April 11, 2016
MTE File No.: C38805-100

Mr. Prasoon Adhikari, P.Eng.
Environmental Engineer
City of Guelph
1 Carden Street
Guelph, ON N1H 3A1

Dear Mr. Adhikari:

Re: Vapour Intrusion Assessment
Surrey Street East, Guelph, Ontario

1.0 INTRODUCTION

This letter report provides a discussion of the analytical results of soil vapour sampling completed within the Surrey Street East municipal road allowance southwest of Wyndham Street in Guelph, ON (herein referred to as the 'Study Area'). Refer to **Figure 1** for the limits of the Study Area.

The work was completed as part of the ongoing environmental investigation at the adjacent former coal gas plant, which is currently used as a municipal parking lot. The City parking lot (commonly referred to as the Fountain Street Lot) operated as a manufactured gas plant from the 1870s until the late 1950s, at which time the plant was decommissioned.

The purpose of the soil vapour sampling is to assess whether impacts present on the Fountain Street Lot are causing vapour intrusion issues that could potentially impact residences along the southeast side of Surrey Street, specifically 45-49 Surrey Street East, 53 Surrey Street East and 41 Wyndham Street South. The sampling program was designed to determine the concentrations of contaminants of potential concern in soil vapour in close proximity to the residences and the source at the Fountain Street Lot.

The purpose of this letter report is to summarize the data and provide context for the concentrations of substances that were measured in soil vapour, to support ongoing discussions between the City of Guelph and the Ontario Ministry of the Environment and Climate Change (MOECC).

All aspects of the vapour intrusion assessment were completed under the direct supervision of a Qualified Person (QP_{ESA}).

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2.0 BACKGROUND

MTE completed a soil and groundwater sampling investigation along Surrey Street in spring 2015, which included drilling activities in the right-of-way adjacent to the three residential dwellings of interest. Refer to **Figure 1** for the 2015 sampling locations.

A shallow borehole was advanced in the sidewalk adjacent to 45-49 Surrey Street East, and was completed as a monitoring well screened in overburden materials, denoted as MW203-15. Soil and groundwater impacts related to petroleum hydrocarbons (PHCs), polycyclic aromatic hydrocarbons (PAHs), benzene, toluene, ethylbenzene and xylenes (BTEX compounds) were identified at MW203-15, indicating that coal tar related impacts have migrated from the former coal gas plant to the vicinity of 45-49 Surrey Street East. Static groundwater levels were measured in the overburden monitoring well at depths ranging from approximately 1.4 to 1.7 metres below ground surface (m bgs), with soil impacts present at water table. Bedrock was encountered at a depth of approximately 2.3 m bgs. The soil and groundwater analytical results for contaminants of concern at MW203-15 are presented in **Table 1** below.

TABLE 1: ANALYTICAL RESULTS IN SOIL AND GROUNDWATER AT MW203-15

Parameter	MOE 2011 Table 2 Soil Standards (residential) (ug/g)	Soil Analytical Results 1.5 - 2.1 m bgs April 13, 2015 (ug/g)	MOE 2011 Table 2 Groundwater Standards (potable) (ug/L)	Groundwater Analytical Results May 8, 2015 (ug/L)
Acenaphthene	7.9	2	4.1	**48**
Acenaphthylene	0.15	**3.6**	1	**22**
Anthracene	0.67	**5.7**	2.4	**49**
Benzo(a)anthracene	0.5	**4.7**	1	**33**
Benzo(a)pyrene	0.3	**3.6**	0.01	**24**
Benzo(b/j)fluoranthene	0.78	**3.8**	0.1	**28**
Benzo(ghi)perylene	6.6	1.5	0.2	**8**
Benzo(k)fluoranthene	0.78	**1.3**	0.1	**10**
Chrysene	7	3.4	0.1	**21**
Dibenzo(a,h)anthracene	0.1	**0.42**	0.2	<5
Fluoranthene	0.69	**12**	0.41	**92**
Fluorene	62	5.4	120	95
Indeno(1,2,3-cd)pyrene	0.38	**1.9**	0.2	**10**
1-Methylnaphthalene	0.99	**4.5**	3.2	**200**
2-Methylnaphthalene	0.99	0.019	3.2	<10
Naphthalene	0.6	0.21	11	**17**
Phenanthrene	6.2	**17**	1	**160**
Pyrene	78	10	4.1	**80**

TABLE 1: ANALYTICAL RESULTS IN SOIL AND GROUNDWATER AT MW203-15 (cont'd…)

Parameter	MOE 2011 Table 2 Soil Standards (residential) (ug/g)	Soil Analytical Results 1.5 - 2.1 m bgs April 13, 2015 (ug/g)	MOE 2011 Table 2 Groundwater Standards (potable) (ug/L)	Groundwater Analytical Results May 8, 2015 (ug/L)
F1 (C6 to C10) minus	55	<10	750	<25
F2 (C10 to C16)	98	**170**	150	**2500**
F3 (C16 to C34)	300	**600**	500	**960**
F4 (C34 to C50)	2800	120	500	<200
Benzene	0.21	<0.020	5	2.7
Ethylbenzene	1.1	0.039	2.4	**14**
Toluene	2.3	<0.020	24	2.1
Total Xylenes	3.1	**0.091**	300	27

Shallow boreholes were advanced in overburden materials along the right-of-way in the vicinity of 53 Surrey Street East and 41 Wyndham Street South, denoted as BH204-15 and BH205-15, respectively. No significant coal tar related impacts were identified in soil at these locations, and groundwater was not encountered in overburden. Bedrock was encountered at 2.0 m bgs at BH204-15 and at 1.8 m bgs at BH205-15. A monitoring well denoted as MW303-15 was subsequently installed in bedrock adjacent to BH205-15. A static water level of 2.8 m bgs was measured at MW303-15. No significant groundwater impacts related to coal tar were identified at MW303-15. This suggests that coal tar related impacts have not migrated from the former coal gas plant to the areas immediately west of 53 Surrey Street East and 41 Wyndham Street South.

3.0 INVESTIGATION METHOD

Soil Vapour Probe Installation

Soil vapour probes were installed in shallow overburden at five (5) locations within the Surrey Street right-of-way. The vapour sampling locations were selected by MTE in consultation with the City of Guelph and by considering utility locations. MTE was present during the soil vapour probe installation to record and document the construction details. Where groundwater was encountered in the overburden, the probes were installed approximately 0.5 to 1.0 metres above the shallow water table, as per MOE guidance. Where groundwater was not encountered, the probes were installed above the bedrock surface.

Three (3) initial soil vapour probes were installed on April 13, 2015 by CMT Engineering Inc. (CMT) using a track-mounted GeoProbe 7822DT drill rig, including:

- SVP203-15: Installed in the southeast sidewalk of Surrey Street adjacent to monitoring well MW203-15, in close proximity to 45-49 Surrey Street East;
- SVP204-15: Installed along the southeast boulevard of Surrey Street, in close proximity to 53 Surrey Street East; and
- SVP205-15: Installed along the southeast boulevard of Surrey Street, in close proximity to 41 Wyndham Street South.

Three (3) additional soil vapour probes were installed on October 19, 2015 by CMT using a track-mounted GeoProbe 7822DT drill rig, including:

- SVP203B-15: Installed to replace soil vapour probe SVP203-15, which was found to have been compromised by water intrusion at the time of soil vapour sampling in April 2015;
- SVP206-15: Installed along the northwest boulevard of Surrey Street, directly downgradient of the former coal gas plant and directly across from 45-49 Surrey Street East, to provide soil vapour results in close proximity to the source site; and
- SVP207-15: Installed in the southeast sidewalk of Surrey Street to the southwest of the 45-49 Surrey Street East building, to investigate soil vapour conditions to the southwest of 45-49 Surrey Street East.

Two (2) replacement soil vapour probes were installed on March 11, 2016 by Direct Environmental Drilling (DED) using a Bosch hammer drill, including:

- SVP203C-16: Installed to replace soil vapour probe SVP203B-15, which was found to have been compromised by water intrusion at the time of soil vapour sampling in February 2016; and
- SVP206B-16: Installed to replace soil vapour probe SVP206-15, which was found to have been compromised by water intrusion at the time of soil vapour sampling in February 2016.

The locations of the soil vapour probes are illustrated on **Figure 1**. Borehole logs for the vapour probes are attached.

The vapour probes were constructed with 6 inch (0.15 m) Geoprobe Soil Gas Implants installed at the depth of interest, which were connected to 1/4 inch (6.4 mm) Teflon tubing extending to ground surface. The tubing was capped at ground surface to prevent the accumulation of ambient air. At each soil vapour probe location, approximately 6 to 12 inches (0.15 to 0.30 m) of coarse grained (#3) sand pack was placed around the Soil Gas Implant to allow for vapour collection. Bentonite (holeplug)

was placed immediately above the sand pack to isolate the Soil Gas Implant. Each vapour probe was completed with a flush-mounted protective casing, which was cemented in place. The above method is consistent with the *Draft Technical Guidance: Soil Vapour Intrusion Assessment* (MOE, September 2013).

Soil Vapour Sampling

Soil vapour sampling was completed pursuant to the *Draft Technical Guidance: Soil Vapour Intrusion Assessment* (MOE, September 2013).

In accordance with Ontario Regulation 153/04, leak testing was performed prior to vapour sampling to ensure that there were no leaks at connections in the vapour sampling equipment and that ambient air was not interfering with the collection of vapour samples. The leak tests were performed through both shut-in tests and helium tracer tests.

The shut-in tests were performed by introducing a vacuum of up to 24 inches of mercury (in Hg) into the sampling train using a syringe. The valves at either end of the sampling train were then closed and the vacuum was measured for two minutes. A measurable decrease in vacuum would indicate a leak in the sampling train. MTE determined that there was no measurable decrease in the vacuum over two minutes during the shut-in tests, indicating proper connections and that sampling could commence.

Helium tracer tests were also performed, whereby the sampling train and probe, including all connections, were enclosed in a shroud. Helium gas was introduced into the shroud while a vapour sample was collected from the probe using a Tedlar bag. The concentration of helium within the shroud was measured using a hand-held helium detector while the Tedlar bag filled. The concentration of helium within the Tedlar bag was also measured with the hand-held detector once it was filled with vapour. A Tedlar bag helium concentration of greater than 2% of the shroud helium concentration would indicate a possible leak within the sampling train and/or a possible leak in the vapour probe seal from ground surface.

During April 2015 soil vapour sampling at SVP205-15, a Tedlar bag helium concentration of up to 5% of the shroud helium concentration was measured, indicating a possible leak. The leak continued to be measured after tightening and changing connections within the sampling train multiple times, indicating that the leak was likely from the probe seal rather than the sampling train. During subsequent sampling completed at SVP205-15 in August 2015 and February 2016, there were no elevated levels of helium measured in the Tedlar bags during helium tracer tests, indicating that the suspected probe leak was no longer present. Since the results for all three sampling events at SVP205-15 were similar, the QP_{ESA} has determined that the leak

measured at SVP205-15 in April 2015 did not affect the results of sampling, and the sample will be been used to support the vapour intrusion assessment.
No elevated levels of helium were measured within the Tedlar bag during any other tests, indicating proper connections within the sampling trains and adequate vapour probe installation.

For development purposes, three probe volumes were removed from each vapour probe, representing the total volume of stagnant air. This stagnant air was purged following leak testing and prior to sampling to ensure a representative vapour sample was collected.

Following purging and leak testing, samples for analysis of PHCs, BTEX and various other VOC compounds (including cis-1,3-dichloropropene, trans-1,3-dichloropropene, styrene and hexane, which were identified as contaminants of concern at the former coal gas plant) were collected from the vapour probes in SUMMA canisters (1.4 L capacity) with 20-minute or 60-minute flow regulators and Teflon-lined tubing, supplied and certified clean by the analytical laboratory. Samples for analysis of PAHs were collected using sorbent tubes connected to certified clean Teflon-lined tubing and calibrated air pumps, consistent with USEPA protocol TO-13A.

Following soil vapour sampling, the SUMMA canisters and sorbent tubes were sealed, labelled and stored for transportation to Maxxam Analytics of Mississauga, Ontario. The vapour samples were submitted under chain-of-custody for analysis of contaminants of potential concern, as outlined below in **Table 2**.

Due to water accumulation in the vapour probes, MTE was unable to collect a sample from SVP203-15 (or replacement probes SVP203B-15 and SVP203C-16) during the spring 2016 or winter 2016 sampling events, as originally proposed. Since MTE was able to collect a soil vapour sample from this location in October 2015, this deviation does not affect the outcome of the vapour intrusion assessment.

TABLE 2: SOIL VAPOUR SAMPLES SUBMITTED FOR ANALYSIS

Sample Location	Sample Name	Sample Date	Laboratory Analysis
SVP203B-15	SVP203B-15	23-Oct-15	PHCs F1+F2, BTEX, naphthalene, VOCs, PAHs
	SVP203B-15 Lab-Dup	23-Oct-15	PHCs F1+F2, BTEX, naphthalene, VOCs
SVP204-15	SVP204-15	24-Apr-15	PHCs F1+F2, BTEX, naphthalene, VOCs, PAHs
	SVP492-15	24-Apr-15 (DUP)	PHCs F1+F2, BTEX, naphthalene, VOCs
	SVP204-15	13-Aug-15	PHCs F1+F2, BTEX, naphthalene, VOCs
	SVP204-15	11-Feb-16	PHCs F1+F2, BTEX, naphthalene, VOCs
SVP205-15	SVP-205-15	24-Apr-15	PHCs F1+F2, BTEX, naphthalene, VOCs
	SVP205-15	13-Aug-15	PHCs F1+F2, BTEX, naphthalene, VOCs
	SVP205-15	11-Feb-16	PHCs F1+F2, BTEX, naphthalene, VOCs
SVP206-15 / SVP206B-16	SVP206-15	23-Oct-15	PHCs F1+F2, BTEX, naphthalene, VOCs, PAHs
	SVP206B-16	12-Mar-16	PHCs F1+F2, BTEX, naphthalene, VOCs, PAHs
SVP207-15	SVP207-15	26-Oct-15	PHCs F1+F2, BTEX, naphthalene, VOCs, PAHs
	SVP207-15	11-Feb-16	PHCs F1+F2, BTEX, naphthalene, VOCs
TRIP BLANKS	TRIP BLANK	24-Apr-15	PHCs F1+F2, BTEX, naphthalene, VOCs, PAHs
	TRIP BLANK	13-Aug-15	PHCs F1+F2, BTEX, naphthalene, VOCs
	TRIP BLANK	23-Oct-15	PAHs
	TRIP BLANK	26-Oct-15	PHCs F1+F2, BTEX, naphthalene, VOCs
	TRIP BLANK	11-Feb-16	PHCs F1+F2, BTEX, naphthalene, VOCs
	TRIP BLANK	12-Mar-16	PHCs F1+F2, BTEX, naphthalene, VOCs, PAHs

PHCs = Petroleum hydrocarbon fractions F1 and F2 (including aliphatic and aromatic fractions)
BTEX = benzene, toluene, ethylbenzene and xylenes
VOCs = cis-1,3-dichloropropene, trans-1,3-dichloropropene, styrene and hexane
PAHs = polycyclic aromatic hydrocarbons

Sampling Quality Assurance/Quality Control

In accordance with the MOE (2013) draft guidance document, the SUMMA canister vacuum was measured prior to shipping by the laboratory, immediately prior to and after sampling by MTE using a gauge supplied by the laboratory, and by the laboratory upon receipt. There were no significant differences between the canister vacuum readings recorded at the completion of sampling and upon receipt by the laboratory (beyond the range of accuracy of the gauge), indicating that there was no leakage during shipping.

Prior to sampling, the measured vacuum in each SUMMA canister was approximately 29 in Hg, the recommended initial vacuum. Typically, a residual vacuum within the recommended range of 4 to 6 in Hg was left in the SUMMA canister after sampling.

Trip blanks were prepared by the laboratory at the same time as the sampling canisters, including a SUMMA canister (1.4 L capacity) containing ultra-pure air and an unopened sorbent tube. The trip blanks were transported to and from the Study Area with the sampling canisters during each sampling event. The trip blanks were left unopened for the duration of travel and sampling time, and the SUMMA canister trip blank was returned to the laboratory with its original vacuum. The trip blanks were analyzed for contaminants of potential concern to determine if any shipping and laboratory sources of contamination interfered with field or laboratory sample handling.

4.0 RESULTS

The analytical data obtained from the five sampling events are summarized in the attached **Tables 2a and 2b**. The laboratory certificates of analysis are attached.

Given the shallow nature of the contamination, the results were compared to the Sub-Slab Vapour Screening Criteria for residential land use, which are calculated by dividing the lowest 2011 MOE Health Based Indoor Air Criteria (HBIAC) by the default attenuation factor of 0.02 for a residential building. The Sub-Slab Vapour Screening Criteria were considered more appropriate than the 2011 MOE Soil Vapour Screening Criteria because of the shallow depths of the soil vapour samples in relation to where the building foundations are expected to be located. Since there is uncertainty with respect to determining an accurate separation distance between the bottom of the basement foundation and the soil vapour measurements, and there is also uncertainty with respect to whether groundwater could be in contact with the gravel crush layer (or building foundation), it was not considered appropriate to use the soil vapour screening levels that can be calculated using the 2011 MOE Modified Generic Risk Assessment (MGRA) Approved Model.

Soil Vapour Results

PHC F1, PHC F2, BTEX parameters, PAHs, cis-1,3-dichloropropene, trans-1,3-dichloropropene, styrene and hexane were all measured below the applicable Sub-Slab Vapour Screening Criteria.

Trip Blank

There were no detections of PHC F1, PHC F2, BTEX parameters, PAHs, cis-1,3-dichloropropene, trans-1,3-dichloropropene, styrene and hexane in the Trip Blanks submitted for analysis, indicating that sample storage and handling procedures were adequate.

5.0 CONCLUSIONS

Five rounds of sampling were completed which covered all seasons (i.e., spring, summer, fall and winter). During each seasonal sampling event, the concentrations of PHC F1, PHC F2, BTEX parameters, PAHs, cis-1,3-dichloropropene, trans-1,3-dichloropropene, styrene and hexane measured in soil vapour were below the applicable Sub-Slab Vapour Screening Criteria for residential land use.

This suggests that there is a low potential for vapour intrusion into the existing residential dwellings at 45-49 Surrey Street East, 53 Surrey Street East and 41 Wyndham Street South, associated with the former coal gasification plant.

6.0 DISCUSSION OF UNCERTAINTY

The uncertainty in this vapour intrusion assessment is associated with the fact that access was not granted into the residential dwellings at 45-49 Surrey Street East, 53 Surrey Street East and 41 Wyndham Street South. The City of Guelph requested access with the owners of these properties on several occasions; however, access was not granted to representatives of the City or MTE for this request. As such, it was not an option to collect sub-slab vapour or indoor air samples from these premises. Therefore, shallow soil gas samples were collected from municipal property in close proximity to the existing dwellings in the area of known groundwater impacts.

Furthermore, MTE was unable to inspect the basements for the following information pertinent to the vapour intrusion assessment:

- Current use (e.g., apartment units including washrooms and/or bedrooms, commercial shop, storage space);
- Presence of basement sumps or issues related to basement flooding;
- Construction type of the basement foundation walls and floor (e.g. earthen, stone, poured); and
- Condition of the foundation, including any cracks in the walls or floor.

If certain features are present such as earthen basements or sumps containing open groundwater, this could result in a higher potential for vapour intrusion to occur.

Conversely, if the buildings are well sealed and do not have preferential pathways, vapour intrusion is not expected to be problematic based on the soil vapour data collected outside the buildings.

7.0 LIMITATIONS

The soil vapour investigation carried out at the Study Area as described herein focused on identifying the potential for PHC F1, PHC F2, BTEX parameters, PAHs, cis-1,3-dichloropropene, trans-1,3-dichloropropene, styrene or hexane to be present in soil vapour at the Study Area based on the potential to volatilize from soil or groundwater. As such, analyses were limited to concentrations of the contaminants of potential concern outlined above as these were identified to be potentially associated with the underlying soil and/or groundwater. MTE is unable to make any conclusions or recommendations regarding the potential for additional substances to be present that were not investigated in this study, or with respect to the environmental conditions in areas that were not investigated, or with respect to exposure pathways other than vapour intrusion.

Services performed by **MTE Consultants Inc.** (MTE) were conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the Environmental Engineering & Consulting profession. No other representation expressed or implied as to the accuracy of the information, conclusions or recommendations is included or intended in this report.

This report was completed for the sole use of the City of Guelph. As such, this report may not deal with all issues potentially applicable to the Study Area and may omit issues that are or may be of interest to the reader. MTE makes no representation that the present report has dealt with all of the important environmental features, except as provided in the Scope of Work. All findings and conclusions presented in this report are based on site conditions as they were observed during sampling in 2015 and 2016. This report is not intended to be exhaustive in scope or to imply a risk-free site.

Any use which a third party makes of this report, or any reliance on, or decisions to be made based upon it, are the responsibility of such third parties. MTE accepts no responsibility for liabilities incurred by or damages, if any, suffered by any third party as a result of decisions made or actions taken, based upon this report. Others with interest in the Study Area should undertake their own investigations and studies to determine how or if the condition affects them or their plans.

It should be recognized that the passage of time might affect the views, conclusions and recommendations (if any) provided in this report because environmental conditions of a property and information about the toxicological properties of substances can change. Should additional or new information become available, MTE recommends that it be brought to our attention in order that we may re-assess the contents of this report.

All of which is respectfully submitted,

MTE CONSULTANTS INC.

Steve Russell, B.Sc. (Hon), QP_{RA}
Human Health Toxicologist

Sean Anderson, P.Eng.
Environmental Engineer

Robert Fedy, P.Eng., QP_{ESA}
Senior Environmental Engineer

SCA:scp
Attach.
M:\38805\Surrey Street Investigation\Soil Vapour Investigation\Report\38805-100 - Vapour Intrusion Assessment.doc

8.0 REFERENCES

Ontario Ministry of the Environment (MOE). 2013. Draft Technical Guidance: Soil Vapour Intrusion Assessment. PIBS # 8477.

ATTACHMENTS

Project: 38805-100 CAD: P:\38805\100\38805-100-EV10.DWG EV10.1
May 5, 2016 - 1:12 p.m. - Plotted By: kmadsen

10 SURREY STREET EAST
(UNION GAS)

FORMER CITY OF GUELPH
COAL GASIFICATION PLANT

STUDY AREA

SVP206-15 / SVP206B-16	
Depth to GW in overburden =	~1.8 m bgs
Depth to bedrock =	2.4 m bgs
SVP screen depth =	0.8 - 0.9 m bgs

SVP205-15	
Depth to GW in overburden =	N/A
Depth to bedrock =	1.8 m bgs
SVP screen depth =	1.1 - 1.2 m bgs

SVP206-15/SVP206B-16

Surrey Street East

Wyndham Street South

SVP207-15

SVP203B-15

MW203-15

SVP204-15/BH204-15

MW303-15

SVP205-15/BH205-15

36
WELLINGTON
STREET
EAST

45-49
SURREY
STREET
EAST

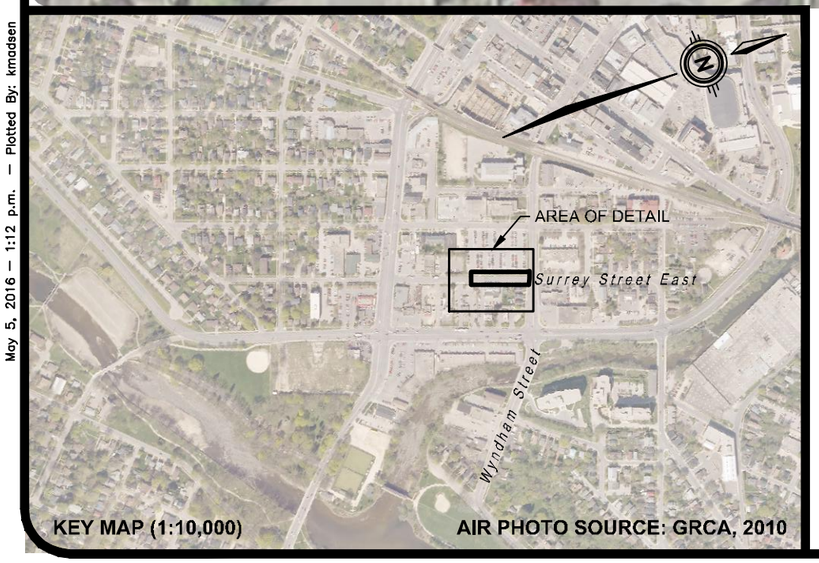
53
SURREY
STREET
EAST

41
WYNDHAM
STREET
SOUTH

SVP207-15	
Depth to GW in overburden =	~1.5 m bgs
Depth to bedrock =	2.1 m bgs
SVP screen depth =	0.6 - 0.8 m bgs

SVP203B-15	
Depth to GW in overburden =	1.4 m bgs
Depth to bedrock =	2.3 m bgs
SVP screen depth =	0.6 - 0.8 m bgs

SVP204-15	
Depth to GW in overburden =	~1.5 m bgs
Depth to bedrock =	2.0 m bgs
SVP screen depth =	0.8 - 0.9 m bgs



KEY MAP (1:10,000)

AIR PHOTO SOURCE: GRCA, 2010

LEGEND

- SOIL VAPOUR PROBE / BOREHOLE
- MONITORING WELL

0 10 20m

Notes:
N/A = not applicable
GW = groundwater
SVP = soil vapour probe
m bgs = metres below ground surface

Engineers | Scientists | Surveyors

SOIL VAPOUR SAMPLING LOCATIONS

Project Name
Surrey Street East Soil Vapour Investigation

Site	Client
Surrey Street East, Guelph, Ontario	City of Guelph

Scale (11x17)	MTE Project No.	Date	Figure No.
1:400	38805-100	April 2016	1

Client: City of Guelph

Project: Soil Vapour Investigation

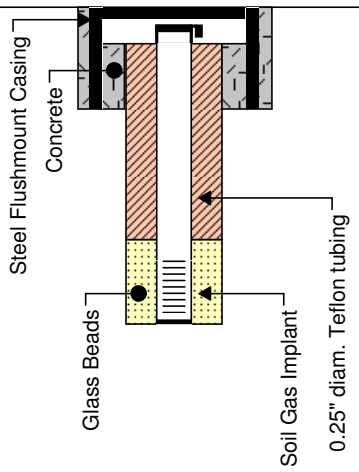
Location: Surrey Street East, Guelph, ON

Borehole Number: SVP203B-15

Job Number: 38805-100

Drill Date: October 19, 2015

Depth (ft)	Depth (m)	Elevation (m)	Soil Description	Symbol	Number	Type	Recovery (%)	Headspace (ppm)	Borehole
			Ground Elevation						
0.0	0.0	0.00	**ASPHALT**						
		0.13	**FILL** brown, sand and gravel granular base, moist, no noticeable staining or odours		1	SS	5		
2.0		0.83	dark brown to black, sandy silt, moist, some organic content, no noticeable staining or odours		2	SS	80	0.2	
4.0		1.22	**SILTY SAND** light brown, some gravel, wet, no noticeable staining or odours						
		1.52	black, visible sheen, strong coal tar odour, saturated		3	SS	75	8.3	
6.0	2.0								
		2.29	Borehole terminated on suspected bedrock at 2.3 m bgs						
8.0									
10.0									



Reviewed By: RJF

Method: Geoprobe 7822DT

Notes: Soil descriptions from adjacent MW203-15

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Logged By: SCA

Client: City of Guelph

Project: Soil Vapour Investigation

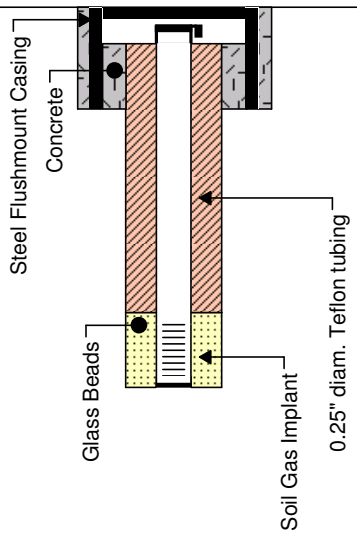
Location: Surrey Street East, Guelph, ON

Borehole Number: SVP204-15

Job Number: 38805-100

Drill Date: April 13, 2015

Depth (ft)	Depth (m)	Elevation (m)	Soil Description	Symbol	Number	Type	Recovery (%)	Headspace (ppm)	Borehole
			Ground Elevation						
0.0	0.0	0.00	**TOPSOIL** dark brown, silty sand, damp						
		0.30	**FILL** dark brown, sandy silt, trace clay, some rootlets, trace cobbles, damp		1	DP	40	0.0	
	2.0	1.52	**SANDY SILT** soft, brown, trace clay, some gravel, wet		2	DP	60	0.0	
	2.0	1.98	Borehole terminated on suspected bedrock at 2.0 m bgs						



Reviewed By: RJF

Method: Geoprobe 7822DT (Direct Push)

Notes: No noticeable staining or odours

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(519) 743-6500

Logged By: SCA

Sheet: 1 of 1

Client: City of Guelph

Project: Soil Vapour Investigation

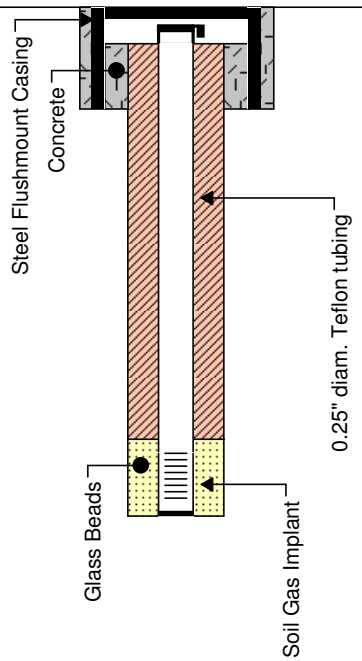
Location: Surrey Street East, Guelph, ON

Borehole Number: SVP205-15

Job Number: 38805-100

Drill Date: April 13, 2015

Depth (m)	Elevation (m)	Soil Description	Symbol	Number	Type	Recovery (%)	Headspace (ppm)	Borehole
ft / m		Ground Elevation						
0.0 / 0.0	0.00	**ASPHALT**						
	0.13	**FILL** grey, sand and gravel granular base, moist						
	0.28	dark brown, silty sand fill, moist, trace black organic content at 1.8 metres		1	SS	60	0.1	
2.0								
				2	SS	40	0.3	
4.0								
				3	SS	10	0.0	
6.0	1.83	Borehole terminated on suspected bedrock at 1.8 m bgs						
2.0								
8.0								
10.0								



Reviewed By: RJF

Method: Geoprobe 7822DT (SPT)

Notes: No noticeable staining or odours

MTE Consultants Inc.
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Kitchener, Ontario
N2B 3X9
(519) 743-6500

Logged By: SCA

Sheet: 1 of 1

Client: City of Guelph

Project: Soil Vapour Investigation

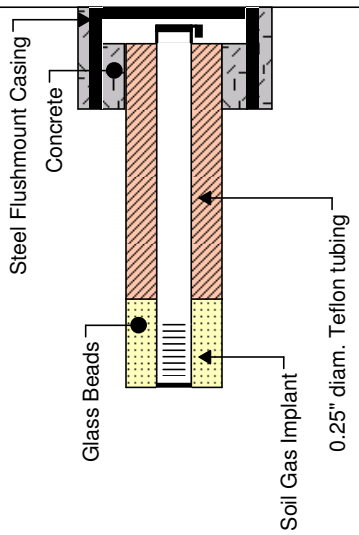
Location: Surrey Street East, Guelph, ON

Borehole Number: SVP206-15

Job Number: 38805-100

Drill Date: October 19, 2015

Depth (m)	Elevation (m)	Soil Description	Symbol	Number	Type	Recovery (%)	Headspace (ppm)	Borehole
ft / m		Ground Elevation						
0.0 / 0.0	0.00	**TOPSOIL** dark brown, sandy silt, damp, no noticeable staining or odours						
	0.15	**FILL** brown, medium to coarse grained sand and gravel, damp, no noticeable staining or odours		1	DP	50		
6.0 / 2.0	1.83	brown, silty fine to medium grained sand, trace gravel, wet, trace coal tar odour and slight staining		2	DP	70		
8.0	2.44	Borehole terminated on suspected bedrock at 2.4 m bgs						
10.0								



Reviewed By: RJF

Method: Geoprobe 7822DT

Notes:

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Kitchener, Ontario
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Sheet: 1 of 1

Client: City of Guelph

Project: Soil Vapour Investigation

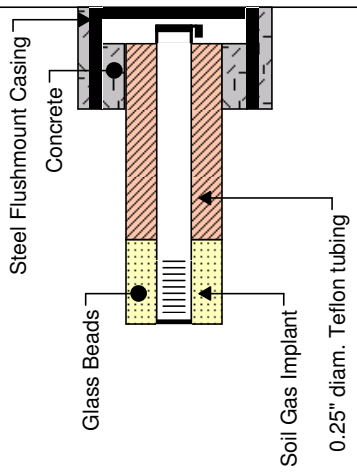
Location: Surrey Street East, Guelph, ON

Borehole Number: SVP207-15

Job Number: 38805-100

Drill Date: October 19, 2015

Depth (m)	Elevation (m)	Soil Description	Symbol	Number	Type	Recovery (%)	Headspace (ppm)	Borehole
ft / m		Ground Elevation						
0.0 / 0.0	0.00	**TOPSOIL** dark brown, sandy silt, damp, no noticeable staining or odours						
	0.30	**FILL** brown, medium to coarse grained sand and gravel, damp, no noticeable staining or odours		1	DP	40		
2.0								
4.0								
	1.52	dark brown, sandy silt, wet, some black staining, coal tar odour		2	DP	50		
6.0 / 2.0								
	2.13	Borehole terminated on suspected bedrock at 2.1 m bgs						
8.0								
10.0								



Reviewed By: RJF

Method: Geoprobe 7822DT

Notes:

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Sheet: 1 of 1

Table 2a: VOCs, BTEX and PHCs Results in Soil Vapour

Parameter	Reported Detection Limit	Sub-Slab Vapour Criteria (Residential)	Location	SVP203B-15		SVP204-15				SVP205-15			SVP206-15/SVP206B-16		SVP207-15		TRIP BLANKS				
			Sample ID	SVP203B-15	SVP203B-15 Lab-Dup	SVP204-15	SVP492-15	SVP204-15	SVP204-15	SVP-205-15	SVP205-15	SVP205-15	SVP206-15	SVP206B-16	SVP207-15	SVP207-15	TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK
			SUMMA Can	1314	1314	1418	2542	1253	340	2557	2479	1923	2538	1449	2391	2391	405	2545	1782	3024	1381
			Sample Date	23-Oct-15	23-Oct-15	24-Apr-15	24-Apr-15 (DUP)	13-Aug-15	11-Feb-16	24-Apr-15	13-Aug-15	11-Feb-16	23-Oct-15	12-Mar-16	26-Oct-15	11-Feb-16	24-Apr-15	13-Aug-15	26-Oct-15	11-Feb-16	12-Mar-16
			Lab Certificate	B5L9477	B5L9477	B574904	B574904	B5G1716	B629536	B574904	B5G1716	B629536	B5L9477	B651425	B5L9477	B629536	B574904	B5G1716	B5L9477	B629536	B651425
			Units / Lab ID	BFW916	BFW916	AEA819	AEA820	AUM106	BVR868	AEA821	AUM107	BVR869	BFW917	CAD334	BFW918	BVR870	AEA822	AUM109	BFW919	BVR871	CAD335
Pressure on Receipt	N/A	N/A	psig	-1.7	-1.7	-3.0	-3.0	-1.9	-2.6	-3.4	-2.0	-2.2	-2.9	-2.3	-2.3	-3.1	4.3	3.6	5.3	9.5	3.7
Pressure on Receipt (converted)	N/A	N/A	inHg	-3.5	-3.5	-6.1	-6.1	-3.9	-5.3	-6.9	-4.1	-4.5	-5.9	-4.7	-4.7	-6.3	8.8	7.3	10.8	19.3	7.5
cis-1,3-Dichloropropene	0.454	13.9	µg/m3	<0.454	<0.454	<0.454	<0.454	<0.454	<0.45	<0.454	<0.454	<0.45	<0.454	<0.454	<0.454	<0.45	<0.454	<0.227	<0.454	<0.45	<0.454
trans-1,3-Dichloropropene	0.454	13.9	µg/m3	<0.454	<0.454	<0.454	<0.454	<0.454	<0.45	<0.454	<0.454	<0.45	<0.454	<0.454	<0.454	<0.45	<0.454	<0.227	<0.454	<0.45	<0.454
Styrene	0.426	2711	µg/m3	<0.426	<0.426	<0.426	<0.426	<0.426	<0.43	<0.426	<0.426	<0.43	0.917	0.744	<0.426	<0.43	<0.426	<0.213	<0.426	<0.43	<0.426
Hexane	0.705	26071	µg/m3	5.21	4.98	0.825	0.779	<0.705	<0.70	7.13	<0.705	<0.70	7.40	2.39	<0.705	<0.70	<0.705	<0.352	<0.705	<0.70	<0.705
Naphthalene	1.05	39	µg/m3	<1.05	<1.05	<1.05	<1.05	<1.05	<1.0	<1.05	<1.05	<1.0	6.70	<1.05	<1.05	<1.0	<1.05	<0.524	<1.05	<1.0	<1.05
Benzene	0.319	25.5	µg/m3	6.58	6.28	<0.319	<0.319	<0.319	<0.32	0.668	0.662	<0.32	7.85	14.7	<0.319	<0.32	<0.319	<0.160	<0.319	<0.32	<0.319
Toluene	0.376	52143	µg/m3	111	109	1.08	1.58	1.34	<0.38	78.5	2.19	<0.38	57.1	12.6	1.19	<0.38	<0.376	<0.188	<0.376	<0.38	<0.376
Ethylbenzene	0.434	10027	µg/m3	33.2	33.0	2.73	3.57	<0.434	<0.43	85.7	<0.434	<0.43	21.7	8.26	<0.434	<0.43	<0.434	<0.217	<0.434	<0.43	<0.434
p+m-Xylene	0.868	NV	µg/m3	85.9	86.0	2.74	5.2	<0.868	<0.87	258	<0.868	<0.87	82.0	43.8	<0.868	<0.87	<0.868	<0.434	<0.868	<0.87	<0.868
o-Xylene	0.434	NV	µg/m3	46.3	46.6	4.55	5.44	<0.434	<0.43	78.7	<0.434	<0.43	32.4	13.0	<0.434	<0.43	<0.434	<0.217	<0.434	<0.43	<0.434
Total Xylenes	1.30	7300	µg/m3	132	133	7.29	10.6	<1.32	<1.3	337	<1.32	<1.3	114	56.7	<1.32	<1.3	<1.32	<0.662	<1.32	<1.3	<1.30
F1-BTEX, C6-C10 (as Toluene)	5.0	124530	µg/m3	826	820	56.1	74.9	19.2	41.2	767	23.1	30.6	783	176	53.2	41.4	<5.0	<5.0	<5.0	<5.0	<5.0
F2, C10-C16 (as Decane)	5.0	23530	µg/m3	1,160	1,200	44.4	72.4	54.6	<5.0	748	68.5	<5.0	1,070	178	21.4	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Aliphatic >C5-C6	5.0	NV	µg/m3	17.0	10.7	<5.0	<5.0	<5.0	<5.0	6.6	<5.0	<5.0	16.3	-	7.9	<5.0	<5.0	<5.0	<5.0	<5.0	-
Aliphatic >C6-C8	5.0	479714	µg/m3	70.8	74.1	<5.0	6.2	<5.0	<5.0	63.7	<5.0	<5.0	86.6	14.6	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Aliphatic >C8-C10	5.0	26071	µg/m3	178	176	7.8	13.8	<5.0	<5.0	171	<5.0	<5.0	146	29.7	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Aliphatic >C10-C12	5.0	26072	µg/m3	595	600	13.5	27.9	16.2	<5.0	348	15.5	<5.0	340	58.3	13.1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Aliphatic >C12-C16	5.0	26071	µg/m3	79.8	83.4	<5.0	<5.0	22.7	<5.0	17.7	30.2	<5.0	114	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Aromatic >C7-C8 (TEX Excluded)	5.0	NV	µg/m3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	-
Aromatic >C8-C10	5.0	5214	µg/m3	219	217	6.3	9	<5.0	<5.0	260	<5.0	<5.0	212	28.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Aromatic >C10-C12	5.0	5214	µg/m3	185	186	7	9.9	<5.0	<5.0	128	<5.0	<5.0	238	16.9	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Aromatic >C12-C16	5.0	5214	µg/m3	9.7	9.1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	24.6	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

Notes:

170 Exceedance of Sub-Slab Vapour Criteria (Residential)

NV = No value

N/A = Not Applicable

DUP = Field duplicate sample

Table 2b: PAHs Results in Soil Vapour

Parameter	Sub-Slab Vapour Criteria (Residential)	Location	SVP203B-15	SVP204-15	SVP205-15	SVP206-15/SVP206B-16		SVP207-15	Units	TRIP BLANKS		
		Sample ID	SVP203B-15	SVP204-15	SVP-205-15	SVP206-15	SVP206B-16	SVP207-15		TRIP BLANK	TRIP BLANK	TRIP BLANK
		Sample Date	23-Oct-15	24-Apr-15	24-Apr-15	23-Oct-15	12-Mar-16	23-Oct-15		24-Apr-15	23-Oct-15	12-Mar-16
		Lab Certificate	B5L8525	B574896	B574896	B5L8525	B651522	B5L8525		B574896	B5L8525	B651522
		Units / Lab ID	BFS014	AEA763	AEA764	BFS015	CAD691	BFS016		AEA764	BFS017	CAD692
1-Methylnaphthalene	NV	µg/m3	<3.0	<3.28	<3.17	<3.5	<3.3	<3.3	µg	<0.020	<0.020	<0.020
2-Methylnaphthalene	NV	µg/m3	<3.0	<3.28	<3.17	<3.5	<3.3	<3.3	µg	<0.020	<0.020	<0.020
Acenaphthene	50.5	µg/m3	<3.0	<3.28	<3.17	<3.5	<3.3	<3.3	µg	<0.020	<0.020	<0.020
Acenaphthylene	5.05	µg/m3	<3.0	<3.28	<3.17	<3.5	<3.3	<3.3	µg	<0.020	<0.020	<0.020
Anthracene	NV	µg/m3	<3.0	<3.28	<3.17	<3.5	<3.3	<3.3	µg	<0.020	<0.020	<0.020
Benzo(a)anthracene	0.505	µg/m3	<3.0	<3.28	<3.17	<3.5	<3.3	<3.3	µg	<0.020	<0.020	<0.020
Benzo(a)pyrene*	0.0505	µg/m3	<3.0	<3.28	<3.17	<3.5	<3.3	<3.3	µg	<0.020	<0.020	<0.020
Benzo(b)fluoranthene*	0.505	µg/m3	<3.0	<3.28	<3.17	<3.5	<3.3	<3.3	µg	<0.020	<0.020	<0.020
Benzo(g,h,i)perylene*	5.05	µg/m3	<3.0	<3.28	<3.17	<3.5	<3.3	<3.3	µg	<0.020	<0.020	<0.020
Benzo(k)fluoranthene*	0.505	µg/m3	<3.0	<3.28	<3.17	<3.5	<3.3	<3.3	µg	<0.020	<0.020	<0.020
Biphenyl	NV	µg/m3	<3.0	<3.28	<3.17	<3.5	<3.3	<3.3	µg	<0.020	<0.020	<0.020
Chrysene*	5.05	µg/m3	<3.0	<3.28	<3.17	<3.5	<3.3	<3.3	µg	<0.020	<0.020	<0.020
Dibenz(a,h)anthracene*	0.0505	µg/m3	<3.0	<3.28	<3.17	<3.5	<3.3	<3.3	µg	<0.020	<0.020	<0.020
Fluoranthene*	5.05	µg/m3	<3.0	<3.28	<3.17	<3.5	<3.3	<3.3	µg	<0.020	<0.020	<0.020
Fluorene	NV	µg/m3	<3.0	<3.28	<3.17	<3.5	<3.3	<3.3	µg	<0.020	<0.020	<0.020
Indeno(1,2,3-cd)pyrene*	0.505	µg/m3	<3.0	<3.28	<3.17	<3.5	<3.3	<3.3	µg	<0.020	<0.020	<0.020
Naphthalene	38.6	µg/m3	<3.0	<3.28	<3.17	<3.5	<3.3	<3.3	µg	<0.020	<0.020	<0.020
Phenanthrene	NV	µg/m3	<3.0	<3.28	<3.17	<3.5	<3.3	<3.3	µg	<0.020	<0.020	<0.020
Pyrene	50.5	µg/m3	<3.0	<3.28	<3.17	<3.5	<3.3	<3.3	µg	<0.020	<0.020	<0.020

Notes:

170 Exceedance of Sub-Slab Vapour Criteria (Residential)

NV = No value

N/A = Not Applicable

*PAH not considered sufficiently volatile based on Henry's Law Constant and vapour pressure

Success Through Science®

Your Project #: 38805-100
Your C.O.C. #: 15953

Attention:Bill Lawlor

MTE Consultants Inc
520 Bingemans Centre Dr
Kitchener, ON
N2B 3X9

Report Date: 2015/05/06
Report #: R3416837
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B574904
Received: 2015/04/24, 17:58

Sample Matrix: AIR
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
BTEX and CCME Compounds in Air(TO-15mod)	4	N/A	2015/04/30	BRL SOP-00304	EPA TO-15 m
BTEX Fractionation in Air (TO-15mod)	4	N/A	2015/04/30	BRL SOP-00304	EPA TO-15 m
Canister Pressure (TO-15)	4	N/A	2015/04/30	BRL SOP-00304	EPA TO-15 m
Volatile Organics in Air using GC/MS (1)	4	N/A	2015/04/30	BRL SOP-00304	EPA TO-15A m

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

Theresa Stephenson
06 May 2015 16:29:41 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905)817-5763

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Maxxam Job #: B574904
Report Date: 2015/05/06

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: SA

RESULTS OF ANALYSES OF AIR

Maxxam ID		AEA819	AEA820	AEA821	AEA822		
Sampling Date		2015/04/24	2015/04/24	2015/04/24	2015/04/24		
COC Number		15953	15953	15953	15953		
	Units	**SVP204-15/1418**	**SVP492-15/2542**	**SVP-205-15/2557**	**TRIP BLANK/405**	**QC Batch**	**MDL**
Volatile Organics							
Pressure on Receipt	psig	(-3.0)	(-3.0)	(-3.4)	4.3	4005957	N/A

QC Batch = Quality Control Batch
N/A = Not Applicable

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B574904
Report Date: 2015/05/06

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: SA

VOLATILE ORGANIC HYDROCARBONS BY GC/MS (AIR)

Maxxam ID		AEA819	AEA820	AEA821	AEA822			
Sampling Date		2015/04/24	2015/04/24	2015/04/24	2015/04/24			
COC Number		15953	15953	15953	15953			
	Units	**SVP204-15/1418**	**SVP492-15/2542**	**SVP-205-15/2557**	**TRIP BLANK/405**	**RDL**	**QC Batch**	**MDL**
Volatile Organics								
F1-BTEX, C6-C10 (as Toluene)	ug/m3	56.1	74.9	767	<5.0	5.0	4008068	1.0
F2, C10-C16 (as Decane)	ug/m3	44.4	72.4	748	<5.0	5.0	4008068	1.0
Aliphatic >C5-C6	ug/m3	<5.0	<5.0	6.6	<5.0	5.0	4008099	1.0
Aliphatic >C6-C8	ug/m3	<5.0	6.2	63.7	<5.0	5.0	4008099	1.0
Aliphatic >C8-C10	ug/m3	7.8	13.8	171	<5.0	5.0	4008099	1.0
Aliphatic >C10-C12	ug/m3	13.5	27.9	348	<5.0	5.0	4008099	1.0
Aliphatic >C12-C16	ug/m3	<5.0	<5.0	17.7	<5.0	5.0	4008099	1.0
Aromatic >C7-C8 (TEX Excluded)	ug/m3	<5.0	<5.0	<5.0	<5.0	5.0	4008099	1.0
Aromatic >C8-C10	ug/m3	6.3	9.0	260	<5.0	5.0	4008099	1.0
Aromatic >C10-C12	ug/m3	7.0	9.9	128	<5.0	5.0	4008099	1.0
Aromatic >C12-C16	ug/m3	<5.0	<5.0	<5.0	<5.0	5.0	4008099	1.0

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B574904
Report Date: 2015/05/06

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: SA

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		AEA819			AEA820					
Sampling Date		2015/04/24			2015/04/24					
COC Number		15953			15953					
	Units	**SVP204-15/1418**	**ug/m3**	**DL (ug/m3)**	**SVP492-15/2542**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**	**MDL**
Volatile Organics										
cis-1,3-Dichloropropene	ppbv	<0.10	< 0.454	0.454	<0.10	0.10	< 0.454	0.454	4008030	0.10
trans-1,3-Dichloropropene	ppbv	<0.10	< 0.454	0.454	<0.10	0.10	< 0.454	0.454	4008030	0.10
Benzene	ppbv	<0.10	< 0.319	0.319	<0.10	0.10	< 0.319	0.319	4008030	0.10
Toluene	ppbv	0.29	1.08	0.376	0.42	0.10	1.58	0.376	4008030	0.10
Ethylbenzene	ppbv	0.63	2.73	0.434	0.82	0.10	3.57	0.434	4008030	0.10
p+m-Xylene	ppbv	0.63	2.74	0.868	1.20	0.20	5.20	0.868	4008030	0.20
o-Xylene	ppbv	1.05	4.55	0.434	1.25	0.10	5.44	0.434	4008030	0.10
Styrene	ppbv	<0.10	< 0.426	0.426	<0.10	0.10	< 0.426	0.426	4008030	0.10
Hexane	ppbv	0.23	0.825	0.705	0.22	0.20	0.779	0.705	4008030	0.20
Naphthalene	ppbv	<0.20	< 1.05	1.05	<0.20	0.20	< 1.05	1.05	4008030	0.20
Total Xylenes	ppbv	1.68	7.29	1.32	2.45	0.30	10.6	1.32	4008030	0.30
Surrogate Recovery (%)										
Bromochloromethane	%	77	N/A	N/A	78		N/A	N/A	4008030	
D5-Chlorobenzene	%	72	N/A	N/A	75		N/A	N/A	4008030	
Difluorobenzene	%	77	N/A	N/A	78		N/A	N/A	4008030	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B574904
Report Date: 2015/05/06

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: SA

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		AEA821			AEA822					
Sampling Date		2015/04/24			2015/04/24					
COC Number		15953			15953					
	Units	**SVP-205-15/2557**	**ug/m3**	**DL (ug/m3)**	**TRIP BLANK/405**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**	**MDL**
Volatile Organics										
cis-1,3-Dichloropropene	ppbv	<0.10	< 0.454	0.454	<0.10	0.10	< 0.454	0.454	4008030	0.10
trans-1,3-Dichloropropene	ppbv	<0.10	< 0.454	0.454	<0.10	0.10	< 0.454	0.454	4008030	0.10
Benzene	ppbv	0.21	0.668	0.319	<0.10	0.10	< 0.319	0.319	4008030	0.10
Toluene	ppbv	20.9	78.5	0.376	<0.10	0.10	< 0.376	0.376	4008030	0.10
Ethylbenzene	ppbv	19.7	85.7	0.434	<0.10	0.10	< 0.434	0.434	4008030	0.10
p+m-Xylene	ppbv	59.4	258	0.868	<0.20	0.20	< 0.868	0.868	4008030	0.20
o-Xylene	ppbv	18.1	78.7	0.434	<0.10	0.10	< 0.434	0.434	4008030	0.10
Styrene	ppbv	<0.10	< 0.426	0.426	<0.10	0.10	< 0.426	0.426	4008030	0.10
Hexane	ppbv	2.02	7.13	0.705	<0.20	0.20	< 0.705	0.705	4008030	0.20
Naphthalene	ppbv	<0.20	< 1.05	1.05	<0.20	0.20	< 1.05	1.05	4008030	0.20
Total Xylenes	ppbv	77.5	337	1.32	<0.30	0.30	< 1.32	1.32	4008030	0.30
Surrogate Recovery (%)										
Bromochloromethane	%	80	N/A	N/A	82		N/A	N/A	4008030	
D5-Chlorobenzene	%	80	N/A	N/A	76		N/A	N/A	4008030	
Difluorobenzene	%	81	N/A	N/A	84		N/A	N/A	4008030	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B574904
Report Date: 2015/05/06

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: SA

TEST SUMMARY

Maxxam ID: AEA819
Sample ID: SVP204-15/1418
Matrix: AIR

Collected: 2015/04/24
Shipped:
Received: 2015/04/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
BTEX and CCME Compounds in Air(TO-15mod)	GC/MS	4008068	N/A	2015/04/30	Nicholas Smith
BTEX Fractionation in Air (TO-15mod)	GC/MS	4008099	N/A	2015/04/30	Nicholas Smith
Canister Pressure (TO-15)	PRES	4005957	N/A	2015/04/30	Angel Guerrero
Volatile Organics in Air using GC/MS	GC/MS	4008030	N/A	2015/04/30	Nicholas Smith

Maxxam ID: AEA820
Sample ID: SVP492-15/2542
Matrix: AIR

Collected: 2015/04/24
Shipped:
Received: 2015/04/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
BTEX and CCME Compounds in Air(TO-15mod)	GC/MS	4008068	N/A	2015/04/30	Nicholas Smith
BTEX Fractionation in Air (TO-15mod)	GC/MS	4008099	N/A	2015/04/30	Nicholas Smith
Canister Pressure (TO-15)	PRES	4005957	N/A	2015/04/30	Angel Guerrero
Volatile Organics in Air using GC/MS	GC/MS	4008030	N/A	2015/04/30	Nicholas Smith

Maxxam ID: AEA821
Sample ID: SVP-205-15/2557
Matrix: AIR

Collected: 2015/04/24
Shipped:
Received: 2015/04/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
BTEX and CCME Compounds in Air(TO-15mod)	GC/MS	4008068	N/A	2015/04/30	Nicholas Smith
BTEX Fractionation in Air (TO-15mod)	GC/MS	4008099	N/A	2015/04/30	Nicholas Smith
Canister Pressure (TO-15)	PRES	4005957	N/A	2015/04/30	Angel Guerrero
Volatile Organics in Air using GC/MS	GC/MS	4008030	N/A	2015/04/30	Nicholas Smith

Maxxam ID: AEA822
Sample ID: TRIP BLANK/405
Matrix: AIR

Collected: 2015/04/24
Shipped:
Received: 2015/04/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
BTEX and CCME Compounds in Air(TO-15mod)	GC/MS	4008068	N/A	2015/04/30	Nicholas Smith
BTEX Fractionation in Air (TO-15mod)	GC/MS	4008099	N/A	2015/04/30	Nicholas Smith
Canister Pressure (TO-15)	PRES	4005957	N/A	2015/04/30	Angel Guerrero
Volatile Organics in Air using GC/MS	GC/MS	4008030	N/A	2015/04/30	Nicholas Smith

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Maxxam Job #: B574904
Report Date: 2015/05/06

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: SA

GENERAL COMMENTS

Results relate only to the items tested.

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Maxxam Job #: B574904
Report Date: 2015/05/06

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: SA

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	Units	QC Limits
4008030	NS2	Spiked Blank	Bromochloromethane	2015/04/30		97	%	60 - 140
			D5-Chlorobenzene	2015/04/30		102	%	60 - 140
			Difluorobenzene	2015/04/30		98	%	60 - 140
			cis-1,3-Dichloropropene	2015/04/30		107	%	70 - 130
			trans-1,3-Dichloropropene	2015/04/30		112	%	70 - 130
			Benzene	2015/04/30		94	%	70 - 130
			Toluene	2015/04/30		99	%	70 - 130
			Ethylbenzene	2015/04/30		99	%	70 - 130
			p+m-Xylene	2015/04/30		96	%	70 - 130
			o-Xylene	2015/04/30		98	%	70 - 130
			Styrene	2015/04/30		96	%	70 - 130
			Hexane	2015/04/30		86	%	70 - 130
			Total Xylenes	2015/04/30		97	%	70 - 130
4008030	NS2	Method Blank	Bromochloromethane	2015/04/30		97	%	60 - 140
			D5-Chlorobenzene	2015/04/30		91	%	60 - 140
			Difluorobenzene	2015/04/30		99	%	60 - 140
			cis-1,3-Dichloropropene	2015/04/30	<0.10		ppbv	
			trans-1,3-Dichloropropene	2015/04/30	<0.10		ppbv	
			Benzene	2015/04/30	<0.10		ppbv	
			Toluene	2015/04/30	<0.10		ppbv	
			Ethylbenzene	2015/04/30	<0.10		ppbv	
			p+m-Xylene	2015/04/30	<0.20		ppbv	
			o-Xylene	2015/04/30	<0.10		ppbv	
			Styrene	2015/04/30	<0.10		ppbv	
			Hexane	2015/04/30	<0.20		ppbv	
			Naphthalene	2015/04/30	<0.20		ppbv	
			Total Xylenes	2015/04/30	<0.30		ppbv	
4008068	NS2	Method Blank	F1-BTEX, C6-C10 (as Toluene)	2015/04/30	<5.0		ug/m3	
			F2, C10-C16 (as Decane)	2015/04/30	<5.0		ug/m3	
4008099	NS2	Method Blank	Aliphatic >C5-C6	2015/04/30	<5.0		ug/m3	
			Aliphatic >C6-C8	2015/04/30	<5.0		ug/m3	
			Aliphatic >C8-C10	2015/04/30	<5.0		ug/m3	
			Aliphatic >C10-C12	2015/04/30	<5.0		ug/m3	
			Aliphatic >C12-C16	2015/04/30	<5.0		ug/m3	
			Aromatic >C7-C8 (TEX Excluded)	2015/04/30	<5.0		ug/m3	
			Aromatic >C8-C10	2015/04/30	<5.0		ug/m3	
			Aromatic >C10-C12	2015/04/30	<5.0		ug/m3	
			Aromatic >C12-C16	2015/04/30	<5.0		ug/m3	

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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Your Project #: 38805-100
Your C.O.C. #: 23429

Attention: Bill Lawlor
MTE Consultants Inc
520 Bingemans Centre Dr
Kitchener, ON
N2B 3X9

Report Date: 2015/05/16
Report #: R3431497
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B574896
Received: 2015/04/24, 16:30

Sample Matrix: Filter
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH in XAD Resin (In house method)	3	2015/05/03	2015/05/04	BRL SOP-00201	In house method

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

Encryption Key

Theresa Stephenson
16 May 2015 10:36:18 -04:00

Please direct all qu ; Certificate of Analysis to your Project Manager.

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

==========

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Total cover pages: 1

Maxxam Job #: B574896
Report Date: 2015/05/16

MTE Consultants Inc
Client Project #: 38805-100

Sampler Initials: SA

SEMI-VOLATILE ORGANICS BY GC-MS (FILTER)

Maxxam ID		AEA763						
Sampling Date		2015/04/24						
COC Number		23429						
	Units	**SVP204-15**	**RDL**	**Vol (L)**	**mg/m3**	**DL (mg/m3)**	**QC Batch**	**MDL**
Semivolatile Organics								
1-Methylnaphthalene	ug	<0.020	0.020	6.10	<0.00328	0.00328	4007095	0.0040
2-Methylnaphthalene	ug	<0.020	0.020	6.10	<0.00328	0.00328	4007095	0.0040
Acenaphthene	ug	<0.020	0.020	6.10	<0.00328	0.00328	4007095	0.0040
Acenaphthylene	ug	<0.020	0.020	6.10	<0.00328	0.00328	4007095	0.0040
Anthracene	ug	<0.020	0.020	6.10	<0.00328	0.00328	4007095	0.0040
Benzo(a)anthracene	ug	<0.020	0.020	6.10	<0.00328	0.00328	4007095	0.0040
Benzo(a)pyrene	ug	<0.020	0.020	6.10	<0.00328	0.00328	4007095	0.0040
Benzo(b)fluoranthene	ug	<0.020	0.020	6.10	<0.00328	0.00328	4007095	0.0040
Benzo(g,h,i)perylene	ug	<0.020	0.020	6.10	<0.00328	0.00328	4007095	0.0040
Benzo(k)fluoranthene	ug	<0.020	0.020	6.10	<0.00328	0.00328	4007095	0.0040
Biphenyl	ug	<0.020	0.020	6.10	<0.00328	0.00328	4007095	0.0040
Chrysene	ug	<0.020	0.020	6.10	<0.00328	0.00328	4007095	0.0040
Dibenz(a,h)anthracene	ug	<0.020	0.020	6.10	<0.00328	0.00328	4007095	0.0040
Fluoranthene	ug	<0.020	0.020	6.10	<0.00328	0.00328	4007095	0.0040
Fluorene	ug	<0.020	0.020	6.10	<0.00328	0.00328	4007095	0.0040
Indeno(1,2,3-cd)pyrene	ug	<0.020	0.020	6.10	<0.00328	0.00328	4007095	0.0040
Naphthalene	ug	<0.020	0.020	6.10	<0.00328	0.00328	4007095	0.0040
Phenanthrene	ug	<0.020	0.020	6.10	<0.00328	0.00328	4007095	0.0040
Pyrene	ug	<0.020	0.020	6.10	<0.00328	0.00328	4007095	0.0040
Surrogate Recovery (%)								
D10-Anthracene	%	79		N/A	N/A	N/A	4007095	
D12-Benzo(a)pyrene	%	89		N/A	N/A	N/A	4007095	
D12-Chrysene	%	85		N/A	N/A	N/A	4007095	

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B574896
Report Date: 2015/05/16

MTE Consultants Inc
Client Project #: 38805-100

Sampler Initials: SA

SEMI-VOLATILE ORGANICS BY GC-MS (FILTER)

Maxxam ID		AEA764						
Sampling Date		2015/04/24						
COC Number		23429						
	Units	**SVP205-15**	**RDL**	**Vol (L)**	**mg/m3**	**DL (mg/m3)**	**QC Batch**	**MDL**
Semivolatile Organics								
1-Methylnaphthalene	ug	<0.020	0.020	6.30	<0.00317	0.00317	4007095	0.0040
2-Methylnaphthalene	ug	<0.020	0.020	6.30	<0.00317	0.00317	4007095	0.0040
Acenaphthene	ug	<0.020	0.020	6.30	<0.00317	0.00317	4007095	0.0040
Acenaphthylene	ug	<0.020	0.020	6.30	<0.00317	0.00317	4007095	0.0040
Anthracene	ug	<0.020	0.020	6.30	<0.00317	0.00317	4007095	0.0040
Benzo(a)anthracene	ug	<0.020	0.020	6.30	<0.00317	0.00317	4007095	0.0040
Benzo(a)pyrene	ug	<0.020	0.020	6.30	<0.00317	0.00317	4007095	0.0040
Benzo(b)fluoranthene	ug	<0.020	0.020	6.30	<0.00317	0.00317	4007095	0.0040
Benzo(g,h,i)perylene	ug	<0.020	0.020	6.30	<0.00317	0.00317	4007095	0.0040
Benzo(k)fluoranthene	ug	<0.020	0.020	6.30	<0.00317	0.00317	4007095	0.0040
Biphenyl	ug	<0.020	0.020	6.30	<0.00317	0.00317	4007095	0.0040
Chrysene	ug	<0.020	0.020	6.30	<0.00317	0.00317	4007095	0.0040
Dibenz(a,h)anthracene	ug	<0.020	0.020	6.30	<0.00317	0.00317	4007095	0.0040
Fluoranthene	ug	<0.020	0.020	6.30	<0.00317	0.00317	4007095	0.0040
Fluorene	ug	<0.020	0.020	6.30	<0.00317	0.00317	4007095	0.0040
Indeno(1,2,3-cd)pyrene	ug	<0.020	0.020	6.30	<0.00317	0.00317	4007095	0.0040
Naphthalene	ug	<0.020	0.020	6.30	<0.00317	0.00317	4007095	0.0040
Phenanthrene	ug	<0.020	0.020	6.30	<0.00317	0.00317	4007095	0.0040
Pyrene	ug	<0.020	0.020	6.30	<0.00317	0.00317	4007095	0.0040
Surrogate Recovery (%)								
D10-Anthracene	%	79		N/A	N/A	N/A	4007095	
D12-Benzo(a)pyrene	%	91		N/A	N/A	N/A	4007095	
D12-Chrysene	%	84		N/A	N/A	N/A	4007095	

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B574896
Report Date: 2015/05/16

MTE Consultants Inc
Client Project #: 38805-100

Sampler Initials: SA

SEMI-VOLATILE ORGANICS BY GC-MS (FILTER)

Maxxam ID		AEA765					
Sampling Date		2015/04/24					
COC Number		23429					
	Units	**TRIP BLANK**	**RDL**	**mg/m3**	**DL (mg/m3)**	**QC Batch**	**MDL**
Semivolatile Organics							
1-Methylnaphthalene	ug	<0.020	0.020	NC	N/A	4007095	0.0040
2-Methylnaphthalene	ug	<0.020	0.020	NC	N/A	4007095	0.0040
Acenaphthene	ug	<0.020	0.020	NC	N/A	4007095	0.0040
Acenaphthylene	ug	<0.020	0.020	NC	N/A	4007095	0.0040
Anthracene	ug	<0.020	0.020	NC	N/A	4007095	0.0040
Benzo(a)anthracene	ug	<0.020	0.020	NC	N/A	4007095	0.0040
Benzo(a)pyrene	ug	<0.020	0.020	NC	N/A	4007095	0.0040
Benzo(b)fluoranthene	ug	<0.020	0.020	NC	N/A	4007095	0.0040
Benzo(g,h,i)perylene	ug	<0.020	0.020	NC	N/A	4007095	0.0040
Benzo(k)fluoranthene	ug	<0.020	0.020	NC	N/A	4007095	0.0040
Biphenyl	ug	<0.020	0.020	NC	N/A	4007095	0.0040
Chrysene	ug	<0.020	0.020	NC	N/A	4007095	0.0040
Dibenz(a,h)anthracene	ug	<0.020	0.020	NC	N/A	4007095	0.0040
Fluoranthene	ug	<0.020	0.020	NC	N/A	4007095	0.0040
Fluorene	ug	<0.020	0.020	NC	N/A	4007095	0.0040
Indeno(1,2,3-cd)pyrene	ug	<0.020	0.020	NC	N/A	4007095	0.0040
Naphthalene	ug	<0.020	0.020	NC	N/A	4007095	0.0040
Phenanthrene	ug	<0.020	0.020	NC	N/A	4007095	0.0040
Pyrene	ug	<0.020	0.020	NC	N/A	4007095	0.0040
Surrogate Recovery (%)							
D10-Anthracene	%	78		N/A	N/A	4007095	
D12-Benzo(a)pyrene	%	93		N/A	N/A	4007095	
D12-Chrysene	%	84		N/A	N/A	4007095	

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B574896
Report Date: 2015/05/16

MTE Consultants Inc
Client Project #: 38805-100

Sampler Initials: SA

Test Summary

Maxxam ID AEA763 **Collected** 2015/04/24
Sample ID SVP204-15 **Shipped**
Matrix Filter **Received** 2015/04/24

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH in XAD Resin (In house method)	GC/MS	4007095	2015/05/03	2015/05/04	Lidija Tomic

Maxxam ID AEA764 **Collected** 2015/04/24
Sample ID SVP205-15 **Shipped**
Matrix Filter **Received** 2015/04/24

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH in XAD Resin (In house method)	GC/MS	4007095	2015/05/03	2015/05/04	Lidija Tomic

Maxxam ID AEA765 **Collected** 2015/04/24
Sample ID TRIP BLANK **Shipped**
Matrix Filter **Received** 2015/04/24

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH in XAD Resin (In house method)	GC/MS	4007095	2015/05/03	2015/05/04	Lidija Tomic

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Maxxam Job #: B574896
Report Date: 2015/05/16

MTE Consultants Inc
Client Project #: 38805-100

Sampler Initials: SA

GENERAL COMMENTS

Volumes have been submitted by the client.

Results relate only to the items tested.

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MTE Consultants Inc
Attention: Bill Lawlor
Client Project #: 38805-100
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: GB574896

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
4007095	LTO	Spiked Blank	D10-Anthracene	2015/05/08		79	%	50 - 150
			D12-Benzo(a)pyrene	2015/05/08		88	%	50 - 150
			D12-Chrysene	2015/05/08		84	%	50 - 150
			Acenaphthene	2015/05/08		86	%	60 - 130
		RPD	Acenaphthene	2015/05/04	0.3		%	50
		Spiked Blank	Acenaphthylene	2015/05/08		78	%	60 - 130
		RPD	Acenaphthylene	2015/05/04	0.01		%	50
		Spiked Blank	Anthracene	2015/05/08		81	%	60 - 130
		RPD	Anthracene	2015/05/04	0.3		%	50
		Spiked Blank	Benzo(a)anthracene	2015/05/08		81	%	60 - 130
		RPD	Benzo(a)anthracene	2015/05/04	1.1		%	50
		Spiked Blank	Benzo(a)pyrene	2015/05/08		85	%	60 - 130
		RPD	Benzo(a)pyrene	2015/05/04	2.9		%	50
		Spiked Blank	Benzo(b)fluoranthene	2015/05/08		82	%	60 - 130
		RPD	Benzo(b)fluoranthene	2015/05/04	7.4		%	50
		Spiked Blank	Benzo(g,h,i)perylene	2015/05/08		79	%	60 - 130
		RPD	Benzo(g,h,i)perylene	2015/05/04	0.9		%	50
		Spiked Blank	Benzo(k)fluoranthene	2015/05/08		90	%	60 - 130
		RPD	Benzo(k)fluoranthene	2015/05/04	1.5		%	50
		Spiked Blank	Chrysene	2015/05/08		88	%	60 - 130
		RPD	Chrysene	2015/05/04	0.6		%	50
		Spiked Blank	Dibenz(a,h)anthracene	2015/05/08		83	%	60 - 130
		RPD	Dibenz(a,h)anthracene	2015/05/04	1.7		%	50
		Spiked Blank	Fluoranthene	2015/05/08		84	%	60 - 130
		RPD	Fluoranthene	2015/05/04	0.04		%	50
		Spiked Blank	Fluorene	2015/05/08		85	%	60 - 130
		RPD	Fluorene	2015/05/04	0.5		%	50
		Spiked Blank	Indeno(1,2,3-cd)pyrene	2015/05/08		83	%	60 - 130
		RPD	Indeno(1,2,3-cd)pyrene	2015/05/04	2.2		%	50
		Spiked Blank	Naphthalene	2015/05/08		90	%	60 - 130
		RPD	Naphthalene	2015/05/04	1.6		%	50
		Spiked Blank	Phenanthrene	2015/05/08		85	%	60 - 130
		RPD	Phenanthrene	2015/05/04	1.6		%	50
		Spiked Blank	Pyrene	2015/05/08		74	%	60 - 130
		RPD	Pyrene	2015/05/04	0.7		%	50
		Method Blank	D10-Anthracene	2015/05/04		81	%	50 - 150
			D12-Benzo(a)pyrene	2015/05/04		92	%	50 - 150
			D12-Chrysene	2015/05/04		86	%	50 - 150
			1-Methylnaphthalene	2015/05/04	<0.020		ug	
			2-Methylnaphthalene	2015/05/04	<0.020		ug	
			Acenaphthene	2015/05/04	<0.020		ug	
			Acenaphthylene	2015/05/04	<0.020		ug	
			Anthracene	2015/05/04	<0.020		ug	
			Benzo(a)anthracene	2015/05/04	<0.020		ug	
			Benzo(a)pyrene	2015/05/04	<0.020		ug	
			Benzo(b)fluoranthene	2015/05/04	<0.020		ug	
			Benzo(g,h,i)perylene	2015/05/04	<0.020		ug	
			Benzo(k)fluoranthene	2015/05/04	<0.020		ug	
			Biphenyl	2015/05/04	<0.020		ug	
			Chrysene	2015/05/04	<0.020		ug	
			Dibenz(a,h)anthracene	2015/05/04	<0.020		ug	
			Fluoranthene	2015/05/04	<0.020		ug	
			Fluorene	2015/05/04	<0.020		ug	
			Indeno(1,2,3-cd)pyrene	2015/05/04	<0.020		ug	
			Naphthalene	2015/05/04	<0.020		ug	

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MTE Consultants Inc
Attention: Bill Lawlor
Client Project #: 38805-100
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB574896

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
4007095	LTO	Method Blank	Phenanthrene	2015/05/04	<0.020		ug	
			Pyrene	2015/05/04	<0.020		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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Maxxam
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Success Through Science®

Your Project #: 38805-100
Your C.O.C. #: 15746

Attention:Bill Lawlor

MTE Consultants Inc
520 Bingemans Centre Dr
Kitchener, ON
N2B 3X9

Report Date: 2015/08/20
Report #: R3634584
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5G1716
Received: 2015/08/13, 18:20

Sample Matrix: AIR
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
BTEX and CCME Compounds in Air(TO-15mod)	3	N/A	2015/08/18	BRL SOP-00304	EPA TO-15 m
BTEX Fractionation in Air (TO-15mod)	3	N/A	2015/08/18	BRL SOP-00304	EPA TO-15 m
Canister Pressure (TO-15)	3	N/A	2015/08/18	BRL SOP-00304	EPA TO-15 m
Volatile Organics in Air using GC/MS (1)	2	N/A	2015/08/18	BRL SOP-00304	EPA TO-15A m
Volatile Organics in Air by GC/MS/SIM (1)	1	N/A	2015/08/19	BRL SOP-00304	EPA TO-15Amod

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

Jade Browne
21 Aug 2015 15:26:18 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905)817-5763

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Maxxam Job #: B5G1716
Report Date: 2015/08/20

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: JLB

RESULTS OF ANALYSES OF AIR

Maxxam ID		AUM106	AUM107	AUM109		
Sampling Date		2015/08/13	2015/08/13	2015/08/13		
COC Number		15746	15746	15746		
	UNITS	**SVP204-15/1253**	**SVP205-15/2479**	**TRIP BLANK/2545**	**QC Batch**	**MDL**
Volatile Organics						
Pressure on Receipt	psig	(-1.9)	(-2.0)	3.6	4154891	N/A

QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B5G1716
Report Date: 2015/08/20

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: JLB

VOLATILE ORGANIC HYDROCARBONS BY GC/MS (AIR)

Maxxam ID		AUM106	AUM107	AUM109			
Sampling Date		2015/08/13	2015/08/13	2015/08/13			
COC Number		15746	15746	15746			
	UNITS	**SVP204-15/1253**	**SVP205-15/2479**	**TRIP BLANK/2545**	**RDL**	**QC Batch**	**MDL**
Volatile Organics							
F1-BTEX, C6-C10 (as Toluene)	ug/m3	19.2	23.1	<5.0	5.0	4156357	1.0
F2, C10-C16 (as Decane)	ug/m3	54.6	68.5	<5.0	5.0	4156357	1.0
Aliphatic >C5-C6	ug/m3	<5.0	<5.0	<5.0	5.0	4156403	1.0
Aliphatic >C6-C8	ug/m3	<5.0	<5.0	<5.0	5.0	4156403	1.0
Aliphatic >C8-C10	ug/m3	<5.0	<5.0	<5.0	5.0	4156403	1.0
Aliphatic >C10-C12	ug/m3	16.2	15.5	<5.0	5.0	4156403	1.0
Aliphatic >C12-C16	ug/m3	22.7	30.2	<5.0	5.0	4156403	1.0
Aromatic >C7-C8 (TEX Excluded)	ug/m3	<5.0	<5.0	<5.0	5.0	4156403	1.0
Aromatic >C8-C10	ug/m3	<5.0	<5.0	<5.0	5.0	4156403	1.0
Aromatic >C10-C12	ug/m3	<5.0	<5.0	<5.0	5.0	4156403	1.0
Aromatic >C12-C16	ug/m3	<5.0	<5.0	<5.0	5.0	4156403	1.0

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B5G1716
Report Date: 2015/08/20

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: JLB

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		AUM106			AUM107					
Sampling Date		2015/08/13			2015/08/13					
COC Number		15746			15746					
	UNITS	**SVP204-15/1253**	**ug/m3**	**DL (ug/m3)**	**SVP205-15/2479**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**	**MDL**
Volatile Organics										
cis-1,3-Dichloropropene	ppbv	<0.10	< 0.454	0.454	<0.10	0.10	< 0.454	0.454	4156322	0.10
trans-1,3-Dichloropropene	ppbv	<0.10	< 0.454	0.454	<0.10	0.10	< 0.454	0.454	4156322	0.10
Benzene	ppbv	<0.10	< 0.319	0.319	0.21	0.10	0.662	0.319	4156322	0.10
Toluene	ppbv	0.36	1.34	0.376	0.58	0.10	2.19	0.376	4156322	0.10
Ethylbenzene	ppbv	<0.10	< 0.434	0.434	<0.10	0.10	< 0.434	0.434	4156322	0.10
p+m-Xylene	ppbv	<0.20	< 0.868	0.868	<0.20	0.20	< 0.868	0.868	4156322	0.20
o-Xylene	ppbv	<0.10	< 0.434	0.434	<0.10	0.10	< 0.434	0.434	4156322	0.10
Styrene	ppbv	<0.10	< 0.426	0.426	<0.10	0.10	< 0.426	0.426	4156322	0.10
Hexane	ppbv	<0.20	< 0.705	0.705	<0.20	0.20	< 0.705	0.705	4156322	0.20
Naphthalene	ppbv	<0.20	< 1.05	1.05	<0.20	0.20	< 1.05	1.05	4156322	0.20
Total Xylenes	ppbv	<0.30	< 1.32	1.32	<0.30	0.30	< 1.32	1.32	4156322	0.30
Surrogate Recovery (%)										
Bromochloromethane	%	72	N/A	N/A	67		N/A	N/A	4156322	
D5-Chlorobenzene	%	72	N/A	N/A	69		N/A	N/A	4156322	
Difluorobenzene	%	75	N/A	N/A	70		N/A	N/A	4156322	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B5G1716
Report Date: 2015/08/20

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: JLB

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		AUM109					
Sampling Date		2015/08/13					
COC Number		15746					
	UNITS	**TRIP BLANK/2545**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**	**MDL**
Volatile Organics							
cis-1,3-Dichloropropene	ppbv	<0.050	0.050	< 0.227	0.227	4155098	0.050
trans-1,3-Dichloropropene	ppbv	<0.050	0.050	< 0.227	0.227	4155098	0.050
Benzene	ppbv	<0.050	0.050	< 0.160	0.160	4155098	0.050
Toluene	ppbv	<0.050	0.050	< 0.188	0.188	4155098	0.050
Ethylbenzene	ppbv	<0.050	0.050	< 0.217	0.217	4155098	0.050
p+m-Xylene	ppbv	<0.10	0.10	< 0.434	0.434	4155098	0.10
o-Xylene	ppbv	<0.050	0.050	< 0.217	0.217	4155098	0.050
Styrene	ppbv	<0.050	0.050	< 0.213	0.213	4155098	0.050
Hexane	ppbv	<0.10	0.10	< 0.352	0.352	4155098	0.10
Naphthalene	ppbv	<0.10	0.10	< 0.524	0.524	4155098	0.10
Total Xylenes	ppbv	<0.15	0.15	< 0.662	0.662	4155098	0.15
Surrogate Recovery (%)							
Bromochloromethane	%	85		N/A	N/A	4155098	
D5-Chlorobenzene	%	77		N/A	N/A	4155098	
Difluorobenzene	%	80		N/A	N/A	4155098	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B5G1716
Report Date: 2015/08/20

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: JLB

TEST SUMMARY

Maxxam ID: AUM106
Sample ID: SVP204-15/1253
Matrix: AIR

Collected: 2015/08/13
Shipped:
Received: 2015/08/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
BTEX and CCME Compounds in Air(TO-15mod)	GC/MS	4156357	N/A	2015/08/18	Nicholas Smith
BTEX Fractionation in Air (TO-15mod)	GC/MS	4156403	N/A	2015/08/18	Nicholas Smith
Canister Pressure (TO-15)	PRES	4154891	N/A	2015/08/18	Angel Guerrero
Volatile Organics in Air using GC/MS	GC/MS	4156322	N/A	2015/08/18	Nicholas Smith

Maxxam ID: AUM107
Sample ID: SVP205-15/2479
Matrix: AIR

Collected: 2015/08/13
Shipped:
Received: 2015/08/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
BTEX and CCME Compounds in Air(TO-15mod)	GC/MS	4156357	N/A	2015/08/18	Nicholas Smith
BTEX Fractionation in Air (TO-15mod)	GC/MS	4156403	N/A	2015/08/18	Nicholas Smith
Canister Pressure (TO-15)	PRES	4154891	N/A	2015/08/18	Angel Guerrero
Volatile Organics in Air using GC/MS	GC/MS	4156322	N/A	2015/08/18	Nicholas Smith

Maxxam ID: AUM109
Sample ID: TRIP BLANK/2545
Matrix: AIR

Collected: 2015/08/13
Shipped:
Received: 2015/08/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
BTEX and CCME Compounds in Air(TO-15mod)	GC/MS	4156357	N/A	2015/08/18	Nicholas Smith
BTEX Fractionation in Air (TO-15mod)	GC/MS	4156403	N/A	2015/08/18	Nicholas Smith
Canister Pressure (TO-15)	PRES	4154891	N/A	2015/08/18	Angel Guerrero
Volatile Organics in Air by GC/MS/SIM	GC/MS	4155098	N/A	2015/08/19	Melanie Mabini

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Maxxam Job #: B5G1716
Report Date: 2015/08/20

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: JLB

GENERAL COMMENTS

VOLATILE ORGANICS BY GC/MS (AIR)

Volatile Organics in Air using GC/MS: Hexachlorobutadiene exceeded 40% RSD in the initial calibration. No positives were found for this compound therefore the data should not be affected.

Results relate only to the items tested.

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Maxxam Job #: B5G1716
Report Date: 2015/08/20

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: JLB

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
4155098	MM2	Spiked Blank	Bromochloromethane	2015/08/19		99	%	60 - 140
			D5-Chlorobenzene	2015/08/19		99	%	60 - 140
			Difluorobenzene	2015/08/19		101	%	60 - 140
			cis-1,3-Dichloropropene	2015/08/19		107	%	70 - 130
			trans-1,3-Dichloropropene	2015/08/19		101	%	70 - 130
			Benzene	2015/08/19		98	%	70 - 130
			Toluene	2015/08/19		104	%	70 - 130
			Ethylbenzene	2015/08/19		109	%	70 - 130
			p+m-Xylene	2015/08/19		106	%	70 - 130
			o-Xylene	2015/08/19		108	%	70 - 130
			Styrene	2015/08/19		114	%	70 - 130
			Hexane	2015/08/19		103	%	70 - 130
			Total Xylenes	2015/08/19		107	%	70 - 130
4155098	MM2	Method Blank	Bromochloromethane	2015/08/19		91	%	60 - 140
			D5-Chlorobenzene	2015/08/19		83	%	60 - 140
			Difluorobenzene	2015/08/19		90	%	60 - 140
			cis-1,3-Dichloropropene	2015/08/19	<0.050		ppbv	
			trans-1,3-Dichloropropene	2015/08/19	<0.050		ppbv	
			Benzene	2015/08/19	<0.050		ppbv	
			Toluene	2015/08/19	<0.050		ppbv	
			Ethylbenzene	2015/08/19	<0.050		ppbv	
			p+m-Xylene	2015/08/19	<0.10		ppbv	
			o-Xylene	2015/08/19	<0.050		ppbv	
			Styrene	2015/08/19	<0.050		ppbv	
			Hexane	2015/08/19	<0.10		ppbv	
			Naphthalene	2015/08/19	<0.10		ppbv	
			Total Xylenes	2015/08/19	<0.15		ppbv	
4155098	MM2	RPD - Sample/Sample Dup	Styrene	2015/08/19	NC		%	25
4156322	NS2	Spiked Blank	Bromochloromethane	2015/08/18		94	%	60 - 140
			D5-Chlorobenzene	2015/08/18		96	%	60 - 140
			Difluorobenzene	2015/08/18		96	%	60 - 140
			cis-1,3-Dichloropropene	2015/08/18		108	%	70 - 130
			trans-1,3-Dichloropropene	2015/08/18		106	%	70 - 130
			Benzene	2015/08/18		98	%	70 - 130
			Toluene	2015/08/18		98	%	70 - 130
			Ethylbenzene	2015/08/18		97	%	70 - 130
			p+m-Xylene	2015/08/18		94	%	70 - 130
			o-Xylene	2015/08/18		96	%	70 - 130
			Styrene	2015/08/18		99	%	70 - 130
			Hexane	2015/08/18		95	%	70 - 130
			Naphthalene	2015/08/18		104	%	70 - 130
			Total Xylenes	2015/08/18		95	%	70 - 130
4156322	NS2	Method Blank	Bromochloromethane	2015/08/18		92	%	60 - 140
			D5-Chlorobenzene	2015/08/18		90	%	60 - 140
			Difluorobenzene	2015/08/18		97	%	60 - 140
			cis-1,3-Dichloropropene	2015/08/18	<0.10		ppbv	
			trans-1,3-Dichloropropene	2015/08/18	<0.10		ppbv	
			Benzene	2015/08/18	<0.10		ppbv	
			Toluene	2015/08/18	<0.10		ppbv	
			Ethylbenzene	2015/08/18	<0.10		ppbv	
			p+m-Xylene	2015/08/18	<0.20		ppbv	
			o-Xylene	2015/08/18	<0.10		ppbv	
			Styrene	2015/08/18	<0.10		ppbv	

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Maxxam Job #: B5G1716
Report Date: 2015/08/20

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: JLB

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Hexane	2015/08/18	<0.20		ppbv	
			Naphthalene	2015/08/18	<0.20		ppbv	
			Total Xylenes	2015/08/18	<0.30		ppbv	
4156357	NS2	Method Blank	F1-BTEX, C6-C10 (as Toluene)	2015/08/18	<5.0		ug/m3	
			F2, C10-C16 (as Decane)	2015/08/18	<5.0		ug/m3	
4156403	NS2	Method Blank	Aliphatic >C5-C6	2015/08/18	<5.0		ug/m3	
			Aliphatic >C6-C8	2015/08/18	<5.0		ug/m3	
			Aliphatic >C8-C10	2015/08/18	<5.0		ug/m3	
			Aliphatic >C10-C12	2015/08/18	<5.0		ug/m3	
			Aliphatic >C12-C16	2015/08/18	<5.0		ug/m3	
			Aromatic >C7-C8 (TEX Excluded)	2015/08/18	<5.0		ug/m3	
			Aromatic >C8-C10	2015/08/18	<5.0		ug/m3	
			Aromatic >C10-C12	2015/08/18	<5.0		ug/m3	
			Aromatic >C12-C16	2015/08/18	<5.0		ug/m3	

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

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Maxxam
A Bureau Veritas Group Company

Your Project #: 38805-100
Your C.O.C. #: 26982

Attention:Bill Lawlor

MTE Consultants Inc
520 Bingemans Centre Dr
Kitchener, ON
N2B 3X9

Report Date: 2015/11/27
Report #: R3784546
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5L8525
Received: 2015/10/26, 08:25

Sample Matrix: Filter
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Calculated Polyaromatic Hydrocarbons	3	2015/10/27	2015/10/27	BRL SOP-00201	
PAH in XAD Resin (In house method)	4	2015/11/01	2015/11/02	BRL SOP-00201	In house method
Air Volume Sampled	3	N/A	2015/10/27		

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

Encryption Key

Renata Spena
30 Nov 2015 09:44:00 -05:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Theresa Stephenson, Project Manager
Email: xxTStephenson@maxxam.ca
Phone# (905)817-5763

==========

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Maxxam Job #: B5L8525
Report Date: 2015/11/27

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: JB

FIELD MEASUREMENTS (FILTER)

Maxxam ID		BFS014	BFS015	BFS016		
Sampling Date		2015/10/23	2015/10/23	2015/10/23		
COC Number		26982	26982	26982		
	UNITS	**SVP203B-15**	**SVP206-15**	**SVP207-15**	**QC Batch**	**MDL**
Field Measurements						
Volume	L	6.760	5.790	6.130	ONSITE	N/A

QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B5L8525
Report Date: 2015/11/27

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: JB

CALCULATED SEMIVOLATILE ORGANICS (FILTER)

Maxxam ID		BFS014		BFS015		BFS016			
Sampling Date		2015/10/23		2015/10/23		2015/10/23			
COC Number		26982		26982		26982			
	UNITS	**SVP203B-15**	**RDL**	**SVP206-15**	**RDL**	**SVP207-15**	**RDL**	**QC Batch**	**MDL**
Calculated Parameters									
1-Methylnaphthalene	ug/m3	<3.0	3.0	<3.5	3.5	<3.3	3.3	4246939	N/A
2-Methylnaphthalene	ug/m3	<3.0	3.0	<3.5	3.5	<3.3	3.3	4246939	N/A
Acenaphthene	ug/m3	<3.0	3.0	<3.5	3.5	<3.3	3.3	4246939	N/A
Acenaphthylene	ug/m3	<3.0	3.0	<3.5	3.5	<3.3	3.3	4246939	N/A
Anthracene	ug/m3	<3.0	3.0	<3.5	3.5	<3.3	3.3	4246939	N/A
Benzo(a)anthracene	ug/m3	<3.0	3.0	<3.5	3.5	<3.3	3.3	4246939	N/A
Benzo(a)pyrene	ug/m3	<3.0	3.0	<3.5	3.5	<3.3	3.3	4246939	N/A
Benzo(b)fluoranthene	ug/m3	<3.0	3.0	<3.5	3.5	<3.3	3.3	4246939	N/A
Benzo(g,h,i)perylene	ug/m3	<3.0	3.0	<3.5	3.5	<3.3	3.3	4246939	N/A
Benzo(k)fluoranthene	ug/m3	<3.0	3.0	<3.5	3.5	<3.3	3.3	4246939	N/A
Biphenyl	ug/m3	<3.0	3.0	<3.5	3.5	<3.3	3.3	4246939	N/A
Chrysene	ug/m3	<3.0	3.0	<3.5	3.5	<3.3	3.3	4246939	N/A
Dibenz(a,h)anthracene	ug/m3	<3.0	3.0	<3.5	3.5	<3.3	3.3	4246939	N/A
Fluorene	ug/m3	<3.0	3.0	<3.5	3.5	<3.3	3.3	4246939	N/A
Naphthalene	ug/m3	<3.0	3.0	<3.5	3.5	<3.3	3.3	4246939	N/A
Phenanthrene	ug/m3	<3.0	3.0	<3.5	3.5	<3.3	3.3	4246939	N/A
Pyrene	ug/m3	<3.0	3.0	<3.5	3.5	<3.3	3.3	4246939	N/A
Fluoranthene	ug/m3	<3.0	3.0	<3.5	3.5	<3.3	3.3	4246939	N/A
Indeno(1,2,3-cd)pyrene	ug/m3	<3.0	3.0	<3.5	3.5	<3.3	3.3	4246939	N/A

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B5L8525
Report Date: 2015/11/27

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: JB

SEMI-VOLATILE ORGANICS BY GC-MS (FILTER)

Maxxam ID		BFS014	BFS015	BFS016	BFS017			
Sampling Date		2015/10/23	2015/10/23	2015/10/23	2015/10/23			
COC Number		26982	26982	26982	26982			
	UNITS	**SVP203B-15**	**SVP206-15**	**SVP207-15**	**TRIP BLANK**	**RDL**	**QC Batch**	**MDL**
Semivolatile Organics								
1-Methylnaphthalene	ug	<0.020	<0.020	<0.020	<0.020	0.020	4253991	0.0040
2-Methylnaphthalene	ug	<0.020	<0.020	<0.020	<0.020	0.020	4253991	0.0040
Acenaphthene	ug	<0.020	<0.020	<0.020	<0.020	0.020	4253991	0.0040
Acenaphthylene	ug	<0.020	<0.020	<0.020	<0.020	0.020	4253991	0.0040
Anthracene	ug	<0.020	<0.020	<0.020	<0.020	0.020	4253991	0.0040
Benzo(a)anthracene	ug	<0.020	<0.020	<0.020	<0.020	0.020	4253991	0.0040
Benzo(a)pyrene	ug	<0.020	<0.020	<0.020	<0.020	0.020	4253991	0.0040
Benzo(b)fluoranthene	ug	<0.020	<0.020	<0.020	<0.020	0.020	4253991	0.0040
Benzo(g,h,i)perylene	ug	<0.020	<0.020	<0.020	<0.020	0.020	4253991	0.0040
Benzo(k)fluoranthene	ug	<0.020	<0.020	<0.020	<0.020	0.020	4253991	0.0040
Biphenyl	ug	<0.020	<0.020	<0.020	<0.020	0.020	4253991	0.0040
Chrysene	ug	<0.020	<0.020	<0.020	<0.020	0.020	4253991	0.0040
Dibenz(a,h)anthracene	ug	<0.020	<0.020	<0.020	<0.020	0.020	4253991	0.0040
Fluorene	ug	<0.020	<0.020	<0.020	<0.020	0.020	4253991	0.0040
Naphthalene	ug	<0.020	<0.020	<0.020	<0.020	0.020	4253991	0.0040
Phenanthrene	ug	<0.020	<0.020	<0.020	<0.020	0.020	4253991	0.0040
Pyrene	ug	<0.020	<0.020	<0.020	<0.020	0.020	4253991	0.0040
Fluoranthene	ug	<0.020	<0.020	<0.020	<0.020	0.020	4253991	0.0040
Indeno(1,2,3-cd)pyrene	ug	<0.020	<0.020	<0.020	<0.020	0.020	4253991	0.0040
Surrogate Recovery (%)								
D10-Anthracene	%	84	84	84	84		4253991	
D12-Benzo(a)pyrene	%	86	87	88	82		4253991	
D12-Chrysene	%	79	80	80	78		4253991	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B5L8525
Report Date: 2015/11/27

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: JB

TEST SUMMARY

Maxxam ID: BFS014
Sample ID: SVP203B-15
Matrix: Filter

Collected: 2015/10/23
Shipped:
Received: 2015/10/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Calculated Polyaromatic Hydrocarbons		4246939	2015/10/27	2015/10/27	Automated Statchk
PAH in XAD Resin (In house method)	GC/MS	4253991	2015/11/01	2015/11/02	Lidija Tomic
Air Volume Sampled		ONSITE	N/A	2015/10/27	Cyril Annor

Maxxam ID: BFS015
Sample ID: SVP206-15
Matrix: Filter

Collected: 2015/10/23
Shipped:
Received: 2015/10/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Calculated Polyaromatic Hydrocarbons		4246939	2015/10/27	2015/10/27	Automated Statchk
PAH in XAD Resin (In house method)	GC/MS	4253991	2015/11/01	2015/11/02	Lidija Tomic
Air Volume Sampled		ONSITE	N/A	2015/10/27	Cyril Annor

Maxxam ID: BFS016
Sample ID: SVP207-15
Matrix: Filter

Collected: 2015/10/23
Shipped:
Received: 2015/10/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Calculated Polyaromatic Hydrocarbons		4246939	2015/10/27	2015/10/27	Automated Statchk
PAH in XAD Resin (In house method)	GC/MS	4253991	2015/11/01	2015/11/02	Lidija Tomic
Air Volume Sampled		ONSITE	N/A	2015/10/27	Cyril Annor

Maxxam ID: BFS017
Sample ID: TRIP BLANK
Matrix: Filter

Collected: 2015/10/23
Shipped:
Received: 2015/10/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PAH in XAD Resin (In house method)	GC/MS	4253991	2015/11/01	2015/11/02	Lidija Tomic

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Maxxam Job #: B5L8525
Report Date: 2015/11/27

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: JB

GENERAL COMMENTS

Results relate only to the items tested.

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Maxxam Job #: B5L8525
Report Date: 2015/11/27

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: JB

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
4253991	LTO	Spiked Blank	Acenaphthene	2015/11/02		80	%	60 - 130
			Acenaphthylene	2015/11/02		77	%	60 - 130
			Anthracene	2015/11/02		78	%	60 - 130
			Benzo(a)anthracene	2015/11/02		77	%	60 - 130
			Benzo(a)pyrene	2015/11/02		86	%	60 - 130
			Benzo(b)fluoranthene	2015/11/02		77	%	60 - 130
			Benzo(g,h,i)perylene	2015/11/02		82	%	60 - 130
			Benzo(k)fluoranthene	2015/11/02		83	%	60 - 130
			Chrysene	2015/11/02		78	%	60 - 130
			D10-Anthracene	2015/11/02		82	%	50 - 150
			D12-Benzo(a)pyrene	2015/11/02		86	%	50 - 150
			D12-Chrysene	2015/11/02		81	%	50 - 150
			Dibenz(a,h)anthracene	2015/11/02		90	%	60 - 130
			Fluorene	2015/11/02		80	%	60 - 130
			Naphthalene	2015/11/02		86	%	60 - 130
			Phenanthrene	2015/11/02		85	%	60 - 130
			Pyrene	2015/11/02		81	%	60 - 130
			Fluoranthene	2015/11/02		83	%	60 - 130
			Indeno(1,2,3-cd)pyrene	2015/11/02		89	%	60 - 130
4253991	LTO	RPD	Acenaphthene	2015/11/02	6.2		%	50
			Acenaphthylene	2015/11/02	5.5		%	50
			Anthracene	2015/11/02	3.9		%	50
			Benzo(a)anthracene	2015/11/02	5.2		%	50
			Benzo(a)pyrene	2015/11/02	2.4		%	50
			Benzo(b)fluoranthene	2015/11/02	4.4		%	50
			Benzo(g,h,i)perylene	2015/11/02	2.2		%	50
			Benzo(k)fluoranthene	2015/11/02	1.3		%	50
			Chrysene	2015/11/02	4.9		%	50
			Dibenz(a,h)anthracene	2015/11/02	2.7		%	50
			Fluorene	2015/11/02	9.2		%	50
			Naphthalene	2015/11/02	0.26		%	50
			Phenanthrene	2015/11/02	3.8		%	50
			Pyrene	2015/11/02	5.0		%	50
			Fluoranthene	2015/11/02	1.1		%	50
			Indeno(1,2,3-cd)pyrene	2015/11/02	3.8		%	50
4253991	LTO	Method Blank	1-Methylnaphthalene	2015/11/02	<0.020		ug	
			2-Methylnaphthalene	2015/11/02	<0.020		ug	
			Acenaphthene	2015/11/02	<0.020		ug	
			Acenaphthylene	2015/11/02	<0.020		ug	
			Anthracene	2015/11/02	<0.020		ug	
			Benzo(a)anthracene	2015/11/02	<0.020		ug	
			Benzo(a)pyrene	2015/11/02	<0.020		ug	
			Benzo(b)fluoranthene	2015/11/02	<0.020		ug	
			Benzo(g,h,i)perylene	2015/11/02	<0.020		ug	
			Benzo(k)fluoranthene	2015/11/02	<0.020		ug	
			Biphenyl	2015/11/02	<0.020		ug	
			Chrysene	2015/11/02	<0.020		ug	
			D10-Anthracene	2015/11/02		85	%	50 - 150
			D12-Benzo(a)pyrene	2015/11/02		85	%	50 - 150
			D12-Chrysene	2015/11/02		84	%	50 - 150
			Dibenz(a,h)anthracene	2015/11/02	<0.020		ug	
			Fluorene	2015/11/02	<0.020		ug	
			Naphthalene	2015/11/02	<0.020		ug	

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Maxxam Job #: B5L8525
Report Date: 2015/11/27

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: JB

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Phenanthrene	2015/11/02	<0.020		ug	
			Pyrene	2015/11/02	<0.020		ug	
			Fluoranthene	2015/11/02	<0.020		ug	
			Indeno(1,2,3-cd)pyrene	2015/11/02	<0.020		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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Your Project #: 38805-100
Your C.O.C. #: 14918

Attention:Bill Lawlor

MTE Consultants Inc
520 Bingemans Centre Dr
Kitchener, ON
N2B 3X9

Report Date: 2015/11/06
Report #: R3753315
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5L9477
Received: 2015/10/27, 09:30

Sample Matrix: AIR
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
BTEX and CCME Compounds in Air(TO-15mod)	4	N/A	2015/11/03	BRL SOP-00304	EPA TO-15 m
BTEX Fractionation in Air (TO-15mod)	4	N/A	2015/11/03	BRL SOP-00304	EPA TO-15 m
Canister Pressure (TO-15)	4	N/A	2015/11/03	BRL SOP-00304	EPA TO-15 m
Volatile Organics in Air using GC/MS (1)	4	N/A	2015/11/03	BRL SOP-00304	EPA TO-15A m

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

Theresa Stephenson
06 Nov 2015 17:33:50 -05:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905)817-5763

==========

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Maxxam Job #: B5L9477
Report Date: 2015/11/06

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: JB

RESULTS OF ANALYSES OF AIR

Maxxam ID		BFW916	BFW917	BFW918	BFW919		
Sampling Date		2015/10/23	2015/10/23	2015/10/26			
COC Number		14918	14918	14918	14918		
	UNITS	**SVP203B-15**	**SVP206-15**	**SVP207-15**	**TRIP BLANK**	**QC Batch**	**MDL**
Volatile Organics							
Pressure on Receipt	psig	(-1.7)	(-2.9)	(-2.3)	5.3	4257814	N/A

QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B5L9477
Report Date: 2015/11/06

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: JB

VOLATILE ORGANIC HYDROCARBONS BY GC/MS (AIR)

Maxxam ID		BFW916	BFW916	BFW917	BFW918	BFW919			
Sampling Date		2015/10/23	2015/10/23	2015/10/23	2015/10/26				
COC Number		14918	14918	14918	14918	14918			
	UNITS	**SVP203B-15**	**SVP203B-15 Lab-Dup**	**SVP206-15**	**SVP207-15**	**TRIP BLANK**	**RDL**	**QC Batch**	**MDL**
Volatile Organics									
F1-BTEX, C6-C10 (as Toluene)	ug/m3	826	820	783	53.2	<5.0	5.0	4261580	1.0
F2, C10-C16 (as Decane)	ug/m3	1160	1200	1070	21.4	<5.0	5.0	4261580	1.0
Aliphatic >C5-C6	ug/m3	17.0	10.7	16.3	7.9	<5.0	5.0	4261705	1.0
Aliphatic >C6-C8	ug/m3	70.8	74.1	86.6	<5.0	<5.0	5.0	4261705	1.0
Aliphatic >C8-C10	ug/m3	178	176	146	<5.0	<5.0	5.0	4261705	1.0
Aliphatic >C10-C12	ug/m3	595	600	340	13.1	<5.0	5.0	4261705	1.0
Aliphatic >C12-C16	ug/m3	79.8	83.4	114	<5.0	<5.0	5.0	4261705	1.0
Aromatic >C7-C8 (TEX Excluded)	ug/m3	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	4261705	1.0
Aromatic >C8-C10	ug/m3	219	217	212	<5.0	<5.0	5.0	4261705	1.0
Aromatic >C10-C12	ug/m3	185	186	238	<5.0	<5.0	5.0	4261705	1.0
Aromatic >C12-C16	ug/m3	9.7	9.1	24.6	<5.0	<5.0	5.0	4261705	1.0
Surrogate Recovery (%)									
1,4-Difluorobenzene	%	83	81	84	92	114		4261705	
Bromochloromethane	%	83	81	83	90	117		4261705	
D5-Chlorobenzene	%	80	79	82	89	104		4261705	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Maxxam Job #: B5L9477
Report Date: 2015/11/06

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Client Project #: 38805-100
Sampler Initials: JB

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		BFW916			BFW916					
Sampling Date		2015/10/23			2015/10/23					
COC Number		14918			14918					
	UNITS	**SVP203B-15**	**ug/m3**	**DL (ug/m3)**	**SVP203B-15 Lab-Dup**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**	**MDL**
Volatile Organics										
cis-1,3-Dichloropropene	ppbv	<0.10	< 0.454	0.454	<0.10	0.10	< 0.454	0.454	4261651	0.10
trans-1,3-Dichloropropene	ppbv	<0.10	< 0.454	0.454	<0.10	0.10	< 0.454	0.454	4261651	0.10
Benzene	ppbv	2.06	6.58	0.319	1.96	0.10	6.28	0.319	4261651	0.10
Toluene	ppbv	29.6	111	0.376	29.0	0.10	109	0.376	4261651	0.10
Ethylbenzene	ppbv	7.64	33.2	0.434	7.60	0.10	33.0	0.434	4261651	0.10
p+m-Xylene	ppbv	19.8	85.9	0.868	19.8	0.20	86.0	0.868	4261651	0.20
o-Xylene	ppbv	10.7	46.3	0.434	10.7	0.10	46.6	0.434	4261651	0.10
Styrene	ppbv	<0.10	< 0.426	0.426	<0.10	0.10	< 0.426	0.426	4261651	0.10
Hexane	ppbv	1.48	5.21	0.705	1.41	0.20	4.98	0.705	4261651	0.20
Naphthalene	ppbv	<0.20	< 1.05	1.05	<0.20	0.20	< 1.05	1.05	4261651	0.20
Total Xylenes	ppbv	30.5	132	1.32	30.5	0.30	133	1.32	4261651	0.30
Surrogate Recovery (%)										
Bromochloromethane	%	83	N/A	N/A	81		N/A	N/A	4261651	
D5-Chlorobenzene	%	80	N/A	N/A	79		N/A	N/A	4261651	
Difluorobenzene	%	83	N/A	N/A	81		N/A	N/A	4261651	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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Report Date: 2015/11/06

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Client Project #: 38805-100
Sampler Initials: JB

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		BFW917			BFW918					
Sampling Date		2015/10/23			2015/10/26					
COC Number		14918			14918					
	UNITS	**SVP206-15**	**ug/m3**	**DL (ug/m3)**	**SVP207-15**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**	**MDL**
Volatile Organics										
cis-1,3-Dichloropropene	ppbv	<0.10	< 0.454	0.454	<0.10	0.10	< 0.454	0.454	4261651	0.10
trans-1,3-Dichloropropene	ppbv	<0.10	< 0.454	0.454	<0.10	0.10	< 0.454	0.454	4261651	0.10
Benzene	ppbv	2.46	7.85	0.319	<0.10	0.10	< 0.319	0.319	4261651	0.10
Toluene	ppbv	15.2	57.1	0.376	0.32	0.10	1.19	0.376	4261651	0.10
Ethylbenzene	ppbv	5.00	21.7	0.434	<0.10	0.10	< 0.434	0.434	4261651	0.10
p+m-Xylene	ppbv	18.9	82.0	0.868	<0.20	0.20	< 0.868	0.868	4261651	0.20
o-Xylene	ppbv	7.45	32.4	0.434	<0.10	0.10	< 0.434	0.434	4261651	0.10
Styrene	ppbv	0.22	0.917	0.426	<0.10	0.10	< 0.426	0.426	4261651	0.10
Hexane	ppbv	2.10	7.40	0.705	<0.20	0.20	< 0.705	0.705	4261651	0.20
Naphthalene	ppbv	1.28	6.70	1.05	<0.20	0.20	< 1.05	1.05	4261651	0.20
Total Xylenes	ppbv	26.3	114	1.32	<0.30	0.30	< 1.32	1.32	4261651	0.30
Surrogate Recovery (%)										
Bromochloromethane	%	83	N/A	N/A	90		N/A	N/A	4261651	
D5-Chlorobenzene	%	82	N/A	N/A	89		N/A	N/A	4261651	
Difluorobenzene	%	84	N/A	N/A	92		N/A	N/A	4261651	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B5L9477
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MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: JB

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		BFW919					
Sampling Date							
COC Number		14918					
	UNITS	**TRIP BLANK**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**	**MDL**
Volatile Organics							
cis-1,3-Dichloropropene	ppbv	<0.10	0.10	< 0.454	0.454	4261651	0.10
trans-1,3-Dichloropropene	ppbv	<0.10	0.10	< 0.454	0.454	4261651	0.10
Benzene	ppbv	<0.10	0.10	< 0.319	0.319	4261651	0.10
Toluene	ppbv	<0.10	0.10	< 0.376	0.376	4261651	0.10
Ethylbenzene	ppbv	<0.10	0.10	< 0.434	0.434	4261651	0.10
p+m-Xylene	ppbv	<0.20	0.20	< 0.868	0.868	4261651	0.20
o-Xylene	ppbv	<0.10	0.10	< 0.434	0.434	4261651	0.10
Styrene	ppbv	<0.10	0.10	< 0.426	0.426	4261651	0.10
Hexane	ppbv	<0.20	0.20	< 0.705	0.705	4261651	0.20
Naphthalene	ppbv	<0.20	0.20	< 1.05	1.05	4261651	0.20
Total Xylenes	ppbv	<0.30	0.30	< 1.32	1.32	4261651	0.30
Surrogate Recovery (%)							
Bromochloromethane	%	117		N/A	N/A	4261651	
D5-Chlorobenzene	%	104		N/A	N/A	4261651	
Difluorobenzene	%	114		N/A	N/A	4261651	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B5L9477
Report Date: 2015/11/06

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: JB

TEST SUMMARY

Maxxam ID: BFW916
Sample ID: SVP203B-15
Matrix: AIR

Collected: 2015/10/23
Shipped:
Received: 2015/10/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
BTEX and CCME Compounds in Air(TO-15mod)	GC/MS	4261580	N/A	2015/11/03	Diane Temniuk
BTEX Fractionation in Air (TO-15mod)	GC/MS	4261705	N/A	2015/11/03	Diane Temniuk
Canister Pressure (TO-15)	PRES	4257814	N/A	2015/11/03	Diane Temniuk
Volatile Organics in Air using GC/MS	GC/MS	4261651	N/A	2015/11/03	Diane Temniuk

Maxxam ID: BFW916 Dup
Sample ID: SVP203B-15
Matrix: AIR

Collected: 2015/10/23
Shipped:
Received: 2015/10/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
BTEX and CCME Compounds in Air(TO-15mod)	GC/MS	4261580	N/A	2015/11/03	Diane Temniuk
BTEX Fractionation in Air (TO-15mod)	GC/MS	4261705	N/A	2015/11/03	Diane Temniuk
Volatile Organics in Air using GC/MS	GC/MS	4261651	N/A	2015/11/03	Diane Temniuk

Maxxam ID: BFW917
Sample ID: SVP206-15
Matrix: AIR

Collected: 2015/10/23
Shipped:
Received: 2015/10/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
BTEX and CCME Compounds in Air(TO-15mod)	GC/MS	4261580	N/A	2015/11/03	Diane Temniuk
BTEX Fractionation in Air (TO-15mod)	GC/MS	4261705	N/A	2015/11/03	Diane Temniuk
Canister Pressure (TO-15)	PRES	4257814	N/A	2015/11/03	Diane Temniuk
Volatile Organics in Air using GC/MS	GC/MS	4261651	N/A	2015/11/03	Diane Temniuk

Maxxam ID: BFW918
Sample ID: SVP207-15
Matrix: AIR

Collected: 2015/10/26
Shipped:
Received: 2015/10/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
BTEX and CCME Compounds in Air(TO-15mod)	GC/MS	4261580	N/A	2015/11/03	Diane Temniuk
BTEX Fractionation in Air (TO-15mod)	GC/MS	4261705	N/A	2015/11/03	Diane Temniuk
Canister Pressure (TO-15)	PRES	4257814	N/A	2015/11/03	Diane Temniuk
Volatile Organics in Air using GC/MS	GC/MS	4261651	N/A	2015/11/03	Diane Temniuk

Maxxam ID: BFW919
Sample ID: TRIP BLANK
Matrix: AIR

Collected:
Shipped:
Received: 2015/10/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
BTEX and CCME Compounds in Air(TO-15mod)	GC/MS	4261580	N/A	2015/11/03	Diane Temniuk
BTEX Fractionation in Air (TO-15mod)	GC/MS	4261705	N/A	2015/11/03	Diane Temniuk
Canister Pressure (TO-15)	PRES	4257814	N/A	2015/11/03	Diane Temniuk
Volatile Organics in Air using GC/MS	GC/MS	4261651	N/A	2015/11/03	Diane Temniuk

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Maxxam Job #: B5L9477
Report Date: 2015/11/06

MTE Consultants Inc
Client Project #: 38805-100
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GENERAL COMMENTS

Results relate only to the items tested.

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Maxxam Job #: B5L9477
Report Date: 2015/11/06

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: JB

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
4261580	DVO	Method Blank	F1-BTEX, C6-C10 (as Toluene)	2015/11/03	<5.0		ug/m3	
			F2, C10-C16 (as Decane)	2015/11/03	<5.0		ug/m3	
4261580	DVO	RPD - Sample/Sample Dup	F1-BTEX, C6-C10 (as Toluene)	2015/11/03	0.70		%	25
			F2, C10-C16 (as Decane)	2015/11/03	3.1		%	25
4261651	DVO	Spiked Blank	Bromochloromethane	2015/11/03		109	%	60 - 140
			D5-Chlorobenzene	2015/11/03		111	%	60 - 140
			Difluorobenzene	2015/11/03		112	%	60 - 140
			cis-1,3-Dichloropropene	2015/11/03		109	%	70 - 130
			trans-1,3-Dichloropropene	2015/11/03		108	%	70 - 130
			Benzene	2015/11/03		90	%	70 - 130
			Toluene	2015/11/03		104	%	70 - 130
			Ethylbenzene	2015/11/03		104	%	70 - 130
			p+m-Xylene	2015/11/03		106	%	70 - 130
			o-Xylene	2015/11/03		110	%	70 - 130
			Styrene	2015/11/03		117	%	70 - 130
			Hexane	2015/11/03		94	%	70 - 130
			Naphthalene	2015/11/03		111	%	70 - 130
			Total Xylenes	2015/11/03		107	%	70 - 130
4261651	DVO	Method Blank	Bromochloromethane	2015/11/03		111	%	60 - 140
			D5-Chlorobenzene	2015/11/03		104	%	60 - 140
			Difluorobenzene	2015/11/03		114	%	60 - 140
			cis-1,3-Dichloropropene	2015/11/03	<0.10		ppbv	
			trans-1,3-Dichloropropene	2015/11/03	<0.10		ppbv	
			Benzene	2015/11/03	<0.10		ppbv	
			Toluene	2015/11/03	<0.10		ppbv	
			Ethylbenzene	2015/11/03	<0.10		ppbv	
			p+m-Xylene	2015/11/03	<0.20		ppbv	
			o-Xylene	2015/11/03	<0.10		ppbv	
			Styrene	2015/11/03	<0.10		ppbv	
			Hexane	2015/11/03	<0.20		ppbv	
			Naphthalene	2015/11/03	<0.20		ppbv	
			Total Xylenes	2015/11/03	<0.30		ppbv	
4261651	DVO	RPD - Sample/Sample Dup	cis-1,3-Dichloropropene	2015/11/03	NC		%	25
			trans-1,3-Dichloropropene	2015/11/03	NC		%	25
			Benzene	2015/11/03	4.7		%	25
			Toluene	2015/11/03	2.0		%	25
			Ethylbenzene	2015/11/03	0.58		%	25
			p+m-Xylene	2015/11/03	0.033		%	25
			o-Xylene	2015/11/03	0.77		%	25
			Styrene	2015/11/03	NC		%	25
			Hexane	2015/11/03	4.6		%	25
			Naphthalene	2015/11/03	NC		%	25
			Total Xylenes	2015/11/03	0.29		%	25
4261705	DVO	Spiked Blank	1,4-Difluorobenzene	2015/11/03		112	%	60 - 140
			Bromochloromethane	2015/11/03		109	%	60 - 140
			D5-Chlorobenzene	2015/11/03		111	%	60 - 140
4261705	DVO	Method Blank	1,4-Difluorobenzene	2015/11/03		114	%	60 - 140
			Bromochloromethane	2015/11/03		111	%	60 - 140
			D5-Chlorobenzene	2015/11/03		104	%	60 - 140
			Aliphatic >C5-C6	2015/11/03	<5.0		ug/m3	
			Aliphatic >C6-C8	2015/11/03	<5.0		ug/m3	
			Aliphatic >C8-C10	2015/11/03	<5.0		ug/m3	
			Aliphatic >C10-C12	2015/11/03	<5.0		ug/m3	

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Maxxam Job #: B5L9477
Report Date: 2015/11/06

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: JB

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Aliphatic >C12-C16	2015/11/03	<5.0		ug/m3	
			Aromatic >C7-C8 (TEX Excluded)	2015/11/03	<5.0		ug/m3	
			Aromatic >C8-C10	2015/11/03	<5.0		ug/m3	
			Aromatic >C10-C12	2015/11/03	<5.0		ug/m3	
			Aromatic >C12-C16	2015/11/03	<5.0		ug/m3	
4261705	DVO	RPD - Sample/Sample Dup	Aliphatic >C5-C6	2015/11/03	NC		%	25
			Aliphatic >C6-C8	2015/11/03	4.6		%	25
			Aliphatic >C8-C10	2015/11/03	0.91		%	25
			Aliphatic >C10-C12	2015/11/03	0.70		%	25
			Aliphatic >C12-C16	2015/11/03	4.4		%	25
			Aromatic >C7-C8 (TEX Excluded)	2015/11/03	NC		%	25
			Aromatic >C8-C10	2015/11/03	0.72		%	25
			Aromatic >C10-C12	2015/11/03	0.59		%	25
			Aromatic >C12-C16	2015/11/03	NC		%	25

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

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Maxxam
A Bureau Veritas Group Company

Your Project #: 38805-100
Your C.O.C. #: 15282

Attention:Bill Lawlor

MTE Consultants Inc
520 Bingemans Centre Dr
Kitchener, ON
N2B 3X9

Report Date: 2016/02/22
Report #: R3904675
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B629536
Received: 2016/02/11, 15:00

Sample Matrix: AIR
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
BTEX and CCME Compounds in Air(TO-15mod)	4	N/A	2016/02/12	BRL SOP-00304	EPA TO-15 m
BTEX Fractionation in Air (TO-15mod)	4	N/A	2016/02/12	BRL SOP-00304	EPA TO-15 m
Canister Pressure (TO-15)	4	N/A	2016/02/12	BRL SOP-00304	EPA TO-15 m
Volatile Organics in Air (ug/m3)	4	N/A	2016/02/16	BRL SOP-00304	EPA TO-15 m
Volatile Organics in Air using GC/MS (1)	4	N/A	2016/02/12	BRL SOP-00304	EPA TO-15A m

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

Cristina Bacchus
Project Manager
22 Feb 2016 17:26:31 -05:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Cristina Bacchus, Project Manager
Email: CBacchus@maxxam.ca
Phone# (905) 817-5700

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Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Maxxam Job #: B629536
Report Date: 2016/02/22

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: JLB

RESULTS OF ANALYSES OF AIR

Maxxam ID		BVR868	BVR869	BVR870	BVR871		
Sampling Date		2016/02/11	2016/02/11	2016/02/11	2016/02/11		
COC Number		15282	15282	15282	15282		
	UNITS	**SVP204-15**	**SVP205-15**	**SVP207-15**	**TRIP BLANK**	**QC Batch**	**MDL**
Volatile Organics							
Pressure on Receipt	psig	(-2.6)	(-2.2)	(-3.1)	9.5	4380646	
QC Batch = Quality Control Batch							

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Maxxam Job #: B629536
Report Date: 2016/02/22

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: JLB

CALCULATED VOLATILE ORGANICS (AIR)

Maxxam ID		BVR868	BVR869	BVR870	BVR871			
Sampling Date		2016/02/11	2016/02/11	2016/02/11	2016/02/11			
COC Number		15282	15282	15282	15282			
	UNITS	**SVP204-15**	**SVP205-15**	**SVP207-15**	**TRIP BLANK**	**RDL**	**QC Batch**	**MDL**
Calculated Parameters								
cis-1,3-Dichloropropene	ug/m3	<0.45	<0.45	<0.45	<0.45	0.45	4379247	0.10
trans-1,3-Dichloropropene	ug/m3	<0.45	<0.45	<0.45	<0.45	0.45	4379247	0.10
Benzene	ug/m3	<0.32	<0.32	<0.32	<0.32	0.32	4379247	0.10
Toluene	ug/m3	<0.38	<0.38	<0.38	<0.38	0.38	4379247	0.10
Ethylbenzene	ug/m3	<0.43	<0.43	<0.43	<0.43	0.43	4379247	0.10
p+m-Xylene	ug/m3	<0.87	<0.87	<0.87	<0.87	0.87	4379247	0.10
o-Xylene	ug/m3	<0.43	<0.43	<0.43	<0.43	0.43	4379247	0.10
Styrene	ug/m3	<0.43	<0.43	<0.43	<0.43	0.43	4379247	0.10
Hexane	ug/m3	<0.70	<0.70	<0.70	<0.70	0.70	4379247	0.10
Naphthalene	ug/m3	<1.0	<1.0	<1.0	<1.0	1.0	4379247	N/A
Total Xylenes	ug/m3	<1.3	<1.3	<1.3	<1.3	1.3	4379247	N/A

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B629536
Report Date: 2016/02/22

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: JLB

VOLATILE ORGANIC HYDROCARBONS BY GC/MS (AIR)

Maxxam ID		BVR868	BVR869	BVR870	BVR871			
Sampling Date		2016/02/11	2016/02/11	2016/02/11	2016/02/11			
COC Number		15282	15282	15282	15282			
	UNITS	**SVP204-15**	**SVP205-15**	**SVP207-15**	**TRIP BLANK**	**RDL**	**QC Batch**	**MDL**
Volatile Organics								
F1-BTEX, C6-C10 (as Toluene)	ug/m3	41.2	30.6	41.4	<5.0	5.0	4380688	1.0
F2, C10-C16 (as Decane)	ug/m3	<5.0	<5.0	<5.0	<5.0	5.0	4380688	1.0
Aliphatic >C5-C6	ug/m3	<5.0	<5.0	<5.0	<5.0	5.0	4380692	1.0
Aliphatic >C6-C8	ug/m3	<5.0	<5.0	<5.0	<5.0	5.0	4380692	1.0
Aliphatic >C8-C10	ug/m3	<5.0	<5.0	<5.0	<5.0	5.0	4380692	1.0
Aliphatic >C10-C12	ug/m3	<5.0	<5.0	<5.0	<5.0	5.0	4380692	1.0
Aliphatic >C12-C16	ug/m3	<5.0	<5.0	<5.0	<5.0	5.0	4380692	1.0
Aromatic >C7-C8 (TEX Excluded)	ug/m3	<5.0	<5.0	<5.0	<5.0	5.0	4380692	1.0
Aromatic >C8-C10	ug/m3	<5.0	<5.0	<5.0	<5.0	5.0	4380692	1.0
Aromatic >C10-C12	ug/m3	<5.0	<5.0	<5.0	<5.0	5.0	4380692	1.0
Aromatic >C12-C16	ug/m3	<5.0	<5.0	<5.0	<5.0	5.0	4380692	1.0

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: JLB

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		BVR868			BVR869					
Sampling Date		2016/02/11			2016/02/11					
COC Number		15282			15282					
	UNITS	**SVP204-15**	**ug/m3**	**DL (ug/m3)**	**SVP205-15**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**	**MDL**
Volatile Organics										
cis-1,3-Dichloropropene	ppbv	<0.10	< 0.454	0.454	<0.10	0.10	< 0.454	0.454	4380693	0.10
trans-1,3-Dichloropropene	ppbv	<0.10	< 0.454	0.454	<0.10	0.10	< 0.454	0.454	4380693	0.10
Benzene	ppbv	<0.10	< 0.319	0.319	<0.10	0.10	< 0.319	0.319	4380693	0.10
Toluene	ppbv	<0.10	< 0.376	0.376	<0.10	0.10	< 0.376	0.376	4380693	0.10
Ethylbenzene	ppbv	<0.10	< 0.434	0.434	<0.10	0.10	< 0.434	0.434	4380693	0.10
p+m-Xylene	ppbv	<0.20	< 0.868	0.868	<0.20	0.20	< 0.868	0.868	4380693	0.20
o-Xylene	ppbv	<0.10	< 0.434	0.434	<0.10	0.10	< 0.434	0.434	4380693	0.10
Styrene	ppbv	<0.10	< 0.426	0.426	<0.10	0.10	< 0.426	0.426	4380693	0.10
Hexane	ppbv	<0.20	< 0.705	0.705	<0.20	0.20	< 0.705	0.705	4380693	0.20
Naphthalene	ppbv	<0.20	< 1.05	1.05	<0.20	0.20	< 1.05	1.05	4380693	0.20
Total Xylenes	ppbv	<0.30	< 1.30	1.30	<0.30	0.30	< 1.30	1.30	4380693	0.30
Surrogate Recovery (%)										
Bromochloromethane	%	83	N/A	N/A	82		N/A	N/A	4380693	
D5-Chlorobenzene	%	81	N/A	N/A	78		N/A	N/A	4380693	
Difluorobenzene	%	78	N/A	N/A	78		N/A	N/A	4380693	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B629536
Report Date: 2016/02/22

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: JLB

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		BVR870			BVR871					
Sampling Date		2016/02/11			2016/02/11					
COC Number		15282			15282					
	UNITS	**SVP207-15**	**ug/m3**	**DL (ug/m3)**	**TRIP BLANK**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**	**MDL**
Volatile Organics										
cis-1,3-Dichloropropene	ppbv	<0.10	< 0.454	0.454	<0.10	0.10	< 0.454	0.454	4380693	0.10
trans-1,3-Dichloropropene	ppbv	<0.10	< 0.454	0.454	<0.10	0.10	< 0.454	0.454	4380693	0.10
Benzene	ppbv	<0.10	< 0.319	0.319	<0.10	0.10	< 0.319	0.319	4380693	0.10
Toluene	ppbv	<0.10	< 0.376	0.376	<0.10	0.10	< 0.376	0.376	4380693	0.10
Ethylbenzene	ppbv	<0.10	< 0.434	0.434	<0.10	0.10	< 0.434	0.434	4380693	0.10
p+m-Xylene	ppbv	<0.20	< 0.868	0.868	<0.20	0.20	< 0.868	0.868	4380693	0.20
o-Xylene	ppbv	<0.10	< 0.434	0.434	<0.10	0.10	< 0.434	0.434	4380693	0.10
Styrene	ppbv	<0.10	< 0.426	0.426	<0.10	0.10	< 0.426	0.426	4380693	0.10
Hexane	ppbv	<0.20	< 0.705	0.705	<0.20	0.20	< 0.705	0.705	4380693	0.20
Naphthalene	ppbv	<0.20	< 1.05	1.05	<0.20	0.20	< 1.05	1.05	4380693	0.20
Total Xylenes	ppbv	<0.30	< 1.30	1.30	<0.30	0.30	< 1.30	1.30	4380693	0.30
Surrogate Recovery (%)										
Bromochloromethane	%	82	N/A	N/A	94		N/A	N/A	4380693	
D5-Chlorobenzene	%	76	N/A	N/A	87		N/A	N/A	4380693	
Difluorobenzene	%	77	N/A	N/A	97		N/A	N/A	4380693	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B629536
Report Date: 2016/02/22

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: JLB

TEST SUMMARY

Maxxam ID: BVR868
Sample ID: SVP204-15
Matrix: AIR

Collected: 2016/02/11
Shipped:
Received: 2016/02/11

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
BTEX and CCME Compounds in Air(TO-15mod)	GC/MS	4380688	N/A	2016/02/12	Kethumali (Ubayarathna) Mendis
BTEX Fractionation in Air (TO-15mod)	GC/MS	4380692	N/A	2016/02/12	Kethumali (Ubayarathna) Mendis
Canister Pressure (TO-15)	PRES	4380646	N/A	2016/02/12	Kethumali (Ubayarathna) Mendis
Volatile Organics in Air (ug/m3)	GC/MS	4379247	N/A	2016/02/16	Automated Statchk
Volatile Organics in Air using GC/MS	GC/MS	4380693	N/A	2016/02/12	Kethumali (Ubayarathna) Mendis

Maxxam ID: BVR868 Dup
Sample ID: SVP204-15
Matrix: AIR

Collected: 2016/02/11
Shipped:
Received: 2016/02/11

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
BTEX and CCME Compounds in Air(TO-15mod)	GC/MS	4380688	N/A	2016/02/12	Kethumali (Ubayarathna) Mendis
BTEX Fractionation in Air (TO-15mod)	GC/MS	4380692	N/A	2016/02/12	Kethumali (Ubayarathna) Mendis
Volatile Organics in Air (ug/m3)	GC/MS	4379247	N/A	2016/02/22	Automated Statchk
Volatile Organics in Air using GC/MS	GC/MS	4380693	N/A	2016/02/12	Kethumali (Ubayarathna) Mendis

Maxxam ID: BVR869
Sample ID: SVP205-15
Matrix: AIR

Collected: 2016/02/11
Shipped:
Received: 2016/02/11

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
BTEX and CCME Compounds in Air(TO-15mod)	GC/MS	4380688	N/A	2016/02/12	Kethumali (Ubayarathna) Mendis
BTEX Fractionation in Air (TO-15mod)	GC/MS	4380692	N/A	2016/02/12	Kethumali (Ubayarathna) Mendis
Canister Pressure (TO-15)	PRES	4380646	N/A	2016/02/12	Kethumali (Ubayarathna) Mendis
Volatile Organics in Air (ug/m3)	GC/MS	4379247	N/A	2016/02/16	Automated Statchk
Volatile Organics in Air using GC/MS	GC/MS	4380693	N/A	2016/02/12	Kethumali (Ubayarathna) Mendis

Maxxam ID: BVR870
Sample ID: SVP207-15
Matrix: AIR

Collected: 2016/02/11
Shipped:
Received: 2016/02/11

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
BTEX and CCME Compounds in Air(TO-15mod)	GC/MS	4380688	N/A	2016/02/12	Kethumali (Ubayarathna) Mendis
BTEX Fractionation in Air (TO-15mod)	GC/MS	4380692	N/A	2016/02/12	Kethumali (Ubayarathna) Mendis
Canister Pressure (TO-15)	PRES	4380646	N/A	2016/02/12	Kethumali (Ubayarathna) Mendis
Volatile Organics in Air (ug/m3)	GC/MS	4379247	N/A	2016/02/16	Automated Statchk
Volatile Organics in Air using GC/MS	GC/MS	4380693	N/A	2016/02/12	Kethumali (Ubayarathna) Mendis

Maxxam ID: BVR871
Sample ID: TRIP BLANK
Matrix: AIR

Collected: 2016/02/11
Shipped:
Received: 2016/02/11

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
BTEX and CCME Compounds in Air(TO-15mod)	GC/MS	4380688	N/A	2016/02/12	Kethumali (Ubayarathna) Mendis
BTEX Fractionation in Air (TO-15mod)	GC/MS	4380692	N/A	2016/02/12	Kethumali (Ubayarathna) Mendis
Canister Pressure (TO-15)	PRES	4380646	N/A	2016/02/12	Kethumali (Ubayarathna) Mendis

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Maxxam Job #: B629536
Report Date: 2016/02/22

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: JLB

TEST SUMMARY

Maxxam ID: BVR871
Sample ID: TRIP BLANK
Matrix: AIR

Collected: 2016/02/11
Shipped:
Received: 2016/02/11

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Volatile Organics in Air (ug/m3)	GC/MS	4379247	N/A	2016/02/16	Automated Statchk
Volatile Organics in Air using GC/MS	GC/MS	4380693	N/A	2016/02/12	Kethumali (Ubayarathna) Mendis

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Maxxam Job #: B629536
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GENERAL COMMENTS

Results relate only to the items tested.

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Sampler Initials: JLB

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
4379247	ASC	RPD - Sample/Sample Dup	Benzene	2016/02/22	NC		%	25
			Toluene	2016/02/22	0.95		%	25
			Ethylbenzene	2016/02/22	NC		%	25
			p+m-Xylene	2016/02/22	NC		%	25
			o-Xylene	2016/02/22	NC		%	25
			Naphthalene	2016/02/22	NC		%	25
			Total Xylenes	2016/02/22	NC		%	25
			cis-1,3-Dichloropropene	2016/02/22	NC		%	25
			trans-1,3-Dichloropropene	2016/02/22	NC		%	25
			Benzene	2016/02/22	NC		%	25
			Toluene	2016/02/22	NC		%	25
			Ethylbenzene	2016/02/22	NC		%	25
			p+m-Xylene	2016/02/22	NC		%	25
			o-Xylene	2016/02/22	NC		%	25
			Styrene	2016/02/22	NC		%	25
			Hexane	2016/02/22	NC		%	25
			Naphthalene	2016/02/22	NC		%	25
			Total Xylenes	2016/02/22	NC		%	25
4380688	KM2	Method Blank	F1-BTEX, C6-C10 (as Toluene)	2016/02/12	<5.0		ug/m3	
			F2, C10-C16 (as Decane)	2016/02/12	<5.0		ug/m3	
4380688	KM2	RPD - Sample/Sample Dup	F1-BTEX, C6-C10 (as Toluene)	2016/02/12	16		%	25
			F2, C10-C16 (as Decane)	2016/02/12	NC		%	25
4380692	KM2	Method Blank	Aliphatic >C5-C6	2016/02/12	<5.0		ug/m3	
			Aliphatic >C6-C8	2016/02/12	<5.0		ug/m3	
			Aliphatic >C8-C10	2016/02/12	<5.0		ug/m3	
			Aliphatic >C10-C12	2016/02/12	<5.0		ug/m3	
			Aliphatic >C12-C16	2016/02/12	<5.0		ug/m3	
			Aromatic >C7-C8 (TEX Excluded)	2016/02/12	<5.0		ug/m3	
			Aromatic >C8-C10	2016/02/12	<5.0		ug/m3	
			Aromatic >C10-C12	2016/02/12	<5.0		ug/m3	
			Aromatic >C12-C16	2016/02/12	<5.0		ug/m3	
4380692	KM2	RPD - Sample/Sample Dup	Aliphatic >C5-C6	2016/02/12	NC		%	25
			Aliphatic >C6-C8	2016/02/12	NC		%	25
			Aliphatic >C8-C10	2016/02/12	NC		%	25
			Aliphatic >C10-C12	2016/02/12	NC		%	25
			Aliphatic >C12-C16	2016/02/12	NC		%	25
			Aromatic >C7-C8 (TEX Excluded)	2016/02/12	NC		%	25
			Aromatic >C8-C10	2016/02/12	NC		%	25
			Aromatic >C10-C12	2016/02/12	NC		%	25
			Aromatic >C12-C16	2016/02/12	NC		%	25
4380693	KM2	Spiked Blank	Bromochloromethane	2016/02/12		93	%	60 - 140
			D5-Chlorobenzene	2016/02/12		90	%	60 - 140
			Difluorobenzene	2016/02/12		90	%	60 - 140
			cis-1,3-Dichloropropene	2016/02/12		114	%	70 - 130
			trans-1,3-Dichloropropene	2016/02/12		118	%	70 - 130
			Benzene	2016/02/12		109	%	70 - 130
			Toluene	2016/02/12		112	%	70 - 130
			Ethylbenzene	2016/02/12		110	%	70 - 130
			p+m-Xylene	2016/02/12		106	%	70 - 130
			o-Xylene	2016/02/12		106	%	70 - 130
			Styrene	2016/02/12		110	%	70 - 130
			Hexane	2016/02/12		92	%	70 - 130
			Naphthalene	2016/02/12		87	%	70 - 130

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Report Date: 2016/02/22

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: JLB

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Total Xylenes	2016/02/12		106	%	70 - 130
4380693	KM2	Method Blank	Bromochloromethane	2016/02/12		98	%	60 - 140
			D5-Chlorobenzene	2016/02/12		89	%	60 - 140
			Difluorobenzene	2016/02/12		100	%	60 - 140
			cis-1,3-Dichloropropene	2016/02/12	<0.10		ppbv	
			trans-1,3-Dichloropropene	2016/02/12	<0.10		ppbv	
			Benzene	2016/02/12	<0.10		ppbv	
			Toluene	2016/02/12	<0.10		ppbv	
			Ethylbenzene	2016/02/12	<0.10		ppbv	
			p+m-Xylene	2016/02/12	<0.20		ppbv	
			o-Xylene	2016/02/12	<0.10		ppbv	
			Styrene	2016/02/12	<0.10		ppbv	
			Hexane	2016/02/12	<0.20		ppbv	
			Naphthalene	2016/02/12	<0.20		ppbv	
			Total Xylenes	2016/02/12	<0.30		ppbv	
4380693	KM2	RPD - Sample/Sample Dup	cis-1,3-Dichloropropene	2016/02/12	NC		%	25
			trans-1,3-Dichloropropene	2016/02/12	NC		%	25
			Benzene	2016/02/12	NC		%	25
			Toluene	2016/02/12	NC		%	25
			Ethylbenzene	2016/02/12	NC		%	25
			p+m-Xylene	2016/02/12	NC		%	25
			o-Xylene	2016/02/12	NC		%	25
			Styrene	2016/02/12	NC		%	25
			Hexane	2016/02/12	NC		%	25
			Naphthalene	2016/02/12	NC		%	25
			Total Xylenes	2016/02/12	NC		%	25

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

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Maxxam
A Bureau Veritas Group Company

Your Project #: 38805-100
Your C.O.C. #: 15578

Attention:Sean Anderson

MTE Consultants Inc
520 Bingemans Centre Dr
Kitchener, ON
N2B 3X9

Report Date: 2016/03/17
Report #: R3933470
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B651425
Received: 2016/03/14, 08:30

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
BTEX and CCME Compounds in Air(TO-15mod)	2	N/A	2016/03/15	BRL SOP-00304	EPA TO-15 m
BTEX Fractionation in Air (TO-15mod)	2	N/A	2016/03/15	BRL SOP-00304	EPA TO-15 m
Canister Pressure (TO-15)	2	N/A	2016/03/15	BRL SOP-00304	EPA TO-15 m
Volatile Organics in Air using GC/MS (1)	2	N/A	2016/03/15	BRL SOP-00304	EPA TO-15A m

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

Cristina Bacchus
Project Manager
17 Mar 2016 17:21:49 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Cristina Bacchus, Project Manager
Email: CBacchus@maxxam.ca
Phone# (905) 817-5700

==========

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Maxxam Job #: B651425
Report Date: 2016/03/17

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: SA

RESULTS OF ANALYSES OF AIR

Maxxam ID		CAD334	CAD335		
Sampling Date		2016/03/12	2016/03/12		
COC Number		15578	15578		
	UNITS	**SVP206B-16/1449**	**TRIP BLANK/1381**	**QC Batch**	**MDL**
Volatile Organics					
Pressure on Receipt	psig	(-2.3)	3.7	4418358	
QC Batch = Quality Control Batch					

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Maxxam Job #: B651425
Report Date: 2016/03/17

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: SA

VOLATILE ORGANIC HYDROCARBONS BY GC/MS (AIR)

Maxxam ID		CAD334	CAD335			
Sampling Date		2016/03/12	2016/03/12			
COC Number		15578	15578			
	UNITS	**SVP206B-16/1449**	**TRIP BLANK/1381**	**RDL**	**QC Batch**	**MDL**
Volatile Organics						
F1-BTEX, C6-C10 (as Toluene)	ug/m3	176	<5.0	5.0	4418362	1.0
F2, C10-C16 (as Decane)	ug/m3	178	<5.0	5.0	4418362	1.0
Aliphatic >C6-C8	ug/m3	14.6	<5.0	5.0	4419348	1.0
Aliphatic >C8-C10	ug/m3	29.7	<5.0	5.0	4419348	1.0
Aliphatic >C10-C12	ug/m3	58.3	<5.0	5.0	4419348	1.0
Aliphatic >C12-C16	ug/m3	<5.0	<5.0	5.0	4419348	1.0
Aromatic >C8-C10	ug/m3	28.3	<5.0	5.0	4419348	1.0
Aromatic >C10-C12	ug/m3	16.9	<5.0	5.0	4419348	1.0
Aromatic >C12-C16	ug/m3	<5.0	<5.0	5.0	4419348	1.0

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B651425
Report Date: 2016/03/17

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: SA

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		CAD334			CAD335					
Sampling Date		2016/03/12			2016/03/12					
COC Number		15578			15578					
	UNITS	**SVP206B-16/1449**	**ug/m3**	**DL (ug/m3)**	**TRIP BLANK/1381**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**	**MDL**
Volatile Organics										
cis-1,3-Dichloropropene	ppbv	<0.10	< 0.454	0.454	<0.10	0.10	< 0.454	0.454	4418361	0.10
trans-1,3-Dichloropropene	ppbv	<0.10	< 0.454	0.454	<0.10	0.10	< 0.454	0.454	4418361	0.10
Benzene	ppbv	4.61	14.7	0.319	<0.10	0.10	< 0.319	0.319	4418361	0.10
Toluene	ppbv	3.36	12.6	0.376	<0.10	0.10	< 0.376	0.376	4418361	0.10
Ethylbenzene	ppbv	1.90	8.26	0.434	<0.10	0.10	< 0.434	0.434	4418361	0.10
p+m-Xylene	ppbv	10.1	43.8	0.868	<0.20	0.20	< 0.868	0.868	4418361	0.20
o-Xylene	ppbv	2.99	13.0	0.434	<0.10	0.10	< 0.434	0.434	4418361	0.10
Styrene	ppbv	0.17	0.744	0.426	<0.10	0.10	< 0.426	0.426	4418361	0.10
Hexane	ppbv	0.68	2.39	0.705	<0.20	0.20	< 0.705	0.705	4418361	0.20
Naphthalene	ppbv	<0.20	< 1.05	1.05	<0.20	0.20	< 1.05	1.05	4418361	0.20
Total Xylenes	ppbv	13.1	56.7	1.30	<0.30	0.30	< 1.30	1.30	4418361	0.30
Surrogate Recovery (%)										
Bromochloromethane	%	87	N/A	N/A	89		N/A	N/A	4418361	
D5-Chlorobenzene	%	85	N/A	N/A	79		N/A	N/A	4418361	
Difluorobenzene	%	86	N/A	N/A	93		N/A	N/A	4418361	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B651425
Report Date: 2016/03/17

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: SA

TEST SUMMARY

Maxxam ID: CAD334
Sample ID: SVP206B-16/1449
Matrix: AIR

Collected: 2016/03/12
Shipped:
Received: 2016/03/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
BTEX and CCME Compounds in Air(TO-15mod)	GC/MS	4418362	N/A	2016/03/15	Kethumali (Ubayarathna) Mendis
BTEX Fractionation in Air (TO-15mod)	GC/MS	4419348	N/A	2016/03/15	Kethumali (Ubayarathna) Mendis
Canister Pressure (TO-15)	PRES	4418358	N/A	2016/03/15	Kethumali (Ubayarathna) Mendis
Volatile Organics in Air using GC/MS	GC/MS	4418361	N/A	2016/03/15	Kethumali (Ubayarathna) Mendis

Maxxam ID: CAD334 Dup
Sample ID: SVP206B-16/1449
Matrix: AIR

Collected: 2016/03/12
Shipped:
Received: 2016/03/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
BTEX and CCME Compounds in Air(TO-15mod)	GC/MS	4418362	N/A	2016/03/15	Kethumali (Ubayarathna) Mendis
BTEX Fractionation in Air (TO-15mod)	GC/MS	4419348	N/A	2016/03/15	Kethumali (Ubayarathna) Mendis
Volatile Organics in Air using GC/MS	GC/MS	4418361	N/A	2016/03/15	Kethumali (Ubayarathna) Mendis

Maxxam ID: CAD335
Sample ID: TRIP BLANK/1381
Matrix: AIR

Collected: 2016/03/12
Shipped:
Received: 2016/03/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
BTEX and CCME Compounds in Air(TO-15mod)	GC/MS	4418362	N/A	2016/03/15	Kethumali (Ubayarathna) Mendis
BTEX Fractionation in Air (TO-15mod)	GC/MS	4419348	N/A	2016/03/15	Kethumali (Ubayarathna) Mendis
Canister Pressure (TO-15)	PRES	4418358	N/A	2016/03/15	Kethumali (Ubayarathna) Mendis
Volatile Organics in Air using GC/MS	GC/MS	4418361	N/A	2016/03/15	Kethumali (Ubayarathna) Mendis

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Maxxam Job #: B651425
Report Date: 2016/03/17

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: SA

GENERAL COMMENTS

Results relate only to the items tested.

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Maxxam Job #: B651425
Report Date: 2016/03/17

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: SA

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
4418361	KM2	Spiked Blank	Bromochloromethane	2016/03/15		104	%	60 - 140
			D5-Chlorobenzene	2016/03/15		101	%	60 - 140
			Difluorobenzene	2016/03/15		108	%	60 - 140
			cis-1,3-Dichloropropene	2016/03/15		116	%	70 - 130
			trans-1,3-Dichloropropene	2016/03/15		116	%	70 - 130
			Benzene	2016/03/15		107	%	70 - 130
			Toluene	2016/03/15		109	%	70 - 130
			Ethylbenzene	2016/03/15		110	%	70 - 130
			p+m-Xylene	2016/03/15		106	%	70 - 130
			o-Xylene	2016/03/15		109	%	70 - 130
			Styrene	2016/03/15		110	%	70 - 130
			Hexane	2016/03/15		101	%	70 - 130
			Naphthalene	2016/03/15		125	%	70 - 130
			Total Xylenes	2016/03/15		107	%	70 - 130
4418361	KM2	Method Blank	Bromochloromethane	2016/03/15		100	%	60 - 140
			D5-Chlorobenzene	2016/03/15		92	%	60 - 140
			Difluorobenzene	2016/03/15		106	%	60 - 140
			cis-1,3-Dichloropropene	2016/03/15	<0.10		ppbv	
			trans-1,3-Dichloropropene	2016/03/15	<0.10		ppbv	
			Benzene	2016/03/15	<0.10		ppbv	
			Toluene	2016/03/15	<0.10		ppbv	
			Ethylbenzene	2016/03/15	<0.10		ppbv	
			p+m-Xylene	2016/03/15	<0.20		ppbv	
			o-Xylene	2016/03/15	<0.10		ppbv	
			Styrene	2016/03/15	<0.10		ppbv	
			Hexane	2016/03/15	<0.20		ppbv	
			Naphthalene	2016/03/15	<0.20		ppbv	
			Total Xylenes	2016/03/15	<0.30		ppbv	
4418361	KM2	RPD - Sample/Sample Dup	cis-1,3-Dichloropropene	2016/03/15	NC		%	25
			trans-1,3-Dichloropropene	2016/03/15	NC		%	25
			Benzene	2016/03/15	2.8		%	25
			Toluene	2016/03/15	0.093		%	25
			Ethylbenzene	2016/03/15	2.7		%	25
			p+m-Xylene	2016/03/15	4.2		%	25
			o-Xylene	2016/03/15	4.7		%	25
			Styrene	2016/03/15	NC		%	25
			Hexane	2016/03/15	NC		%	25
			Naphthalene	2016/03/15	NC		%	25
			Total Xylenes	2016/03/15	4.3		%	25
4418362	KM2	Method Blank	F1-BTEX, C6-C10 (as Toluene)	2016/03/15	<5.0		ug/m3	
			F2, C10-C16 (as Decane)	2016/03/15	<5.0		ug/m3	
4418362	KM2	RPD - Sample/Sample Dup	F1-BTEX, C6-C10 (as Toluene)	2016/03/15	2.4		%	25
			F2, C10-C16 (as Decane)	2016/03/15	1.5		%	25
4419348	KM2	Method Blank	Aliphatic >C6-C8	2016/03/15	<5.0		ug/m3	
			Aliphatic >C8-C10	2016/03/15	<5.0		ug/m3	
			Aliphatic >C10-C12	2016/03/15	<5.0		ug/m3	
			Aliphatic >C12-C16	2016/03/15	<5.0		ug/m3	
			Aromatic >C8-C10	2016/03/15	<5.0		ug/m3	
			Aromatic >C10-C12	2016/03/15	<5.0		ug/m3	
			Aromatic >C12-C16	2016/03/15	<5.0		ug/m3	
4419348	KM2	RPD - Sample/Sample Dup	Aliphatic >C6-C8	2016/03/15	NC		%	25
			Aliphatic >C8-C10	2016/03/15	2.6		%	25
			Aliphatic >C10-C12	2016/03/15	18		%	25

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Maxxam Job #: B651425
Report Date: 2016/03/17

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: SA

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Aliphatic >C12-C16	2016/03/15	NC		%	25
			Aromatic >C8-C10	2016/03/15	4.0		%	25
			Aromatic >C10-C12	2016/03/15	NC		%	25
			Aromatic >C12-C16	2016/03/15	NC		%	25

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

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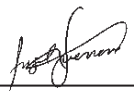
Maxxam Job #: B651425
Report Date: 2016/03/17

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: SA

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Angel Guerrero, Team Leader, VOC Air

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Maxxam
A Bureau Veritas Group Company

Your Project #: 38805-100
Your C.O.C. #: 13264

Attention:Sean Anderson

MTE Consultants Inc
520 Bingemans Centre Dr
Kitchener, ON
N2B 3X9

Report Date: 2016/03/29
Report #: R3944744
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B651522
Received: 2016/03/14, 15:41

Sample Matrix: Filter
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Calculated Polyaromatic Hydrocarbons	1	2016/03/14	2016/03/15	BRL SOP-00201	
PAH in XAD Resin (In house method)	2	2016/03/15	2016/03/21	BRL SOP-00201	In house method
Air Volume Sampled	1	N/A	2016/03/21		

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

Encryption Key

Cristina Bacchus
Project Manager
29 Mar 2016 14:25:26 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Cristina Bacchus, Project Manager
Email: CBacchus@maxxam.ca
Phone# (905) 817-5700

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Maxxam Job #: B651522
Report Date: 2016/03/29

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: SA

FIELD MEASUREMENTS (FILTER)

Maxxam ID		CAD691		
Sampling Date		2016/03/12 09:50		
COC Number		13264		
	UNITS	**SVP206B-16**	**QC Batch**	**MDL**
Field Measurements				
Volume	L	6.000	ONSITE	N/A

QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B651522
Report Date: 2016/03/29

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: SA

CALCULATED SEMIVOLATILE ORGANICS (FILTER)

Maxxam ID		CAD691			
Sampling Date		2016/03/12 09:50			
COC Number		13264			
	UNITS	**SVP206B-16**	**RDL**	**QC Batch**	**MDL**
Calculated Parameters					
1-Methylnaphthalene	ug/m3	<3.3	3.3	4418298	N/A
2-Methylnaphthalene	ug/m3	<3.3	3.3	4418298	N/A
Acenaphthene	ug/m3	<3.3	3.3	4418298	N/A
Acenaphthylene	ug/m3	<3.3	3.3	4418298	N/A
Anthracene	ug/m3	<3.3	3.3	4418298	N/A
Benzo(a)anthracene	ug/m3	<3.3	3.3	4418298	N/A
Benzo(a)pyrene	ug/m3	<3.3	3.3	4418298	N/A
Benzo(b)fluoranthene	ug/m3	<3.3	3.3	4418298	N/A
Benzo(g,h,i)perylene	ug/m3	<3.3	3.3	4418298	N/A
Benzo(k)fluoranthene	ug/m3	<3.3	3.3	4418298	N/A
Biphenyl	ug/m3	<3.3	3.3	4418298	N/A
Chrysene	ug/m3	<3.3	3.3	4418298	N/A
Dibenz(a,h)anthracene	ug/m3	<3.3	3.3	4418298	N/A
Fluorene	ug/m3	<3.3	3.3	4418298	N/A
Naphthalene	ug/m3	<3.3	3.3	4418298	N/A
Phenanthrene	ug/m3	<3.3	3.3	4418298	N/A
Pyrene	ug/m3	<3.3	3.3	4418298	N/A
Fluoranthene	ug/m3	<3.3	3.3	4418298	N/A
Indeno(1,2,3-cd)pyrene	ug/m3	<3.3	3.3	4418298	N/A

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B651522
Report Date: 2016/03/29

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: SA

SEMI-VOLATILE ORGANICS BY GC-MS (FILTER)

Maxxam ID		CAD691	CAD692			
Sampling Date		2016/03/12 09:50	2016/03/12			
COC Number		13264	13264			
	UNITS	**SVP206B-16**	**TRIP BLANK**	**RDL**	**QC Batch**	**MDL**
Semivolatile Organics						
1-Methylnaphthalene	ug	<0.020	<0.020	0.020	4418388	0.0040
2-Methylnaphthalene	ug	<0.020	<0.020	0.020	4418388	0.0040
Acenaphthene	ug	<0.020	<0.020	0.020	4418388	0.0040
Acenaphthylene	ug	<0.020	<0.020	0.020	4418388	0.0040
Anthracene	ug	<0.020	<0.020	0.020	4418388	0.0040
Benzo(a)anthracene	ug	<0.020	<0.020	0.020	4418388	0.0040
Benzo(a)pyrene	ug	<0.020	<0.020	0.020	4418388	0.0040
Benzo(b)fluoranthene	ug	<0.020	<0.020	0.020	4418388	0.0040
Benzo(g,h,i)perylene	ug	<0.020	<0.020	0.020	4418388	0.0040
Benzo(k)fluoranthene	ug	<0.020	<0.020	0.020	4418388	0.0040
Biphenyl	ug	<0.020	<0.020	0.020	4418388	0.0040
Chrysene	ug	<0.020	<0.020	0.020	4418388	0.0040
Dibenz(a,h)anthracene	ug	<0.020	<0.020	0.020	4418388	0.0040
Fluorene	ug	<0.020	<0.020	0.020	4418388	0.0040
Naphthalene	ug	<0.020	<0.020	0.020	4418388	0.0040
Phenanthrene	ug	<0.020	<0.020	0.020	4418388	0.0040
Pyrene	ug	<0.020	<0.020	0.020	4418388	0.0040
Fluoranthene	ug	<0.020	<0.020	0.020	4418388	0.0040
Indeno(1,2,3-cd)pyrene	ug	<0.020	<0.020	0.020	4418388	0.0040
Surrogate Recovery (%)						
D10-Anthracene	%	77	74		4418388	
D12-Benzo(a)pyrene	%	108	108		4418388	
D12-Chrysene	%	94	89		4418388	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B651522
Report Date: 2016/03/29

MTE Consultants Inc
Client Project #: 38805-100
Sampler Initials: SA

TEST SUMMARY

Maxxam ID: CAD691
Sample ID: SVP206B-16
Matrix: Filter

Collected: 2016/03/12
Shipped:
Received: 2016/03/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Calculated Polyaromatic Hydrocarbons		4418298	2016/03/15	2016/03/15	Automated Statchk
PAH in XAD Resin (In house method)	GC/MS	4418388	2016/03/15	2016/03/21	Lidija Tomic
Air Volume Sampled		ONSITE	N/A	2016/03/15	Cristina Bacchus

Maxxam ID: CAD692
Sample ID: TRIP BLANK
Matrix: Filter

Collected: 2016/03/12
Shipped:
Received: 2016/03/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PAH in XAD Resin (In house method)	GC/MS	4418388	2016/03/15	2016/03/21	Lidija Tomic

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GENERAL COMMENTS

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
4418388	LTO	Spiked Blank	Acenaphthene	2016/03/21		90	%	60 - 130
			Acenaphthylene	2016/03/21		87	%	60 - 130
			Anthracene	2016/03/21		86	%	60 - 130
			Benzo(a)anthracene	2016/03/21		91	%	60 - 130
			Benzo(a)pyrene	2016/03/21		100	%	60 - 130
			Benzo(b)fluoranthene	2016/03/21		87	%	60 - 130
			Benzo(g,h,i)perylene	2016/03/21		94	%	60 - 130
			Benzo(k)fluoranthene	2016/03/21		100	%	60 - 130
			Chrysene	2016/03/21		97	%	60 - 130
			D10-Anthracene	2016/03/21		84	%	50 - 150
			D12-Benzo(a)pyrene	2016/03/21		104	%	50 - 150
			D12-Chrysene	2016/03/21		93	%	50 - 150
			Dibenz(a,h)anthracene	2016/03/21		103	%	60 - 130
			Fluorene	2016/03/21		90	%	60 - 130
			Naphthalene	2016/03/21		93	%	60 - 130
			Phenanthrene	2016/03/21		84	%	60 - 130
			Pyrene	2016/03/21		87	%	60 - 130
			Fluoranthene	2016/03/21		87	%	60 - 130
			Indeno(1,2,3-cd)pyrene	2016/03/21		100	%	60 - 130
4418388	LTO	RPD	Acenaphthene	2016/03/21	1.4		%	50
			Acenaphthylene	2016/03/21	6.3		%	50
			Anthracene	2016/03/21	4.0		%	50
			Benzo(a)anthracene	2016/03/21	7.8		%	50
			Benzo(a)pyrene	2016/03/21	8.6		%	50
			Benzo(b)fluoranthene	2016/03/21	1.6		%	50
			Benzo(g,h,i)perylene	2016/03/21	20		%	50
			Benzo(k)fluoranthene	2016/03/21	8.0		%	50
			Chrysene	2016/03/21	0.43		%	50
			Dibenz(a,h)anthracene	2016/03/21	17		%	50
			Fluorene	2016/03/21	2.1		%	50
			Naphthalene	2016/03/21	5.4		%	50
			Phenanthrene	2016/03/21	0.50		%	50
			Pyrene	2016/03/21	1.1		%	50
			Fluoranthene	2016/03/21	1.7		%	50
			Indeno(1,2,3-cd)pyrene	2016/03/21	19		%	50
4418388	LTO	Method Blank	1-Methylnaphthalene	2016/03/21	<0.020		ug	
			2-Methylnaphthalene	2016/03/21	<0.020		ug	
			Acenaphthene	2016/03/21	<0.020		ug	
			Acenaphthylene	2016/03/21	<0.020		ug	
			Anthracene	2016/03/21	<0.020		ug	
			Benzo(a)anthracene	2016/03/21	<0.020		ug	
			Benzo(a)pyrene	2016/03/21	<0.020		ug	
			Benzo(b)fluoranthene	2016/03/21	<0.020		ug	
			Benzo(g,h,i)perylene	2016/03/21	<0.020		ug	
			Benzo(k)fluoranthene	2016/03/21	<0.020		ug	
			Biphenyl	2016/03/21	<0.020		ug	
			Chrysene	2016/03/21	<0.020		ug	
			D10-Anthracene	2016/03/21		78	%	50 - 150
			D12-Benzo(a)pyrene	2016/03/21		105	%	50 - 150
			D12-Chrysene	2016/03/21		89	%	50 - 150
			Dibenz(a,h)anthracene	2016/03/21	<0.020		ug	
			Fluorene	2016/03/21	<0.020		ug	
			Naphthalene	2016/03/21	<0.020		ug	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Phenanthrene	2016/03/21	<0.020		ug	
			Pyrene	2016/03/21	<0.020		ug	
			Fluoranthene	2016/03/21	<0.020		ug	
			Indeno(1,2,3-cd)pyrene	2016/03/21	<0.020		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Karen Nicol

Karen Nicol, Supervisor, Semi-Volatiles

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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