytical holding time was exceeded

IonRatio: Ion abundance or GC/MS qualifier ion ratio did not meet acceptance criteria

LabDup>RPD: Relative percent difference greater than laboratory criteria

LCS<LCL: Laboratory control sample recovery less than lower control limit

MS<LCL: Matrix spike sample recovery less than the lower control limit

SAR:M: SAR result represents a maximum estimated concentration due to non-detected calcium or magnesium result

Surr<LCL: Surrogate recovery less than the lower control limit

Temp>10C: Sample temperatures upon receipt at the laboratory exceeded the control limit of 10° Celsius.

References

Ontario Regulation 153/ 04 Protocols; the *Environmental Protection Act* (June 2016).

U.S. Environmental Protection Agency (USEPA). 2017. *USEPA National Functional Guidelines for Organic Superfund Methods Data Review*. EPA-540-R-2016-002. January.

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