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January 8, 2021

Attention:
Jennifer Volpato, District Engineer
Ministry of the Environment, Conservation and Parks
Guelph District Office
1 Stone Road West, 4th Floor
Guelph, ON N1G 4Y2

Project Name: Baker Street Redevelopment
Project Number: CE751900

Subject: Compilation of Documents for Modified Generic Risk Assessment No. 7882-BRYP6L
55 Baker St., 152 & 160 Wyndham St. N. and Park Lane, Guelph

Dear Ms. Volpato,

As requested, the final accepted Modified Generic Risk Assessment (MGRA) report for the properties located at 55 Baker St., 152 & 160 Wyndham St. N. and Park Lane, Guelph and the associated Ministry of the Environment, Conservation and Parks (MECP) correspondence has been attached to this letter as follows:

1. *Pre-submission Form and Modified Generic Risk Assessment for 55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, ON*. Revision 1, dated October 20, 2020.

   The PSF/MGRA revision was submitted in response to a Notice of Circumstance issued by the MECP dated September 22, 2020. Attachment I of the PSF/MGRA report (Attachment 1 of this letter) provides the Notice of Circumstance and associated Schedule A. Attachment I also contains email correspondence between Jacobs and the MECP following a request for clarification with regards to the MECP comments.

2. *Addendum #1 to report entitled Baker Street Redevelopment Pre-submission Form and Modified Generic Risk Assessment for 55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario, Revision 1, dated October 20, 2020 (RA1896-20, IDS Ref No. 7882-BRYP6L),* dated November 27, 2020.

   Addenda #1 was instigated by Jacobs to correct an error with the presentation of the RA Property boundary on the Phase Two Conceptual Site Model figures submitted as part of the resubmitted PSF/MGRA. The email correspondence with the MECP for this submission is included in Attachment 4 of this letter.

3. *Addenda #2 to report entitled Baker Street Redevelopment Pre-submission Form and Modified Generic Risk Assessment for 55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario, Revision 1, dated October 20, 2020 (RA1896-20, IDS Ref No. 7882-BRYP6L),* dated December 14, 2020.

   Addenda #2 was submitted in response to a "Request for Additional Information" received from the MECP via email on December 4, 2020. The email correspondence with the MECP for this submission is included in Attachment 4 of this letter.

4. Email correspondence between the MECP and Qualified Persons (Risk Assessment and Environmental Site Assessment) for the items listed above.

We trust this document provides the requested documentation of the final accepted MGRA. Please do not hesitate to contact the undersigned if there are any questions.

Yours sincerely

Katherine Appleby

Katherine Appleby, B.E.S., E.P., QPRA
katherine.appleby@jacobs.com

Attachments

1 - MGRA Revision 1 (October 20, 2020)
2 - MGRA Addenda #1 (November 27, 2020)
3 - MGRA Addenda #2 (December 20, 2020)
4 - MECP and Jacobs Email Correspondence

Copies to:
Tania McCarthy, Jacobs
Ed Taves, Jacobs
Prasoon Adhikari, City of Guelph

Attachment 1
MGRA Revision 1 (October 20, 2020)

Baker District Redevelopment

Pre-submission Form and Modified Generic Risk Assessment for 55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, ON

Revision 1

October 20, 2020

The City of Guelph

Ontario **Ministry of the Environment, Conservation and Parks**

Risk Assessment Pre-submission

Ministry Use Only		
Reference Number	Date (yyyy/mm/dd)	Initials

General Information and Instructions

- Submit the completed form to: The Director
  Environmental Approvals Access and Service Integration Branch
  Ministry of the Environment, Conservation and Parks
  135 St Clair Ave W, 1st Floor
  Toronto ON M4V 1P5
- Questions and inquiries: Call 416-314-8001
- In order for this form to be considered complete, all relevant sections must be completed and it must be accompanied by the required supporting documents (please see Important Note below).
- Sections A and B must be signed.
- **Forms that are incomplete will be returned without comment.**

Important Note to Property Owners and their Qualified Persons

Preparing and submitting the Risk Assessment Pre-submission form (PSF) is a mandatory part of the risk assessment review process. The PSF is an opportunity for the property owner and their Qualified Person to provide a thorough description of the property and of the planned risk assessment approach, and for the Ministry to provide comments in return. When used effectively, the PSF can improve the quality of the risk assessment (RA) submission, enabling a more efficient Ministry review.

The PSF must be filled out completely and accurately for it to be reviewed by the ministry. Critical supporting documents that must accompany the PSF include:

- A Conceptual Site Model that meets the requirements of O. Reg. 153/04, Schedule C, section 3. Please carefully review completeness checklist included in Section 7 of this form.
- Human Health Conceptual Site Model and Ecological Conceptual Site Model (with and without risk management measures (RMMs) in place).

It is very important for property owners and Qualified Persons to know that if the Conceptual Site Model submitted with this form does not meet all of the requirements specified in O. Reg. 153/04, Schedule C, Section 3, the PSF will not be considered complete and review will not be initiated by the Ministry.

Notice of Collection of Personal Information

Personal information is collected under the authority of Part XV.1 of the *Environmental Protection Act*, R.S.O. 1990, c. E-19, as amended (EPA). Personal information will be used to identify current and previous owner(s) of the risk assessment property. Questions about the collection of personal information should be directed to the Director, Environmental Approvals Access and Service Integration Branch, Ministry of the Environment, Conservation and Parks, 135 St. Clair Avenue West, 1st Floor, Toronto ON M4V 1P5, 416-314-8001.

Note: Comments provided by the Ministry of the Environment, Conservation and Parks (Ministry) on the content of this PSF are not in any way a Director's response to a risk assessment referred to in section 168.5 of the EPA.

It is an offence under subsection 184 (2) of the EPA for a person to give or submit false or misleading information in any statement, document or data to any provincial officer, the Minister, the Ministry, any employee or agent of the Ministry, or any person involved in carrying out a program of the Ministry in respect of any matter related to the EPA or a regulation under the EPA.

Information contained in this form is not considered confidential and will be made available to the public upon request. Information submitted with this form as supporting information may be marked confidential but will be subject to the *Freedom of Information and Protection of Privacy Act*, R.S.O. 1990, c. F.31. If you do not mark supporting information as confidential at the time of submitting the information, the Ministry may make the supporting information available to the public without further notice to you.

Record Information

Has a previous PSF been filed for this property?

☐ Yes ☑ No If yes, provide the PSF/RA reference number ►

Is it intended that a Record of Site Condition be filed for this property?

☑ Yes ☐ No

Is a Record of Site Condition required for this property because of a planned change to a more sensitive land use?

☑ Yes ☐ No ☐ Other (specify) ►

A. Statement of Qualified Person

Note: It is an offence to submit false or misleading information.

I, the undersigned hereby declare that, to the best of my knowledge, the information contained herein and the information submitted in support of this form is complete and accurate in every way and that I meet the applicable qualifications of a Qualified Person for risk assessments as set out in O. Reg. 153/04 for the purpose of preparing the PSF undertaking or supervising the risk assessment work and preparing the subsequent RA Report and that the required documents as indicated below are attached.

Have your qualifications been approved as a result of a previous submitted PSF?

☑ Yes ☐ No If no, specify details below ▼

Resume attached? ☐ Yes ☐ No

Work references attached? ☐ Yes ☐ No

University transcripts attached? ☐ Yes ☐ No

I do not hold and have not held a direct or indirect interest in the Risk Assessment property or any property which includes the Risk Assessment property and was the subject of the phase one or two environmental site assessment upon which the Risk Assessment is based.

☑ Yes ☐ No

(Print) Name (Last name, first name)
Appleby, Katherine

Signature

Date (yyyy/mm/dd)

B. Property Owner Information (To be completed by each owner of the property)

Property Owner 1

Business Name

Legal name **and** the name under which the entity is operating or trading if different from the legal name.
The City of Guelph

Contact Person

Last name
Adhikari

First name
Prasoon

Title
Environmental Engineer

Email address
prasoon.adhikari@guelph.ca

Telephone number (include country code if outside Canada)
519-822-1260 ext. 2946

Fax number (include country code if outside Canada)

Property Owner's Business Mailing Address

Street number
1

Qualifier (e.g., A)

Street name
Carden

Type
Street

Direction

Unit/Suite number

Rural route

PO box

Postal station

City/Town
Guelph

Province/State
Ontario

Postal/Zip code
N1H 3A1

Country
Canada

Additional address information (if applicable)

Statement of Property Owner

I, the undersigned hereby declare that, to the best of my knowledge, the information contained herein and the information submitted in support of this form is complete and accurate in every way and that the Qualified Person identified in section 8 of this form is authorized to act on my behalf for the purpose of preparing the PSF undertaking or supervising the RA work and preparing the subsequent RA Report. If the Property Owner is a corporation or entity, I declare that I have authority to bind the corporation.

(Print) Name (Last name, first name)

Title

Signature

Date (yyyy/mm/dd)

1. Property Information

Ministry district office name
Guelph District Office

Site Street Address

Street number	Qualifier (e.g., A)	Street name	Type	Direction
Rural route	Municipality/unorganized township	Province Ontario	Postal code	

Plan of survey of the property attached
☑ Yes ☐ No

Legal description/lawyer's letter attached?
☑ Yes ☐ No

Alternate address (e.g., near Thickson and Rosslands Roads, Whitby, Ontario)
Multiple Addresses. Refer to attached Table 1-1.

Assessment roll number(s)
Refer to attached Table 1-1

Property identification number(s)
Refer to attached Table 1-1

Geo Reference

GIS map datum	Accuracy estimate	UTM zone	Easting (required)	Northing (required)	Latitude (optional)	Longitude (optional)
UTM NAD 83	+/- 5 m	17	560488	4821807		

2. Planned Risk Assessment Approach (determines timelines for review)

Select appropriate approach

☑ Limited Scope Risk Assessment O. Reg. 153/04 Schedule C, section 7
Reason for limited scope
- ☑ Modified Generic Risk Assessment (Tier 2)
- ☐ Risk Assessment using a community assessment report

☐ New Science risk assessment O. Reg. 153/04 Schedule C, section 9
- ☐ Proposed new toxicity data
- ☐ Probabilistic model (specify details below) ▼
- ☐ New model (specify details below) ▼

Name of new model used?

Are any new models used proprietary?
☐ Yes ☐ No

☐ Estimation of local background concentration O. Reg. 153/04 Schedule C, Section 8. Omit section 4, 5 and 7.

☐ Wider area of Abatement O. Reg. 153/04 Schedule C, section 10

☐ A Risk Assessment other than those identified in O. Reg. 153/04 Schedule C, Part II

Identify the computer models to be used in the preparation of the Risk Assessment

☑ Modified generic Risk Assessment approved model (Ministry of the Environment, Conservation and Parks)

Date (yyyy/mm/dd) ► 2016/11/01

☐ Other

3. Site Information

3.1 Site Use Information (Information about current, proposed, and historical property use for the site)

Year	**Name of Owner** (Last Name, First Name)	**Description of Property Use(s)**	**Property Use(s)** (per regulatory types)	**Other Observations from Aerial Photographs, Fire Insurance Plans, etc.**
	See attached Table 3-1			

3.2 Adjacent Property Use Information (Information about current property use for the adjacent property)

Description of Property Use(s)	**Property Use(s)** (per regulatory types)	**Other Observations from Aerial Photographs, Fire Insurance Plans, etc.**	**Does property receive surface water run-off from the Risk Assessment property?**	**Does ground water from Risk Assessment property flow?**
To the North:	Commercial, industrial, residential	According to FIPs, the area to the north was undeveloped until sometime between 1916 and 1946 when commercial operations were noted, including automotive repair garages and potential dry cleaners. Aerial photographs indicated commercial and residential properties as early as 1930.	No	Down-gradient
To the South	Commercial, industrial, residential	As described in the FIPS and aerial photographs, the properties to the south were commercial and industrial as early as 1897, including print shops, automotive repairs, dry cleaners, and laundries.	No	Down-gradient
To the West	Commercial, industrial, residential	As described in FIPs and aerial photographs, the properties to the south were industrial and commercial as early as 1911 including chinese laundries, a creamery, a machine and tool workes, and automotive repairs. In 1946, residential properties were identified beyond the commercial/industrial areas.	No	Up-gradient

To the East	Commercial, industrial, residential	As described in FIPs and aerial photographs, the properties to the east were commercial and industrial as early as 1911 including chinese laundries, print shops, and manufacturing	No	Down-gradient

3.3 Additional Project Information

3.3.1 Has municipality been notified of non-potable ground water? . . . . ☐ Yes ☑ No
If yes, attach notification

3.3.2 Has municipality responded? . . . . ☐ Yes ☐ No ☑ Not applicable
If yes, specify location of response
Please provide a copy of the response.

3.3.3 Flow through of contaminated ground water? . . . . ☐ Yes ☐ No ☑ Not determined

3.3.4 Are there ongoing industrial/commercial operations on the property? . . . ☑ Yes ☐ No

3.3.5 Are there structures currently on the property? . . . . ☐ Yes ☑ No

3.3.6 Have buildings/structures on the property been demolished? . . . . ☑ Yes ☐ No

3.3.7 Has any remedial action taken place on the property? . . . . ☑ Yes ☐ No

3.3.8 Has the contaminant source been removed from the property? . . . . . . ☐ Yes ☑ No ☐ Not determined

3.3.9 Has free phase product (non-aqueous phase liquid (NAPL) / dense non-aqueous phase liquid (DNAPL)) been visually observed or documented via an interface probe on the site? . . . . ☐ Yes ☑ No
If yes, state maximum reported thickness or other evidence

3.3.10 Do chemical analysis results for soil or ground water indicate the potential for, or likelihood of free phase product within ground water based on solubility concentrations or saturated soil conditions on the site?
Ground water . . . . ☐ Yes ☑ No
Soil . . . . ☐ Yes ☑ No

3.3.11 Depth of organic contamination in soil ☑ Not applicable

3.3.12 Depth of inorganic contamination in soil 3.7 m ☐ Not applicable

3.3.13 On site contamination source . . . . ☑ Yes ☐ No ☐ Not determined

3.3.14 Off site contamination source . . . . ☐ Yes ☐ No ☑ Not determined

3.3.15 Based on the Conceptual Site Model and the identified potential pathways/routes of contaminants to receptors, have all pathways/ routes been assessed in the Phase 1 and Phase 2 environmental site assessment (ESAs)? . . . . ☑ Yes ☐ No
If no, is additional site characterization planned prior to submission of Risk Assessment? . . . . ☐ Yes ☐ No

3.4 Sampling Summary

Media sampled as part of Phase 2 ESA requirements for filing a Record of Site Condition

	Media	Was This Medium Sampled?	Year of Most Recent Sample Collection
3.4.1	Surface soil (up to 1.5 metres)	☑ Yes ☐ No	2020

	Media	Was This Medium Sampled?	Year of Most Recent Sample Collection
3.4.2	Subsurface soil (greater than 1.5 metres)	☑ Yes ☐ No	2020
3.4.3	Ground water	☑ Yes ☐ No	2020
3.4.4	Soil vapour/sub slab	☐ Yes ☑ No	
3.4.5	Sediment	☐ Yes ☑ No	
3.4.6	Surface water	☐ Yes ☑ No	
3.4.7	Indoor air	☐ Yes ☑ No	
3.4.8	Outdoor air	☐ Yes ☑ No	
3.4.9.		☐ Yes ☐ No	

3.5 Selection of Applicable Site Condition Standards

3.5.1 Is property within an area of natural significance? . . . . ☐ Yes ☑ No

3.5.2 Does property:

- include or is adjacent to an area of natural significance? . . . . ☐ Yes ☑ No
- include land that is within 30 metres of an area of natural significance? ☐ Yes ☑ No

3.5.3 Soil at the property has:

- pH value for surface soil less than 5 or greater than 9? . . . . ☐ Yes ☑ No
- pH value for subsurface soil less than 5 or greater than 11? . . . . . . ☐ Yes ☑ No

3.5.4 Is the property a shallow soil property? . . . . ☐ Yes ☑ No

3.5.5 Does the property include or is the property adjacent to a water body or does it include land that is within 30 metres of a water body? . . . . ☐ Yes ☑ No

3.5.6 What is the ground water condition for the property? . . . . ☑ Potable ☐ Non-potable

3.5.7 What is the texture of the soil? . . . . ☑ Coarse ☐ Medium or fine
If medium or fine, attach grain size analysis and rationale

3.5.8 What is the Assessment/Restoration approach? . . . ☐ Background ☑ Full-depth generic ☐ Stratified

3.5.9 What is the intended use of the property?

☐ Agricultural/Other ☑ Commercial ☑ Community ☐ Industrial
☑ Institutional ☐ Parkland ☑ Residential

3.6 Contaminant Inventory for the Media

Surface Soil (up to 1.5 metres) (Complete if using stratified approach)

Surface soil applicable
☐ Yes
☑ No

Soil pH Measured ☐ Not determined
Minimum
Maximum
Number of samples

Soil texture
☐ Coarse
☐ Medium or fine ▶
☐ Not determined

If medium or fine, specify grain size analysis, figure showing grain size sampling locations and rationale for soil texture

Contaminant inventory for surface soil

Note: If there is a contaminant not listed under the drop down menu, enter the chemical information and its contaminant identifier directly into the fields.

Contaminant	Contaminant Identifier	Maximum Measured Concentration	Units	Minimum Detection Limit (MDL)	Applicable Site Condition Standard (SCS)	Potential for Exceedance of Applicable SCSs at Nearest Off-site Receptors?	Retained as a Contaminant for Risk Assessment?
						☐ Yes ☐ No	☐ Yes ☐ No

Subsurface Soil (greater than 1.5 metres) (Complete if using stratified approach)

Subsurface soil applicable
☐ Yes
☑ No

Soil pH Measured ☐ Not determined
Minimum
Maximum
Number of samples

Soil texture
☐ Coarse
☐ Medium or fine ▶
☐ Not determined

If medium or fine, specify grain size analysis, figure showing grain size sampling locations and rationale for soil texture

Contaminant inventory for subsurface soil

Note: If there is a contaminant not listed under the drop down menu, enter the chemical information and its contaminant identifier directly into the fields.

Contaminant	Contaminant Identifier	Maximum Measured Concentration	Units	Minimum Detection Limit (MDL)	Applicable Site Condition Standard (SCS)	Potential for Exceedance of Applicable SCSs at Nearest Off-site Receptors?	Retained as a Contaminant for Risk Assessment?
						☐ Yes ☐ No	☐ Yes ☐ No

Full Depth Soil

Full depth soil applicable
☑ Yes
☐ No

Soil pH Measured ☐ Not determined
Minimum 7.37
Maximum 9.46
Number of samples 45

Soil texture
☑ Coarse
☐ Medium or fine ▶
☐ Not determined

If medium or fine, specify grain size analysis, figure showing grain size sampling locations and rationale for soil texture

Contaminant inventory for full depth soil

Note: If there is a contaminant not listed under the drop down menu, enter the chemical information and its contaminant identifier directly into the fields.

Contaminant	Contaminant Identifier	Maximum Measured Concentration	Units	Minimum Detection Limit (MDL)	Applicable Site Condition Standard (SCS)	Potential for Exceedance of Applicable SCSs at Nearest Off-site Receptors?	Retained as a Contaminant for Risk Assessment?
Refer to Table C-1						☐ Yes ☐ No	☐ Yes ☐ No

Ground Water

Ground water applicable ☑ Yes ☐ No	How many ground water units are present to the depth of concern on the site? 2	Minimum depth to water table (in metres) 3.78 (perched); 5.82 (water table)

Is more than one aquifer impacted? ☐ Yes ☑ No ☐ Not determined

Vertical delineation for the Risk Assessment property shown on conceptual site model (CSM) cross-sectional figures? ☑ Yes ☐ No

Lateral delineation for the Risk Assessment property shown on CSM plan view and cross-sectional figures? ☑ Yes ☐ No

Does the plume extend off site? ☐ Yes ☐ No ☑ Not determined

Aquifer hydraulic conductivity (in metres per second) 2.0E-04 o 4.6E-07, geomean of 6.0E-06 ☐ Not determined	Aquifer horizontal gradient (in metres per metres) 0.009 to 0.025, mean of 0.016 ☐ Not determined

Contaminant inventory for ground water

Note: If there is a contaminant not listed under the drop down menu, enter the chemical information and its contaminant identifier directly into the fields.

Contaminant	Contaminant Identifier	Maximum Measured Concentration	Units	Minimum Detection Limit (MDL)	Applicable Site Condition Standard (SCS)	Potential for Exceedance of Applicable SCSs at Nearest Off-site Receptors?	Retained as a Contaminant for Risk Assessment?
Refer to Table C-2						☐ Yes ☐ No	☐ Yes ☐ No

Sediment

Sediment applicable ☐ Yes ☑ No

Contaminant inventory for sediment

Note: If there is a contaminant not listed under the drop down menu, enter the chemical information and its contaminant identifier directly into the fields.

Contaminant	Contaminant Identifier	Maximum Measured Concentration	Units	Minimum Detection Limit (MDL)	Applicable Site Condition Standard (SCS)	Potential for Exceedance of Applicable SCSs at Nearest Off-site Receptors?	Retained as a Contaminant for Risk Assessment?
						☐ Yes ☐ No	☐ Yes ☐ No

Vapour

Soil vapour applicable	Sub-slab vapour applicable	Indoor air applicable	Outdoor air applicable
☐ Yes ☑ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

Contaminant inventory for vapour

Note: If there is a contaminant not listed under the drop down menu, enter the chemical information and its contaminant identifier directly into the fields.

Contaminant	Contaminant Identifier	Maximum Concentration (include unit of measure)	Number of Sample Locations	Number of Samples Analysed	Analytical Method	Minimum Detection Limit (MDL)	Maximum Detection Limit Unit (MDLU)

Other

Other applicable	If yes, specify
☐ Yes ☑ No	

Contaminant inventory

Note: If there is a contaminant not listed under the drop down menu, enter the chemical information and its contaminant identifier directly into the fields.

Contaminant	Contaminant Identifier	Maximum Concentration (include unit of measure)	Number of Sample Locations	Number of Samples Analysed	Analytical Method	Minimum Detection Limit (MDL)	Maximum Detection Limit Unit (MDLU)

4. Laboratory Information

Laboratory 1

Laboratory name
ALS Canada Ltd.

Address

Street number	Qualifier (e.g., A)	Street name	Type	Direction
60		Northland	Road	

Unit/Suite number	Rural route	PO box	Postal station	City/Town
1				Waterloo

Province/State	Postal/Zip Code	Country
Ontario	N2V 2B8	Canada

Additional address information (if applicable)

Contact Person

Last name	First name
Mahadeva	Mathy

Telephone number (include country code if outside Canada)	Email address
519-514-1860 ext.	mathy.mahadeva@alsglobal.com

Medium tested by laboratory

	Medium	Was Medium Tested?
1.	Surface soil layer	☐ Yes ☐ No ☑ Not applicable
2.	Subsurface soil layer	☐ Yes ☐ No ☑ Not applicable
3.	Full depth soil	☑ Yes ☐ No ☐ Not applicable
4.	Ground water	☑ Yes ☐ No ☐ Not applicable
5.	Soil vapour/sub slab	☐ Yes ☐ No ☑ Not applicable
6.	Sediments	☐ Yes ☐ No ☑ Not applicable
7.	Surface water	☐ Yes ☐ No ☑ Not applicable
8.	Indoor air	☐ Yes ☐ No ☑ Not applicable
9.	outside air	☐ Yes ☐ No ☑ Not applicable
10.		☐ Yes ☐ No ☐ Not applicable

5. Human Health Conceptual Site Model (HHCSM) – Potential Exposure Pathways for Proposed Property Use

Information in this section is intended to support the HHCSM, including any proposed barriers to exposure, as illustrated in diagrams attached to the PSF.

HHCSM *without* on site risk management measures – Receptors *on* the property

Pathways	Resident – Adult	Resident – Child	Workers – Sub-surface	Workers – Long Term (Indoor)	Workers – Long Term (Outdoor)	Property Visitor – Recreational	Property Visitor – Trespassers	Other (specify) Utility Worker	Other (specify)
Soil ingestion	☑	☑	☑	☑	☑	☑	☐	☑	☐
Soil inhalation	☑	☑	☑	☑	☑	☑	☐	☑	☐
Soil skin contact	☑	☑	☑	☑	☑	☑	☐	☑	☐

Pathways	Resident – Adult	Resident – Child	Workers – Sub-surface	Workers – Long Term (Indoor)	Workers – Long Term (Outdoor)	Property Visitor – Recreational	Property Visitor – Trespassers	Other (specify) Utility Worker	Other (specify)
Ground water ingestion	☑	☑	☑	☐	☐	☐	☐	☑	☐
Ground water skin contact	☑	☑	☑	☐	☐	☐	☐	☑	☐
Surface water ingestion	☐	☐	☐	☐	☐	☐	☐	☐	☐
Surface water skin contact	☐	☐	☐	☐	☐	☐	☐	☐	☐
Garden produce ingestion	☑	☑	☐	☐	☐	☐	☐	☐	☐
Livestock ingestion	☐	☐	☐	☐	☐	☐	☐	☐	☐
Vapour inhalation	☑	☑	☑	☑	☑	☑	☐	☑	☐
Vapour skin contact	☑	☑	☑	☑	☑	☑	☐	☑	☐
Other (specify) Vapour Inhalation - Trench	☐	☐	☑	☐	☐	☐	☐	☑	☐

HHCSM *without* on site risk management measures – Receptors *off* the property

Pathways	Resident – Adult	Resident – Child	Workers – Sub-surface	Workers – Long Term (Indoor)	Workers – Long Term (Outdoor)	Property Visitor – Recreational	Property Visitor – Trespassers	Other (specify) Utility Worker	Other (specify)
Soil ingestion	☐	☐	☐	☐	☐	☐	☐	☐	☐
Soil inhalation	☑	☑	☑	☑	☑	☑	☐	☑	☐
Soil skin contact	☐	☐	☐	☐	☐	☐	☐	☐	☐
Ground water ingestion	☑	☑	☑	☐	☐	☐	☐	☑	☐
Ground water skin contact	☑	☑	☑	☐	☐	☐	☐	☑	☐
Surface water ingestion	☐	☐	☐	☐	☐	☐	☐	☐	☐
Surface water skin contact	☐	☐	☐	☐	☐	☐	☐	☐	☐
Garden produce ingestion	☐	☐	☐	☐	☐	☐	☐	☐	☐
Livestock ingestion	☐	☐	☐	☐	☐	☐	☐	☐	☐
Vapour inhalation	☑	☑	☑	☑	☑	☑	☐	☑	☐
Vapour skin contact	☑	☑	☑	☑	☑	☑	☐	☑	☐
Other (specify) Vapour Inhalation - Trench	☐	☐	☑	☐	☐	☐	☐	☑	☐

HHCSM *with* on site risk management measures – Receptors *on* the property

Pathways	Resident – Adult	Resident – Child	Workers – Sub-surface	Workers – Long Term (Indoor)	Workers – Long Term (Outdoor)	Property Visitor – Recreational	Property Visitor – Trespassers	Other (specify)	Other (specify)

Pathways	**Resident – Adult**	**Resident – Child**	**Workers – Sub-surface**	**Workers – Long Term (Indoor)**	**Workers – Long Term (Outdoor)**	**Property Visitor – Recreational**	**Property Visitor – Trespassers**	Other (specify) Utility Worker	Other (specify)
Soil ingestion	☐	☐	☐	☐	☐	☐	☐	☐	☐
Soil inhalation	☐	☐	☐	☐	☐	☐	☐	☐	☐
Soil skin contact	☐	☐	☐	☐	☐	☐	☐	☐	☐
Ground water ingestion	☐	☐	☐	☐	☐	☐	☐	☐	☐
Ground water skin contact	☐	☐	☐	☐	☐	☐	☐	☐	☐
Surface water ingestion	☐	☐	☐	☐	☐	☐	☐	☐	☐
Surface water skin contact	☐	☐	☐	☐	☐	☐	☐	☐	☐
Garden produce ingestion	☐	☐	☐	☐	☐	☐	☐	☐	☐
Livestock ingestion	☐	☐	☐	☐	☐	☐	☐	☐	☐
Vapour inhalation	☑	☑	☑	☑	☑	☑	☐	☑	☐
Vapour skin contact	☑	☑	☑	☑	☑	☑	☐	☑	☐
Other (specify) Vapour Inhalation - Trench	☐	☐	☐	☐	☐	☐	☐	☐	☐

HHCSM *with* on site risk management measures – Receptors *off* the property

Pathways	**Resident – Adult**	**Resident – Child**	**Workers – Sub-surface**	**Workers – Long Term (Indoor)**	**Workers – Long Term (Outdoor)**	**Property Visitor – Recreational**	**Property Visitor – Trespassers**	Other (specify) Utility Worker	Other (specify)
Soil ingestion	☐	☐	☐	☐	☐	☐	☐	☐	☐
Soil inhalation	☐	☐	☐	☐	☐	☐	☐	☐	☐
Soil skin contact	☐	☐	☐	☐	☐	☐	☐	☐	☐
Ground water ingestion	☐	☐	☐	☐	☐	☐	☐	☐	☐
Ground water skin contact	☐	☐	☐	☐	☐	☐	☐	☐	☐
Surface water ingestion	☐	☐	☐	☐	☐	☐	☐	☐	☐
Surface water skin contact	☐	☐	☐	☐	☐	☐	☐	☐	☐
Garden produce ingestion	☐	☐	☐	☐	☐	☐	☐	☐	☐
Livestock ingestion	☐	☐	☐	☐	☐	☐	☐	☐	☐
Vapour inhalation	☑	☑	☑	☑	☑	☑	☐	☑	☐
Vapour skin contact	☑	☑	☑	☑	☑	☑	☐	☑	☐
Other (specify) Vapour Inhalation - Trench	☐	☐	☑	☐	☐	☐	☐	☑	☐

6. Ecological Conceptual Site Model

Valued Ecological Components (VECs) and Potential Exposure Pathways for Proposed Property Use

List Endangered or Threatened Species on and off the property

	Common Name	Latin Name
1.	Ten species identified. Refer to attached Table 6-1.	
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10		
11		
12		
13		
14		
15		

Habitat	Is the habitat present *on* the property?			Is the habitat present *off* the property?		
	Yes	No	Not determined	Yes	No	Not determined
Terrestrial						
Agricultural	☐	☑	☐	☐	☑	☐
Undisturbed natural	☐	☑	☐	☐	☑	☐
Man made	☑	☐	☐	☑	☐	☐
Aquatic						
Lakes/streams	☐	☑	☐	☑	☐	☐
Wetland	☐	☑	☐	☐	☑	☐
Bog (acid/alkaline)	☐	☑	☐	☐	☑	☐

Valued Ecological Components

☑ If Modified Generic Risk Assessment, the site specific Valued Ecological Components list is consistent with the list in the Approved Model.

Valued Ecological Components	List of Studied Species
Terrestrial Vegetation	
Crops	
Trees/Shrubs	
Herbaceous	

Valued Ecological Components	List of Studied Species
Terrestrial Animals	
Invertebrates	
Mammals	
Mammals with breeding habitat	
Avian species	
Avian species with breeding habitat	
Reptiles/Amphibians	
Reptiles/Amphibians with breeding habitat	
Aquatic Vegetation	
Aquatic plant species	
Trees/Shrubs/Bog plants	
Aquatic Animals	
Invertebrates (water column)	
Invertebrates (benthic)	
Molluscs	
Amphibians	
Amphibians with breeding habitat	
Fish	
Fish with spawning habitat	

Terrestrial Ecological Pathways

Pathways	On the Property				Off the Property			
	Is this a potential pathway based on receptor characteristics, chemical characteristics and geological interpretation?		Is a man-made barrier or measure to interrupt this pathway present or anticipated?		Is this a potential pathway based on receptor characteristics, chemical characteristics and geological interpretation?		Is a man-made barrier or measure to interrupt this pathway present or anticipated?	
	Yes	No	Yes	No	Yes	No	Yes	No
Animals								
Dermal contact	☑	☐	☑	☐	☑	☐	☐	☑
Inhalation	☑	☐	☐	☑	☑	☐	☐	☑
Soil ingestion	☑	☐	☑	☐	☑	☐	☐	☑
Soil inhalation	☑	☐	☑	☐	☑	☐	☐	☑
Water ingestion	☐	☑	☐	☑	☑	☐	☐	☑
Ingestion of prey/food	☑	☐	☑	☐	☑	☐	☐	☑
Vegetation								
Root uptake of soil	☑	☐	☑	☐	☑	☐	☐	☑
Root uptake of surface water	☐	☑	☐	☑	☑	☐	☐	☑

Root uptake of ground water	☑	☐	☐	☑	☑	☐	☐	☑
Stem uptake of ambient air	☑	☐	☐	☑	☑	☐	☐	☑
Foliar uptake of ambient air	☑	☐	☐	☑	☑	☐	☐	☑
Other (specify) ▼								
	☐	☐	☐	☐	☐	☐	☐	☐

Aquatic Ecological Pathways

Pathways	**On the Property**				**Off the Property**			
	Is this a potential pathway based on receptor characteristics, chemical characteristics and geological interpretation?		**Is a man-made barrier or measure to interrupt this pathway present or anticipated?**		**Is this a potential pathway based on receptor characteristics, chemical characteristics and geological interpretation?**		**Is a man-made barrier or measure to interrupt this pathway present or anticipated?**	
	Yes	No	Yes	No	Yes	No	Yes	No
Aquatic Animals								
Dermal contact	☐	☑	☐	☑	☑	☐	☐	☑
Gill uptake	☐	☑	☐	☑	☑	☐	☐	☑
Water ingestion	☐	☑	☐	☑	☑	☐	☐	☑
Prey/food ingestion	☐	☑	☐	☑	☑	☐	☐	☑
Aquatic Vegetation								
Root uptake from sediment	☐	☑	☐	☑	☑	☐	☐	☑
Root uptake of surface water	☐	☑	☐	☑	☑	☐	☐	☑
Stem/foliar uptake of surface water	☐	☑	☐	☑	☑	☐	☐	☑
Foliar uptake of ambient air	☐	☑	☐	☑	☑	☐	☐	☑
Other (specify) ▼								
	☐	☐	☐	☐	☐	☐	☐	☐

7. Conceptual Site Model (Schedule C, Subsection 3 (8) of O. Reg. 153/04)

Each regulatory requirement listed below must be met. It is recommended that the Conceptual Site Model follow the order below.

Subsection Reference No.	**Description**	**Yes**	**Not Applicable**
3 (8)	The pre-submission form must include information on the proposed conceptual site model that the qualified person intends to rely upon in the preparation of the parts of the Risk Assessment (RA) report described in Report Section 3, Report Section 4 and Report Section 5 of Table 1 of this Schedule including,		
3 (8)(a)	a description and assessment of,	☑	☐
3 (8)(a)(i)	areas of potential environmental concern, and	☑	☐
3 (8)(a)(ii)	any subsurface structures and utilities on, in or under the RA property that may affect contaminant distribution and transport;	☑	☐

Subsection Reference No.	Description	Yes	Not Applicable
3 (8)(a.1)	a description of and, as appropriate, figures illustrating, the physical setting of a RA property and any areas under it including,	☑	☐
3 (8)(a.1)(i)	stratigraphy from ground surface to the deepest aquifer or aquitard investigated,	☑	☐
3 (8)(a.1)(ii)	hydrogeological characteristics, including aquifers, aquitards and, in each hydrostratigraphic unit where one or more contaminants is present at concentrations above the applicable site condition standards, lateral and vertical hydraulic gradients,	☑	☐
3 (8)(a.1)(iii)	approximate depth to bedrock,	☑	☐
3 (8)(a.1)(iv)	approximate depth to water table,	☑	☐
3 (8)(a.1)(v)	any respect in which section 41 or 43.1 of the regulation applies to the property,	☑	☐
3 (8)(a.1)(vi)	areas where soil has been brought from another property and placed on, in or under the RA property, and	☑	☐
3 (8)(a.1)(vii)	approximate locations, if known, of any proposed buildings and other structures;	☑	☐
3 (8)(a.2)	where a contaminant is present on, in or under a RA property at a concentration greater than the applicable site condition standard, identification of,	☑	☐
3 (8)(a.2)(i)	each area where a contaminant is present on, in or under a RA property at a concentration greater than the applicable site condition standard,	☑	☐
3 (8)(a.2)(ii)	the contaminants associated with each of the areas referred to in subclause (i), and	☑	☐
3 (8)(a.2)(iii)	each medium in which a contaminant associated with an area referred to in subclause (i) above is present;	☑	☐
3 (8)(a.3)	where a contaminant is present on, in or under a RA property at a concentration greater than the applicable site condition standard, a description of,	☑	☐
3 (8)(a.3)(i)	what is known about each of the areas referred to in subclause (a.2) (i),	☑	☐
3 (8)(a.3)(ii)	the distribution, in each of the areas referred to in subclause (a.2) (i), of each contaminant present in the area at a concentration greater than the applicable site condition standard, for each medium in which the contaminant is present, together with figures showing the distribution,	☑	☐
3 (8)(a.3)(iii)	anything known about the reason for the discharge into the natural environment of the contaminants present on, in or under the RA property at a concentration greater than the applicable site condition standard,	☑	☐
3 (8)(a.3)(iv)	anything known about migration away from any area of potential environmental concern of the contaminants present on, in or under the RA property at a concentration greater than the applicable site condition standard, including the identification of any preferential pathways,	☑	☐
3 (8)(a.3)(v)	climatic or meteorological conditions that may have influenced distribution and migration of the contaminants, such as temporal fluctuations in ground water levels, and	☑	☐
3 (8)(a.3)(vi)	if applicable, information concerning soil vapour intrusion of the contaminants into buildings including,	☐	☑
3 (8)(a.3)(vi)(A)	relevant construction features of a building, such as a basement or crawl space,	☐	☑
3 (8)(a.3)(vi)(B)	building heating, ventilating and air conditioning design and operation, and	☐	☑
3 (8)(a.3)(vi)(C)	Subsurface utilities;	☑	☐
3 (8)(a.4)	where contaminants on, in or under the RA property are present at concentrations greater than the applicable site condition standard, one or more cross-sections showing,	☑	☐

Subsection Reference No.	Description	Yes	Not Applicable
3 (8)(a.4)(i)	the lateral and vertical distribution of a contaminant in each area where the contaminant is present at a concentration greater than the applicable site condition standard in soil, ground water and sediment,	☑	☐
3 (8)(a.4)(ii)	approximate depth to water table in each area referred to in subclause (i),	☑	☐
3 (8)(a.4)(iii)	stratigraphy from ground surface to the deepest aquifer or aquitard investigated, and	☑	☐
3 (8)(a.4)(iv)	any subsurface structures and utilities that may affect contaminant distribution and transport in each area referred to in subclause (i);	☑	☐
3 (8)(b)	for each area where a contaminant is present on, in or under the RA property at a concentration greater than the applicable site condition standard for the contaminant, a diagram identifying, with narrative explanatory notes,	☑	☐
3 (8)(b)(i)	the release mechanisms,	☑	☐
3 (8)(b)(ii)	contaminant transport pathway,	☑	☐
3 (8)(b)(iii)	the human and ecological receptors located on, in, under and off the RA property,	☑	☐
3 (8)(b)(iv)	receptor exposure points, and	☑	☐
3 (8)(b)(v)	routes of exposure;	☑	☐
3 (8)(c)	with explanatory notes, showing the biota and food web relationships on and off the RA property which may be affected by contaminants on, in or under the RA property.	☑	☐

8. Risk Assessment Team (including sub-consultants)

Discipline	Name (Last, First Name)	Corporate Affiliation/Partnership/ Employer	Telephone	Email Address
Human Health	Appleby, Katherine Wilson, Brandi	Jacobs Engineering Group Inc.	519-579-3500	Katherine.Appleby@jacobs.com
Ecology	Appleby, Katherine Wilson, Brandi	Jacobs Engineering Group Inc.	519-579-3500	Katherine.Appleby@jacobs.com
Hydrogeology	Zang, Jinlong	Jacobs Engineering Group Inc.	519-579-3500	Jinlong.Zang@jacobs.com
Engineering (as needed)	Caron, Jennifer	Jacobs Engineering Group Inc.	519-579-3500	Jennifer.Caron@jacobs.com
Other (specify) QPESA	McCarthy, Tania	Jacobs Engineering Group Inc.	519-579-3500	Tania.McCarthy@jacobs.com
Other (specify) QPRA	Appleby, Katherine	Jacobs Engineering Group Inc.	519-579-3500	Katherine.Appleby@jacobs.com
Other (specify) Geoscience/	Ed Taves	Jacobs Engineering Group	519-579-3500	ed.taves@jacobs.com
Other (specify) Geoscience	Victoria Peters	Jacobs Engineering Group	519-579-3500	victoria.peters@jacobs.com
Other (specify) Geoscience/	Maria Digaletos	Jacobs Engineering Group	519-579-3500	maria.digaletos@jacobs.com

Supporting Information

Document Description	Document Name	Number of Copies Provided	Hard Copies Attached?	Electronic Version Attached?
Phase two conceptual site model (CSM)	Attachment D3	-	☐ Yes ☑ No	☑ Yes ☐ No
Human health CSM and ecological CSM (with and without risk management measures)	Attachment E	-	☐ Yes ☑ No	☑ Yes ☐ No
Plan of survey, legal description/ lawyer's letter	Attachment A	-	☐ Yes ☑ No	☑ Yes ☐ No
Certificate of Status (Qualified Person (QP)/QP firm)	No longer applicable under O. Reg. 153/04	-	☐ Yes ☑ No	☐ Yes ☑ No
For non-potable groundwater: notification to the municipality and any correspondence	Not Applicable	-	☐ Yes ☑ No	☐ Yes ☑ No
If soil texture is identified as Medium or Fine, please include grain size analysis, figure showing grain size sampling locations, and rationale for soil texture selection.	Not Applicable	-	☐ Yes ☑ No	☐ Yes ☑ No
Other (specify) Phase One and Two Summaries	Attachments D1 and D2	-	☐ Yes ☑ No	☑ Yes ☐ No
Other (specify) Data Set	Attachment C	-	☐ Yes ☑ No	☑ Yes ☐ No
Other (specify) Risk Assessment Team	Attachment B	-	☐ Yes ☑ No	☑ Yes ☐ No
Other (specify) MGRA Report	Attachment G	-	☐ Yes ☑ No	☑ Yes ☐ No
Other (specify) MGRA Spreadsheet	Attachment G	-	☐ Yes ☑ No	☑ Yes ☐ No
Other (specify) MGRA Supporting Information	Attachment H	-	☐ Yes ☑ No	☑ Yes ☐ No
Other (specify) No Groundwater Use RMM	Attachment F		☐ Yes ☑ No	☑ Yes ☐ No

9. Public Communication

Will there be public communication? . . . . ☐ Yes ☑ No ☐ Not applicable

Has the appropriate ministry district office been notified? . . . . ☐ Yes ☐ No ☑ Not applicable

10. Business Contact Information (Qualified Person conducting the Risk Assessment)

(Complete as applicable)

Note: It is an offence to submit false or misleading information.

Name of Qualified Person

Last name	First name
Appleby	Katherine

Employer/Business Name
Jacobs Engineering Group Inc.

Business Address

Street number	Qualifier (e.g., A)	Street name	Type	Direction
72		Victoria	Street	South

Unit/Suite number	Rural route	PO box	Postal station	City/Town
300				Kitchener

Province/State
Ontario

Postal/Zip code
N2G 4Y9

Country
Canada

Additional address information (if applicable)

Telephone number (include country code if outside Canada)
519-579-3500 ext. 73281

Fax number (include country code if outside Canada)
519-579-8986

Email address
Katherine.Appleby@jacobs.com

11. Modified Generic Risk Assessment (MGRA) Approved Model

This section to be completed only if intending to submit MGRA in respect of the Risk Assessment property.

☐ **Pathway Modifier: Modify Solubility Component Values (for Petroleum Hydrocarbons (PHC) F1 and PHC F2)**

1) Was ground water collected for PHC analysis using a low-flow sampling method? ☐ Yes ☐ No
2) Was ground water collected for PHC analysis no more than 30 cm below the water table? ☐ Yes ☐ No
3) Has groundwater flow direction been determined based on the minimum requirements for ground water sampling (with respect to monitoring frequency) set out in Schedule E, Table 4, Assumption Category 4? ☐ Yes ☐ No
4) If the contaminant source of the PHC exceedance has not been removed from the Risk Assessment property, how far apart were the monitoring wells used to delineate PHC F1 and/or F2?

☑ **Risk management measure: no ground water use**

Note: "Well" marked with an asterisk (*) in this measure, is defined in subsection 35 (1) of the Regulation. It does not include holes such as:

- a hole solely intended to test or to obtain information in respect of groundwater or an aquifer, or
- a hole solely made to lower or control the level of groundwater in the area of the hole or to remove material that may be in the groundwater.

This risk management measure applies only to wells as defined in subsection 35 (1).

1a) Is the GW1 (drinking water component value) component value (i.e., Ontario Drinking Water Quality Standard) met down-gradient of all known exceedances of the applicable generic standard at the Risk Assessment property? ☑ Yes ☐ No

1b) Will the GW1 component value likely be met at the nearest off-site human receptors? ☑ Yes ☐ No

1c) Are there any water well* records within a radius of 250 metres from the boundary of the Risk Assessment property, as identified in the phase 1 environmental site assessment report? ☑ Yes ☐ No

1d) Have you carried out any other activities to identify other potable wells* not captured by water well records? ☐ Yes ☑ No

If yes, does the information identify other potable wells not captured by water well records? ☐ Yes ☐ No

2) Are the Risk Assessment property and all other properties located, in whole or in part, within 250 metres of the boundaries of the Risk Assessment property, supplied by a municipal drinking water system, as defined in the *Safe Drinking Water Act, 2002*? ☑ Yes ☐ No

3a) Is the Risk Assessment property in, or within, 250 m any of the following, as set out in the Assessment Report portion of the applicable Source Protection Plan under the *Clean Water Act, 2006* (as per source water protection mapping available through local Conservation Authorities):

Note: For definitions, see the *Clean Water Act, 2006*

- A designated well head protection area (WHPA) ☑ Yes ☐ No

  If yes, identify the WHPA classification (A through F) **and** aquifer vulnerability score
  WHPA-B (2 yr- time travel) with an aquifer vulnerability score of 10

- A significant groundwater recharge area (SGRA) ☐ Yes ☑ No
- A highly vulnerable aquifer (HVA) ☑ Yes ☐ No
- An issues contributing area (ICA) ☑ Yes ☐ No
- A Source Water Intake Protection Zone (IPZ) ☐ Yes ☑ No

3b) Have you attached a map showing the Risk Assessment property in relation any Source Water Protection Areas identified above? ☑ Yes ☐ No

4) Have you consulted with the appropriate Ministry District Office on the proposal to use the "No Ground Water Use risk management measure" at the Risk Assessment property?. ☑ Yes ☐ No

Note: One of the outcomes of the Ministry's detailed review of the RA may still be the conclusion that ground water monitoring is warranted for the Risk Assessment property, and, therefore, the Risk Assessment cannot be classified as an Modified Generic Risk Assessment.

5a) Has the Municipality been notified that the Risk Assessment assumes that the ground water under the Risk Assessment property does not or will not serve as a raw water supply for a drinking water system, in accordance with Schedule C, subsection 4(5)? ☑ Yes ☐ No

Location of notification
Attachment F

Please attach the notification.

5b) Has Municipality responded? ☑ Yes ☐ No

If yes, provide response
No objections to use of this RMM

Location of response
Attachment F

☑ **Any pathway modifier or risk management measure that modifies the GW2 (the protection of indoor air from vapours originating from groundwater component) component value**

☑ Building with storage garage
☐ Building prohibition
☐ Building with no first storey residential use
☐ Soil vapour intrusion mitigation system
☐ Soil vapour screening level met for ground water source
☐ Building with minimum first storey ceiling height requirement

1) Will the applicable full depth site condition standards likely be met at the nearest off-site human receptors? ☑ Yes ☐ No

2) Have you consulted with the appropriate Ministry of the Environment, Conservation and Parks District Office regarding your assessment of the likelihood for vapour intrusion to occur off-site? ☑ Yes ☐ No

☐ **Modified Subsurface Worker Protection (where the S3 pathway is modified for an inorganic chemicals of concern (COC)**

1) Did you do leachate testing for inorganics? ☐ Yes ☐ No

If yes, what leachate test did you use?

☐ Synthetic Precipitation Leaching Procedure (SPLP)
☐ Toxicity Characteristic Leaching Procedure (TCLP)

2) Did the results meet the values generated by the Approved Model? ["Tier 2 Input" tab, Cell A61-C66] ☐ Yes ☐ No

Tables

Table 1-1. Property Information

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Municipal Address	Property Identification Number	Assessment Roll Number	Legal Description
55 Baker Street	71287-0038 (LT) [a]	2308020-00100500	Pt. Burying Ground; Pt. lane through Burying Ground; Plan 8, Closed by MS80255; as in CS58221, MS20082 & MS78644; S/T Interest, if any, in CS58221
	71287-0058 (LT) [a]	2308020-00100500	PT Burying Ground, Plan 8, as in Cs51962; Guelph
152 Wyndham Street North	71287-0045 (LT) [a]	2308020-00112800	PT Lots 73 & 74, Plan 8; PT Burying Ground, Plan 8; PT Lane, Plan 8, at the rear of lots 73 & 74 (AKA Park Lane) closed by CS31228, as in ROS573090; S/T & T/W ROS573090;
160 Wyndham Street North	71287-0044 (LT) [a]	2308020-00112900	PT Lot 74, Plan 8; PT Burying Ground, Plan 8; PT Lane, Plan 8, at the rear of lot 74 (AKA Park Lane) closed by CS31228, as in ROS557919; S/T & T/W ROS557919
N/A (Park Lane)	71287-0099 (LT) [a]	N/A	Unnamed Lane, Plan 8, (Aka Park Lane, Plan 8) lying south of part closed by CS31228, save and except RO755787, ROS546721, CS52867, & ROS220056; Guelph

[a] Ontario Land Title

Table 3-1. Current and Past Land Uses of the Phase One Property

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Year	Name of Owner	Description of Property Use	Property Use [1]	Other Observations from Aerial Photograph, Fire Insurance Plans, etc. [2]
55 Baker Street (all sections), 152 and 160 Wyndham Street North				
2013 – present	*The Corporation of the City of Guelph*	Parking Lot	Commercial	Aerial photographs from 1972 to 2009 show a parking lot over the Baker Street parcels. Based on a review of aerial photographs the commercial development on 152 and 160 Wyndham Street North appeared to have been demolished between 2009 and 2013 and replaced with an asphalt parking lot.
55 Baker Street (all sections)				
1998 – 2013	*The Corporation of the City of Guelph*	Parking Lot	Commercial	Aerial photographs from 1972 to 2009 show a parking lot.
55 Baker Street, north portion (Instrument MS20082)				
1961 – 1998	*The Corporation of the City of Guelph*	Parking Lot	Commercial	Aerial photographs from 1972 to 2009 show a parking lot.
1951 – 1961	*Steele's Wire Springs Ltd.*	Manufacturing of coiled wire springs and wire specialties	Industrial Use	The 1960 FIP indicated that Steele's Wire Springs Limited was located on the north portion of 55 Baker Street. In addition, city directories from 1936 until 1955 identified this operation on-Site.
1941 - 1951	Frederick Freedman and James Millar	Manufacturing of coiled wire springs and wire specialties	Industrial Use	The chain of title report (Pinchin, 2018) indicated the deed transfer was a from Charles L. Dunbar, who was listed as the mortgagee. The 1946 FIP indicated that Steele's Wire Springs Limited was located on the north portion of 55 Baker Street. In addition, city directories from 1936 until 1955 identified this operation on-Site.
1926 - 1941	*James Steele Limited*	Manufacturing of coiled wire springs and wire specialties	Industrial Use	The chain of title report (Pinchin, 2018) indicated the mortgage was put under Charles L. Dunbar on the same day of the deed transfer.
55 Baker Street, small parcel (PIN 71287-0058 (LT))				
1949 – 1998	*The Board of Light and Heat Commissioners of the City of Guelph*	Historical transformer location.	Commercial Use	The 1960 FIP identified a small parcel on the east-central portion of 55 Baker Street labelled as transformers.
1947 - 1949	*Hugh Millar and Western Lindamond*	No records	Industrial Use	Assumed industrial use based on the associated parcel (northern) land use.

Table 3-1. Current and Past Land Uses of the Phase One Property

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Year	Name of Owner	Description of Property Use	Property Use ^{1}	Other Observations from Aerial Photograph, Fire Insurance Plans, etc. ^{2}
1947 – 1947	*Elmer Awrey*	No records	Industrial Use	Assumed industrial use based on the associated parcel (northern) land use.
1944 – 1947	*Frederick Freedman and James Millar*	No records	Industrial Use	The 1946 FIP identifies the parcel of land is associated with Steele's Wire Spring Ltd. However, there are no buildings indicated in this area. The chain of title indicates the property was transferred under Power of Sale from Charles L. Dunbar.
1926 – 1944	*James Steele Limited*	No records	Industrial Use	The chain of title report (Pinchin, 2018) indicated the mortgage was put under Charles L. Dunbar on the same day of the deed transfer.
55 Baker Street, "Travelled Lane Through Burying Grounds" (Instrument CS58221)				
1953 – 1998	*The Corporation of the City of Guelph*	Parking Lot	Commercial	Aerial photographs from 1972 to 2009 show a parking lot. The 1960 FIP identifies the parcel to be in the area of "bowling greens".
1934 - 1953	His Majesty The King/ Her Majesty The Queen	No records	Industrial Use	Assumed industrial use based on the associated parcel (northern) land use. The 1946 FIP does not show any buildings in this area.
1929 – 1934	*The Culten Company Limited*	No records	Industrial Use	Assumed industrial use based on the associated parcel (northern) land use.
March 1928 – 1929	*James Steele Limited*	No records	Industrial Use	Assumed industrial use based on the associated parcel (northern) land use.
Feb 1926 – March 1928	Angus Dunbar	No records	Industrial Use	Assumed industrial use based on the associated parcel (northern) land use.
Nov 1926 – Feb 1928	*James Steele Limited*	No records	Industrial Use	Assumed industrial use based on the associated parcel (northern) land use.
55 Baker Street, north portion, "Travelled Lane", and small parcel (Instrument MS20082, Instrument CS58221 and PIN 71287-0058 (LT))				
May 1926 – November 1926	*Louis Brown, Sam Acker, and Sam Lampel*	No records	Industrial Use	
May 1916 – May 1926	*The White Sewing Machine Company of Canada/ White Sewing Machine Company*	Sewing machine and accessory manufacturing	Industrial Use	The 1916 FIPs identified an industrial building on the west-central portion of 55 Baker Street labelled as 'White Sewing Machine Co. of Canada Ltd'.

Table 3-1. Current and Past Land Uses of the Phase One Property

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Year	Name of Owner	Description of Property Use	Property Use [1]	Other Observations from Aerial Photograph, Fire Insurance Plans, etc. [2]
April 1916 – May 1916	*William Chase and Isadore Freiberger*	No records	Industrial Use	
1900 – April 1916	*The Raymond Manufacturing Company of Guelph Limited*	Sewing machine and accessory manufacturing	Industrial Use	The 1911 and 1916 Fire Insurance Plans (FIPs) identified an industrial building on the west-central portion of 55 Baker Street and Park Lane labelled as 'White Sewing Machine Co. of Canada Ltd'
1891 - 1900	Corporation of the City of Guelph	No records	Parkland Use	
55 Baker Street, south portion (Instrument MS78644)				
1968 – 1998	*The Corporation of the City of Guelph*	Parking Lot	Commercial Use	Aerial photographs from 1972 to 2009 show a parking lot.
1936 – 1968	*The Victoria Rink Company / Guelph Curling Club Limited*	Curling rink	Commercial Use	The 1946 and 1960 FIP identified a curling rink on the south portion of 55 Baker Street. The curling club was last listed in the city directories in 1966. The chain of title (Pinchin, 2018) references instrument MS78644 and indicates the Guelph Curling Club Limited was formerly The Victoria Rink Company.
1892 to 1936	*The Corporation of the Township of Guelph*	Curling rink	Commercial Use	The 1911 FIP identified a curling rink "Victoria Rink" on the south portion of 55 Baker Street. The curling club was last listed in the city directories in 1966. The 2007 D.R. Poulton Archaeological Report indicated that the Royal Curling Club was constructed on the south portion of 55 Baker Street in 1892, and the club merged with the Union Curling Club to form the Guelph Curling Club in 1926. The chain of title (Pinchin, 2018) does not list a previous owner and indicates there are no records before 1891.
1891 - 1892	The Corporation of the Township of Guelph	No records	Parkland Use	

Table 3-1. Current and Past Land Uses of the Phase One Property

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Year	Name of Owner	Description of Property Use	Property Use [1]	Other Observations from Aerial Photograph, Fire Insurance Plans, etc. [2]
55 Baker Street (all sections)				
1879 – 1891	Corporation of the Township of Guelph	Park	Parkland Use	The 2007 D.R. Poulton Archaeological Report indicated 55 Baker Street and Park Lane was used as a park between 1879 and 1891. The chain of title report in the Phase One ESA (Pinchin, 2018) indicated no records were found prior to 1891. The first document found was a deed transfer between the Corporation of the Township of Guelph to the Corporation of the City of Guelph.
1827 - 1879	The Canada Company	Public burying grounds	Community Use	The 2007 D.R. Poulton Archaeological Report indicated 55 Baker Street and Park Lane was an active burying ground from 1827 (when the Town of Guelph was founded) until 1853. The report references the property being owned by the Canada Company and that they included the parcel on the original plan of the town as land known to be the Public Burying Ground (Poulton, 2007). It is unknown how long the parcel of land was used for this purpose. The burial ground was officially closed in 1879 (Pinchin, 2018) and most burials removed. The 1872 Bird's Eye View shows a naturally rolling topography.
Park Lane (PIN 71287-0099 (LT))				
1855 - present	The Corporation of the City of Guelph	Road/Laneway	Community Use	In 1855, this parcel was registered as laneways and has remained in use as laneways and/or access routes since that time (Pinchin, 2018). Historical maps (1855, 1866, 1906) and FIPs (1911, 1946, and 1960) also show the parcel as a laneway.
152 Wyndham Street North (PIN 71287-0045 (LT))				
2010 - 2013	*The Corporation of the City of Guelph*	Commercial / Parking lot	Commercial Use	Based on a review of aerial photographs the commercial development on 152 and 160 Wyndham Street North appeared to have been demolished between 2009 and 2013 and replaced with an asphalt parking lot.
1985 – 1988	*Smija Lesic*	Commercial	Commercial Use	
1985 – 1988	*Edwin Stuart and Jean Stewart*	Commercial	Commercial Use	
1980 – 1985	*District Trust Company*	Commercial	Commercial Use	
1967 – 1980	*Stuart N. McInnis and Ernest E.R. Garlick*	Commercial	Commercial Use	

Table 3-1. Current and Past Land Uses of the Phase One Property

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Year	Name of Owner	Description of Property Use	Property Use [1]	Other Observations from Aerial Photograph, Fire Insurance Plans, etc. [2]
1956 – 1967	*John W. Hall*	Commercial	Commercial Use	Based on a review of the 1960 FIP, as well as city directories from 1938 to 2012, 152 and 160 Wyndham Street North was utilized for various commercial retail operations from 1938 to at least 2009.
1949 – 1956	*John W. Hall and Nellie J. Hall*	Commercial	Commercial Use	
1929 – 1949	*The Eaton Company*	Commercial	Commercial Use	Based on a review of the 1946 FIP, as well as city directories from 1938 to 2012, 152 and 160 Wyndham Street North was utilized for various commercial retail operations from 1938 to at least 2009.
1929 – 1929	*Angus Dunston*	Commercial	Commercial Use	
1917 – 1929	*Jane McAteer*	Commercial	Commercial Use	
160 Wyndham Street North (PIN 71287-0044 (LT))				
2010 - 2013	The Corporation of the City of Guelph	Commercial / Parking lot	Commercial Use	Based on a review of aerial photographs the commercial development on 152 and 160 Wyndham Street North appeared to have been demolished between 2009 and 2013 and replaced with an asphalt parking lot.
1987 – 2010	*Green Forest Investments*	No records	Commercial Use	
1984 – 1987	*Wyndam Street Investments Inc. or Anna Kwitco (Larina Investments)*	No records	Commercial Use	
1981 – 1984	*Wolfond Construction Ltd.*	Commercial	Commercial Use	
1946 – 1981	*Esther Wolfond*	No records	Commercial Use	
1945 – 1946	*The Cullen Company*	No records	Commercial Use	
1917 – 1945	*Jane McAteer*	No records	Commercial Use	

Table 3-1. Current and Past Land Uses of the Phase One Property

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Year	Name of Owner	Description of Property Use	Property Use [1]	Other Observations from Aerial Photograph, Fire Insurance Plans, etc. [2]
152 and 160 Wyndham Street North (PIN 71287-0045 (LT) and PIN 71287-0044 (LT))				
1910 - 1917	*John McAteer*	No records	Commercial Use	The 1911 and 1916 FIPs identified the American Hotel on the north portion of 152 and 160 Wyndham Street North. The south portion of 152 and 160 Wyndham Street North was developed with a commercial building occupied by an undertaker and movie theatre.
1895 – 1910	*Elizabeth Wagner*	No records	Commercial Use	
1891 - 1895	*Thomas Ellis*	Commercial	Commercial Use	Information provided in the 2007 D.R. Poulton Archaeological Report indicated that 152 and 160 Wyndham Street North was developed with assumed commercial buildings between 1862 and 1872; however, the occupants of the buildings were not identified and the date of construction of the buildings are unknown.
1855 - 1891	The Canada Company	Unknown	NA	

Notes:

Information presented in this table has been taken from Pinchin's Phase One Environmental Site Assessment, 55 Baker Street, 152, 160 Wyndham Street North, Chapel and Park Lane, Guelph, Ontario, dated October 30, 2018

PINs and Instruments referenced above are as shown on Registered Plan 61R-21815, dated June 22, 2020.

FIP = fire insurance plan

Commercial or Industrial Property Uses are shown in italicized font.

[1] Types of property use as defined in Ontario Regulation 153/04. Permitted uses include Agricultural or other, Commercial, Industrial, Parkland, Residential.

[2] Additional information was obtained from the city directories, historical reports, title search, Site observations, interviews, and aerial photographs documented in the Pinchin report (2018) and supplemented by Jacobs with any readily available information.

Table 6-1. Species at Risk Occurrences on and within 1 km^2 of the RA Property

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Species (Common Name)	Species (*Latin Name*)	Preferred Habitat [a]	Ontario (S-Rank)	COSEWIC	MNRF Status/ SARO	Likelihood and Last Observation [b]
Plants						
Carey's Sedge	*Carex careyana*	Rich deciduous woods, wooded slopes and ravines.	S2	-	-	None, habitat not present. Last observed June 1905.
Birds						
Eastern Wood-Pewee	*Contopus virens*	Lives in the mid-canopy layer of forest clearings and edges of deciduous and mixed forests. Most abundant in intermediate-age mature forest stands with little understory vegetation.	S4B	SC	SC	None, habitat not present. Last observed date not provided.
Wood Thrush	*Hylocichla mustelina*	Live in close proximity of humans. Build their nests in open barns, under bridges, and in culverts.	S4B	THR	THR	None, habitat not present. Last observed date not provided.
Invertebrates						
Speckled Giant Lacewing	*Polystoechotes punctatus*	Streamside vegetation, especially in woods.	SH	-	-	None, habitat not present. Last observed 1948.
American burying beetle	*Nicrophorus americanus*	Prefers undisturbed deciduous forest but have been found in many kinds of habitat.	SH	EXP	EXP	None, habitat not present. Has not been present in Ontario since 1972. Last observed September 1930.
Rusty-patched Bumble Bee	*Bombus affinis*	Found in open habitat such as mixed farmland, urban settings, savannah, open woods and sand dunes.	S1	END	END	Low, habitat potentially present. Last observed September 1998.
Gypsy Cuckoo Bumble Bee	*Bombus bohemicus*	Diverse habitats such as open meadows, agricultural and urban areas, boreal forest and woodlands.	S1/S2	END	-	Low, habitat potentially present. Last observed August 1986.
Yellow-Banded Bumble Bee	*Bombus terricola*	Prefers mixed woodlands, but have been found in native grasslands, farmlands, and urban areas. Abandoned rodent burrows or decomposing logs are used as nest sites.	S3/S5	SC	SC	None, habitat not present. Last observed date not provided.

Table 6-1. Species at Risk Occurrences on and within 1 km^2 of the RA Property

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Species (Common Name)	Species (*Latin Name*)	Preferred Habitat [a]	Ontario (S-Rank)	COSEWIC	MNRF Status/ SARO	Likelihood and Last Observation [b]
Reptiles						
Northern Map Turtle	*Graptemys geographica*	Areas of medium to large open water in lakes with emerging woody debris and abundant molluscs.	S3	SC	SC	None, habitat not present. Last observed 1924.
Eastern Milksnake	*Lampropeltis triangulum*	Open habitats such as rocky outcrops, fields and forest edge. The milksnake hibernates underground, in rotting logs or in the foundations of old buildings.	S3	SC	SC	None, habitat not present. Last observed on September 28, 1978.

Notes:

[a] Information obtained from the following sources accessed on June 9, 2020:

Ontario Ministry of Natural Resources and Forestry Website: https://www.ontario.ca/environment-and-energy/species-risk-ontario-list

Minnesota Wildflowers website: https://www.minnesotawildflowers.info/

Nature Spot: https://www.naturespot.org.uk/species/giant-lacewing

[b] Likelihood of species being present on RA Property. Last observation obtained from the MNRF (2020) NHIC database for the following grid squares: 957424, 957425, 957426, 967334, 967335, 967336, 967344, 967345, and 967346.

COSEWIC = Committee on the Status of Endangered Wildlife in Canada
END = Endangered
EXP = Extirpated
km^2 = square kilometre(s)
RA = Risk Assessment
MNRF = Ontario Ministry of Natural Resources and Forestry
NHIC = Natural Heritage Information Centre
SARO = Species at Risk in Ontario
SC = Special concern
S-Rank = Subnational Rank
  S1 = Critically Imperiled (often 5 or fewer occurrences)
  S2 = Imperiled (often 20 or fewer occurrences)
  S3 = Vulnerable (restricted range with relatively few populations - often 80 or fewer)
  S4 = Uncommon but not rare; some cause for long-term concern due to declines or other factors.
SH= Possibly extirpated (historically) but may be rediscovered.
THR =Threatened

Attachment A
Legal Documents

CITY OF
Guelph
Making a Difference

June 17, 2020

Ministry of the Environment, Conservation and Parks
Brownfields, Environment Clean-Up & Financial Assurance Services
Client Services and Permissions Branch
135 St. Clair Avenue West, 1st Floor
Toronto, ON M4V 1P5

RE: **Properties located at 55 Baker Street, 152 Wyndham Street North, 160 Wyndham Street North, and the Right-of-Way known as Park Lane in Guelph, Ontario ("Lands)". Record of Site Condition Filing Requirements Pursuant to Part XV.1 of the *Environmental Protection Act***

Dear Sir/Madame:

By way of introduction, I am the solicitor for The Corporation of the City of Guelph with carriage of the above-noted matter, and I have reviewed the following, a copy of each of which is attached hereto:

1. Plan of Survey prepared, signed and sealed by Van Harten Surveying Inc., Land Surveyors and Engineers of Guelph, Ontario, which has on it an outline of the Lands;
2. Transfer Instrument Nos. CS58221, MS20082, MS78644, LT8833, WC274023 and WC266673, whereby The Corporation of the City of Guelph acquired the Lands;
3. Registered Plan 8, whereby the unnamed Lane (aka Park Lane) was dedicated to The Corporation of the City of Guelph; and
4. Parcel Registers (PIN abstracts) regarding the Lands.

The current legal descriptions, property identifier numbers (PINs), municipal addresses and assessment roll numbers of the Lands are the following:

Municipal Address	Property Identification Number	Assessment Roll Number	Legal Description[a]	Transfer Instrument
55 Baker Street	71287-0038 (LT)	2308020-00100500	Pt. Burying Ground; Pt. lane through Burying Ground; Plan 8, Closed by MS80255; as in CS58221, MS20082 & MS78644; S/T Interest, if any, in CS58221	CS58221 (1953/04/01), MS20082 (1961/05/09) and MS78644 (1968/10/25), whereby The Corporation of the City of Guelph acquired the Lands by way of a transfer from the previous owners, Her Majesty The Queen, Steele's Wire Springs Limited and Guelph Curling Club Limited, respectively.
55 Baker Street	71287-0058 (LT)	Same as above	PT BURYING GROUND, PLAN 8 , AS IN CS51962 ; GUELPH	LT8833, whereby The Corporation of the City of Guelph acquired the Lands by way of a transfer from the previous owner, The Board of Light and Heat Commissioners of the City of Guelph, on November 9, 1998.
160 Wyndham Street North	71287-0044 (LT)	2308020 – 00112900	PT Lot 74, Plan 8; PT Burying Ground, Plan 8; PT Lane, Plan 8, at the rear of Lot 74 (AKA Park Lane) Closed by CS31228, as in ROS557919; S/T & T/W ROS557919.	WC274023, whereby The Corporation of the City of Guelph acquired the Lands by way of a transfer from the previous owner, Green Forests Investments Limited, on April 9, 2010

152 Wyndham Street North	71287-0045 (LT)	2308020 – 00112800	PT Lots 73 & 74, Plan 8; PT Burying Ground, Plan 8; PT Lane, Plan 8, at the rear of Lots 73 &74 (AKA Park Lane) Closed by CS31228, as in ROS573090; S/T & T/W ROS573090;	WC266673, whereby The Corporation of the City of Guelph acquired the Lands by way of a transfer from the previous owner, Smilja Lesic, on January 6, 2010
N/A (Park Lane)	71287-0099 (LT)	N/A	UNNAMED LANE, PLAN 8 , (AKA PARK LANE, PLAN 8) LYING SOUTH OF PART CLOSED BY CS31228, SAVE AND EXCEPT RO755787, ROS546721, CS52867, & ROS220056 ; GUELPH	dedicated as a Lane by registered Plan 8

N/A = not applicable

The owner of the Lands and a description of their interest is:

Name: The Corporation of the City of Guelph
Address: 1 Carden Street
Guelph, ON N1H 3A1
Contact: Mr. Prasoon Adhikari
Telephone: 519.822.1260, ext. 2946
E-Mail: Prasoon.Adhikari@guelph.ca

Owner's Interest: Registered Owner (Fee Simple)

Should you have any questions of concerns about this matter, please do not hesitate to contact the undersigned.

I trust this to be satisfactory.

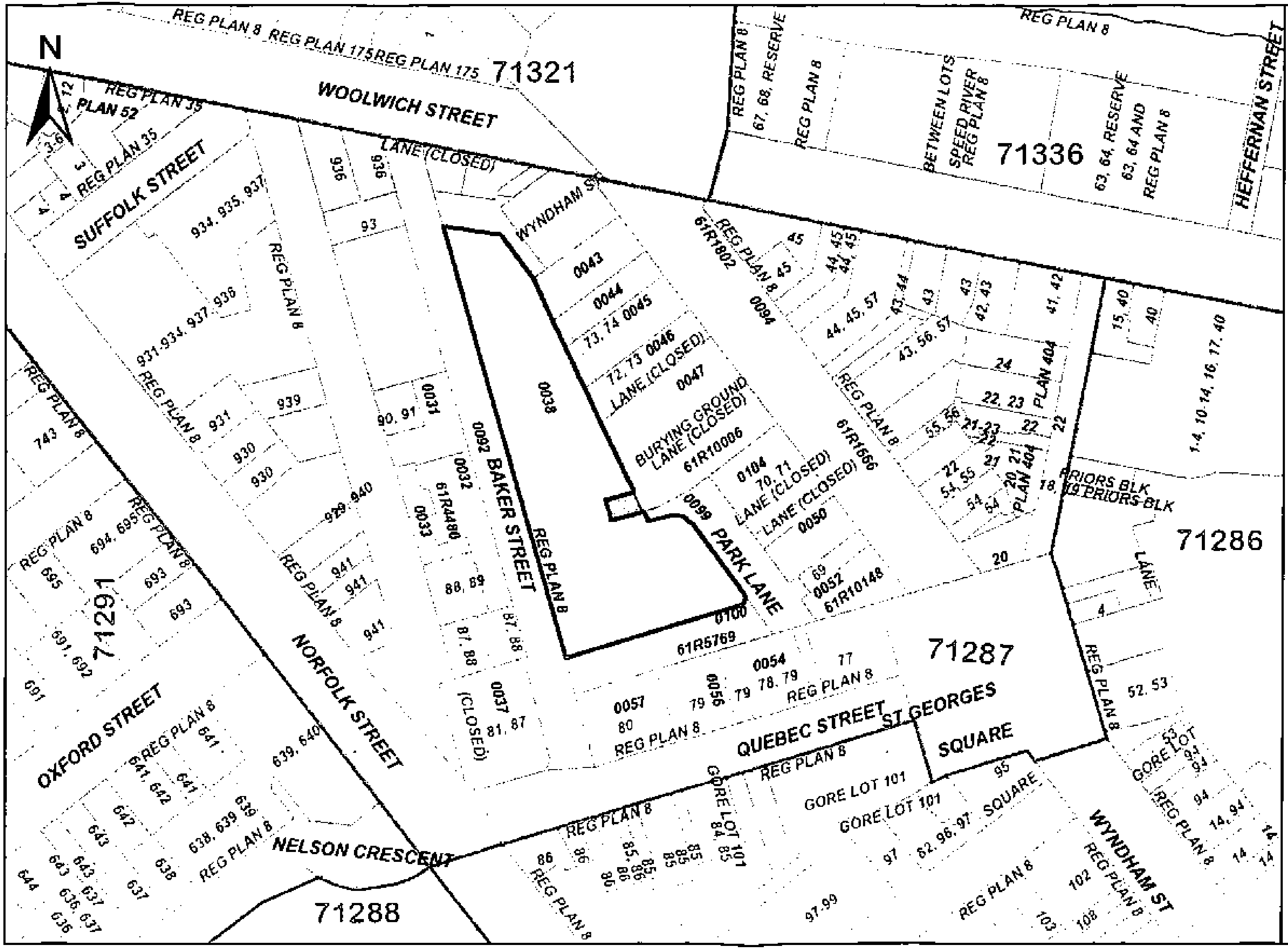
Yours truly,

Christopher C. Cooper
General Manager of Legal, Realty and Court Services / City Solicitor

Legal, Realty and Court Services
Corporate Services
Location: 1 Carden Street
T 519-822-1260, ext. 2288
E Christopher.Cooper@guelph.ca

Attachments:

- Plan of Survey
- Transfer Instruments
- Registered Plan 8
- PIN Abstracts



ServiceOntario

PRINTED ON 31 MAY, 2017 AT 16:26:51
FOR BERTUCCI1

SCALE

0 30 60 90 meters

PROPERTY INDEX MAP

WELLINGTON(No. 61)

LEGEND

FREEHOLD PROPERTY	
LEASEHOLD PROPERTY	
LIMITED INTEREST PROPERTY	
CONDOMINIUM PROPERTY	
RETIRED PIN (MAP UPDATE PENDING)	
PROPERTY NUMBER	0449
BLOCK NUMBER	08050
GEOGRAPHIC FABRIC	
EASEMENT	

THIS IS NOT A PLAN OF SURVEY

NOTES

REVIEW THE TITLE RECORDS FOR COMPLETE PROPERTY INFORMATION AS THIS MAP MAY NOT REFLECT RECENT REGISTRATIONS

THIS MAP WAS COMPILED FROM PLANS AND DOCUMENTS RECORDED IN THE LAND REGISTRATION SYSTEM AND HAS BEEN PREPARED FOR PROPERTY INDEXING PURPOSES ONLY

FOR DIMENSIONS OF PROPERTIES BOUNDARIES SEE RECORDED PLANS AND DOCUMENTS

ONLY MAJOR EASEMENTS ARE SHOWN

REFERENCE PLANS UNDERLYING MORE RECENT REFERENCE PLANS ARE NOT ILLUSTRATED

Ontario

Ontario ServiceOntario

LAND
REGISTRY
OFFICE #61

PARCEL REGISTER (ABBREVIATED) FOR PROPERTY IDENTIFIER

71287-0038 (LT)

PAGE 1 OF 1
PREPARED FOR Bertucci1
ON 2017/05/31 AT 16:27:14

* CERTIFIED IN ACCORDANCE WITH THE LAND TITLES ACT * SUBJECT TO RESERVATIONS IN CROWN GRANT *

PROPERTY DESCRIPTION: PT BURYING GROUND, PLAN 8 ; PT LANE THROUGH BURYING GROUND, PLAN 8 , CLOSED BY MS80255 ; AS IN MS78644, MS20082, CS58221 ; S/T INTEREST, IF ANY, IN CS58221 ; GUELPH

PROPERTY REMARKS:

ESTATE/QUALIFIER:
FEE SIMPLE
LT CONVERSION QUALIFIED

RECENTLY:
FIRST CONVERSION FROM BOOK

PIN CREATION DATE:
1998/08/31

OWNERS' NAMES	CAPACITY	SHARE
THE CORPORATION OF THE CITY OF GUELPH	BENO	

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
EFFECTIVE 2000/07/29 THE NOTATION OF THE "BLOCK IMPLEMENTATION DATE" OF 1998/08/31 ON THIS PIN						
WAS REPLACED WITH THE "PIN CREATION DATE" OF 1998/08/31						
*** PRINTOUT INCLUDES ALL DOCUMENT TYPES AND DELETED INSTRUMENTS SINCE 1998/08/28 ***						
***SUBJECT, ON FIRST REGISTRATION UNDER THE LAND TITLES ACT, TO*						
****	*SUBSECTION 44(1) OF THE LAND TITLES ACT, EXCEPT PARAGRAPH 11, PARAGRAPH 14, PROVINCIAL SUCCESSION DUTIES **					
****	*AND ESCHEATS OR FORFEITURE TO THE CROWN.*					
****	*THE RIGHTS OF ANY PERSON WHO WOULD, BUT FOR THE LAND TITLES ACT, BE ENTITLED TO THE LAND OR ANY PART OF*					
****	*IT THROUGH LENGTH OF ADVERSE POSSESSION, PRESCRIPTION, MISDESCRIPTION OR BOUNDARIES SETTLED BY*					
****	*CONVENTION.*					
****	*ANY LEASE TO WHICH THE SUBSECTION 70(2) OF THE REGISTRY ACT APPLIES.*					
***DATE OF CONVERSION TO LAND TITLES: 1998/08/31 ***						
CS58221	1953/04/01	QUIT CLAIM TRNSFR			THE CORPORATON OF THE CITY OF GUELPH	C
CORRECTIONS: 'REGN. NUMBER' CHANGED FROM 'CS582221' TO 'CS58221' ON 2003/07/16 BY WILLIAM LITTLE.						
MS20082	1961/05/09	TRANSFER	$1		THE CORPORATION OF THE CITY OF GUELPH	C
MS78644	1968/10/25	TRANSFER	$1		THE CORPORATION OF THE CITY OF GUELPH	C
WC32682	2003/07/16	LR'S ORDER		*** COMPLETELY DELETED *** LAND REGISTRAR		
REMARKS: CS582221 AMENDED TO BE CS58221						

NOTE: ADJOINING PROPERTIES SHOULD BE INVESTIGATED TO ASCERTAIN DESCRIPTIVE INCONSISTENCIES, IF ANY, WITH DESCRIPTION REPRESENTED FOR THIS PROPERTY.
NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.

58221 C67

APR 1 1953

certify that the within instrum
is duly entered and registered in th
Registry Office for the Registry Divisio
of the South and Centre Ridings of th
County of Wellington, in Book C67
or the City of Guelph
at 10:37 o'clock A.M. of the 1st day
of April A.D. 1953
Number 58221

Registr

12/478

QUIT-CLAIM

by

HER MAJESTY THE QUEEN

to

THE CORPORATION OF THE CITY
OF GUELPH.

Of a certain parcel or tract
of land and premises situate in
the City of Guelph, County of
Wellington, Province of Ontario.

DATED . . . . . 9th March, 1953.

RECORDED . . . . 25th March, 1953.

Lib. 504 Fol. 377

FOR DEPUTY REGISTRAR GENERAL OF
CANADA.

Refer. No. 140050

251-14 D.p.

DEPUTY GOVERNOR

Canada

for Paul [illegible]
DEPUTY ATTORNEY GENERAL,
CANADA.

ELIZABETH THE SECOND, by the Grace of God, of Great Britain, Ireland and the British Dominions beyond the Seas QUEEN, Defender of the Faith.

TO ALL TO WHOM these Presents shall come,

GREETING:

WHEREAS the lands hereinafter described are vested in Us in the right of Canada.

AND WHEREAS the said lands are not required for public purposes, and under and by virtue of the statutes in that behalf and pursuant to authority duly granted by Our Governor in Council, the said lands or the interest therein that is or may be vested in Us for the uses of Canada, have for valuable consideration been sold to THE CORPORATION OF THE CITY OF GUELPH, in the Province of Ontario, hereinafter called the grantee.

NOW KNOW YE that We have granted, bargained, sold and quit-claimed, and do by these Presents grant, bargain, sell and quit-claim unto the grantee and its successors, all the right, title, interest, claim, property, estate and demand both at law and in equity, and as well in possession as in expectancy, which We or Our Heirs or Successors have, or may have for the use of or in the right of Canada, of, in, and to ALL AND SINGULAR:

THAT certain parcel or tract of land and premises, situate, lying and being in the City of Guelph, in the County of Wellington and Province of Ontario, being composed of part of the Burying Ground as shown on the Canada Company's Survey of the said Town, now City of Guelph, and which said parcel or tract of land and premises may be more particularly described as follows:-

COMMENCING at the end of the following two courses and distances;

BEGINNING at a point on the northeasterly limit of lot 71 according to the Canada Company's Survey being also the southwesterly limit of Wyndham Street, distant Fifty-six and nine-tenths (56.9) feet measured northwesterly thereon from the point where the said limit of Wyndham Street is intersected by the limit between Lots 70 and 71; thence South 54 degrees 38 minutes West One Hundred and Six and seven-tenths (106.7) feet to the southwesterly limit of said Lot 71; thence South 55 degrees 50 minutes West Forty-nine and five-tenths (49.5) feet to the southwesterly limit of the lane in the rear of the said Lot 71 according to said Canada Company's Survey and point of commencement of the parcel of land intended to be described hereby;

THENCE South 33 degrees 49 minutes East along said southwesterly limit of said lane Twenty-eight and forty-five one-hundredths (28.45) feet;

THENCE South 77 degrees 30 minutes West along the most southerly limit of lands described in Registered Instrument No. 35380 for said City, Two Hundred and Forty-one and one-tenth (241.1) feet to the easterly limit of Baker Street;

THENCE North 12 degrees 18 minutes West along the said limit of Baker Street Fifteen (15) feet;

THENCE North 77 degrees 30 minutes East One Hundred and Eighty and sixty-eight one-hundredths (180.68) feet;

THENCE North 64 degrees 40 minutes East Fifty-one and twenty-nine one-hundredths (51.29) feet more or less to the point of commencement.

The said land having been acquired from The Cutten Company Limited by deed dated November 20, 1934, registered in the Registry Office for the Registry Division of the South and Centre Ridings of the County of Wellington December 21, 1934, as No. 35380 City of Guelph, and being subject to a right-of-way to The Cutten Company Limited and to others as set out in the said deed.

SAVING, excepting and reserving unto Us, Our Heirs and Successors, the free use, passage and enjoyment of, in, over and upon all navigable waters that now are or may be hereafter found on or under or flowing through or upon any part of the lands hereby granted or intended so to be.

TO HAVE AND TO HOLD the said lands unto the grantee and its successors, forever;

GIVEN under the Great Seal of Canada.

WITNESS; JOSEPH FRANCOIS DELAUTE, ESQUIRE, Deputy of Our Right Trusty and Well-beloved Counsellor, Vincent Massey, Member of Our Order of the Companions of Honour, Governor General and Commander-in-Chief of Canada.

AT OTTAWA, this Ninth day of March in the year of Our Lord One thousand nine hundred and fifty-three and in the Second year of Our Reign.

BY COMMAND,

UNDER SECRETARY OF STATE

DEPUTY MINISTER OF DEFENCE PRODUCTION

Dye & Durham, 9-11 Yonge Street Arcade, Toronto, Can.
Law and Commercial Stationers
Form No. 449

Affidavit, Land Transfer Tax Act

IN THE MATTER OF THE LAND TRANSFER TAX ACT

PROVINCE OF ONTARIO
COUNTY OF WELLINGTON
To Wit:

I, RICHARD BECKER HUNGERFORD
of the City of Guelph
in the County of Wellington, Solicitor for the grantee
named in the within (or annexed) transfer make oath and say:

This affidavit may be made by the purchaser or vendor or by any one acting for them under power of attorney or by an agent accredited in writing by the purchaser or vendor or by the solicitor of either of them.

1. I am solicitor for the grantee named in the within (or annexed) transfer.

2. I have a personal knowledge of the facts stated in this affidavit.

3. The true amount of the monies in cash and the value of any property or security included in the consideration is as follows:

(a)	Monies paid in cash		$ 100.00
(b)	Property transferred in exchange; Equity value	$	
	Encumbrances	$	$ nil
(c)	Securities transferred to the value of		$ nil
(d)	Balances of existing encumbrances with interest owing at date of transfer		$ nil
(e)	Monies secured by mortgage under this transaction		$ nil
(f)	Liens, annuities and maintenance charges to which transfer is subject		$ nil
	Total consideration		$ 100.00

All blanks must be filled in.

4. If consideration is nominal, is the transfer for natural love and affection?

5. If so, what is the relationship between Grantor and Grantee?

6. Other remarks and explanations, if necessary

Sworn before me at the City
of Guelph
in the County of Wellington
this 1st
day of April A.D. 1953

S Becker Dy Reg
~~A Commissioner~~, etc.

R B Hungerford

M-20082-

4.12 Guelph

Dated May 5th, 1961

MAY 9 1961

STEELE'S WIRE SPRINGS
LIMITED

—TO—

THE CORPORATION OF THE
CITY OF GUELPH

Address: Guelph, Ontario.

Deed of Land

SITUATE
in the City of Guelph

United Stationery Co. Limited, Toronto

THIS SPACE TO BE RESERVED FOR REGISTRY OFFICE CERTIFICATES

I certify that the within Instrument is duly entered and registered in the Registry Office for the Registry Division of the South and Centre Ridings of the County of Wellington on Microfilm for the City of Guelph at 4.12 o'clock P.M. of the 9th day of May A.D. 1961 Number M-20082

36/176(1)

Registrar.

470.00

6.00 pd.

Hungerford [illegible]

KEARNS, McKINNON, CLARE & KEARNS
BARRISTERS & SOLICITORS
GUELPH, ONTARIO

I, of the of in the
OF of
TO WIT: make oath and say:

1. THAT I was personally present and did see the within or annexed Instrument and a duplicate thereof duly signed, sealed and executed by of the parties thereto.
2. THAT the said Instrument and duplicate were executed by the said part at the of
3. THAT I know the said part
4. THAT I am a subscribing witness to the said Instrument and duplicate.

SWORN before me at the of
in the
of
this day of
A.D. 19

A Commissioner for taking Affidavits, etc.

I, of the of in the
OF of
TO WIT: make oath and say:

1. THAT I was personally present and did see the within or annexed Instrument and a duplicate thereof duly signed, sealed and executed by of the parties thereto.
2. THAT the said Instrument and duplicate were executed by the said part at the of
3. THAT I know the said part
4. THAT I am a subscribing witness to the said Instrument and duplicate.

SWORN before me at the of
in the
of
this day of
A.D. 19

A Commissioner for taking Affidavits, etc.

United Stationery Co. Limited. Legal Form Dept.
866 Richmond St. W., Toronto.

This Indenture

made (in duplicate) the 5th day of May one thousand nine hundred and sixty-one

In Pursuance of The Short Forms of Conveyances Act.

Between

STEELE'S WIRE SPRINGS LIMITED,
a Company incorporated under the
laws of the Province of Ontario,
hereinafter called the "Grantor",
OF THE FIRST PART

- and -

THE CORPORATION OF THE CITY OF
GUELPH,
hereinafter called the "Grantee",
OF THE SECOND PART.

Witnesseth that in consideration of other valuable consideration and the sum of one... ($1.00) .... Dollarsof lawful money of Canada, now paid by the said Grantee to the said Grantor, the receipt whereof is hereby by it acknowledged, it the said Grantor **Doth Grant** unto said Grantee in fee simple.

All and Singular that certain parcel or tract of land and premises situate, lying and being in the City of Guelph, in the County of Wellington and Province of Ontario, being composed of part of the Block of land set apart as a "Burying Ground" in the Canada Company's Survey, in the said City, which may be more particularly described as follows: COMMENCING at a point in the northeasterly limit of Baker Street as now laid out on the ground at a distance of 334 feet measured northwesterly along the said limit of said Street from the northwest side of Quebec Street; THENCE northwesterly along Baker Street nearly parallel with the original limit thereof 456 feet and 6 inches to where a stone has been planted to mark the westerly angle of the said parcel of land; THENCE South 79 degrees and 30 minutes East (original bearing) 67 feet to where a stone has been planted at the northerly angle of the said parcel of land; THENCE South 34 degrees and 10 minutes East along the southwesterly limit of a lane or street 50 feet wide in rear of the lots fronting on Wyndham Street 77 feet and 6 inches more or less to the northerly angle of Parcel No. 1 of the lands conveyed by James Steele Limited to The Cutten Company Limited by Deed bearing date the 15th day of April, A.D. 1929, and registered as No. 31026; THENCE South 22 degrees and 42 minutes East along the westerly boundary of the said Parcel No. 1 conveyed by said Indenture No. 31026, 362.85 feet to a point in the northerly limit of Parcel No. 2 of the lands conveyed by the said Indenture No. 31026; THENCE South 77 degrees and 36 minutes West along the said northerly limit 163 feet more or less to the place of beginning. TOGETHER with whatever right the Grantor may have to a right-of-way as described excepted and reserved in Registered Instrument No. 31026 over and along that certain parcel or tract of land and premises situate lying and being in the City of Guelph, in the County of Wellington and Province of Ontario, more particularly described as follows: COMMENCING at a point in the dividing line between the lands formerly of James Steele, Limited, and the Guelph Curling and Skating Club, which said point is distant South 77 degrees 36 minutes West seventy-eight (78) feet from the northeasterly limit of the Burying Ground and the southwesterly limit of the lane in rear of the lots on Wyndham Street; THENCE continuing along the said dividing line South 77 degrees 36 minutes West one hundred and sixty-three and one-tenth (163.1) feet to the northeasterly limit of Baker Street; THENCE in a northwesterly direction along the said northeasterly limit of Baker Street fifteen (15) feet to a point; THENCE North 77 degrees 36 minutes East one hundred and sixty-three (163) feet more or less to the southwesterly limits of the lands described in Parcel No. 1 of the said Deed No. 31026; THENCE South 22 degrees 42 minutes east fifteen (15) feet more or less to the place of beginning. EXCEPTING thereout the lands heretofore sold to The Board of Light and Heat Commissioners of the City of Guelph by registered instrument No. 51962, which may be more particularly described as follows:- COMMENCING at an iron bar planted in the easterly limit of Baker Street at the point where the said limit is intersected by the northerly limit of a strip of land fifteen (15) feet in width formerly conveyed to His Majesty the King by registered instrument C42-35380, said iron bar being distant three hundred and thirty-two (332) feet measured northerly along the said easterly limit of Baker Street from its intersection with the northerly limit of Quebec Street; THENCE North 77 degrees 36 minutes East along the said northerly limit of said strip of land conveyed by said Instrument No. 35380 one hundred and fourteen and nine-tenths (114.9) feet to an iron pipe planted at the southwesterly angle and point of commencement of the parcel of land intended to be conveyed hereby; THENCE North 77 degrees 36 minutes East continuing along the said northerly limit of said strip of land so conveyed forty-five and forty-five one-hundredths (45.45) feet to an angle in said lands conveyed by said instrument No. 35380; THENCE North 22 degrees 42 minutes West along the Westerly limit of lands conveyed by said instrument No. 35380 thirty and forty-nine one-hundredths (30.49) feet; THENCE South 77 degrees 36 minutes West forty (40) feet; THENCE South 12 degrees 24 minutes East thirty (30) feet more or less to the place of beginning.

To have and to hold unto the said Grantee its successors ~~heirs~~ and assigns to and for its and their sole and only use forever.

Subject nevertheless to the reservations, limitations, provisos and conditions expressed in the original grant thereof from the Crown.

The said Grantor **Covenants** with the said Grantee **That** it ~~he~~ has the right to convey the said lands to the said Grantee notwithstanding any act of the said Grantor.

And that the said Grantee shall have quiet possession of the said lands, free from all incumbrances.

And the said Grantor **Covenants** with the said Grantee that it ~~he~~ will execute such further assurances of the said lands as may be requisite.

And the said Grantor **Covenants** with the said Grantee that it ~~he~~ has done no act to incumber the said lands.

And the said Grantor **Releases** to the said Grantee **All** its claims upon the said lands.

In Witness Whereof the said ~~parties hereto have hereunto set~~ Grantor has caused its corporate seal to be hereunto affixed attested by the signature of its ~~their hands and seals~~ proper officers in that behalf.

Signed, Sealed and Delivered
IN THE PRESENCE OF

STEELE'S WIRE SPRINGS LIMITED
President
Director

COMBINED AFFIDAVIT AS TO LEGAL AGE AND MARITAL STATUS

Province of Ontario
of
TO WIT:

I
of the   of
in the   of

Strike out words and parts not applicable and initial.

If Attorney see footnote.

in the within instrument named, make oath and say that at the time of the execution of the within instrument,

1. I was of the full age of twenty-one years;

2. And that

who also executed the within instrument of the full age of twenty-one years

3. I was legally married to the person named therein as my wife/husband;

4. I was unmarried/divorced/widower.

SWORN before me at the
of
in the
of
this day of
19

A Commissioner for taking Affidavits, etc.

NOTE: If Attorney, substitute in space provided "I am Attorney for..........(State name).......... one of the parties named therein and he/she was of the full age of twenty-one years"

AFFIDAVIT UNDER LANDS TRANSFER TAX ACT

In the Matter of The Land Transfer Tax Act

Province of Ontario
of
To Wit:

I, Richard Becker Hungerford
of the city of Guelph
in the county of Wellington
solicitor make oath and say:

This affidavit may be made by the purchaser or vendor or by any one acting for them under power of attorney or by an agent accredited in writing by the purchaser or vendor or by the solicitor of either of them.

1. I am solicitor for the grantee named in the within (or annexed) transfer.

2. I have a personal knowledge of the facts stated in this affidavit.

3. The true amount of the monies in cash and the value of any property or security included in the consideration is as follows:

(a) Monies paid in cash	$ 235,000
(b) Property transferred in exchange: Equity value $	$ —
Encumbrances	$ —
(c) Securities transferred to the value of	$ —
(d) Balances of existing encumbrances with interest owing at date of transfer	$ —
(e) Monies secured by mortgage under this transaction	$ —
(f) Liens, annuities and maintenance charges to which transfer is subject	$ —
Total consideration	$ 235,000

All blanks must be filled in

Clauses 4, 5 and 6 should be struck out if not applicable or necessary.

4. If consideration is nominal, is the transfer for natural love and affection?

5. If so, what is the relationship between Grantor and Grantee?

6. Other remarks and explanations, if necessary

SWORN before me at the city
of Guelph
in the County
of Wellington
this 9th day of May
19 61

R.B. Hungerford

A Commissioner for taking Affidavits, etc.

M-78644
Guelph

OCT 25 AM 11 27

THIS SPACE TO BE RESERVED FOR REGISTRY OFFICE CERTIFICATE

I certify that the within instrument is duly entered and registered in the Registry Office for the Registry Division of the South and Centre Ridings of the County of Wellington on Microfilm for the City of Guelph at 11.27 o'clock A.M. of the 25th day of October A.D. 1968 Number M.786[illegible]

Paul N. Armstrong
Registrar.

34/177.

950.00
6.00 Pd.

Hungerford + [illegible]

Dated October 16th 1968.

GUELPH CURLING CLUB LIMITED

TO

THE CORPORATION OF THE CITY OF GUELPH

Address:

Deed of Land

SITUATE

in the City of Guelph, in the County of Wellington

Dye & Durham Limited — Toronto, Canada
Printers to the Legal Profession

RETURN TO

PAYNE, SMITH & SMITH,
Barristers and Solicitors,
285 Woolwich Street,
GUELPH, Ontario.

A Commissioner for taking Affidavits, etc.

OF ..... }
TO WIT: }

I, ... of the ..... of ..... in the ..... of ..... make oath and say:

1. THAT I was personally present and did see the within or annexed Instrument and a duplicate thereof duly signed, sealed and executed by ..... of the parties thereto.

2. THAT the said Instrument and duplicate were executed by the said part ..... at the ..... of .....

3. THAT I know the said part .....

4. THAT I am a subscribing witness to the said Instrument and duplicate.

SWORN before me at the ..... of ..... in the County of ..... this ..... day of ..... A.D. 19 .....

A Commissioner for taking Affidavits, etc.

OF ..... }
TO WIT: }

I, ... of the ..... of ..... in the ..... of ..... make oath and say:

1. THAT I was personally present and did see the within or annexed Instrument and a duplicate thereof duly signed, sealed and executed by ..... of the parties thereto.

2. THAT the said Instrument and duplicate were executed by the said part ..... at the ..... of .....

3. THAT I know the said part .....

4. THAT I am a subscribing witness to the said Instrument and duplicate.

SWORN before me at the ..... of ..... in the County of ..... this ..... day of ..... A.D. 19 .....

Deed — Without Dower

This Indenture

made (in duplicate) the 16th day of October one thousand nine hundred and sixty-eight.

In Pursuance of The Short Forms of Conveyances Act

Between

GUELPH CURLING CLUB LIMITED, a Company incorporated under the laws of the Province of Ontario, having its Head Office, in the City of Guelph, hereinafter called the Grantor

OF THE FIRST PART

- and -

THE CORPORATION OF THE CITY OF GUELPH, hereinafter called the Grantee

OF THE SECOND PART

Dye & Durham Limited
Toronto, Canada

Form 1 to 4

WHEREAS by Supplementary Letters Patent dated the 27th day of February, 1956 and registered on the 24th day of October, 1968 as No. M-78620 the name of the Grantor herein was changed from The Victoria Rink (Guelph) Limited to Guelph Curling Club Limited.

Witnesseth that in consideration of other valuable consideration and the sum of ONE --

---------------------(\$1.00)-------------------------------- Dollars of lawful money of Canada now paid by the said Grantee to the said Grantor (the receipt whereof is hereby by acknowledged), the said Grantor Doth Grant unto the said Grantee in fee simple.

All and Singular that certain parcel or tract of land and premises situate lying and being in the City of Guelph, in the County of Wellington and Province of Ontario, being composed of part of the Burying Ground between the lane or street along the rear of lots fronting on Wyndham Street and the lane now known as Baker Street, according to the Canada Company's Survey of the Town, now City, of Guelph, containing an area of Ninety-five One-hundredths (.95) of an acre, more or less and which said parcel or tract of land and premises may be more particularly described as follows:

COMMENCING at the point where the Easterly limit of Baker Street is intersected by the Northerly limit of a lane or street along the rear of lots fronting on Quebec Street, as the said lane is now located by the line of buildings on the Southerly side thereof, the said point being distant One Hundred and Sixty-one and Four Tenths (161.4) feet measured Northerly along the said limit of Baker Street from its intersection with the Northerly limit of Quebec Street;

THENCE North 76 degrees 10 minutes East along the said Northerly limit of said lane or street as the same is now located Two Hundred and Ninety-nine and Three Tenths (299.3) feet to its intersection with the Southwesterly limit of the lane or street along the rear of lots fronting on Wyndham Street

THENCE North 33 degrees 49 minutes West along the said last mentioned limit One Hundred and Fifty-eight and Eight Tenths (158.8) feet to the Northerly limit of the lands of the Guelph Curling and Skating Rink;

THENCE South 77 degrees 36 minutes West along the same Two Hundred and Forty-one and One Tenth (241.1) feet, more or less, to the said Easterly limit of Baker Street;

THENCE South 12 degrees 19 minutes East along the said limit of Baker Street One Hundred and Fifty-five and Six Tenths (155.6) feet, more or less, to the place of beginning.

To have and to hold unto the said Grantee its successors ~~heirs~~ and assigns, to and for its ~~their~~ sole and only use for ever. **Subject Nevertheless** to the reservations, limitations, provisoes and conditions, expressed in the original grant thereof from the Crown.

The said Grantor Covenants with the said Grantee That ~~he~~ it has the right to convey the said lands to the said Grantee notwithstanding any act of the said Grantor .

And that the said Grantee shall have quiet possession of the said lands, free from all encumbrances.

And the said Grantor Covenants with the said Grantee that ~~he~~ it will execute such further assurances of the said lands as may be requisite.

And the said Grantor Covenants with the said Grantee that it has done no act to encumber the said lands.

And the said Grantor Releases to the said Grantee All its claims upon the said lands.

In Witness Whereof the said parties hereto have hereunto set their hands and seals.

Signed, Sealed and Delivered
IN THE PRESENCE OF

GUELPH CURLING CLUB LIMITED
G H Johnston

AFFIDAVIT AS TO LEGAL AGE AND MARITAL STATUS

PROVINCE OF ONTARIO
COUNTY OF
To Wit:

I/WE……
of the……of……
in the County of……

Strike out words and parts not applicable and initial.

in the within instrument named, make oath and say that at the time of the execution of the within instrument,

1. I was of the full age of twenty-one years;

If Attorney see footnote.

2. And that

who also executed the within instrument of the full age of twenty-one years

3. I was legally married to the person named therein as my wife/husband;

4. I was unmarried/divorced/widower.

SWORN before me at the……
of……
in the……
this……day of……
A.D. 19……

A Commissioner for taking Affidavits, etc.

NOTE: If Attorney, substitute in space provided "I am Attorney for……(State name)……, one of the parties named therein and he/she was of the full age of twenty-one years."

Affidavit, Land Transfer Tax Act

IN THE MATTER OF THE LAND TRANSFER TAX ACT

PROVINCE OF ONTARIO
COUNTY OF WELLINGTON
To Wit:

I, ~~BRUCE ERNEST PAYNE~~ Richard Bertrand Hungerford
of the City of Guelph
in the County of Wellington, Solicitor for the Grant~~ee~~ or
named in the within (or annexed) transfer make oath and say:

This affidavit may be made by the purchaser or vendor or by any one acting for them under power of attorney or by an agent accredited in writing by the purchaser or vendor or by the solicitor of either of them.

1. I am the solicitor for the Grant~~or~~ ee named in the within (or annexed) transfer.

2. I have a personal knowledge of the facts stated in this affidavit.

3. The true amount of the monies in cash and the value of any property or security included in the consideration is as follows:

(a)	Monies paid in cash		$250,000.00
(b)	Property transferred in exchange; Equity value	$	$ nil
	Encumbrances	$	$ nil
(c)	Securities transferred to the value of		$ nil
(d)	Balances of existing encumbrances with interest owing at date of transfer		$ nil
(e)	Monies secured by mortgage under this transaction		$ nil
(f)	Liens, annuities and maintenance charges to which transfer is subject		$ nil
	Total consideration		$250,000.00

all blanks must be filled in.

~~[illegible]~~

~~[illegible]~~

~~[illegible]~~

Sworn before me at the City
of Guelph
in the County of Wellington
this 25
day of October A.D. 1968.

RBHungerford

J. Collingridge
DEPUTY ~~Commissioner~~ etc.
SOUTH AND CENTRE RIDINGS
WELLINGTON COUNTY

ServiceOntario

PRINTED ON 11 APR, 2018 AT 09:09:17
FOR JANEGRAY

SCALE

0 20
meters

PROPERTY INDEX MAP

WELLINGTON(No. 61)

LEGEND

FREEHOLD PROPERTY	🟨
LEASEHOLD PROPERTY	▭
LIMITED INTEREST PROPERTY	▨
CONDOMINIUM PROPERTY	🟨
RETIRED PIN (MAP UPDATE PENDING)	🟨
PROPERTY NUMBER	0449
BLOCK NUMBER	08050
GEOGRAPHIC FABRIC	—
EASEMENT	----

THIS IS NOT A PLAN OF SURVEY

NOTES

REVIEW THE TITLE RECORDS FOR COMPLETE PROPERTY INFORMATION AS THIS MAP MAY NOT REFLECT RECENT REGISTRATIONS

THIS MAP WAS COMPILED FROM PLANS AND DOCUMENTS RECORDED IN THE LAND REGISTRATION SYSTEM AND HAS BEEN PREPARED FOR PROPERTY INDEXING PURPOSES ONLY

FOR DIMENSIONS OF PROPERTIES BOUNDARIES SEE RECORDED PLANS AND DOCUMENTS

ONLY MAJOR EASEMENTS ARE SHOWN

REFERENCE PLANS UNDERLYING MORE RECENT REFERENCE PLANS ARE NOT ILLUSTRATED

Ontario

Ontario ServiceOntario

LAND
REGISTRY
OFFICE #61

PARCEL REGISTER (ABBREVIATED) FOR PROPERTY IDENTIFIER

71287-0044 (LT)

* CERTIFIED IN ACCORDANCE WITH THE LAND TITLES ACT * SUBJECT TO RESERVATIONS IN CROWN GRANT *

PROPERTY DESCRIPTION: PT LOT 74, PLAN 8 ; PT BURYING GROUND, PLAN 8 ; PT LANE, PLAN 8 , AT THE REAR OF LT74 (AKA PARK LANE) CLOSED BY CS31228, AS IN ROS557919 ; S/T & T/W ROS557919 ; GUELPH

PROPERTY REMARKS:

ESTATE/QUALIFIER:
FEE SIMPLE
LT CONVERSION QUALIFIED

RECENTLY:
FIRST CONVERSION FROM BOOK

PIN CREATION DATE:
1998/08/31

OWNERS' NAMES
THE CORPORATION OF THE CITY OF GUELPH

CAPACITY SHARE
ROWN

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
EFFECTIVE 2000/07/29 THE NOTATION OF THE "BLOCK IMPLEMENTATION DATE" OF 1998/08/31 ON THIS PIN						
WAS REPLACED WITH THE "PIN CREATION DATE" OF 1998/08/31						
*** PRINTOUT INCLUDES ALL DOCUMENT TYPES AND DELETED INSTRUMENTS SINCE 1998/08/28 ***						
***SUBJECT, ON FIRST REGISTRATION UNDER THE LAND TITLES ACT, TO:*						
****	*SUBSECTION 44(1) OF THE LAND TITLES ACT, EXCEPT PARAGRAPH 11, PARAGRAPH 14, PROVINCIAL SUCCESSION DUTIES **					
****	*AND ESCHEATS OR FORFEITURE TO THE CROWN.*					
****	*THE RIGHTS OF ANY PERSON WHO WOULD, BUT FOR THE LAND TITLES ACT, BE ENTITLED TO THE LAND OR ANY PART OF*					
****	*IT THROUGH LENGTH OF ADVERSE POSSESSION, PRESCRIPTION, MISDESCRIPTION OR BOUNDARIES SETTLED BY*					
****	*CONVENTION.*					
****	*ANY LEASE TO WHICH THE SUBSECTION 70(2) OF THE REGISTRY ACT APPLIES.*					
***DATE OF CONVERSION TO LAND TITLES: 1998/08/31 ***						
MS20875	1961/06/19	ASSIGNMENT LEASE		*** COMPLETELY DELETED ***	THE HURON & ERIE MORTGAGE CORPORATION	
REMARKS: CS45661						
MS66453	1967/07/26	LEASE		*** COMPLETELY DELETED ***	HER MAJESTY THE QUEEN IN THE RIGHT OF THE PROVINCE OF ONTARIO REPRESENTING THE MINISTER OF PUBLIC WORKS	
REMARKS: PLAN ATTACHED						
ROS557919	1987/08/31	TRANSFER		*** COMPLETELY DELETED ***	GREEN FOREST INVESTMENTS LIMITED	
CORRECTIONS: PARTY TO NAME CHANGED FROM GREEN FOREST INVESTMENTS LTD. TO GREEN FOREST INVESTMENTS LIMITED ON 2009/09/25 BY TREVORS, DONNA.						

NOTE: ADJOINING PROPERTIES SHOULD BE INVESTIGATED TO ASCERTAIN DESCRIPTIVE INCONSISTENCIES, IF ANY, WITH DESCRIPTION REPRESENTED FOR THIS PROPERTY.
NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.

Ontario ServiceOntario

LAND
REGISTRY
OFFICE #61

PARCEL REGISTER (ABBREVIATED) FOR PROPERTY IDENTIFIER

71287-0044 (LT)

* CERTIFIED IN ACCORDANCE WITH THE LAND TITLES ACT * SUBJECT TO RESERVATIONS IN CROWN GRANT *

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
ROS641637	1991/04/30	CHARGE		*** COMPLETELY DELETED ***	CANADA TRUSTCO MORTGAGE COMPANY	
ROS641638	1991/04/30	ASSIGNMENT GENERAL		*** COMPLETELY DELETED ***		
REMARKS: RENTS, ROS641637						
ROS649868	1991/09/04	AGR AM CH		*** COMPLETELY DELETED ***		
REMARKS: ROS641637						
ROS680185	1992/10/19	AGR AM CH		*** COMPLETELY DELETED ***		
REMARKS: ROS641637						
WC17026	2003/01/21	TRANSFER OF CHARGE		*** COMPLETELY DELETED *** CANADA TRUSTCO MORTGAGE COMPANY	THE CANADA TRUST COMPANY	
REMARKS: ROS641637						
WC274023	2010/04/09	TRANSFER	$1,700,000	GREEN FOREST INVESTMENTS LIMITED	THE CORPORATION OF THE CITY OF GUELPH	C
WC350675	2012/08/02	NOTICE		THE CORPORATION OF THE CITY OF GUELPH		C
WC376565	2013/06/24	DISCH OF CHARGE		*** COMPLETELY DELETED *** THE TORONTO-DOMINION BANK		
REMARKS: ROS641637.						
WC378806	2013/07/16	APL (GENERAL)		*** COMPLETELY DELETED *** THE CORPORATION OF THE CITY OF GUELPH		
REMARKS: MS20875						
WC378807	2013/07/16	NO DET/SURR LEASE		*** COMPLETELY DELETED *** THE CORPORATION OF THE CITY OF GUELPH	THE CORPORATION OF THE CITY OF GUELPH	
REMARKS: MS66453.						

NOTE: ADJOINING PROPERTIES SHOULD BE INVESTIGATED TO ASCERTAIN DESCRIPTIVE INCONSISTENCIES, IF ANY, WITH DESCRIPTION REPRESENTED FOR THIS PROPERTY.
NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.

Properties

PIN	71287 − 0044 LT	*Interest/Estate*	Fee Simple
Description	PT LOT 74, PLAN 8 ; PT BURYING GROUND, PLAN 8 ; PT LANE, PLAN 8 , AT THE REAR OF LT74 (AKA PARK LANE) CLOSED BY CS31228, AS IN ROS557919 ; S/T & T/W ROS557919 ; GUELPH		
Address	164 WYNDHAM ST N GUELPH		

Consideration

Consideration $1,700,000.00

Transferor(s)

The transferor(s) hereby transfers the land to the transferee(s).

Name	GREEN FOREST INVESTMENTS LIMITED
Address for Service	147 Wyndham Street North, Suite 401, Guelph, Ontario, N1H 4E9

I, Chester Carere (President) and Doug Bridge (Secretary−Treasurer), have the authority to bind the corporation.

This document is not authorized under Power of Attorney by this party.

Transferee(s)

Transferee(s)		*Capacity*	*Share*
Name	THE CORPORATION OF THE CITY OF GUELPH	Registered Owner	
Address for Service	1 Carden Street, GUELPH, Ontario, N1H 3A1		

Statements

The land is being acquired or disposed of by the Crown in Right of Ontario or the Crown in Right of Canada, including any Crown corporation, or any agency, board or commission of the Crown; or a municipal corporation.

Signed By

Ronald George Sansom	S105 Silvercreek Parkway N., Ste. 100, PO Box 1240 Guelph N1H 6N6	acting for Transferor(s)	Signed	2010 04 09

Tel 5198210010

Fax 5198371617

I have the authority to sign and register the document on behalf of the Transferor(s).

Donna Marie Couto	1 Carden St. Guelph N1H 3A1	acting for Transferee(s)	Signed	2010 04 09

Tel 5198375637

Fax 5198220705

I have the authority to sign and register the document on behalf of the Transferee(s).

Submitted By

THE CITY OF GUELPH	1 Carden St. Guelph N1H 3A1	2010 04 09

Tel 5198375637

Fax 5198220705

Fees/Taxes/Payment

Statutory Registration Fee	$60.00
Provincial Land Transfer Tax	$23,975.00
Total Paid	$24,035.00

File Number

Transferor Client File Number : 50457−002 (CMB)

LAND TRANSFER TAX STATEMENTS

In the matter of the conveyance of: 71287 − 0044 PT LOT 74, PLAN 8 ; PT BURYING GROUND, PLAN 8 ; PT LANE, PLAN 8 , AT THE REAR OF LT74 (AKA PARK LANE) CLOSED BY CS31228, AS IN ROS557919 ; S/T & T/W ROS557919 ; GUELPH

BY: GREEN FOREST INVESTMENTS LIMITED

TO: THE CORPORATION OF THE CITY OF GUELPH Registered Owner

1. LOIS E. PAYNE

I am

☐ (a) A person in trust for whom the land conveyed in the above−described conveyance is being conveyed;

☐ (b) A trustee named in the above−described conveyance to whom the land is being conveyed;

☐ (c) A transferee named in the above−described conveyance;

☑ (d) The authorized agent or solicitor acting in this transaction for THE CORPORATION OF THE CITY OF GUELPH described in paragraph(s) (C) above.

☐ (e) The President, Vice−President, Manager, Secretary, Director, or Treasurer authorized to act for _____ described in paragraph(s) (_) above.

☐ (f) A transferee described in paragraph() and am making these statements on my own behalf and on behalf of _____who is my spouse described in paragraph(_) and as such, I have personal knowledge of the facts herein deposed to.

2. I have read and considered the definition of "single family residence" set out in subsection 1(1) of the Act. The land being conveyed herein:

contains at least one and not more than two single family residences and the lands are used for other than just residential purposes. The transferee has accordingly apportioned the value of consideration on the basis that the consideration for the single family residence is 0 and the remainder of the lands are used for commercial purposes.

3. **The total consideration for this transaction is allocated as follows:**

(a) Monies paid or to be paid in cash	1,700,000.00
(b) Mortgages (i) assumed (show principal and interest to be credited against purchase price)	0.00
(ii) Given Back to Vendor	0.00
(c) Property transferred in exchange (detail below)	0.00
(d) Fair market value of the land(s)	0.00
(e) Liens, legacies, annuities and maintenance charges to which transfer is subject	0.00
(f) Other valuable consideration subject to land transfer tax (detail below)	0.00
(g) Value of land, building, fixtures and goodwill subject to land transfer tax (total of (a) to (f))	1,700,000.00
(h) VALUE OF ALL CHATTELS −items of tangible personal property	0.00
(i) Other considerations for transaction not included in (g) or (h) above	0.00
(j) Total consideration	1,700,000.00

PROPERTY Information Record

A. Nature of Instrument: Transfer
LRO 61 Registration No. WC274023 Date: 2010/04/09

B. Property(s): PIN 71287 − 0044 Address 164 WYNDHAM ST N GUELPH Assessment Roll No 2308020 − 00112900

C. Address for Service: 1 Carden Street, GUELPH, Ontario, N1H 3A1

D. (i) Last Conveyance(s): PIN 71287 − 0044 Registration No. ROS557919

(ii) Legal Description for Property Conveyed: Same as in last conveyance? Yes ☑ No ☐ Not known ☐

E. Tax Statements Prepared By: Donna Marie Couto
1 Carden St.
Guelph N1H 3A1

ServiceOntario

PRINTED ON 11 APR, 2018 AT 08:59:30
FOR JANEGRAY

SCALE

0 20 meters

PROPERTY INDEX MAP

WELLINGTON(No. 61)

LEGEND

FREEHOLD PROPERTY	🟨
LEASEHOLD PROPERTY	▨
LIMITED INTEREST PROPERTY	▨
CONDOMINIUM PROPERTY	▨
RETIRED PIN (MAP UPDATE PENDING)	🟨
PROPERTY NUMBER	0449
BLOCK NUMBER	08050
GEOGRAPHIC FABRIC	—
EASEMENT	----

THIS IS NOT A PLAN OF SURVEY

NOTES

REVIEW THE TITLE RECORDS FOR COMPLETE PROPERTY INFORMATION AS THIS MAP MAY NOT REFLECT RECENT REGISTRATIONS

THIS MAP WAS COMPILED FROM PLANS AND DOCUMENTS RECORDED IN THE LAND REGISTRATION SYSTEM AND HAS BEEN PREPARED FOR PROPERTY INDEXING PURPOSES ONLY

FOR DIMENSIONS OF PROPERTIES BOUNDARIES SEE RECORDED PLANS AND DOCUMENTS

ONLY MAJOR EASEMENTS ARE SHOWN

REFERENCE PLANS UNDERLYING MORE RECENT REFERENCE PLANS ARE NOT ILLUSTRATED

Ontario

PROPERTY DESCRIPTION: PT LOTS 73 & 74, PLAN 8 ; PT BURYING GROUND, PLAN 8 ; PT LANE, PLAN 8 , AT THE REAR OF LOTS 73 & 74 (AKA PARK LANE) CLOSED BY CS31228, AS IN ROS573090 ; S/T & T/W ROS573090 ; GUELPH

PROPERTY REMARKS:

ESTATE/QUALIFIER:
FEE SIMPLE
LT CONVERSION QUALIFIED

RECENTLY:
FIRST CONVERSION FROM BOOK

PIN CREATION DATE:
1998/08/31

OWNERS' NAMES
THE CORPORATION OF THE CITY OF GUELPH

CAPACITY SHARE
ROWN

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
EFFECTIVE 2000/07/29 THE NOTATION OF THE "BLOCK IMPLEMENTATION DATE" OF 1998/08/31 ON THIS PIN						
WAS REPLACED WITH THE "PIN CREATION DATE" OF 1998/08/31						
*** PRINTOUT INCLUDES ALL DOCUMENT TYPES AND DELETED INSTRUMENTS SINCE 1998/08/28 ***						
***SUBJECT, ON FIRST REGISTRATION UNDER THE LAND TITLES ACT, TO:*						
*** SUBSECTION 44(1) OF THE LAND TITLES ACT, EXCEPT PARAGRAPH 11, PARAGRAPH 14, PROVINCIAL SUCCESSION DUTIES **						
*** AND ESCHEATS OR FORFEITURE TO THE CROWN.*						
*** THE RIGHTS OF ANY PERSON WHO WOULD, BUT FOR THE LAND TITLES ACT, BE ENTITLED TO THE LAND OR ANY PART OF*						
*** IT THROUGH LENGTH OF ADVERSE POSSESSION, PRESCRIPTION, MISDESCRIPTION OR BOUNDARIES SETTLED BY*						
*** CONVENTION.*						
*** ANY LEASE TO WHICH THE SUBSECTION 70(2) OF THE REGISTRY ACT APPLIES.*						
***DATE OF CONVERSION TO LAND TITLES: 1998/08/31 ***						
ROS573090	1988/05/13	TRANSFER		*** COMPLETELY DELETED ***	LESIC, SMILJA	
REMARKS: SKETCH ATTACHED						
ROS573091	1988/05/13	CHARGE		*** COMPLETELY DELETED ***	ROYAL TRUST CORP. OF CANADA	
ROS573092	1988/05/13	ASSIGNMENT GENERAL		*** COMPLETELY DELETED ***		
REMARKS: RENTS - ROS573091						
WC147816	2006/08/15	DISCH OF CHARGE		*** COMPLETELY DELETED *** ROYAL TRUST CORP. OF CANADA		
REMARKS: RE: ROS573091						

NOTE: ADJOINING PROPERTIES SHOULD BE INVESTIGATED TO ASCERTAIN DESCRIPTIVE INCONSISTENCIES, IF ANY, WITH DESCRIPTION REPRESENTED FOR THIS PROPERTY.
NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
WC266673	2010/01/06	TRANSFER	$1,250,000	LESIC, SMILJA	THE CORPORATION OF THE CITY OF GUELPH	C

LRO # 61 **Transfer** **Registered as WC266673** on 2010 01 06 at 12:28

The applicant(s) hereby applies to the Land Registrar. yyyy mm dd Page 1 of 3

Properties

PIN	71287 − 0045 LT	*Interest/Estate*	Fee Simple
Description	PT LOTS 73 & 74, PLAN 8 ; PT BURYING GROUND, PLAN 8 ; PT LANE, PLAN 8 , AT THE REAR OF LOTS 73 & 74 (AKA PARK LANE) CLOSED BY CS31228, AS IN ROS573090 ; S/T & T/W ROS573090 ; GUELPH		
Address	158 WYNDHAM ST N GUELPH		

Consideration

Consideration $1,250,000.00

Transferor(s)

The transferor(s) hereby transfers the land to the transferee(s).

Name LESIC, SMILJA

Address for Service
4708 Town Line
R.R. #1
Moffat, Ontario L0P 1J0

I am at least 18 years of age.

The property is not ordinarily occupied by me and my spouse, who is not separated from me, as our family residence.

This document is not authorized under Power of Attorney by this party.

Transferee(s)

Transferee(s)		*Capacity*	*Share*
Name	THE CORPORATION OF THE CITY OF GUELPH	Registered Owner	
Address for Service	1 Carden Street GUELPH, ON N1H 3A1		

Statements

The land is being acquired or disposed of by the Crown in Right of Ontario or the Crown in Right of Canada, including any Crown corporation, or any agency, board or commission of the Crown; or a municipal corporation.

Signed By

Lee Paul James Villar	183 Norfolk Street Guelph N1H 4K1	acting for Transferor(s)	Signed	2010 01 04

Tel 5198219610

Fax 5198218550

I have the authority to sign and register the document on behalf of the Transferor(s).

Donna Marie Couto	1 Carden St. Guelph N1H 3A1	acting for Transferee(s)	Signed	2010 01 06

Tel 5198375637

Fax 5198220705

I have the authority to sign and register the document on behalf of the Transferee(s).

Submitted By

THE CITY OF GUELPH	1 Carden St. Guelph N1H 3A1	2010 01 06

Tel 5198375637

Fax 5198220705

Fees/Taxes/Payment

Statutory Registration Fee	$60.00

Fees/Taxes/Payment

Provincial Land Transfer Tax	$17,225.00
Total Paid	$17,285.00

File Number

Transferor Client File Number : 09−6E

LAND TRANSFER TAX STATEMENTS

In the matter of the conveyance of: 71287 − 0045 PT LOTS 73 & 74, PLAN 8 ; PT BURYING GROUND, PLAN 8 ; PT LANE, PLAN 8 , AT THE REAR OF LOTS 73 & 74 (AKA PARK LANE) CLOSED BY CS31228, AS IN ROS573090 ; S/T & T/W ROS573090 ; GUELPH

BY: LESIC, SMILJA

TO: THE CORPORATION OF THE CITY OF GUELPH Registered Owner

1. LOIS E. PAYNE

I am

☐ (a) A person in trust for whom the land conveyed in the above−described conveyance is being conveyed;

☐ (b) A trustee named in the above−described conveyance to whom the land is being conveyed;

☐ (c) A transferee named in the above−described conveyance;

☑ (d) The authorized agent or solicitor acting in this transaction for THE CORPORATION OF THE CITY OF GUELPH described in paragraph(s) (C) above.

☐ (e) The President, Vice−President, Manager, Secretary, Director, or Treasurer authorized to act for _____ described in paragraph(s) (_) above.

☐ (f) A transferee described in paragraph() and am making these statements on my own behalf and on behalf of _____who is my spouse described in paragraph(_) and as such, I have personal knowledge of the facts herein deposed to.

2. I have read and considered the definition of "single family residence" set out in subsection 1(1) of the Act. The land being conveyed herein:

does not contain a single family residence or contains more than two single family residences.

3. **The total consideration for this transaction is allocated as follows:**

(a) Monies paid or to be paid in cash	1,250,000.00
(b) Mortgages (i) assumed (show principal and interest to be credited against purchase price)	0.00
(ii) Given Back to Vendor	0.00
(c) Property transferred in exchange (detail below)	0.00
(d) Fair market value of the land(s)	0.00
(e) Liens, legacies, annuities and maintenance charges to which transfer is subject	0.00
(f) Other valuable consideration subject to land transfer tax (detail below)	0.00
(g) Value of land, building, fixtures and goodwill subject to land transfer tax (total of (a) to (f))	1,250,000.00
(h) VALUE OF ALL CHATTELS −items of tangible personal property	0.00
(i) Other considerations for transaction not included in (g) or (h) above	0.00
(j) Total consideration	1,250,000.00

PROPERTY Information Record

A. Nature of Instrument: Transfer

LRO 61 Registration No. WC266673 Date: 2010/01/06

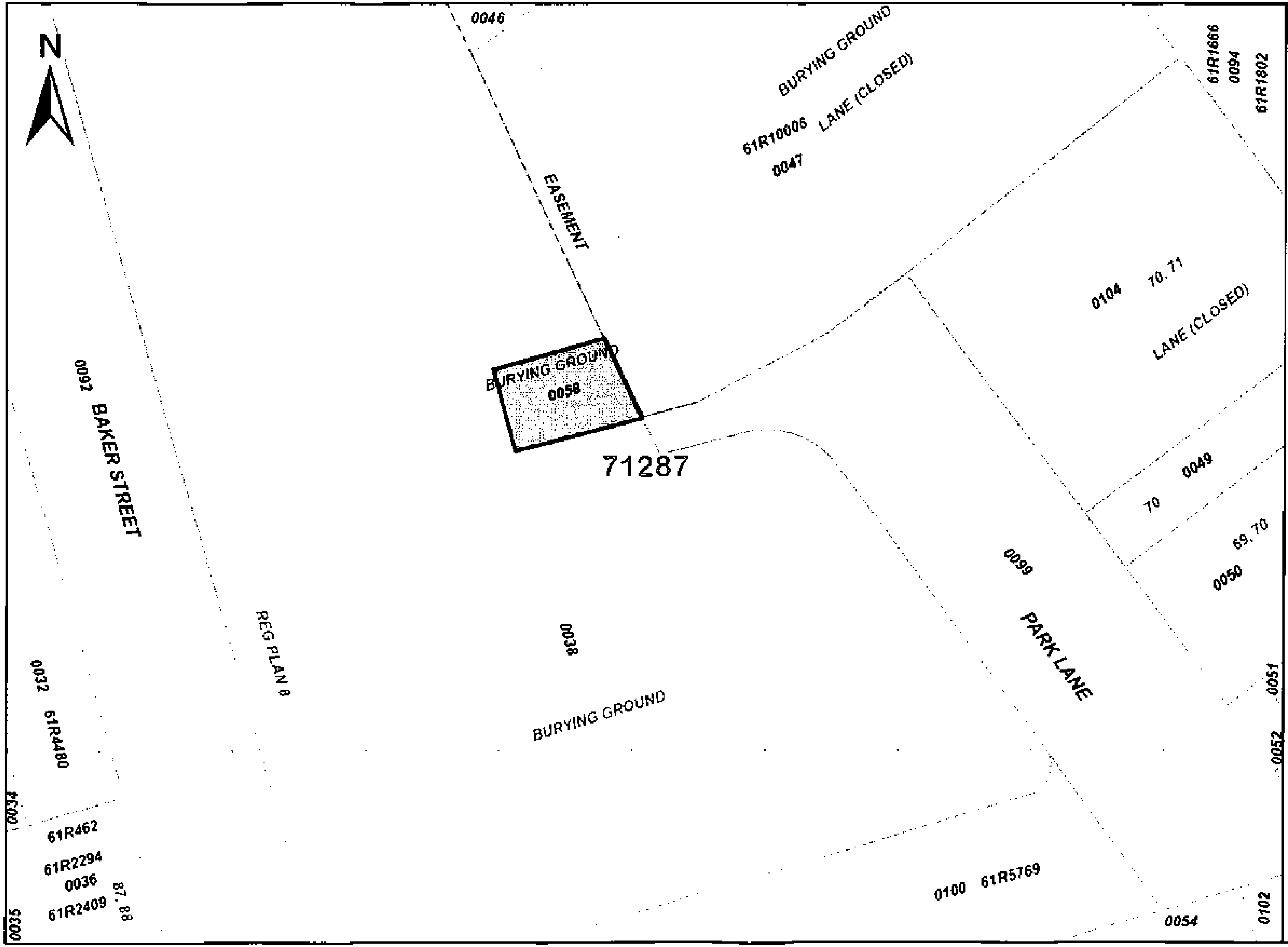
B. Property(s): PIN 71287 − 0045 Address 158 WYNDHAM ST N GUELPH Assessment Roll No 2308020 − 00112800

C. Address for Service:
1 Carden Street
GUELPH, ON N1H 3A1

D. (i) Last Conveyance(s): PIN 71287 − 0045 Registration No. ROS573090

(ii) Legal Description for Property Conveyed: Same as in last conveyance? Yes ☑ No ☐ Not known ☐

E. Tax Statements Prepared By:
Donna Marie Couto
1 Carden St.
Guelph N1H 3A1



ServiceOntario

PRINTED ON 31 MAY, 2017 AT 16:26:26
FOR BERTUCCI1

SCALE

0 20 meters

PROPERTY INDEX MAP
WELLINGTON(No. 61)

LEGEND

FREEHOLD PROPERTY	
LEASEHOLD PROPERTY	
LIMITED INTEREST PROPERTY	
CONDOMINIUM PROPERTY	
RETIRED PIN (MAP UPDATE PENDING)	
PROPERTY NUMBER	0449
BLOCK NUMBER	08050
GEOGRAPHIC FABRIC	
EASEMENT	

THIS IS NOT A PLAN OF SURVEY

NOTES

REVIEW THE TITLE RECORDS FOR COMPLETE PROPERTY INFORMATION AS THIS MAP MAY NOT REFLECT RECENT REGISTRATIONS

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FOR DIMENSIONS OF PROPERTIES BOUNDARIES SEE RECORDED PLANS AND DOCUMENTS

ONLY MAJOR EASEMENTS ARE SHOWN

REFERENCE PLANS UNDERLYING MORE RECENT REFERENCE PLANS ARE NOT ILLUSTRATED

Ontario

Ontario ServiceOntario

PARCEL REGISTER (ABBREVIATED) FOR PROPERTY IDENTIFIER

LAND
REGISTRY
OFFICE #61

71287-0058 (LT)

PAGE 1 OF 1
PREPARED FOR Bertucci1
ON 2017/05/31 AT 16:25:56

* CERTIFIED IN ACCORDANCE WITH THE LAND TITLES ACT * SUBJECT TO RESERVATIONS IN CROWN GRANT *

PROPERTY DESCRIPTION: PT BURYING GROUND, PLAN 8 , AS IN CS51962 ; GUELPH

PROPERTY REMARKS:

ESTATE/QUALIFIER:	RECENTLY:	PIN CREATION DATE:
FEE SIMPLE LT CONVERSION QUALIFIED	FIRST CONVERSION FROM BOOK	1998/08/31

OWNERS' NAMES	CAPACITY	SHARE
THE CORPORATION OF THE CITY OF GUELPH	BENO	

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
EFFECTIVE 2000/07/29 THE NOTATION OF THE "BLOCK IMPLEMENTATION DATE" OF 1998/08/31 ON THIS PIN						
WAS REPLACED WITH THE "PIN CREATION DATE" OF 1998/08/31						
** PRINTOUT INCLUDES ALL DOCUMENT TYPES AND DELETED INSTRUMENTS SINCE 1998/08/28 **						
**SUBJECT, ON FIRST REGISTRATION UNDER THE LAND TITLES ACT, TO:						
** SUBSECTION 44(1) OF THE LAND TITLES ACT, EXCEPT PARAGRAPH 11, PARAGRAPH 14, PROVINCIAL SUCCESSION DUTIES *						
** AND ESCHEATS OR FORFEITURE TO THE CROWN.						
** THE RIGHTS OF ANY PERSON WHO WOULD, BUT FOR THE LAND TITLES ACT, BE ENTITLED TO THE LAND OR ANY PART OF						
** IT THROUGH LENGTH OF ADVERSE POSSESSION, PRESCRIPTION, MISDESCRIPTION OR BOUNDARIES SETTLED BY						
** CONVENTION.						
** ANY LEASE TO WHICH THE SUBSECTION 70(2) OF THE REGISTRY ACT APPLIES.						
**DATE OF CONVERSION TO LAND TITLES: 1998/08/31 **						
CS51962	1949/11/10	TRANSFER		*** COMPLETELY DELETED ***	THE BOARD OF LIGHT AND HEAT COMMISSIONERS OF THE CITY OF GUELPH	
REMARKS: SKETCH ATTACHED						
LT8833	1998/11/09	TRANSFER	$13,000	THE BOARD OF LIGHT AND HEAT COMMISSIONERS OF THE CITY OF GUELPH	THE CORPORATION OF THE CITY OF GUELPH	C

Province of Ontario

Transfer/Deed of Land

Form 1 - Land Registration Reform Act

CAKEware Inc.
(416) 367-0600
08/1993

A

FOR OFFICE USE ONLY

LT 008333

CERTIFICATE OF RECEIPT

98 NOV 9 PM 1 34

New Property Identifiers

Additional: See Schedule ☐

Executions

No Executions

Additional: See Schedule ☐

(1) Registry ☐ Land Titles ☒

(2) Page 1 of 2 pages

(3) Property Identifier(s) Block 71287 Property 0058

Additional: See Schedule ☐

(4) Consideration

THIRTEEN THOUSAND ---------------------- Dollars $ 13,000.00

(5) Description This is a: Property Division ☐ Property Consolidation ☐

Part of the Burying Ground,
Plan 8, Canada Company Survey,
City of Guelph,
County of Wellington.

AS IN INSTRUMENT NO. CS 51962

Land Titles/~~Land Registry~~ Division of Wellington (No. 61).

(6) This Document Contains (a) Redescription New Easement Plan/Sketch ☐ (b) Schedule for: Description ☐ Additional Parties ☐ Other ☐

(7) Interest/Estate Transferred
Fee Simple

(8) Transferor(s) The transferor hereby transfers the land to the transferee and certifies that the transferor is at least eighteen years old and that

Name(s)

THE BOARD OF LIGHT AND HEAT COMMISSIONERS OF THE CITY OF GUELPH

I have authority to bind the Corporation.

Signature(s)

Per: Arthur G. Stokman
Director of Engineering

Date of Signature Y 1998 M 10 D 15

(9) Spouse(s) of Transferor(s) I hereby consent to this transaction
Name(s)
Signature(s)
Date of Signature Y M D

(10) Transferor(s) Address for Service 104 Dawson Road, GUELPH, Ontario N1H 1A7

(11) Transferee(s)

THE CORPORATION OF THE CITY OF GUELPH

Date of Birth Y M D

(12) Transferee(s) Address for Service 59 Carden Street, GUELPH, Ontario N1H 3A1

Planning Act - Optional

(13) Transferor(s) The transferor verifies that to the best of the transferor's knowledge and belief, this transfer does not contravene section 50 of the Planning Act.

Signature Date of Signature Y M D

Signature Date of Signature Y M D

Solicitor for Transferor(s) I have explained the effect of section 50 of the Planning Act to the transferor and I have made inquiries of the transferor to determine that this transfer does not contravene that section and based on the information supplied by the transferor, to the best of my knowledge and belief, this transfer does not contravene that section. I am an Ontario solicitor in good standing.

Name and Address of Solicitor

Signature Date of Signature Y M D

Also Statement by Solicitor for Transferee(s) here if necessary

(14) Solicitor for Transferee(s) I have investigated the title to this land and to abutting land where relevant and I am satisfied that the title records reveal no contravention as set out in subclause 50(22)(c)(ii) of the Planning Act and that to the best of my knowledge and belief this transfer does not contravene section 50 of the Planning Act. I act independently of the solicitor for the transferor(s) and I am an Ontario solicitor in good standing.

Name and Address of Solicitor

Signature Date of Signature Y M D

(15) Assessment Roll Number of Property Cty. Mun. Map Sub. Par.

Not Assigned

(16) Municipal Address of Property

Baker Street
GUELPH, Ontario

RPGS/cmb P2-3240

(17) Document Prepared by:

R. PAUL G. SMITH, Q.C.
SMITH, SMITH, GAZZOLA, SANSOM & HOLUB
Barristers & Solicitors
285 Woolwich Street, Box 1025
Guelph, Ontario N1H 6N1

FOR OFFICE USE ONLY

Fees and Tax	
Registration Fee	50.00
Land Transfer Tax	65.00
Total	115.00

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Affidavit of Residence and of Value of the Consideration
Form 1 – Land Transfer Tax Act

Refer to all instructions on reverse side.

IN THE MATTER OF THE CONVEYANCE OF *(insert brief description of land)* City of Guelph, County of Wellingotn, Part of [illegible] Burying Ground, Canada Company Survey, Plan 8

BY *(print names of all transferors in full)* The Board of Light and Heat Commissioners of the City of Guelph

TO *(see instruction 1 and print names of all transferees in full)* The Corporation of the City of Guelph

I *(see instruction 2 and print name(s) in full)* Lois A. Giles

MAKE OATH AND SAY THAT:

1 I am *(place a clear mark within the square opposite that one of the following paragraphs that describes the capacity of the deponent(s)): (see instruction 2)*

☐ (a) A person in trust for whom the land conveyed in the above-described conveyance is being conveyed.

☐ (b) A trustee named in the above-described conveyance to whom the land is being conveyed.

☐ (c) A transferee named in the above-described conveyance.

☐ (d) The authorized agent or solicitor acting in this transaction for *(insert name(s) of principal(s))* ________ described in paragraph(s) (a), (b), (c) above, *(strike out references to inapplicable paragraphs)*

☒ (e) The City Clerk [illegible] authorized to act for *(insert name(s) of corporation(s))* The Corporation of the City of Guelph ________ described in paragraph(s) ~~(a)~~, ~~(b)~~, (c) above; *(strike out references to inapplicable paragraphs)*

☐ (f) A transferee described in paragraph ( ) *(insert only one of paragraph (a), (b) or (c) above, as applicable)* and am making this affidavit on my own behalf and on behalf of *(insert name of spouse)* ________ who is my spouse described in paragraph ( ) *(insert only one of paragraph (a), (b) or (c) above, as applicable)* and as such, I have personal knowledge of the facts herein deposed to.

2 *(To be completed where the value of the consideration for the conveyance exceeds $400,000).*

I have read and considered the definition of "single family residence" set out in clause 1(1)(a) of the Act. The land conveyed in the above-described conveyance

☐ contains at least one and not more than two single family residences

☐ does not contain a single family residence

☐ contains more than two single family residences *(see instruction 3)*

***Note:* Clause 2(1)(d) imposes an additional tax at the rate of one-half of one per cent upon the value of consideration in excess of $400,000 where the conveyance contains at least one and not more than two single family residences.**

3 I have read and considered the definitions of "non-resident corporation" and "non-resident person" set out respectively in clauses 1(1)(f) and (g) of the Act and each of the following persons to whom or in trust for whom the land is being conveyed in the above-described conveyance is a "non-resident corporation" or a "non-resident person" as set out in the Act. *(see instructions 4 and 5)* None

4 THE TOTAL CONSIDERATION FOR THIS TRANSACTION IS ALLOCATED AS FOLLOWS:

(a) Monies paid or to be paid in cash	$ 13,000.00	
(b) Mortgages (i) Assumed *(show principal and interest to be credited against purchase price)*	$ Nil	
(ii) Given back to vendor	$ Nil	
(c) Property transferred in exchange *(detail below)*	$ Nil	
(d) Securities transferred to the value of *(detail below)*	$ Nil	
(e) Liens, legacies, annuities and maintenance charges to which transfer is subject	$ Nil	
(f) Other valuable consideration subject to land transfer tax *(detail below)*	$ Nil	
(g) VALUE OF LAND, BUILDING, FIXTURES AND GOODWILL SUBJECT TO LAND TRANSFER TAX *(Total of (a) to (f))*	$ 13,000.00	$ 13,000.00
(h) VALUE OF ALL CHATTELS – items of tangible personal property *(Retail Sales Tax is payable on the value of all chattels unless exempt under the provisions of the "Retail Sales Tax Act", R.S.O. 1980, c.454, as amended)*		$ Nil
(i) Other consideration for transaction not included in (g) or (h) above		$ Nil
(j) TOTAL CONSIDERATION		$ 13,000.00

All Blanks Must Be Filled In. Insert "Nil" Where Applicable

5 If consideration is nominal, describe relationship between transferor and transferee and state purpose of conveyance *(see instruction 6)*

6 If the consideration is nominal, is the land subject to any encumbrance?

7 Other remarks and explanations, if necessary

Sworn before me at the City of Guelph,
in the County of Wellington,
this 22nd day of September 1998

Donna M. Palmer
A Commissioner for taking Affidavits, etc

DONNA MARIE PALMER
[illegible], County of Wellington for
[illegible] of the City of Guelph
Ex[illegible] [illegible] 2000.

(signature(s))
Lois A. Giles - City Clerk

Property Information Record

A Describe nature of instrument Transfer/Deed

B (i) Address of property being conveyed *(if available)* Not Assigned

(ii) Assessment Roll No *(if available)* Not Assigned

C Mailing address(es) for future Notices of Assessment under the Assessment Act for property being conveyed *(see instruction 7)* The Corporation of the City of Guelph, 59 Carden Street, Guelph, Ontario N1H 3A1

D (i) Registration number for last conveyance of property being conveyed *(if available)* Not available

(ii) Legal description of property conveyed Same as in D (i) above Yes ☐ No ☐ Not known ☒

E Name(s) and address(es) of each transferee's solicitor
Lois E. Payne, City Solicitor, 59 Carden Street, GUELPH, Ontario N1H 3A1

For Land Registry Office Use Only

Registration No.	
Registration Date	Land Registry Office No.

School Tax Support (Voluntary Election) See reverse for explanation

(a) Are all individual transferees Roman Catholic? Yes ☐ No ☐

(b) If Yes, do all individual transferees wish to be Roman Catholic Separate School Supporters? Yes ☐ No ☐

(c) Do all individual transferees have French Language Education Rights? Yes ☐ No ☐

(d) If Yes, do all individual transferees wish to support the French Language School Board (where established)? Yes ☐ No ☐

NOTE: As to (c) and (d) the land being transferred will be assigned to the French Public School Board or Sector unless otherwise directed in (a) and (b)

Ontario ServiceOntario

PARCEL REGISTER (ABBREVIATED) FOR PROPERTY IDENTIFIER

LAND
REGISTRY
OFFICE #61

71287-0099 (LT)

PAGE 1 OF 1
PREPARED FOR TANIA MCCARTHY
ON 2020/03/06 AT 15:46:06

teranet express

* CERTIFIED IN ACCORDANCE WITH THE LAND TITLES ACT * SUBJECT TO RESERVATIONS IN CROWN GRANT *

PROPERTY DESCRIPTION: UNNAMED LANE, PLAN 8 , (AKA PARK LANE, PLAN 8) LYING SOUTH OF PART CLOSED BY CS31228, SAVE AND EXCEPT RO755787, ROS546721, CS52867, & ROS220056 ; GUELPH

PROPERTY REMARKS:

ESTATE/QUALIFIER:	RECENTLY:	PIN CREATION DATE:
FEE SIMPLE LT CONVERSION QUALIFIED	FIRST CONVERSION FROM BOOK	1998/08/31

OWNERS' NAMES	CAPACITY	SHARE
THE CORPORATION OF THE CITY OF GUELPH	BENO	

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
EFFECTIVE 2000/07/29 THE NOTATION OF THE "BLOCK IMPLEMENTATION DATE" OF 1998/08/31 ON THIS PIN						
WAS REPLACED WITH THE "PIN CREATION DATE" OF 1998/08/31						
*** PRINTOUT INCLUDES ALL DOCUMENT TYPES (DELETED INSTRUMENTS NOT INCLUDED) ***						
***SUBJECT, ON FIRST REGISTRATION UNDER THE LAND TITLES ACT, TO:*						
****	*SUBSECTION 44(1) OF THE LAND TITLES ACT, EXCEPT PARAGRAPH 11, PARAGRAPH 14, PROVINCIAL SUCCESSION DUTIES **					
****	*AND ESCHEATS OR FORFEITURE TO THE CROWN.*					
****	*THE RIGHTS OF ANY PERSON WHO WOULD, BUT FOR THE LAND TITLES ACT, BE ENTITLED TO THE LAND OR ANY PART OF*					
****	*IT THROUGH LENGTH OF ADVERSE POSSESSION, PRESCRIPTION, MISDESCRIPTION OR BOUNDARIES SETTLED BY*					
****	*CONVENTION.*					
****	*ANY LEASE TO WHICH THE SUBSECTION 70(2) OF THE REGISTRY ACT APPLIES.*					
***DATE OF CONVERSION TO LAND TITLES: 1998/08/31 ***						
PL8	1856/01/07	PLAN SUBDIVISION				C

NOTE: ADJOINING PROPERTIES SHOULD BE INVESTIGATED TO ASCERTAIN DESCRIPTIVE INCONSISTENCIES, IF ANY, WITH DESCRIPTION REPRESENTED FOR THIS PROPERTY.
NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.

SCHEDULE

PART	LOT	PLAN	PIN	AREA m^2
1	PART OF LOT 74, PART OF BURYING GROUND, PART OF LANE AT THE REAR OF LOTS 73 & 74 (KNOWN AS PARK LANE & CLOSED BY BY-LAW No. 1983 REGISTERED AS INSTRUMENT CS31228)	8, CANADA COMPANY SURVEY	ALL OF 71287-0044 (LT)	599.9
2	PART OF BURYING GROUND, PART OF LANE AT THE REAR OF LOTS 73 & 74 (KNOWN AS PARK LANE & CLOSED BY BY-LAW No. 1983 REGISTERED AS INSTRUMENT CS31228)			58.2
3	PART OF BURYING GROUND		ALL OF 71287-0045 (LT)	88.0
4	PART OF LOTS 73 & 74, PART OF BURYING GROUND, PART OF LANE AT THE REAR OF LOTS 73 & 74 (KNOWN AS PARK LANE & CLOSED BY BY-LAW No. 1983 REGISTERED AS INSTRUMENT CS31228)			949.0
5	PART OF BURYING GROUND AND PART OF TRAVELLED LANE THROUGH BURYING GROUND (CLOSED BY BY-LAW (1968)-6991 REGISTERED AS INSTRUMENT MS80255)		ALL OF 71287-0038 (LT)	8,361.7
6				520.1
7	PART OF BURYING GROUND		ALL OF 71287-0058 (LT)	119.1
8	PART OF UNNAMED LANE (KNOWN AS PARK LANE)		ALL OF 71287-0099 (LT)	848.8

PART 2 IS SUBJECT TO AN EASEMENT AS IN INSTRUMENT ROS557919.
PART 3 IS SUBJECT TO AN EASEMENT AS IN INSTRUMENT ROS573090.

PLAN OF SURVEY OF
PART OF LOTS 73, 74, BURYING GROUND, UNNAMED LANE
(KNOWN AS PARK LANE),
PART OF THE LANE AT THE REAR OF LOTS 73 & 74
(KNOWN AS PARK LANE AND CLOSED BY INSTRUMENT CS31228)
TRAVELLED LANE THROUGH BURYING GROUND
(CLOSED BY INSTRUMENT MS80255)
REGISTERED PLAN 8
CITY OF GUELPH
COUNTY OF WELLINGTON

SCALE 1 : 250

0 2.5 5 10 15 meters

VAN HARTEN SURVEYING INC.

THE INTENDED PLOT SIZE OF THIS PLAN IS 1219mm IN WIDTH BY 610mm IN HEIGHT WHEN PLOTTED AT A SCALE OF 1:250

LEGEND:

—□—	DENOTES SURVEY MONUMENT SET
—■—	DENOTES SURVEY MONUMENT FOUND
SIB	DENOTES .025 X .025 X 1.20 STANDARD IRON BAR
IB	DENOTES .015 X .015 X 0.60 IRON BAR
SSIB	DENOTES .025 X .025 X 0.60 SHORT STANDARD IRON BAR
RP	DENOTES .015 DIA. X 0.07 ROUND IRON BAR WITH STAMPED WASHER
PB	DENOTES .025 X .025 X 0.30 PLASTIC BAR
CC	DENOTES CUT CROSS
WIT	DENOTES WITNESS
OU	DENOTES ORIGIN UNKNOWN
375	DENOTES BLACK SHOEMAKER ROBINSON & DONALDSON LIMITED
VH	DENOTES VAN HARTEN SURVEYING INC., O.L.S.'S
P1	DENOTES SURVEY BY (375), PROJECT No. 99-2293, DATED SEPTEMBER 21, 1999
P2	DENOTES DEPOSITED PLAN 61R-11926 BY (VH)
P3	DENOTES DEPOSITED PLAN 61R-2545 BY (375)
P4	DENOTES SURVEY BY (375), PROJECT No. 159-9, DATED JANUARY 17, 1946
P5	DENOTES SURVEY BY (375), PROJECT No. 165-15, DATED APRIL 4, 1941
P6	DENOTES SURVEY BY (375), PROJECT No. 10-8579, DATED AUGUST 17, 2010
P7	DENOTES DEPOSITED PLAN 61R-10006 BY (375)
P8	DENOTES SURVEY NOTES 115-105 BY (375), PROJECT No. 316-61, DATED JULY 24, 26, 1964
P9	DENOTES SURVEY BY (375), PROJECT No. 00-3252, DATED JUNE 26, 2001
D1	DENOTES INSTRUMENT ROS579919
D2	DENOTES INSTRUMENT ROS573090

BEARING AND COORDINATE NOTE:

1. BEARINGS ARE GRID BEARINGS AND ARE DERIVED FROM GPS OBSERVATIONS AND ARE REFERRED TO THE UTM PROJECTION, ZONE 17, NAD 83 (CSRS-2010) ADJUSTMENT.

2. DISTANCES SHOWN ON THIS PLAN ARE ADJUSTED GROUND DISTANCES AND CAN BE CONVERTED TO GRID DISTANCES BY MULTIPLYING BY AN AVERAGED COMBINED SCALE FACTOR OF 0.99959928.

3. COORDINATES ON THIS PLAN ARE UTM, ZONE 17, NAD83 (CSRS-2010) ADJUSTMENT AND ARE BASED ON GPS OBSERVATIONS FROM A NETWORK OF PERMANENT GPS REFERENCE STATIONS.

UTM COORDINATES (METRES)		
POINT ID	NORTHING	EASTING
A	4,821,911.42	560,423.74
B	4,821,801.14	560,530.90
C	4,821,725.21	560,467.20

THESE COORDINATE VALUES COMPLY WITH SECTION 14(2) O.REG 216/10. THESE COORDINATES CANNOT, IN THEMSELVES, BE USED TO RE-ESTABLISH THE CORNERS OR BOUNDARIES SHOWN ON THIS PLAN.

BEARING COMPARISONS:

FOR THE PURPOSES OF BEARING COMPARISONS, PREVIOUS SURVEYS HAVE BEEN ROTATED TO UTM BEARINGS BY THE ANGLES SHOWN BELOW.

PLAN	ROTATION FOR NORTHEAST BEARINGS
P1 & P3	-1°57'25"
P6 & P7	-1°56'30"
P9	-0°32'00"

METRIC:

DISTANCES AND COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:

1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT, THE LAND TITLES ACT AND THE REGULATIONS MADE UNDER THEM.

2. THIS SURVEY WAS COMPLETED ON THE 12th DAY OF MAY, 2020.

DATE: MAY 14, 2020

JEFFREY EDWARD BUISMAN
ONTARIO LAND SURVEYOR

THIS PLAN OF SURVEY RELATES TO AOLS PLAN SUBMISSION FORM NUMBER 2117665.

Van Harten
SURVEYING INC.
LAND SURVEYORS and ENGINEERS

Waterloo Ph: 519-742-8371	Guelph Ph: 519-821-2763	Orangeville Ph: 519-940-4110

www.vanharten.com info@vanharten.com

DRAWN BY: S.A.P.	CHECKED BY: J.E.B.	PROJECT No. 25189-17

May 14, 2020-11:38:01 AM
G:\GUELPH\008\Baker\acad\RPTLOT 73, 74 (CITY OF GUELPH) UTM 2010.dwg

Attachment B
Risk Assessment Project Team

Attachment B. Risk Assessment Team Membership

B.1 Environmental Site Assessment

Ed Taves, M.Sc., C.Chem., QPESA, P.Geo. (Limited)

Ed Taves has over 30 years of professional experience in environmental consulting. He specializes in environmental due diligence assessments (Phase One and Two ESAs), site characterization, risk assessment, remedial option analysis, contaminant hydrogeology, facility decommissioning and brownfield redevelopment, and the preparation of Records of Site Condition (RSCs). Clients have included federal and provincial departments and ministries, municipal governments, and private industries, as well as members of the legal, financial, accounting, and land development communities. Projects have been completed for a wide variety of contaminants, including petroleum hydrocarbons, a variety of volatile organic compounds including chlorinated aliphatic hydrocarbons, metals, polychlorinated biphenyls, pesticides, nutrients, energetics, unexploded ordnance, chemical warfare agents, and radiologicals. Ed has fulfilled a number of roles, including project manager, task manager, senior technical consultant, and public and regulatory agency liaison.

Tania McCarthy, B.A.Sc., P.Eng.

Tania McCarthy has over 16 years of experience in environmental services, specializing in Phase I and II and One and Two Environmental Site Assessments (ESAs), contaminated site characterization, remedial investigations, Risk Assessments (RAs), and preparation of Records of Site Condition (RSCs) for various sites in Canada. Her experience also includes fill/soil management plans, solid waste management and landfill gas (LFG) projects within Ontario; and site assessments, remediation, and monitoring reports for projects within the United States (U.S.).

Victoria Peters, B.Sc.Env., G.I.T.

Victoria joined Jacobs as a Junior Environmental Scientist in 2017, working in the Federal and Environmental Solutions Group from Jacobs’ Kitchener office. Victoria has experience preparing technical reports, including Phase One and Two Environmental Site Assessments (ESAs), sediment characterization technical memorandums, and soil management plans. She also has experience working on remedial excavations and environmental monitoring projects, including soil and groundwater sampling, surface water and sediment sampling, and test pit installation and confirmatory sampling. Victoria has experience with the Ontario Clean Water Act and source water protection and has conducted drinking water threat inventories for a regional municipality.

B.2 Hydrogeology

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

Jinlong is a hydrogeologist with over 21 years of quantitative and physical hydrogeology experience in:

- ESAs
- Contaminated groundwater evaluation
- Groundwater resources management
- Oil sands mine closure and reclamation
- Mining industry

He specializes in quantitative hydrogeological evaluations and the application of numerical and analytical groundwater simulation tools, which include primarily groundwater flow and contaminant transport modelling at local and regional scales. He has solid experience in hydrogeological investigation for both clean water and contaminated sites, including:

- Hydrogeological baseline studies
- Environmental impact assessments (EIAs)
- ESAs
- Remediation options design and evaluation

He has experience in project management, including:

- Project planning and delivery
- Costing
- Technical reporting
- Liaising with clients, contractors, and regulatory agencies

Maria Digaletos, M.Sc. G.I.T.

Maria has two years experience working in research and consulting with application in hydrogeology. Maria has completed a variety of research projects on groundwater and surface water quality, including impacts from on-site septic systems and wastewater treatment, and the application of new water sampling techniques. Maria has developed skills in field work, laboratory analysis, developing groundwater models, applying geospatial statistics, writing reports and developing safety plans. She has experience analyzing single well response tests, calculating construction dewatering rates, creating groundwater contours and delineating plumes, and preparing hydrogeological descriptions of site conditions under the supervision of a Professional Geoscientist.

B.3 Human Health Risk Assessment

Katherine Appleby, B.E.S., E.P., QPRA

Katherine will be the QPRA for this RA. Katherine has 14 years of experience in the field of RAs and ESAs. She has prepared numerous technical reports, including pre-submission forms (PSFs), screening-level risk assessments (SLRAs), and comprehensive RAs. Katherine has experience performing, reviewing, and supervising the completion of both HHRAs and ERAs for land- and water-based sites. Her skills include:

- Developing RA conceptual site models (CSMs)
- Selecting ecological and human health receptors
- Exposure modelling
- Selecting toxicity reference values (TRVs)
- Calculating risk estimates
- Developing risk management measures (RMMs)
- Reporting
- Performing peer review
- Responding to client and regulator comments on RA reports

Katherine has authored, led, or contributed to the completion of over 60 focused, comprehensive, or screening-level RA reports using both provincial (Ministry and Environment Yukon) and federal (Health Canada and Canadian Council of Minister of the Environment [CCME]) frameworks. She is familiar with provincial and federal environmental legislation, such as O. Reg. 153/04 (as amended) and the RSC filing process.

Brandi Wilson, B.Sc.

Brandi Wilson is an Environmental Scientist with 4 years of experience in the environmental consulting industry. Her areas of expertise include environmental assessments, including conducting HHRAs and Phase One ESAs; data entry and processing; writing technical memoranda; and performing field investigation activities, including sediment and groundwater sampling. She has prepared numerous technical reports, including PSFs, SLRAs, and comprehensive RAs. Her skills include developing exposure modelling, calculating risk estimates, reporting, and responding to client and regulator comments on RA reports. Brandi also has experience with stormwater management (SWM) pond sediment chemistry related disposal versus beneficial use evaluations.

B.4 Ecological Risk Assessment

Katherine Appleby, B.E.S., E.P., QPRA

Katherine will be the QPRA for this RA. Katherine has 14 years of experience in the field of RAs and ESAs. She has prepared numerous technical reports, including pre-submission forms (PSFs), screening-level risk assessments (SLRAs), and comprehensive RAs. Katherine has experience performing, reviewing, and supervising the completion of both HHRAs and ERAs for land- and water-based sites. Her skills include:

- Developing RA conceptual site models (CSMs)
- Selecting ecological and human health receptors
- Exposure modelling
- Selecting toxicity reference values (TRVs)
- Calculating risk estimates
- Developing risk management measures (RMMs)
- Reporting
- Performing peer review
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Katherine has authored, led, or contributed to the completion of over 60 focused, comprehensive, or screening-level RA reports using both provincial (Ministry and Environment Yukon) and federal (Health Canada and Canadian Council of Minister of the Environment [CCME]) frameworks. She is familiar with provincial and federal environmental legislation, such as O. Reg. 153/04 (as amended) and the RSC filing process.

Brandi Wilson, B.Sc.

Brandi Wilson is an Environmental Scientist with 4 years of experience in the environmental consulting industry. Her areas of expertise include environmental assessments, including conducting HHRAs and Phase One ESAs; data entry and processing; writing technical memoranda; and performing field investigation activities, including sediment and groundwater sampling. She has prepared numerous technical reports, including PSFs, SLRAs, and comprehensive RAs. Her skills include developing exposure modelling, calculating risk estimates, reporting, and responding to client and regulator comments on RA reports. Brandi also has experience with stormwater management (SWM) pond sediment chemistry related disposal versus beneficial use evaluations.

B.5 Engineering

Jennifer Caron, P.Eng., QPRA, QPESA

As a project engineer with over 25 years' experience in environmental consulting, Jennifer Caron has been involved in the management and execution of groundwater and soil cleanup programs for a variety of industrial and municipal clients. She has extensive experience in contaminant hydrogeology and site characterization, and has over 20 years of experience with RA projects. Her role in RA projects during the past 15 years has been primarily as lead risk assessor responsible for completing the majority of the RA reports, including the conceptual site model (CSM); the modelling, exposure, risk characterization calculations; the evaluation of existing site data; and risk management. As a project engineer, she has been responsible for verifying proper quality assurance (QA) and quality control (QC) on numerous multidisciplinary projects that have involved the assessment of human health and ecological risks, soil management, and risk management engineering.

~~Travis Tan, M.A.Sc., P.Eng., QPESA, QPRA~~

~~Travis has over 11 years of experience in the environmental field, specializing in providing solutions for brownfield redevelopment, including risk assessment, risk management, and remediation.~~

~~Travis is a Qualified Person for ESA (QPESA) as defined by O. Reg. 153/04. He has managed and provided senior technical oversight on ESA work for more than 100 sites across Ontario and Alberta. These sites include a 69-hectare (ha) (170-acre) former power plant, an operating aircraft manufacturing facility, a 101-ha (250-acre) former chemical manufacturing plant, a 36-ha (90-acre) former wood treatment plant, and retail gasoline stations.~~

~~Travis has extensive experience in providing solutions for brownfield redevelopment and management of environmental liability. He has been involved in planning and managing risk assessments, including risk management plans (RMPs), and environmental remediation for complex brownfield sites. As a Qualified Person for RA (QPRA) as defined by O. Reg. 153/04, Travis has worked on approximately 30 risk assessments (RAs) on sites across Ontario, of which 15 have been accepted by the Ministry and Records of Site Condition (RSCs) were subsequently filed.~~

~~Travis has provided due diligence consultation on numerous property transactions, including one valued at more than $200 million. He has also provided technical support for some of the top environmental attorneys in Ontario, and served as expert witness on environmental litigation.~~

~~Travis holds a Bachelor of Engineering degree in Environmental Engineering from the National University of Singapore and a Master of Applied Science degree in Chemical Engineering from the University of Toronto. He is a registered Professional Engineer in Ontario and Alberta.~~

Attachment C
Risk Assessment Data Set

Table C-1. Summary of COC Screening in Soil

Risk Assessment, 55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Contaminant [a]	Volatility [b]	Contaminant Identifier	Maximum Measured Concentration [c]	Units	Minimum Detection Limit (MDL)	Applicable SCS [d]	Other Screening Value [e]	Potential for Exceedances of Applicable SCS at Nearest Offsite Receptors?	Retained as a Contaminant for Risk Assessment? (Rationale)
Lead	Non-Volatile	7439921	207	µg/g	1	120	--	No	**Yes, included (Max > Table 2 SCS)**
Mercury	Volatile	7439976	0.889	µg/g	0.005	0.27	--	No	**Yes, included (Max > Table 2 SCS)**
1,1,1,2-Tetrachloroethane	Volatile	630206	0.05	µg/g	0.008	0.058	--	No	No, excluded (Max < or = Table 2 SCS)
1,1,1-Trichloroethane	Volatile	71556	0.05	µg/g	0.008	0.38	--	No	No, excluded (Max < or = Table 2 SCS)
1,1,2,2-Tetrachloroethane	Volatile	79345	0.05	µg/g	0.004	0.05	--	No	No, excluded (Max < or = Table 2 SCS)
1,1,2-Trichloroethane	Volatile	79005	0.05	µg/g	0.002	0.05	--	No	No, excluded (Max < or = Table 2 SCS)
1,1'-Biphenyl	Volatile	92524	0.05	µg/g	0.05	0.31	--	No	No, excluded (Max < or = Table 2 SCS)
1,1-Dichloroethane	Volatile	75343	0.05	µg/g	0.002	0.47	--	No	No, excluded (Max < or = Table 2 SCS)
1,1-Dichloroethene	Volatile	75354	0.05	µg/g	0.002	0.05	--	No	No, excluded (Max < or = Table 2 SCS)
1,2,4-Trichlorobenzene	Volatile	120821	0.05	µg/g	0.05	0.36	--	No	No, excluded (Max < or = Table 2 SCS)
1,2-Dibromoethane	Volatile	106934	0.05	µg/g	0.004	0.05	--	No	No, excluded (Max < or = Table 2 SCS)
1,2-Dichlorobenzene	Volatile	95501	0.05	µg/g	0.002	1.2	--	No	No, excluded (Max < or = Table 2 SCS)
1,2-Dichloroethane	Volatile	107062	0.05	µg/g	0.002	0.05	--	No	No, excluded (Max < or = Table 2 SCS)
1,2-Dichloropropane	Volatile	78875	0.05	µg/g	0.002	0.05	--	No	No, excluded (Max < or = Table 2 SCS)
1,3-Dichlorobenzene	Volatile	541731	0.05	µg/g	0.002	4.8	--	No	No, excluded (Max < or = Table 2 SCS)
1,3-Dichloropropene	Volatile	542756	0.042	µg/g	0.042	0.05	--	No	No, excluded (Max < or = Table 2 SCS)
1,4-Dichlorobenzene	Volatile	106467	0.05	µg/g	0.002	0.083	--	No	No, excluded (Max < or = Table 2 SCS)
2-(1-)Methylnaphthalene	Volatile	91576	0.085	µg/g	0.03	0.99	--	No	No, excluded (Max < or = Table 2 SCS)
2,4 & 2,6-Dinitrotoluene	Non-Volatile	121142	0.14	µg/g	0.141	0.5	--	No	No, excluded (Max < or = Table 2 SCS)
2,4-Dimethylphenol	Non-Volatile	105679	0.1	µg/g	0.1	38	--	No	No, excluded (Max < or = Table 2 SCS)
2,4-Dinitrophenol	Non-Volatile	51285	1	µg/g	1	2	--	No	No, excluded (Max < or = Table 2 SCS)
2-Butanone	Volatile	78933	0.5	µg/g	0.2	16	--	No	No, excluded (Max < or = Table 2 SCS)
3,3'-Dichlorobenzidine	Non-Volatile	91941	0.1	µg/g	0.1	1	--	No	No, excluded (Max < or = Table 2 SCS)
4-Chloroaniline	Non-Volatile	106478	0.1	µg/g	0.1	0.5	--	No	No, excluded (Max < or = Table 2 SCS)
4-Methyl-2-Pentanone	Volatile	108101	0.5	µg/g	0.2	1.7	--	No	No, excluded (Max < or = Table 2 SCS)
Acenaphthene	Volatile	83329	0.05	µg/g	0.05	7.9	--	No	No, excluded (Max < or = Table 2 SCS)
Acenaphthylene	Volatile	208968	0.054	µg/g	0.05	0.15	--	No	No, excluded (Max < or = Table 2 SCS)
Acetone	Volatile	67641	0.5	µg/g	0.5	16	--	No	No, excluded (Max < or = Table 2 SCS)
Anthracene	Volatile	120127	0.05	µg/g	0.05	0.67	--	No	No, excluded (Max < or = Table 2 SCS)
Antimony	Non-Volatile	7440360	1	µg/g	1	7.5	--	No	No, excluded (Max < or = Table 2 SCS)
Arsenic	Non-Volatile	7440382	6.6	µg/g	1	18	--	No	No, excluded (Max < or = Table 2 SCS)
Barium	Non-Volatile	7440393	111	µg/g	1	390	--	No	No, excluded (Max < or = Table 2 SCS)
Benzene	Volatile	71432	0.0068	µg/g	0.002	0.21	--	No	No, excluded (Max < or = Table 2 SCS)
Benzo(a)anthracene	Volatile	56553	0.14	µg/g	0.05	0.5	--	No	No, excluded (Max < or = Table 2 SCS)
Benzo(a)pyrene	Non-Volatile	50328	0.24	µg/g	0.02	0.3	--	No	No, excluded (Max < or = Table 2 SCS)
Benzo(b&j)fluoranthene	Non-Volatile	205992	0.18	µg/g	0.05	0.78	--	No	No, excluded (Max < or = Table 2 SCS)
Benzo(g,h,i)perylene	Non-Volatile	191242	0.237	µg/g	0.05	6.6	--	No	No, excluded (Max < or = Table 2 SCS)
Benzo(k)fluoranthene	Non-Volatile	207089	0.11	µg/g	0.05	0.78	--	No	No, excluded (Max < or = Table 2 SCS)
Beryllium	Non-Volatile	7440417	0.98	µg/g	0.5	4	--	No	No, excluded (Max < or = Table 2 SCS)
Bis (2-chloroethyl) ether	Volatile	111444	0.1	µg/g	0.1	0.5	--	No	No, excluded (Max < or = Table 2 SCS)
Bis (2-Chloroisopropyl) ether	Volatile	108601	0.1	µg/g	0.1	0.67	--	No	No, excluded (Max < or = Table 2 SCS)
Bis (2-ethylhexyl) phthalate	Non-Volatile	117817	0.1	µg/g	0.1	5	--	No	No, excluded (Max < or = Table 2 SCS)
Boron	Non-Volatile	7440428	10.9	µg/g	0.1	120	--	No	No, excluded (Max < or = Table 2 SCS)
Boron (Hot Water Ext.)	Non-Volatile	7440428-HWS	0.81	µg/g	0.1	1.5	--	No	No, excluded (Max < or = Table 2 SCS) [f]
Bromodichloromethane	Volatile	75274	0.05	µg/g	0.005	1.5	--	No	No, excluded (Max < or = Table 2 SCS)
Bromoform	Volatile	75252	0.05	µg/g	0.002	0.27	--	No	No, excluded (Max < or = Table 2 SCS)
Bromomethane	Volatile	74839	0.05	µg/g	0.003	0.05	--	No	No, excluded (Max < or = Table 2 SCS)
Cadmium	Non-Volatile	7440439	0.5	µg/g	0.5	1.2	--	No	No, excluded (Max < or = Table 2 SCS)
Calcium	Non-Volatile	7440702	51.2	mg/l	0.5	-	53508	No	No, excluded (Max < or = OTR value)
Carbon tetrachloride	Volatile	56235	0.05	µg/g	0.002	0.05	--	No	No, excluded (Max < or = Table 2 SCS)
Chlorobenzene	Volatile	108907	0.05	µg/g	0.002	2.4	--	No	No, excluded (Max < or = Table 2 SCS)
Chlorodibromomethane	Volatile	124481	0.05	µg/g	0.003	2.3	--	No	No, excluded (Max < or = Table 2 SCS)
Chloroform	Volatile	67663	0.05	µg/g	0.006	0.05	--	No	No, excluded (Max < or = Table 2 SCS)

Table C-1. Summary of COC Screening in Soil

Risk Assessment, 55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Contaminant [a]	Volatility [b]	Contaminant Identifier	Maximum Measured Concentration [c]	Units	Minimum Detection Limit (MDL)	Applicable SCS [d]	Other Screening Value [e]	Potential for Exceedances of Applicable SCS at Nearest Offsite Receptors?	Retained as a Contaminant for Risk Assessment? (Rationale)
Chromium	Non-Volatile	16065831	29.3	µg/g	1	160	--	No	No, excluded (Max < or = Table 2 SCS)
Chromium, Hexavalent (Cr6+)	Non-Volatile	18540299	2	µg/g	0.2	8	--	No	No, excluded (Max < or = Table 2 SCS)
Chrysene	Non-Volatile	218019	0.18	µg/g	0.05	7	--	No	No, excluded (Max < or = Table 2 SCS)
cis-1,2-Dichloroethene	Volatile	156592	0.05	µg/g	0.02	1.9	--	No	No, excluded (Max < or = Table 2 SCS)
Cobalt	Non-Volatile	7440484	8.6	µg/g	1	22	--	No	No, excluded (Max < or = Table 2 SCS)
Conductivity	Non-Volatile	EC	0.655	mS/cm	0.004	0.7	--	No	No, excluded (Max < or = Table 2 SCS) [f]
Copper	Non-Volatile	7440508	33.1	µg/g	1	140	--	No	No, excluded (Max < or = Table 2 SCS)
Cyanide, Weak Acid Dissociable	Volatile	57125	0.05	µg/g	0.05	0.051	--	No	No, excluded (Max < or = Table 2 SCS)
Dibenzo(a,h)anthracene	Non-Volatile	53703	0.05	µg/g	0.05	0.1	--	No	No, excluded (Max < or = Table 2 SCS)
Dichlorodifluoromethane	Volatile	75718	0.05	µg/g	0.03	16	--	No	No, excluded (Max < or = Table 2 SCS)
Dichloromethane	Volatile	75092	0.063	µg/g	0.003	0.1	--	No	No, excluded (Max < or = Table 2 SCS)
Diethylphthalate	Non-Volatile	84662	0.1	µg/g	0.1	0.5	--	No	No, excluded (Max < or = Table 2 SCS)
Dimethylphthalate	Non-Volatile	131113	0.1	µg/g	0.1	0.5	--	No	No, excluded (Max < or = Table 2 SCS)
Dioxins and Furans	Volatile	1746016	0.0558	pg/g	1	13	--	No	No, excluded (Max < or = Table 2 SCS)
Ethylbenzene	Volatile	100414	0.018	µg/g	0.002	1.1	--	No	No, excluded (Max < or = Table 2 SCS)
Fluoranthene	Non-Volatile	206440	0.19	µg/g	0.05	0.69	--	No	No, excluded (Max < or = Table 2 SCS)
Fluorene	Volatile	86737	0.05	µg/g	0.05	62	--	No	No, excluded (Max < or = Table 2 SCS)
Indeno(1,2,3-Cd)Pyrene	Non-Volatile	193395	0.14	µg/g	0.05	0.38	--	No	No, excluded (Max < or = Table 2 SCS)
Magnesium	Non-Volatile	7439954	27.2	mg/l	0.5	-	17400	No	No, excluded (Max < or = OTR value)
Methyl Mercury	Volatile	22967926	0.00005	mg/kg	0.00005	0.0084	--	No	No, excluded (Max < or = Table 2 SCS)
Methyl tert-butyl ether (MTBE)	Volatile	1634044	0.2	µg/g	0.05	0.75	--	No	No, excluded (Max < or = Table 2 SCS)
Molybdenum	Non-Volatile	7439987	1	µg/g	1	6.9	--	No	No, excluded (Max < or = Table 2 SCS)
Naphthalene	Volatile	91203	0.065	µg/g	0.013	0.6	--	No	No, excluded (Max < or = Table 2 SCS)
n-Hexane	Volatile	11053	0.05	µg/g	0.05	2.8	--	No	No, excluded (Max < or = Table 2 SCS)
Nickel	Non-Volatile	7440020	19.5	µg/g	1	100	--	No	No, excluded (Max < or = Table 2 SCS)
PCB, Total	Volatile	1336363	0.02	µg/g	0.01	0.35	--	No	No, excluded (Max < or = Table 2 SCS)
Petroleum Hydrocarbons F1 (C6-C10)	Volatile	PHCF1	5	µg/g	5	55	--	No	No, excluded (Max < or = Table 2 SCS)
Petroleum Hydrocarbons F2 (C10-C16)	Volatile	PHCF2	20	µg/g	10	98	--	No	No, excluded (Max < or = Table 2 SCS)
Petroleum Hydrocarbons F3 (C16-C34)	Non-Volatile [g]	PHCF3	300	µg/g	50	300	--	No	No, excluded (Max < or = Table 2 SCS)
Petroleum Hydrocarbons F4 (C34-C50)	Non-Volatile [g]	PHCF4	900	µg/g	50	2800	--	No	No, excluded (Max < or = Table 2 SCS)
Phenanthrene	Volatile	85018	0.123	µg/g	0.046	6.2	--	No	No, excluded (Max < or = Table 2 SCS)
Phenol	Non-Volatile	108952	0.1	µg/g	0.1	9.4	--	No	No, excluded (Max < or = Table 2 SCS)
Pyrene	Volatile	129000	0.178	µg/g	0.05	78	--	No	No, excluded (Max < or = Table 2 SCS)
Selenium	Non-Volatile	7782492	1	µg/g	1	2.4	--	No	No, excluded (Max < or = Table 2 SCS)
Silver	Non-Volatile	7440224	0.21	µg/g	0.2	20	--	No	No, excluded (Max < or = Table 2 SCS)
Sodium	Non-Volatile	7440235	215	mg/l	0.5	-	216	No	No, excluded (Max < or = OTR value)
Sodium Absorption Ratio	Non-Volatile	SAR	4.27	SAR	0.1	5	--	No	No, excluded (Max < or = Table 2 SCS) [f]
Styrene	Volatile	100425	0.05	µg/g	0.002	0.7	--	No	No, excluded (Max < or = Table 2 SCS)
Tetrachloroethene	Volatile	127184	0.05	µg/g	0.002	0.28	--	No	No, excluded (Max < or = Table 2 SCS)
Thallium	Non-Volatile	7440280	1	µg/g	0.5	1	--	No	No, excluded (Max < or = Table 2 SCS)
Toluene	Volatile	108883	0.08	µg/g	0.002	2.3	--	No	No, excluded (Max < or = Table 2 SCS)
trans-1,2-Dichloroethene	Volatile	156605	0.05	µg/g	0.002	0.084	--	No	No, excluded (Max < or = Table 2 SCS)
Trichloroethylene	Volatile	79016	0.01	µg/g	0.004	0.061	--	No	No, excluded (Max < or = Table 2 SCS)
Trichlorofluoromethane	Volatile	75694	0.05	µg/g	0.03	4	--	No	No, excluded (Max < or = Table 2 SCS)
Uranium	Non-Volatile	7440611	1	µg/g	1	23	--	No	No, excluded (Max < or = Table 2 SCS)
Vanadium	Non-Volatile	7440622	50.8	µg/g	1	86	--	No	No, excluded (Max < or = Table 2 SCS)
Vinyl Chloride	Volatile	75014	0.02	µg/g	0.003	0.02	--	No	No, excluded (Max < or = Table 2 SCS)
Xylenes, Total	Volatile	1330207	0.05	µg/g	0.002	3.1	--	No	No, excluded (Max < or = Table 2 SCS)
Zinc	Non-Volatile	7440666	246	µg/g	5	340	--	No	No, excluded (Max < or = Table 2 SCS)

Table C-1. Summary of COC Screening in Soil

Risk Assessment, 55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Contaminant [a]	Volatility [b]	Contaminant Identifier	Maximum Measured Concentration [c]	Units	Minimum Detection Limit (MDL)	Applicable SCS [d]	Other Screening Value [e]	Potential for Exceedances of Applicable SCS at Nearest Offsite Receptors?	Retained as a Contaminant for Risk Assessment? (Rationale)

Notes:

[a] The representative maximum concentration (the maximum concentration of similar analytes or total concentration of multiple isomers) is used for comparison.

[b] Indicates whether the parameter is considered volatile or nonvolatile taking into consideration revised MECP-specified criteria (chemicals with a vapour pressure greater than 1.0 Torr or an H greater than 1×10^{-5} atm-m^3/mol are considered volatile).

[c] Column lists the greater of the maximum detected concentration and the maximum nondetect concentration.

[d] Ontario Regulation 153/04, Table 2: Full Depth Generic Site Condition Standards in a Potale Ground Water Condition, for Residential/ Parkland/ Institutional Property Type Use and Coarse Textured Soils (MECP, 2011a)

[e] For calcium, magnesium, and sodium, the Ontario Typical Ranges for an urban scenario are applied (MECP, 2011b)

[f] Parameter is not applicable to human health.

[g] PHC F3 and F4 are not considered volatile based on other regulatory guidance (CCME, 2008).

Bold parameters are identified as COCs
-- = no value or not applicable
< = less than
> = greater than
µg/g = microgram per gram
COC = contaminant of concern
F = fraction
Max = maximum concentration
MECP = Ontario Ministry of the Environment, Conservation and Parks
OTR = Ontario Typical Range

Table C-2. Summary of COC Screening in Groundwater

Risk Assessment, 55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Contaminant [a]	Volatility [b]	Contaminant Identifier	Maximum Measured Concentration [c,d]	Units	Minimum Detection Limit	Applicable SCS [d]	Other Screening Criteria [f]	Potential for Exceedances of Applicable SCSs at Nearest Offsite Receptors?	Retained as a Contaminant for Risk Assessment? (Rationale)
Cadmium	Non-Volatile	7440439	6.16	µg/L	0.01	2.7	--	Yes	**Yes, included (Max > Table 2 SCS)**
1,1,1,2-Tetrachloroethane	Volatile	630206	0.5	µg/L	0.5	1.1	--	No	No, excluded (Max < or = Table 2 SCS)
1,1,1-Trichloroethane	Volatile	71556	0.5	µg/L	0.5	200	--	No	No, excluded (Max < or = Table 2 SCS)
1,1,2,2-Tetrachloroethane	Volatile	79345	0.5	µg/L	0.5	1	--	No	No, excluded (Max < or = Table 2 SCS)
1,1,2-Trichloroethane	Volatile	79005	0.5	µg/L	0.5	4.7	--	No	No, excluded (Max < or = Table 2 SCS)
1,1'-Biphenyl	Volatile	92524	0.4	µg/L	0.4	0.5	--	No	No, excluded (Max < or = Table 2 SCS)
1,1-Dichloroethane	Volatile	75343	0.56	µg/L	0.5	5	--	No	No, excluded (Max < or = Table 2 SCS)
1,1-Dichloroethene	Volatile	75354	0.5	µg/L	0.5	1.6	--	No	No, excluded (Max < or = Table 2 SCS)
1,2,4-Trichlorobenzene	Volatile	120821	0.4	µg/L	0.4	70	--	No	No, excluded (Max < or = Table 2 SCS)
1,2-Dibromoethane	Volatile	106934	0.2	µg/L	0.2	0.2	--	No	No, excluded (Max < or = Table 2 SCS)
1,2-Dichlorobenzene	Volatile	95501	0.5	µg/L	0.5	3	--	No	No, excluded (Max < or = Table 2 SCS)
1,2-Dichloroethane	Volatile	107062	0.5	µg/L	0.5	1.6	--	No	No, excluded (Max < or = Table 2 SCS)
1,2-Dichloropropane	Volatile	78875	0.5	µg/L	0.5	5	--	No	No, excluded (Max < or = Table 2 SCS)
1,3-Dichlorobenzene	Volatile	541731	0.5	µg/L	0.5	59	--	No	No, excluded (Max < or = Table 2 SCS)
1,3-Dichloropropene	Volatile	542756	0.5	µg/L	0.5	0.5	--	No	No, excluded (Max < or = Table 2 SCS)
1,4-Dichlorobenzene	Volatile	106467	0.5	µg/L	0.5	1	--	No	No, excluded (Max < or = Table 2 SCS)
2,4 & 2,6-Dinitrotoluene	Non-Volatile	121142	0.57	µg/L	0.566	5	--	No	No, excluded (Max < or = Table 2 SCS)
2,4-Dimethylphenol	Non-Volatile	105679	0.5	µg/L	0.5	59	--	No	No, excluded (Max < or = Table 2 SCS)
2,4-Dinitrophenol	Non-Volatile	51285	1	µg/L	1	10	--	No	No, excluded (Max < or = Table 2 SCS)
2-Butanone	Volatile	78933	20	µg/L	20	1800	--	No	No, excluded (Max < or = Table 2 SCS)
3,3'-Dichlorobenzidine	Non-Volatile	91941	0.4	µg/L	0.4	0.5	--	No	No, excluded (Max < or = Table 2 SCS)
4-Chloroaniline	Non-Volatile	106478	0.4	µg/L	0.4	10	--	No	No, excluded (Max < or = Table 2 SCS)
4-Methyl-2-Pentanone	Volatile	108101	20	µg/L	20	640	--	No	No, excluded (Max < or = Table 2 SCS)
Acenaphthene	Volatile	83329	0.02	µg/L	0.02	4.1	--	No	No, excluded (Max < or = Table 2 SCS)
Acenaphthylene	Volatile	208968	0.02	µg/L	0.02	1	--	No	No, excluded (Max < or = Table 2 SCS)
Acetone	Volatile	67641	30	µg/L	30	2700	--	No	No, excluded (Max < or = Table 2 SCS)
Anthracene	Volatile	120127	0.02	µg/L	0.02	2.4	--	No	No, excluded (Max < or = Table 2 SCS)
Antimony	Non-Volatile	7440360	6	µg/L	0.1	6	--	No	No, excluded (Max < or = Table 2 SCS)
Arsenic	Non-Volatile	7440382	10	µg/L	0.1	25	--	No	No, excluded (Max < or = Table 2 SCS)
Barium	Non-Volatile	7440393	744	µg/L	0.1	1000	--	No	No, excluded (Max < or = Table 2 SCS)
Benzene	Volatile	71432	0.5	µg/L	0.5	5	--	No	No, excluded (Max < or = Table 2 SCS)
Benzo(a)anthracene	Volatile	56553	0.02	µg/L	0.02	1	--	No	No, excluded (Max < or = Table 2 SCS)
Benzo(a)pyrene	Non-Volatile	50328	0.01	µg/L	0.01	0.01	--	No	No, excluded (Max < or = Table 2 SCS)
Benzo(b)fluoranthene	Non-Volatile	205992	0.02	µg/L	0.02	0.1	--	No	No, excluded (Max < or = Table 2 SCS)
Benzo(g,h,i)perylene	Non-Volatile	191242	0.02	µg/L	0.02	0.2	--	No	No, excluded (Max < or = Table 2 SCS)
Benzo(k)fluoranthene	Non-Volatile	207089	0.02	µg/L	0.02	0.1	--	No	No, excluded (Max < or = Table 2 SCS)
Beryllium	Non-Volatile	7440417	4	µg/L	0.1	4	--	No	No, excluded (Max < or = Table 2 SCS)
Bis (2-chloroethyl) ether	Volatile	111444	0.4	µg/L	0.4	5	--	No	No, excluded (Max < or = Table 2 SCS)
Bis (2-Chloroisopropyl) ether	Volatile	108601	0.4	µg/L	0.4	120	--	No	No, excluded (Max < or = Table 2 SCS)
Bis (2-ethylhexyl) phthalate	Non-Volatile	117817	2.3	µg/L	2	10	--	No	No, excluded (Max < or = Table 2 SCS)
Boron	Non-Volatile	7440428	1000	µg/L	10	5000	--	No	No, excluded (Max < or = Table 2 SCS)
Bromodichloromethane	Volatile	75274	7.1	µg/L	2	16	--	No	No, excluded (Max < or = Table 2 SCS)
Bromoform	Volatile	75252	5	µg/L	5	25	--	No	No, excluded (Max < or = Table 2 SCS)
Bromomethane	Volatile	74839	0.5	µg/L	0.5	0.89	--	No	No, excluded (Max < or = Table 2 SCS)
Carbon tetrachloride	Volatile	56235	0.2	µg/L	0.2	0.79	--	No	No, excluded (Max < or = Table 2 SCS)
Chloride (Cl)	Non-Volatile	16887006	722	mg/L	2.5	790	--	No	No, excluded (Max < or = Table 2 SCS)
Chlorobenzene	Volatile	108907	0.5	µg/L	0.5	30	--	No	No, excluded (Max < or = Table 2 SCS)
Chlorodibromomethane	Volatile	124481	5.4	µg/L	2	25	--	No	No, excluded (Max < or = Table 2 SCS)
Chloroform	Volatile	67663	2.3	µg/L	1	2.4	--	No	No, excluded (Max < or = Table 2 SCS)
Chromium	Non-Volatile	16065831	50	µg/L	0.5	50	--	No	No, excluded (Max < or = Table 2 SCS)
Chromium, Hexavalent (Cr6+)	Non-Volatile	18540299	5.74	µg/L	0.5	25	--	No	No, excluded (Max < or = Table 2 SCS)
Chrysene	Non-Volatile	218019	0.02	µg/L	0.02	0.1	--	No	No, excluded (Max < or = Table 2 SCS)
cis-1,2-Dichloroethene	Volatile	156592	0.5	µg/L	0.5	1.6	--	No	No, excluded (Max < or = Table 2 SCS)
Cobalt	Non-Volatile	7440484	3.8	µg/L	0.1	3.8	--	No	No, excluded (Max < or = Table 2 SCS)

Table C-2. Summary of COC Screening in Groundwater

Risk Assessment, 55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Contaminant [a]	Volatility [b]	Contaminant Identifier	Maximum Measured Concentration [c,d]	Units	Minimum Detection Limit	Applicable SCS [d]	Other Screening Criteria [f]	Potential for Exceedances of Applicable SCSs at Nearest Offsite Receptors?	Retained as a Contaminant for Risk Assessment? (Rationale)
Copper	Non-Volatile	7440508	20	µg/L	0.2	87	--	No	No, excluded (Max < or = Table 2 SCS)
Cyanide, Weak Acid Dissociable	Volatile	57125	8.4	µg/L	2	66	--	No	No, excluded (Max < or = Table 2 SCS)
Dibenzo(a,h)anthracene	Non-Volatile	53703	0.02	µg/L	0.02	0.2	--	No	No, excluded (Max < or = Table 2 SCS)
Dichlorodifluoromethane	Volatile	75718	2	µg/L	2	590	--	No	No, excluded (Max < or = Table 2 SCS)
Dichloromethane	Volatile	75092	5	µg/L	5	50	--	No	No, excluded (Max < or = Table 2 SCS)
Diethylphthalate	Non-Volatile	84662	0.2	µg/L	0.2	38	--	No	No, excluded (Max < or = Table 2 SCS)
Dimethylphthalate	Non-Volatile	131113	0.2	µg/L	0.2	38	--	No	No, excluded (Max < or = Table 2 SCS)
Ethylbenzene	Volatile	100414	0.5	µg/L	0.5	2.4	--	No	No, excluded (Max < or = Table 2 SCS)
Fluoranthene	Non-Volatile	206440	0.02	µg/L	0.02	0.41	--	No	No, excluded (Max < or = Table 2 SCS)
Fluorene	Volatile	86737	0.02	µg/L	0.02	120	--	No	No, excluded (Max < or = Table 2 SCS)
Indeno(1,2,3-Cd)Pyrene	Non-Volatile	193395	0.02	µg/L	0.02	0.2	--	No	No, excluded (Max < or = Table 2 SCS)
Lead	Non-Volatile	7439921	5	µg/L	0.05	10	--	No	No, excluded (Max < or = Table 2 SCS)
Mercury	Volatile	7439976	0.0054	µg/L	0.005	0.29	--	No	No, excluded (Max < or = Table 2 SCS)
Methyl tert-butyl ether (MTBE)	Volatile	1634044	2	µg/L	2	15	--	No	No, excluded (Max < or = Table 2 SCS)
Molybdenum	Non-Volatile	7439987	17.6	µg/L	0.05	70	--	No	No, excluded (Max < or = Table 2 SCS)
Naphthalene	Volatile	91203	0.05	µg/L	0.05	11	--	No	No, excluded (Max < or = Table 2 SCS)
n-Hexane	Volatile	11053	0.5	µg/L	0.5	51	--	No	No, excluded (Max < or = Table 2 SCS)
Nickel	Non-Volatile	7440020	50	µg/L	0.5	100	--	No	No, excluded (Max < or = Table 2 SCS)
Petroleum Hydrocarbons F1 (C6-C10)	Volatile	PHCF1	25	µg/L	25	750	--	No	No, excluded (Max < or = Table 2 SCS)
Petroleum Hydrocarbons F2 (C10-C16)	Volatile	PHCF2	100	µg/L	100	150	--	No	No, excluded (Max < or = Table 2 SCS)
Petroleum Hydrocarbons F3 (C16-C34)	Non-Volatile [e]	PHCF3	250	µg/L	250	500	--	No	No, excluded (Max < or = Table 2 SCS)
Petroleum Hydrocarbons F4 (C34-C50)	Non-Volatile [e]	PHCF4	250	µg/L	250	500	--	No	No, excluded (Max < or = Table 2 SCS)
Phenanthrene	Volatile	85018	0.02	µg/L	0.02	1	--	No	No, excluded (Max < or = Table 2 SCS)
Phenol	Non-Volatile	108952	0.5	µg/L	0.5	890	--	No	No, excluded (Max < or = Table 2 SCS)
Pyrene	Volatile	129000	0.02	µg/L	0.02	4.1	--	No	No, excluded (Max < or = Table 2 SCS)
Selenium	Non-Volatile	7782492	5	µg/L	0.05	10	--	No	No, excluded (Max < or = Table 2 SCS)
Silver	Non-Volatile	7440224	1.5	µg/L	0.05	1.5	--	No	No, excluded (Max < or = Table 2 SCS)
Sodium	Non-Volatile	7440235	436000	µg/L	500	490000	--	No	No, excluded (Max < or = Table 2 SCS)
Sodium Absorption Ratio	Non-Volatile	SAR	130	SAR	0.1	--	--	--	No, excluded (no standard available; all results nondetect)
Styrene	Volatile	100425	0.5	µg/L	0.5	5.4	--	No	No, excluded (Max < or = Table 2 SCS)
Tetrachloroethene	Volatile	127184	0.5	µg/L	0.5	1.6	--	No	No, excluded (Max < or = Table 2 SCS)
Thallium	Non-Volatile	7440280	1	µg/L	0.01	2	--	No	No, excluded (Max < or = Table 2 SCS)
Toluene	Volatile	108883	0.5	µg/L	0.5	24	--	No	No, excluded (Max < or = Table 2 SCS)
trans-1,2-Dichloroethene	Volatile	156605	0.5	µg/L	0.5	1.6	--	No	No, excluded (Max < or = Table 2 SCS)
Trichloroethylene	Volatile	79016	0.5	µg/L	0.5	1.6	--	No	No, excluded (Max < or = Table 2 SCS)
Trichlorofluoromethane	Volatile	75694	5	µg/L	5	150	--	No	No, excluded (Max < or = Table 2 SCS)
Uranium	Non-Volatile	7440611	5.79	µg/L	0.01	20	--	No	No, excluded (Max < or = Table 2 SCS)
Vanadium	Non-Volatile	7440622	5	µg/L	0.5	6.2	--	No	No, excluded (Max < or = Table 2 SCS)
Vinyl Chloride	Volatile	75014	0.5	µg/L	0.5	0.5	--	No	No, excluded (Max < or = Table 2 SCS)
Xylenes, Total	Volatile	1330207	0.5	µg/L	0.5	300	--	No	No, excluded (Max < or = Table 2 SCS)
Zinc	Non-Volatile	7440666	100	µg/L	1	1100	--	No	No, excluded (Max < or = Table 2 SCS)
1+2-Methylnaphthalenes	Volatile	91576	0.028	µg/L	0.02	3.2	--	No	No, excluded (Max < or = Table 2 SCS)

[a] The representative maximum concentration (the maximum concentration of similar analytes or total concentration of multiple isomers) is used for comparison.

[b] Indicates whether the parameter is considered volatile or nonvolatile taking into consideration revised MECP-specified criteria (chemicals with a vapour pressure greater than 1.0 Torr or an H greater than 1×10^{-5} atm-m^3/mol are considered volatile).

[c] Column lists the greater of the maximum detected concentration and the maximum nondetect concentration.

[d] Ontario Regulation 153/04, Table 2: Full Depth Generic Site Condition Standards in a Potale Ground Water Condition, for Residential/ Parkland/ Institutional Property Type Use and Coarse Textured Soils (MECP, 2011a)

[e] PHC F3 and F4 are not considered volatile based on other regulatory guidance (CCME, 2008).

Notes:

Bold parameters are identified as COCs

-- = no value or not applicable
> = greater than
< = less than
µg/L = microgram per litre

COC = contaminant of concern
CCME = Canadian Council of Ministers of the Environment
F = fraction
Max = maximum concentration

MECP = Ontario Ministry of the Environment, Conservation and Parks
mS/cm = milliSiemen(s) per centimetre
NA = not available
No. = number

Attachment D
Environmental Site Assessment Information

Attachment D1

Phase One Environmental Site Assessment Summary

Attachment D1. Phase One Environmental Site Assessment Summary

This attachment summarizes the results and conclusions of the Pinchin Environmental Ltd. (Pinchin) Phase One Environmental Site Assessment (ESA) document entitled *Phase One Environmental Site Assessment, 55 Baker Street, 152, 160 Wyndham Street North, Chapel and Park Lane, Guelph, Ontario,* dated October 30, 2018 (Pinchin 2018). The ESA includes the properties at 55 Baker Street, 152 Wyndham Street North, and 160 Wyndham Street North, as well as the right-of-way known as Park Lane, in Guelph, Ontario (Site or Property). Note, the Site does not include the Chapel Lane right-of-way, which was included in the Pinchin Phase One ESA, and the information presented herein has been adjusted accordingly.

The City of Guelph (City) retained Jacobs Engineering Group Inc. (Jacobs) to provide environmental services to support the Site's potential redevelopment; as part of this work, Jacobs reviewed the existing Pinchin Phase One ESA (2018). The Site is in downtown Guelph (Attachment D3, Figure 2-1); it is approximately 1.14 hectares, and consists of a triangular asphalt parking lot (55 Baker Street), a rectangular asphalt parking lot (152 and 160 Wyndham Street), and an asphalt laneway (Park Lane). Jacobs understands the City intends to redevelop the Site to a mix of residential, community, institutional, and commercial land use, which requires a Record of Site Condition (RSC) for the change to a more sensitive land use. The Site and the Phase One Study Area (defined as lands located within 250 metres [m] of the Site) are shown on Figure 3 of the Pinchin Report, provided in Attachment D1-A.

Pinchin completed the Phase One ESA in accordance with Part VII and Schedule D of Ontario's *Environmental Protection Act R.S.O. 1990, c. E.19* and *Ontario Regulation* (O. Reg.) *153/04: Records of Site Condition – Part XV.1 of the Act* (MECP 2011). The purpose of the Phase One ESA was to assess the potential presence of the environmental impacts at the Property due to activities at and near the Site (Pinchin 2018). The Phase One ESA included the following components:

- Records review
- Interviews
- Site reconnaissance
- Evaluation of the information gathered from the records review, interviews, and Site reconnaissance
- Reporting: the preparation of a Phase One ESA report
- Submission of the Phase One ESA report to the owner of the Phase One Property

Jacobs used the Phase One ESA (Pinchin 2018) findings to support the development of a Phase Two ESA investigation for the Site. The purposes of the Phase 2 ESA were to:

- Assess the subsurface environmental conditions and for the potential presence or absence of contaminants relative to applicable reference standards.
- Assist in the development of a recommended remedial or risk management strategy that may be considered for ongoing use or to facilitate potential redevelopment of the Site.

D1.1 Current and Past Uses

Based on information obtained from the Pinchin Phase One ESA report (2018), 55 Baker Street was an active public burial ground with an unknown owner from 1827 to 1879, when it was converted to a park. In 1892, the southern portion of 55 Baker Street was used as a curling rink. In 1900, the northern portion was identified as Raymond Manufacturing Company of Guelph Limited, a sewing machine manufacturer, which remained until 1926. From 1926 to 1961, the northern portion of the property was listed as a manufacturer of coiled wire springs, and was owned by various people and corporations. In 1961, the City was listed as the property owner. The southern portion of 55 Baker Street remained a curling rink, changing ownership many times, before the title was transferred to the City in 1968.

Pinchin (2018) identified the 152 and 160 Wyndham Street North portion of the Site as commercial from 1862 to the present. There were buildings on the property in 1862, which were listed as being occupied by a hotel, undertaker, and movie theatre in both 1911 and 1916. Pinchin (2018) indicated the buildings were demolished in 2016 based on the Site representative interviews; however, based on aerial imagery Jacobs reviewed from Google Earth (2020), the buildings were demolished between 2009 and 2013.

Pinchin (2018) indicated Park Lane has been a laneway from 1827 to the present.

Figure 2-2a in Attachment D3 identifies the historical buildings onsite. Table D1-1 summarizes the current and historical land uses at the Phase One Property, based on the results of the records review; this table includes the inferred historical occupant or activity.

D1.2 Environmental Reports

The City provided Jacobs with eight historical environmental reports pertaining to the Phase One Property. Five of the reports were reviewed and summarized in the Pinchin Phase One ESA (2018), and Jacobs reviewed and summarizes the remaining three reports. The intent of the environment report review was to identify key environmental concerns regarding actual and potential areas of environmental concern within the Site and its adjacent properties.

Table D1-2 lists the reports and summarizes each investigation or study.

D1.3 Potentially Contaminating Activities

Pinchin (2018) identified 56 potentially contaminating activities (PCAs) in the Phase One Study Area, which are shown on Figure 4 of the Phase One ESA (Attachment D1-A to this submission). Based on Jacob's review of the Pinchin Phase One ESA (2018), as well as available historical environmental reports, aerial photographs, and fire insurance plans (FIPs), the following PCAs were identified within the Phase One Property, and resulted in an area of potential environmental concern (APEC):

- 27 – Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles[1]
- 28 – Gasoline and Associated Products Storage in Fixed Tanks[1]
- 30 – Importation of Fill Material of Unknown Quality
- 34 – Metal Fabrication
- 48 – Salt, Manufacturing, Processing and Bulk Storage
- 55 – Transformer Manufacturing, Processing and Use

The following PCAs were identified outside the Phase One Property, but within the Phase One Study Area, and resulted in an APEC:

- 27 – Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles
- 28 – Gasoline and Associated Products Storage in Fixed Tanks
- 34 – Metal Fabrication
- 37 – Operation of Dry Cleaning Equipment (where chemicals are used)

The PCAs identified within and outside the Phase One Property are shown on Figures 4-1a and 4-1b in Attachment D3.

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[1] PCA/APEC identified by Jacobs

D1.4 Areas of Potential Concern

The Pinchin (2018) Phase One ESA identified 16 APECs on the Phase One Property; 5 were attributed to onsite PCAs, and 11 were attributed to offsite PCAs. Based on a review of the Phase One ESA, Jacobs reinterpreted some of the APECs Pinchin identified, and identified an additional five APECs based on FIPs. Four of the APECs are attributed to onsite PCAs and one is attributed to an offsite PCA. These changes will be documented in a future addendum to the Phase One ESA report to support RSC filing. The APEC locations are presented on Figure 4-2~~1~~ in Attachment D3, and are summarized in Table D1-3, along with the associated PCAs. Contaminants of potential concern have been identified for each APEC in Table D1-3 based on the historical operations and type of PCA associated with each APEC.

The 21 identified APECs are summarized as follows:

- APECs from Onsite PCAs
  - APEC-1: Historical Industrial Property Use - Coil wire springs, sewing machines, and accessories were historically manufactured at 55 Baker Street.
  - APEC-2: Unknown/Poor Quality Fill Material – Fill material to 3.0 metres below ground surface (mbgs) was identified at 55 Baker Street in the XCG Phase II ESA (XCG 2008), and is also likely located at the Wyndham properties from demolition of historical buildings, based on when it was developed (1862).
  - APEC-3: Historical Transformers – The 1960 FIP identified an area of 55 Baker Street labelled as ‘transformers.’
  - APEC-4: Use of Road Salts at the Property –The Site is currently used as a parking lot and road salts are known to be applied for vehicular and pedestrian safety.
  - APEC-18: Former Oil Shed – The 1911 FIP showed a small oil shed in the southwestern corner of the White Sewing Machine of Canada parcel of land on 55 Baker Street.
  - APEC-19: Former Oil House – The 1911 FIP showed a small oil house on the former White Sewing Machine of Canada parcel, now the western portion of 152 Wyndham Street.
  - APEC-20: Former Coke Storage – The 1911 FIP showed a garage located on the northeastern portion of 55 Baker Street.
  - APEC-21: Former Garage – The 1960 FIP showed a garage located on the northeastern portion of 55 Baker Street.
- APECs from Offsite PCAs to the North
  - APEC-5: Historical Dry Cleaning - Potential dry cleaners were identified at 164 Woolwich Street.
  - APEC-6: Historical Retail Fuel Outlet and automotive repair/servicing operations – These operations were identified at 160 Woolwich Street.
  - APEC-7: Historical Dry Cleaning - Potential dry cleaners were identified at 152 Woolwich Street.
  - APEC-8: Historical Dry Cleaning - Potential dry cleaners were identified at 172 Wyndham Street North.
  - APEC-9: Historical Fuel Oil Underground Storage Tank (UST) – A historical UST was identified at 176 Wyndham Street North.
  - APEC-10: Historical Automotive Repair – A historical automotive repair shop was identified at 176 Wyndham Street.

  - APEC-17: Dry Cleaning, Historical Retail Fuel Outlet, and Automotive Repair – These operations were identified at 192 Woolwich Street and 51 Yarmouth Street.
- **APECs from Offsite PCAs to the East**
  - APEC-13: Historical Automotive Garage - The historical garage was identified at 146 Wyndham Street North from 1930 to 1949.
  - APEC-15: Historical Dry Cleaning - Dry cleaners were identified at 108 Wyndham Street North from 1917 to 1922.
- **APECs from Offsite PCAs to the South**
  - APEC-14: Historical Gasoline Spill – Base on database searches, a historical gasoline spill at the intersection of Chapel Lane and Baker Street occurred, with possible environmental impact to land and water. The quantity and exact location are unknown.
  - APEC-16: Historical Aboveground Storage Tank (AST): - A vent and fill pipes associated with an AST were observed at the corner of 20 Quebec Street, a southern adjacent property to the Site that is hydraulically down- and transgradient from the Site.
- **APECs from Offsite PCAs to the West**
  - APEC-11: Historical Offsite Industrial Operations - Cooke & Denison Machine and Tool Works was identified at 40 Baker Street from 1946 to 1960.
  - APEC-12: Historical Automotive Garage – An automotive garage was identified at 45 Baker Street from 1946 to 1960.

D1.5 Phase One Conceptual Site Model

Jacobs prepared a Phase One Conceptual Site Model (CSM) based on the Phase One ESA (Pinchin 2018) and supplemented with data reviewed from Jacobs. Table D1-4 presents the Phase One CSM.

Based on the uncertainties documented in the Phase One ESA (Pinchin 2018), it is possible a PCA, APEC, or land use has not been identified within the individual components of the Phase One ESA. Information was gathered from numerous sources (including aerial photographs, city directories, FIPs, database searches, historical reports, interviews, and a Site reconnaissance), which decreases the chance that a major PCA or land use was not identified in the Phase One ESA.

D1.6 Phase One ESA Conclusions

Based on the findings of the Phase One ESA investigation (Pinchin 2018), potential and confirmed impacts exist at Site, and a Phase Two ESA is considered necessary before an RSC can be filed. Depending on the findings of the Phase Two ESA, risk assessment, risk management, or remedial work, or some combination thereof may also be necessary.

D1.7 References

Google Earth. 2020. Google Earth Imagery. Accessed March 13, 2020.

Chadwick, Fred J. 1855. Map of the Town of Guelph from Recent Surveys and Original Maps.

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D.R. Poulton & Associates Inc. (D.R. Poulton). 2007. *The 2006 Stage 3-4 Archaeological Investigations of the proposed Baker Street parking Facility, Former Public Burying Ground (AjHb-71), Guelph, Ontario*. August 2007.

Ontario Ministry of the Environment, Conservation and Parks (MECP). 2011. Ontario Regulation 153/04, made under the Environmental Protection Act, Records of Site Condition – Part XV.1 of the Act. As amended.

Pinchin Environmental Ltd. (Pinchin). 2018. *Phase One Environmental Site Assessment, 55 Baker Street, 152, 160 Wyndham Street North, Chapel and Park Lane, Guelph, Ontario*. Prepared for City of Guelph. October 30, 2018.

XCG. 2008. *Phase II Environmental Site Assessment, Baker Street Redevelopment Site, Guelph, Ontario*. Prepared for City of Guelph. December 18.

Figure

▭ Site Boundary
⬚ Site Boundary - 500m Buffer

Ontario Water Well Records Near Project Site
- ● Water Supply Well
- ● Recharge Well
- ● Dewatering Well, Not Used
- ○ Purpose not available
- ● Monitoring Well or Test Hole

Notes:
1. Aerial Imagery: ESRI World Imagery 2020. Imagery Date: May 2019.
2. Ontario Water Well Records obtained from: https://www.ontario.ca/data/well-records

Figure D1-1
Ontario Water Well Records Near Project Site
Phase One Environmental Site Assessment Summary
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 7/8/2020

Jacobs

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Tables

Table D1-1. Current and Past Land Uses of the Phase One Property

Phase One ESA Summary, 55 Baker Street, 152, 160 Wyndham Street North and Park Lane, Guelph, Ontario

Year	Name of Owner	Description of Property Use	Property Use [1]	Other Observations from Aerial Photograph, Fire Insurance Plans, etc. [2]
55 Baker Street (all sections), 152 and 160 Wyndham Street North				
2013 – present	*The Corporation of the City of Guelph*	Parking Lot	Commercial	Aerial photographs from 1972 to 2009 show a parking lot over the Baker Street parcels. Based on a review of aerial photographs the commercial development on 152 and 160 Wyndham Street North appeared to have been demolished between 2009 and 2013 and replaced with an asphalt parking lot.
55 Baker Street (all sections)				
1998 – 2013	*The Corporation of the City of Guelph*	Parking Lot	Commercial	Aerial photographs from 1972 to 2009 show a parking lot.
55 Baker Street, north portion (Instrument MS20082)				
1961 – 1998	*The Corporation of the City of Guelph*	Parking Lot	Commercial	Aerial photographs from 1972 to 2009 show a parking lot.
1951 – 1961	*Steele's Wire Springs Ltd.*	Manufacturing of coiled wire springs and wire specialties	Industrial Use	The 1960 FIP indicated that Steele's Wire Springs Limited was located on the north portion of 55 Baker Street. In addition, city directories from 1936 until 1955 identified this operation on-Site.
1941 - 1951	Frederick Freedman and James Millar	Manufacturing of coiled wire springs and wire specialties	Industrial Use	The chain of title report (Pinchin, 2018) indicated the deed transfer was a from Charles L. Dunbar, who was listed as the mortgagee. The 1946 FIP indicated that Steele's Wire Springs Limited was located on the north portion of 55 Baker Street. In addition, city directories from 1936 until 1955 identified this operation on-Site.
1926 - 1941	*James Steele Limited*	Manufacturing of coiled wire springs and wire specialties	Industrial Use	The chain of title report (Pinchin, 2018) indicated the mortgage was put under Charles L. Dunbar on the same day of the deed transfer.
55 Baker Street, small parcel (PIN 71287-0058 (LT))				
1949 – 1998	*The Board of Light and Heat Commissioners of the City of Guelph*	Historical transformer location.	Commercial Use	The 1960 FIP identified a small parcel on the east-central portion of 55 Baker Street labelled as transformers.
1947 - 1949	*Hugh Millar and Western Lindamond*	No records	Industrial Use	Assumed industrial use based on the associated parcel (northern) land use.

Table D1-1. Current and Past Land Uses of the Phase One Property

Phase One ESA Summary, 55 Baker Street, 152, 160 Wyndham Street North and Park Lane, Guelph, Ontario

Year	Name of Owner	Description of Property Use	Property Use [1]	Other Observations from Aerial Photograph, Fire Insurance Plans, etc. [2]
1947 – 1947	*Elmer Awrey*	No records	Industrial Use	Assumed industrial use based on the associated parcel (northern) land use.
1944 – 1947	*Frederick Freedman and James Millar*	No records	Industrial Use	The 1946 FIP identifies the parcel of land is associated with Steele's Wire Spring Ltd. However, there are no buildings indicated in this area. The chain of title indicates the property was transferred under Power of Sale from Charles L. Dunbar.
1926 – 1944	*James Steele Limited*	No records	Industrial Use	The chain of title report (Pinchin, 2018) indicated the mortgage was put under Charles L. Dunbar on the same day of the deed transfer.
55 Baker Street, "Travelled Lane Through Burying Grounds" (Instrument CS58221)				
1953 – 1998	*The Corporation of the City of Guelph*	Parking Lot	Commercial	Aerial photographs from 1972 to 2009 show a parking lot. The 1960 FIP identifies the parcel to be in the area of "bowling greens".
1934 - 1953	His Majesty The King/ Her Majesty The Queen	No records	Industrial Use	Assumed industrial use based on the associated parcel (northern) land use. The 1946 FIP does not show any buildings in this area.
1929 – 1934	*The Culten Company Limited*	No records	Industrial Use	Assumed industrial use based on the associated parcel (northern) land use.
March 1928 – 1929	*James Steele Limited*	No records	Industrial Use	Assumed industrial use based on the associated parcel (northern) land use.
Feb 1926 – March 1928	Angus Dunbar	No records	Industrial Use	Assumed industrial use based on the associated parcel (northern) land use.
Nov 1926 – Feb 1928	*James Steele Limited*	No records	Industrial Use	Assumed industrial use based on the associated parcel (northern) land use.
55 Baker Street, north portion, "Travelled Lane", and small parcel (Instrument MS20082, Instrument CS58221 and PIN 71287-0058 (LT))				
May 1926 – November 1926	*Louis Brown, Sam Acker, and Sam Lampel*	No records	Industrial Use	
May 1916 – May 1926	*The White Sewing Machine Company of Canada/ White Sewing Machine Company*	Sewing machine and accessory manufacturing	Industrial Use	The 1916 FIPs identified an industrial building on the west-central portion of 55 Baker Street labelled as 'White Sewing Machine Co. of Canada Ltd'.

Table D1-1. Current and Past Land Uses of the Phase One Property

Phase One ESA Summary, 55 Baker Street, 152, 160 Wyndham Street North and Park Lane, Guelph, Ontario

Year	Name of Owner	Description of Property Use	Property Use [1]	Other Observations from Aerial Photograph, Fire Insurance Plans, etc. [2]
April 1916 – May 1916	*William Chase and Isadore Freiberger*	No records	Industrial Use	
1900 – April 1916	*The Raymond Manufacturing Company of Guelph Limited*	Sewing machine and accessory manufacturing	Industrial Use	The 1911 and 1916 Fire Insurance Plans (FIPs) identified an industrial building on the west-central portion of 55 Baker Street and Park Lane labelled as 'White Sewing Machine Co. of Canada Ltd'
1891 - 1900	Corporation of the City of Guelph	No records	Parkland Use	
55 Baker Street, south portion (Instrument MS78644)				
1968 – 1998	*The Corporation of the City of Guelph*	Parking Lot	Commercial Use	Aerial photographs from 1972 to 2009 show a parking lot.
1936 – 1968	*The Victoria Rink Company / Guelph Curling Club Limited*	Curling rink	Commercial Use	The 1946 and 1960 FIP identified a curling rink on the south portion of 55 Baker Street. The curling club was last listed in the city directories in 1966. The chain of title (Pinchin, 2018) references instrument MS78644 and indicates the Guelph Curling Club Limited was formerly The Victoria Rink Company.
1892 to 1936	*The Corporation of the Township of Guelph*	Curling rink	Commercial Use	The 1911 FIP identified a curling rink "Victoria Rink" on the south portion of 55 Baker Street. The curling club was last listed in the city directories in 1966. The 2007 D.R. Poulton Archaeological Report indicated that the Royal Curling Club was constructed on the south portion of 55 Baker Street in 1892, and the club merged with the Union Curling Club to form the Guelph Curling Club in 1926. The chain of title (Pinchin, 2018) does not list a previous owner and indicates there are no records before 1891.
1891 - 1892	The Corporation of the Township of Guelph	No records	Parkland Use	

Table D1-1. Current and Past Land Uses of the Phase One Property

Phase One ESA Summary, 55 Baker Street, 152, 160 Wyndham Street North and Park Lane, Guelph, Ontario

Year	Name of Owner	Description of Property Use	Property Use [1]	Other Observations from Aerial Photograph, Fire Insurance Plans, etc. [2]
55 Baker Street (all sections)				
1879 – 1891	Corporation of the Township of Guelph	Park	Parkland Use	The 2007 D.R. Poulton Archaeological Report indicated 55 Baker Street and Park Lane was used as a park between 1879 and 1891. The chain of title report in the Phase One ESA (Pinchin, 2018) indicated no records were found prior to 1891. The first document found was a deed transfer between the Corporation of the Township of Guelph to the Corporation of the City of Guelph.
1827 - 1879	The Canada Company	Public burying grounds	Community Use	The 2007 D.R. Poulton Archaeological Report indicated 55 Baker Street and Park Lane was an active burying ground from 1827 (when the Town of Guelph was founded) until 1853. The report references the property being owned by the Canada Company and that they included the parcel on the original plan of the town as land known to be the Public Burying Ground (Poulton, 2007). It is unknown how long the parcel of land was used for this purpose. The burial ground was officially closed in 1879 (Pinchin, 2018) and most burials removed. The 1872 Bird's Eye View shows a naturally rolling topography.
Park Lane (PIN 71287-0099 (LT))				
1855 - present	The Corporation of the City of Guelph	Road/Laneway	Community Use	In 1855, this parcel was registered as laneways and has remained in use as laneways and/or access routes since that time (Pinchin, 2018). Historical maps (1855, 1866, 1906) and FIPs (1911, 1946, and 1960) also show the parcel as a laneway.
152 Wyndham Street North (PIN 71287-0045 (LT))				
2010 - 2013	*The Corporation of the City of Guelph*	Commercial / Parking lot	Commercial Use	Based on a review of aerial photographs the commercial development on 152 and 160 Wyndham Street North appeared to have been demolished between 2009 and 2013 and replaced with an asphalt parking lot.
1985 – 1988	*Smija Lesic*	Commercial	Commercial Use	
1985 – 1988	*Edwin Stuart and Jean Stewart*	Commercial	Commercial Use	
1980 – 1985	*District Trust Company*	Commercial	Commercial Use	

Table D1-1. Current and Past Land Uses of the Phase One Property

Phase One ESA Summary, 55 Baker Street, 152, 160 Wyndham Street North and Park Lane, Guelph, Ontario

Year	Name of Owner	Description of Property Use	Property Use [1]	Other Observations from Aerial Photograph, Fire Insurance Plans, etc. [2]
1967 – 1980	*Stuart N. McInnis and Ernest E.R. Garlick*	Commercial	Commercial Use	
1956 – 1967	*John W. Hall*	Commercial	Commercial Use	Based on a review of the 1960 FIP, as well as city directories from 1938 to 2012, 152 and 160 Wyndham Street North was utilized for various commercial retail operations from 1938 to at least 2009.
1949 – 1956	*John W. Hall and Nellie J. Hall*	Commercial	Commercial Use	
1929 – 1949	*The Eaton Company*	Commercial	Commercial Use	Based on a review of the 1946 FIP, as well as city directories from 1938 to 2012, 152 and 160 Wyndham Street North was utilized for various commercial retail operations from 1938 to at least 2009.
1929 – 1929	*Angus Dunston*	Commercial	Commercial Use	
1917 – 1929	*Jane McAteer*	Commercial	Commercial Use	
160 Wyndham Street North (PIN 71287-0044 (LT))				
2010 - 2013	The Corporation of the City of Guelph	Commercial / Parking lot	Commercial Use	Based on a review of aerial photographs the commercial development on 152 and 160 Wyndham Street North appeared to have been demolished between 2009 and 2013 and replaced with an asphalt parking lot.
1987 – 2010	*Green Forest Investments*	No records	Commercial Use	
1984 – 1987	*Wyndam Street Investments Inc. or Anna Kwitco (Larina Investments)*	No records	Commercial Use	
1981 – 1984	*Wolfond Construction Ltd.*	Commercial	Commercial Use	
1946 – 1981	*Esther Wolfond*	No records	Commercial Use	
1945 – 1946	*The Cullen Company*	No records	Commercial Use	

Table D1-1. Current and Past Land Uses of the Phase One Property

Phase One ESA Summary, 55 Baker Street, 152, 160 Wyndham Street North and Park Lane, Guelph, Ontario

Year	Name of Owner	Description of Property Use	Property Use [1]	Other Observations from Aerial Photograph, Fire Insurance Plans, etc. [2]
1917 – 1945	*Jane McAteer*	No records	Commercial Use	
152 and 160 Wyndham Street North (PIN 71287-0045 (LT) and PIN 71287-0044 (LT))				
1910 - 1917	*John McAteer*	No records	Commercial Use	The 1911 and 1916 FIPs identified the American Hotel on the north portion of 152 and 160 Wyndham Street North. The south portion of 152 and 160 Wyndham Street North was developed with a commercial building occupied by an undertaker and movie theatre.
1895 – 1910	*Elizabeth Wagner*	No records	Commercial Use	
1891 - 1895	*Thomas Ellis*	Commercial	Commercial Use	Information provided in the 2007 D.R. Poulton Archaeological Report indicated that 152 and 160 Wyndham Street North was developed with assumed commercial buildings between 1862 and 1872; however, the occupants of the buildings were not identified and the date of construction of the buildings are unknown.
1855 - 1891	The Canada Company	Unknown	NA	

Notes:

Information presented in this table has been taken from Pinchin's Phase One Environmental Site Assessment, 55 Baker Street, 152, 160 Wyndham Street North, Chapel and Park Lane, Guelph, Ontario, dated October 30, 2018

PINs and Instruments referenced above are as shown on Registered Plan 61R-21815, dated June 22, 2020.

FIP = fire insurance plan

Commercial or Industrial Property Uses are shown in italicized font.

[1] Types of property use as defined in Ontario Regulation 153/04. Permitted uses include Agricultural or other, Commercial, Industrial, Parkland, Residential.

[2] Additional information was obtained from the city directories, historical reports, title search, Site observations, interviews, and aerial photographs documented in the Pinchin report (2018) and supplemented by Jacobs with any readily available information.

Table D1-2. Summary of Environmental Reports
Phase One ESA Summary, 55 Baker Street, 152, 160 Wyndham Street North and Park Lane, Guelph, Ontario

Report Title	Date	Author	Prepared for	Description [a]	PCAs / COPCs	Field Program	Soil Results	GW Results	Tank related issues
Phase I Environmental Site Assessment, Baker Street Parking Lot, Guelph, Ontario	Mar-01	Kewen Environmental Limited (KEL)	City of Guelph	2001 KEL Phase I ESA Report consisted of historical reviews, a review of surrounding properties, a regulatory database search, and interviews as well as an assessment of the Site. The Phase I ESA Report was completed in general accordance with the CSA document entitled "Phase I Environmental Site Assessment" (CSA Document Z768-94), dated April 1994. Based on Pinchin's review of the 2001 KEL Phase I ESA Report, the following salient information was noted: • Up until 1853 the Phase One Property was historically used as a public burying ground; • The north-central portion of the Phase One Property was historically occupied by Steele's Wire Spring Ltd. (1907 until the early 1960s). The manufacturing activities, which included "japanning" and heat treating were conducted in the northeast corner of the historical building, which also included a machine shop. Various outside sheds were used to store wood, coke and oil; • The southeast corner of the of the historical Steele's property was occupied by the Board of Heat and Light Commissioners and Guelph Hydro. The 1960 FIP shows transformers located on this portion of the Phase One Property; • The commercial/industrial buildings located on the Phase One Property were demolished in the 1960s and the Phase One Property has been developed with a parking lot since that time; and • Based on the historical commercial use of the Phase One Property, KEL concluded that significant quantities of fill material may be present on-Site.	• Metals, VOCs, and Inorganics from spring manufacturing • Former Transformers • Fill of Unknown Quality	N/A	N/A	N/A	N/A
Phase II Environmental Site Assessment, Baker Street Parking Lot, Guelph, Ontario	Aug-01	Kewen Environmental Limited (KEL)	City of Guelph	The KEL Phase II ESA was completed to address the potential issues and contaminants of poential concern identified in the 2001 KEL Phase I ESA Report for the Phase One Property. A field program was implemented and laboratory results were compared to the then applicable standards, as provided in the MECP document entitled "Guidelines for Use at Contaminated Site in Ontario" (February 1997), specifically those of the "Table A industrial/commercial criteria in a potable groundwater condition" (Former Table A Standards). Report indicates that the transformer station was removed in 1989 and that "cleanup" activities were completed around the former transformers in 1998. Two of the three monitoring wells (MW2 and MW4) installed were dry. Pinchin compared the soil and groundwater results to the Table 1 Standards (MECP, 2011a) based on the eleveated pH in soil and considereing the Site as environmentally sensitive.	• Metals, VOCs, and Inorganics in soil from spring manufacturing • pH, conductivity, and inorganics in groundwater	Seven boreholes to a maximum depth of 6.1 mbgs, with three being instrumented as monitoring wells (MW2, MW4, and MW6): • Two soil samples analyzed for VOCs • Eleven soil samples analyzed for pH, EC • One groundwater sample analyzed for metals, sodium, chloride, and general	Soil samples collected from the boreholes advanced at the Site were submitted for select laboratory analyses of volatile organic compounds (VOCs) and metals and inorganics. All soil samples met the applicable Table A Standards except for BH2-2, which had a zinc exceedance. Elevated pH was noted at 5 of the 11 sampled locations. Pinchin's review of the data against the Table 1 Standards identified elevated concentrations of zinc (BH2) and lead (BH3).	A groundwater sample was collected from monitoring well MW6 and submitted for laboratory analyses of pH, conductivity and general inorganics. The groundwater sample submitted for laboratory analyses met the Former Table A Standards, with the exception of concentrations of sodium and chloride that exceeded the Former Table A Standards.	None identified
The 2006 Stage 3-4 Archaelogical Investigations of the Proposed Baker Street Facility, Fomer Public Burying Ground (AjHb-71), Guelph, Ontario	Aug-07	D.R. Poulton & Associates Inc.	City of Guelph	In July of 2006, D.R Poulton was retained to conduct an archaeological excavation on the south portion of the Phase One Property in the area of a proposed multi-storey parking facility. The following summarizes the findings of the 2007 D.R. Poulton Archaeological Report: • The Phase One Property was used as a public burying ground from 1827 until 1853; however, the public burying grounds were not officially closed until 1879 (i.e. 26 years since the last burial); • The Phase One Property historically consisted of naturally rolling topography; • Following closure, burials were removed; however, it was unclear how many burials took place between 1827 and 1853, as well as how many burials were removed following the closure of the public burying grounds; • Following the closure of the burial grounds the Phase One Property was used as park between 1879 and 1892 when the southern portion of the Phase One Property was sold to the Royal Curling Club; and • The excavation completed as part of the archaeological investigation documented the presence of 11 intact burials and a further 25 grave shafts of burials that had been exhumed in the second half of the 19th century.	N/A	N/A	N/A	N/A	N/A
Phase II Environmental Site Assessment, Baker Street Redevelopment, Guelph, Ontario	Dec-08	XCG Consultants Ltd.	City of Guelph	The 2008 XCG Phase II ESA was completed to further investigate the potential environmental issues identified during a pervious Phase I ESA completed by XCG in October of 2008 (this Phase I ESA report was not provided to Pinchin). A field program was implemented that included soil and groundwater samples collected from each borehole and monitoring well, as well as from existing monitoring wells installed as part of the 2001 KEL Phase II ESA and by previous work completed by Jacques Whitford Environmental Limited (Report not provided to Pinchin for review)) and were submitted for laboratory analyses of PHCs (F1 to F4), BTEX, VOCs, PAHs, PCBs, metals and/or pH; Based on a groundwater elevation survey the groundwater was determined to be flowing in an east-southeast direction below the Phase One Property; Two of the twelve shallow soil samples identified pH values outside the 5 to 9 range and therefore the Site was considered an environmentally sensitive Site. Based on the above, the soil and groundwater results were compared to the standards applicable at that time, as provided in the MECP document entitled, "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" dated March 9, 2004, specifically those of the "Table 1 – Background Site Condition Standards in a Potable Ground Water Condition for Industrial/ Commercial/Institutional property use" (2004 Table 1 Standards); Pinchin notes that the Former Table 1 Standards did not include a numerical standard for PHCs (F1-F4) or sodium.	• PHCs (F1 to F4), BTEX, VOCs, PAHs, PCBs, metals and/or pH;	Twenty boreholes were advanced, to a maximum depth of 10.7 mbgs, which included the instrumentation of 7 monitoring wells. Existing monitoring wells were also sampled as part of the field program. Samples were submitted for laboratory analyses of PHCs (F1 to F4), BTEX, VOCs, PAHs, PCBs, metals and/or pH.	Each soil sample submitted for laboratory analyses of PHCs (F1-F4), BTEX, VOCs, PAHs, PCBs, metals and/or pH met the 2004 Table 1 Standards, with the exception of the following: • Lead at boreholes BH-6 and BH-19; • Zinc at boreholes BH-2, BH-9 and BH-19; • Toluene at borehole BH-3; Pinchin notes that the 2004 Table 1 Standards did not include a numerical standard for PHCs (F1-F4). Pinchin compared the laboratory results to the 2011 Table 1 Standards, which identified exceedances of lead, PHC F3 and F4, and dibenzo(a,h)anthracene.	Each groundwater sample submitted for laboratory analyses of PHCs (F1-F4), BTEX, VOCs, PAHs, PCBs, metals and /r pH met the Former Table 1 Standards, with the exception of the following: • Cadmium at monitoring wells MW4, MW5S and BH5; • Cobalt at monitoring wells MW1, MW2, MW3, MW4, MW5S, MW5D, MW6 and BH2; • Copper at monitoring wells MW1, MW2, MW3, MW4, MW5S, MW5D, MW6, BH2, BH5 and BH6; • Lead at monitoring well BH6; • Nickel at monitoring well BH2; • Selenium at monitoring wells MW5D and MW6; • Zinc at monitoring wells MW2, MW4 and MW5S; • Toluene at monitoring wells MW1, MW2, MW5S and MW5D; • Multiple PAHs at monitoring well MW1. Pinchin compared the laboratory results to the 2011 Table 1 Standards, which identified groundwater exceedances of antimony, barium, cadmium, cobalt, copper, lead, nickel, sodium, selenium, PHC F3 and F4, ethylbenzene, toluene, and multiple PAHs.	N/A

Notes:

[a] Information presented in table was obtained directly from the Pinchin document entitled Phase One Environmental Site Assessment, 55 Baker Street, 152, 160 Wyndham Street North, Chapel and Park Lane, Guelph, Ontario , dated October 30, 2018

BTEX = benzene, toluene, ethylbenzene, xylenes
COPC = contaminant of potential concern
F = fraction
m = metre(s)
masl = meters above sea level
mbgs = metre(s) below ground surface
mm - millimetres
N/A = not applicable
NAPL = non aqueous phase liquids
O.Reg. = Ontario Regulation
PCA = potentially contaminating activity
PCBs = polychlorinated biphenyls
PHC = petroleum hydrocarbons
TCLP = toxicity characteristic leaching potential
VOCs = volatile organic compounds

Table D1-3. Areas of Potential Concern

Phase One ESA Summary, 55 Baker Street, 152, 160 Wyndham Street North and Park Lane, Guelph, Ontario

Areas of Potential Environmental Concern [a]		Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity [b]		Location of PCA (on-site or off-site) [c]	Contaminants of Potential Concern [d]	Media Potentially Impacted (Groundwater, soil and/or sediment)
APEC-1	Historical Industrial Property Use	55 Baker Street Park Lane	34	Metal Fabrication	Onsite	Metals (including As, Sb, Se, Hg, and Cr[VI]), B-HWS, CN-, EC, SAR, PHCs, PAHs, VOCs	Soil and Groundwater
APEC-2	Unknown/Poor Quality Fill Material	Entire Site	30	Importation of Fill Material of Unknown Quality	Onsite	Metals (including As, Sb, Se, Hg, and Cr[VI]), B-HWS, CN-, EC, SAR, PHCs, PAHs, VOCs	Soil and Groundwater
APEC-3	Historical Transformers	East-central portion of 55 Baker Street	55	Transformer Manufacturing, Processing and Use	Onsite	PHCs, BTEX, PCBs, PAHs	Soil
APEC-4	Use of Road Salts	Entire Site	48	Salt Manufacturing, Processing and Bulk Storage	Onsite	EC, SAR, sodium, chloride	Soil and Groundwater
APEC-5	Historical Dry Cleaning	North portion of 55 Baker Street	37	Operation of Dry Cleaning Equipment (where chemicals are used)	Offsite - North	VOCs	Groundwater
APEC-6	Historical Retail Fuel Outlet and automotive repair/servicing operations	North portion of 55 Baker Street	28	Gasoline and Associated Products Storage in Fixed Tanks	Offsite - North	PHCs, VOCs, PAHs, Metals (Lead)	Groundwater
APEC-7	Historical Dry Cleaning	North portion of 55 Baker Street	37	Operation of Dry Cleaning Equipment (where chemicals are used)	Offsite - North	VOCs	Groundwater
APEC-8	Historical Dry Cleaning	North portion of 160 Wyndham Street North and northeast portion of 55 Baker Street	37	Operation of Dry Cleaning Equipment (where chemicals are used)	Offsite - Northeast	VOCs	Groundwater
APEC-9	Historical Fuel Oil UST	North portion of 55 Baker Street	28	Gasoline and Associated Products Storage in Fixed Tanks	Offsite - Northeast	PHCs, VOCs, PAHs, Metals (Lead)	Groundwater
APEC-10	Historical Automotive Repair	Northeast portion of 55 Baker Street	27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	Offsite - Northeast	PHCs, VOCs, PAHs, Metals (Lead)	Groundwater
APEC-11	Historical Off-Site Industrial Operations	West-central portion of 55 Baker Street	34	Metal Fabrication	Offsite - West	PHCs, VOCs, PAHs, Metals (Lead)	Groundwater
APEC-12	Historical Automotive Garage	West-central portion of 55 Baker Street	27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	Offsite - West	PHCs, VOCs, PAHs, Metals (Lead)	Groundwater
APEC-13	Historical Automotive Garage	South portion of 152 Wyndham Street North	27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	Offsite - East	PHCs, VOCs, PAHs, Metals (Lead)	Groundwater
APEC-14	Historical Gasoline Spill	Southwest corner of 55 Baker Street	Other	Activity not defined in O. Reg. 153/04 Table 2 of Schedule D	Offsite - South	PHCs, PAHs, ~~Metals (Lead)~~[a], VOCs (MTBE)	Groundwater
APEC-15	Historical Dry Cleaning	Southeast portion of Park Lane	37	Operation of Dry Cleaning Equipment (where chemicals are used)	Offsite - East	VOCs	Groundwater
APEC-16	Historical UST	Southwest corner of 55 Baker Street	28	Gasoline and Associated Products Storage in Fixed Tanks	Offsite - South	PHCs, BTEX, PAHs, Metals (Lead)	Groundwater
APEC-17	Dry Cleaning, Historical Retail Fuel Outlet, and Automotive Repair	Northwest portion of 55 Baker Street	27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	Offsite - Northwest	PHCs, PAHs, Metals (including As, Sb, Se, Hg, and Cr[VI]), BTEX, VOCs	Groundwater
			28	Gasoline and Associated Products Storage in Fixed Tanks			
			37	Operation of Dry Cleaning Equipment (where chemicals are used)			
APEC-18	Former Oil Shed	Southwest portion of 55 Baker Street	28	Gasoline and Associated Products Storage in Fixed Tanks	Onsite	PHCs, PAHs, Metals (including As, Sb, Se, Hg, and Cr[VI]), BTEX, VOCs	Soil and Groundwater
APEC-19	Former Oil House	Western portion of 152 Wyndham Street North	28	Gasoline and Associated Products Storage in Fixed Tanks	Onsite	PHCs, PAHs, Metals (including As, Sb, Se, Hg, and Cr[VI]), BTEX, VOCs	Soil and Groundwater
APEC-20	Former Coke Storage	Northeast portion of 55 Baker Street	Other	Activity not defined in O. Reg. 153/04 Table 2 of Schedule D	Onsite	PHC, PAHs, Metals (including As, Sb, Se, Hg, and Cr[VI]), BTEX, VOCs, ABNs	Soil and Groundwater
APEC-21	Former Garage	Northeast portion of 55 Baker Street	27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	Onsite	PHCs, PAHs, Metals (including As, Sb, Se, Hg, and Cr[VI]), BTEX, VOCs	Soil and Groundwater

[a] APEC means the area on, in, or under a Phase One Property where one or more contaminants are potentially present, as determined through the Phase One ESA, including through (a) identification of past or present uses on, in, or under the Phase One Property; and (b) identification of PCAs.

APECs identified in the Pinchin (2018) Phase One ESA. APECs shaded in grey were identified by Jacobs. Metals as a COPC were removed from APEC-14 by Jacobs as the gasoline spill was in 2003.

[b] PCA – potentially contaminating activity means a use or activity as set out in Column A of Table 2 of Schedule D of O. Reg. 153/04 that is occurring or has occurred in a Phase One study area.

[c] "Onsite" refers to within the Phase One/Two Property; "Offsite" refers to the Phase One Study Area.

[d] Contaminants of potential concern were identified using the Method Groups as identified in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act, March 9, 2004, amended as of July 1, 2011.

Notes:

ABN = Acid Base Neutrals
As = arsenic
B-HWS = hot water soluble boron
BTEX = benzene, toluene, ethylbenzene
CN- = cyanide
Cr(VI) = hexavalent chromium
EC = electrical conductivity
Hg = mercury
MTBE = methyl tert-butyl ether
O. Reg. = Ontario Regulation
PAH = Polyaromatic Hydrocarbons
PCB = Polychlorinated biphenyl
PHC = Petroleum Hydrocarbons
SAR = sodium adsorption ratio
Sb = antimony
Se = selenium
UST = underground storage tank
VOC = Volatile Organic Compounds

Table D1-4. Phase One Conceptual Site Model

Phase One ESA Summary, 55 Baker Street, 152, 160 Wyndham Street North and Park Lane, Guelph, Ontario

Phase One CSM Element	Summary
Existing Buildings and Structures	No buildings exist on the Phase One Property. The Site consists of two asphalt parking lots (55 Baker Street, 152 and 160 Wyndham) and an asphalt laneway (Park Lane).
Identify Water Bodies in the Phase One Study Area	The Speed River is located approximately 130 to 150 m north-northeast of the Phase One Property.
Areas of Natural Significance	No areas of natural significance were identified within the Phase One Study Area, except for Kimberley Park located approximately 65 m northeast of the Phase One Property. The status of Kimberley Park as an area of natural significance has not been confirmed. [a]
Presence of Drinking Water Wells	No drinking water wells were identified on the Phase One Property. The Site and surrounding properties are serviced with potable water obtained from municipal groundwater supply wells located within the City of Guelph. Water wells within 500 m of the Site listed in the Ontario Water well records database are shown on Figure D1-1.
Identify Roads within the Phase One	Figure 3 of the Phase One ESA (Pinchin, 2018) presents the roadways and land uses within the Phase One Study Area.
Adjacent Property Uses	Figure 3 of the Phase One ESA (Pinchin, 2018) presents the adjacent property use: • To the north: commercial/industrial and residential • To the east: commercial/industrial and mixed use residential/commercial • To the south: residential, commercial/industrial and mixed use residential/commercial • To the west: residential, commercial/industrial and mixed use residential/commercial
Identify PCAs in the Phase One Study Area	A total of ~~56~~60 PCAs were identified in the Phase One Study Area and are shown on Figure 4 of the Phase One ESA (Pinchin, 2018) along with approximate locations of historical USTs. The following PCA types were identified on the Phase One Property and within 250 m of the Phase One Property that resulted in an APEC: •27 – Garages and Maintenance and Repair of Railcars, Marine Vehicles, and Aviation Vehicles •28 – Gasoline and Associated Products Storage in Fixed Tanks •30 – Importation of Fill Material of Unknown Quality •34 – Metal Fabrication •37 – Operation of Dry Cleaning Equipment (where chemicals are used) •48 – Salt Manufacturing, Processing and Bulk Storage •55 – Transformer Manufacturing, Processing, and Use Figures 4-1a and 4-1b in Appendix D3 illustrate the on- and off-Site PCAs, and indicate which PCAs result in an APEC.
Identify APECs	The Phase One ESA (Pinchin, 2018) and Jacobs identified twenty-one APECs for the Phase One Property, nine attributable to onsite PCAs, and twelve attributable to offsite PCAs. APECs and are listed in Table 4-2 and located on Figure 4-2.
COPCs	The COPCs identified by Jacobs from a review of the Phase One ESA (Pinchin, 2018) include metals (including hydride-forming metals), other regulated parameters (hot water soluble (HWS) boron, cyanide, EC, SAR, sodium, chloride, mercury, hexavalent chromium), VOCs, BTEX, PHCs, PAHs, dioxins/furans and ABNs.
Presence of Underground Utilities	Underground utilities on the Phase One Property provide electrical services to the light standards and pay meters, in addition to storm sewers which provide the drainage to the parking lots. The Site Representative indicated that a parking attendant building was recently demolished in 2016 on the west central portion of the property. The building was serviced by municipal water and was connected to the sanitary sewer system. Additionally, several buildings were historically present on the Phase One Property. It is unclear if utilities associated with these former buildings remain on the Phase One Property. Estimated depths of the utilities are 1 mbgs for electrical utilities, and 3 mbgs for storm sewers. Previous reports indicate that groundwater was encountered at depths of approximately 3.5 to 8.9 mbgs, therefore utility corridors are expected to be present above the water table and would not act as a preferential pathway for contaminant distribution and transport. It is unclear if historical utilities resulting from the historical industrial use on the Phase One Property are still present.
Regional/Local Geology	The Phase One Property and surrounding properties are located within the physiographical area identified as the Guelph Drumlin Field. Glacialfluvial outwash deposits of sands and gravel occur, underlain in places by fine-graines silts and clays, overlying dolostone bedrock. Native subsurface materials encountered during previous investigations (XCG, 2008), consisted of silty sand, silt and gravel, cobbles, sand and silt. No bedrock outcrops were observed on Site or in the surrounding area. Based on information provided in previous investigations (XCG, 2008), the overburden thickness ranges between approximately 4.3 and 7.3 m.
Regional/Local Hydrogeology	The Phase One Property is relatively flat, with a slight slope to the south. The surrounding area slopes gradually to the south and east towards the Speed River. The Speed River is located 130 m north-northeast and 440 m east of the Site, and flows southeast and discharges into the Grand River located approximately 19 kilometres south of the Site. Based on an elevation survey completed as part of previous investigations (XCG, 2008) the groundwater at the Site flows in an east-southeast direction towards the Speed River.
Uncertainties Affecting the Validity of Phase One CSM	On the basis of the uncertainties presented within the Phase One ESA report, it is possible that a PCA/APEC or land use has not been identified within the individual components of the Phase One ESA. Information was gathered from numerous sources (that is, aerial photographs, City Directories, database searches, historical reports, interviews, and site reconnaissance), which decreases the chance that a major PCA or land use was not identified in this Phase One ESA. Many aspects of the CSM have been previously studied and verified through subsurface investigations (for example, groundwater flow direction); these aspects are not directly affected by the noted uncertainties: • Quality of aerial photographs may not allow some features to be clearly identified, and professional judgment was used to relate the historical features identified in the aerial photographs to present day locations • Municipal addresses are known to change • Information provided by interviewed individuals, could be based on hearsay or personal opinion

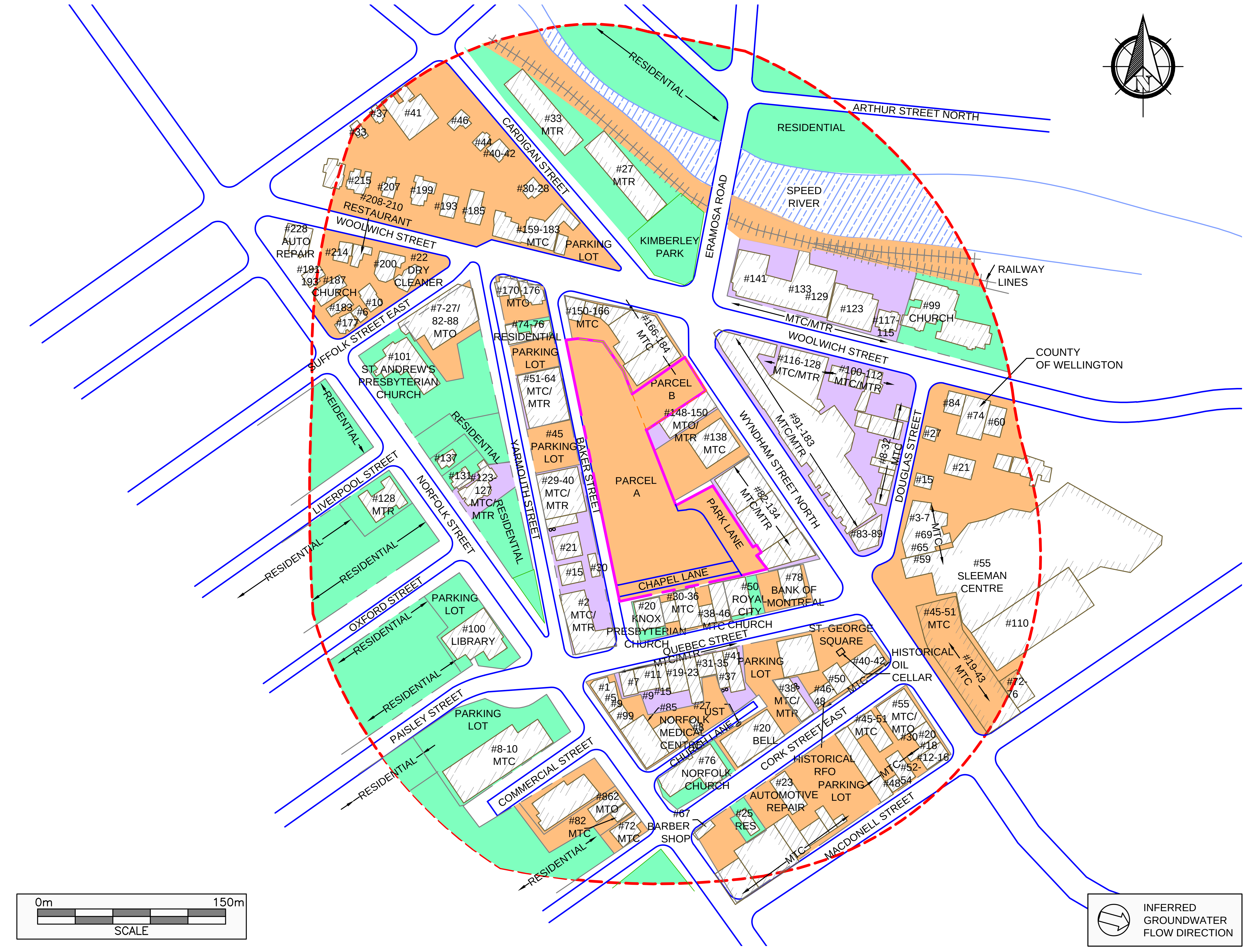
Notes:

This Phase One Conceptual Site Model was prepared by Jacobs based on a review of the Phase One Environmental Site Assessment prepared by Pinchin (2008) and a review of other information for the Site readily available or provided from the City of Guelph.

[a] The map that Pinchin (2008) refers to as the source of this information in their report is not included in the copy of the Phase One ESA provided to Jacobs. Online Ministry of Natural Resources and Forestry mapping accessed by Jacobs does not show an area of scientific or natural interest in the location of Kimberley Park, or within the Guelph city limits.

ABN = Acid base neutral
APEC = Areas of Potential Concern
BTEX = benzene, ethylbenzene, toluene and xylenes
COPC = Contaminant of Potential Concern
CSM = Contaminated Sites Model
EC = electrical conductivity
ESA = Environmental Site Assessment
masl = metre(s) above sea level
mbgs = metre(s) below ground surface
PAH = Polycyclic aromatic hydrocarbon
PCA = Potentially Contaminating Activity
Phase One Property = 55 Baker Street, 152 and 160 Wyndham Street N, Park Lane
PHC = Petroleum hydrocarbon
SAR = sodium adsorption ratio
UST = underground storage tanks
VOC = volatile organic compound(s)

Attachment D1-A
Figures from Pinchin Phase One ESA



LEGEND

🟩	RESIDENTIAL/PARK/ INSTITUTIONAL PROPERTY USE
🟧	COMMERCIAL/INDUSTRIAL PROPERTY USE
🟪	MIXED RESIDENTIAL/COMMERCIAL PROPERTY USE
▬ ▬	PHASE ONE STUDY AREA BOUNDARY
▬ ▬	PHASE ONE PROPERTY BOUNDARY
MTC	MULTI-TENANT COMMERCIAL
MTR	MULTI-TENANT RESIDENTIAL
MTO	MULTI-TENANT OFFICE
RFO	RETAIL FUEL OUTLET
UST	UNDERGROUND STORAGE TANK
○	VENT/FILL PIPES

PINCHIN

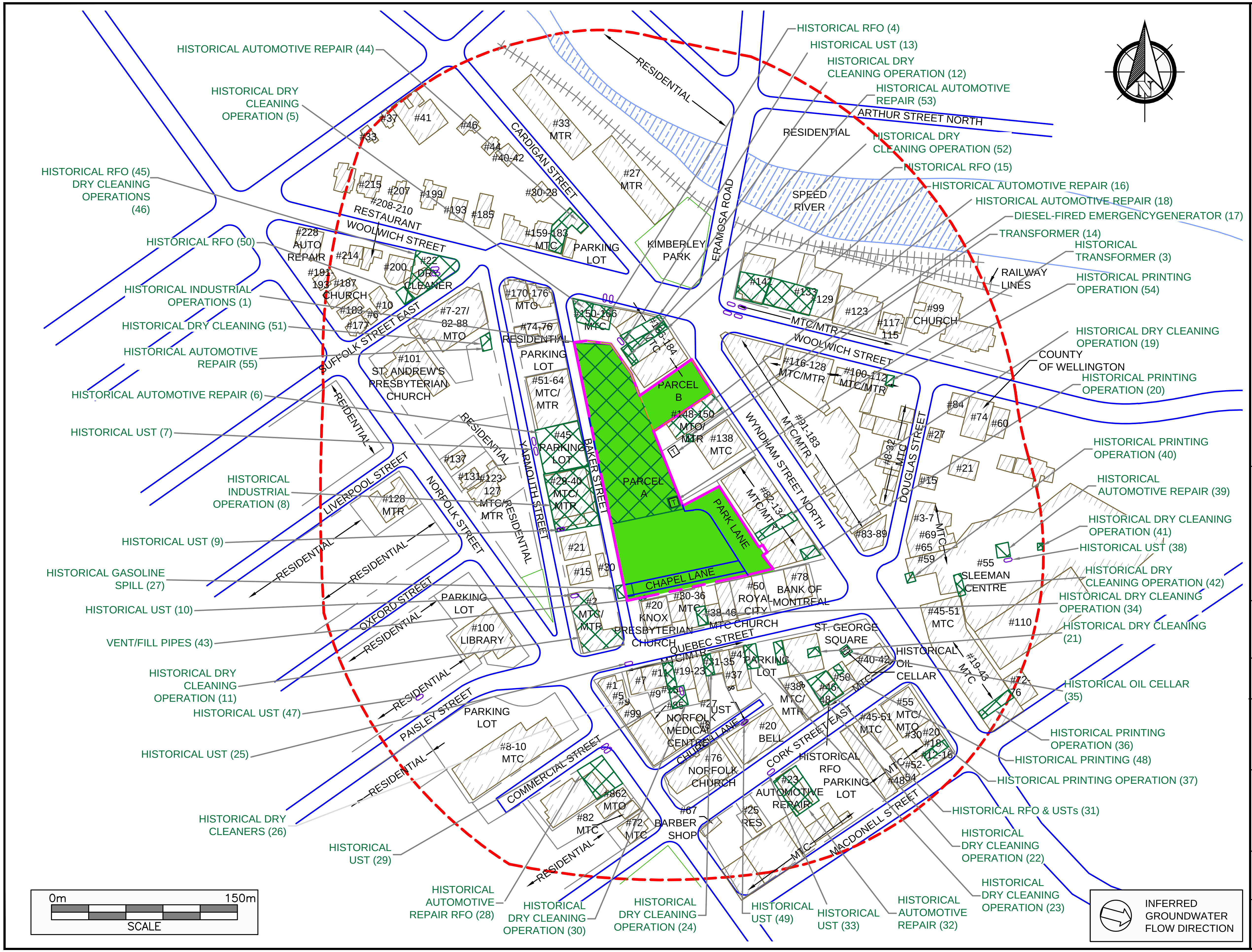
PROJECT NAME
PHASE ONE ENVIRONMENTAL SITE ASSESSMENT

CLIENT NAME
CITY OF GUELPH

PROJECT LOCATION
55 BAKER STREET, 152 AND 160 WYNDHAM STREET NORTH AND CHAPEL AND PARK LANE, GUELPH, ONTARIO

FIGURE NAME
PHASE ONE STUDY AREA

SCALE	PROJECT NO.
AS SHOWN	205059
DATE	FIGURE NO.
OCT. 2018	3



LEGEND

▬ ▬	PHASE ONE STUDY AREA BOUNDARY
▬ ▬	PHASE ONE PROPERTY BOUNDARY
MTC	MULTI-TENANT COMMERCIAL
MTR	MULTI-TENANT RESIDENTIAL
MTO	MULTI-TENANT OFFICE
RFO	RETAIL FUEL OUTLET
UST	UNDERGROUND STORAGE TANK
O	VENT/FILL PIPES
☒	AREA OF PCA
PCA	POTENTIALLY CONTAMINATING ACTIVITIES (REFER TO SECTION 6.4.1 OF REPORT FOR DETAILED SUMMARY OF PCAs)
🟩	FILL OF UNKNOWN QUALITY/POOR QUALITY FILL (2) AND ROAD SALTS (56)
⬭	HISTORICAL USTs
(#)	POTENTIALLY CONTAMINATING ACTIVITY NUMBER

PINCHIN

PROJECT NAME
PHASE ONE ENVIRONMENTAL SITE ASSESSMENT

CLIENT NAME
CITY OF GUELPH

PROJECT LOCATION
55 BAKER STREET, 152 AND 160 WYNDHAM STREET NORTH AND CHAPEL AND PARK LANE, GUELPH, ONTARIO

FIGURE NAME
POTENTIALLY CONTAMINATING ACTIVITIES

SCALE AS SHOWN	PROJECT NO. 205059
DATE OCT. 2018	FIGURE NO. 4

Attachment D2
Phase Two Environmental Site Assessment Summary

Attachment D2. Phase Two Environmental Site Assessment Summary

This attachment provides an overview of the Jacobs Engineering Group Inc. (Jacobs) Phase Two Environmental Site Assessment (ESA) work completed at the properties located at 55 Baker Street, 152 Wyndham Street North, and 160 Wyndham Street North, as well as the right-of-way known as Park Lane in Guelph, Ontario (Phase Two Property or Site). The Phase Two ESA is based on investigations Jacobs conducted between July 2019 and April 2020 (Jacobs 2020), and historical investigations conducted by XCG (2008).

This Phase Two Summary provides an overview for the scope of work and results of the current investigations. Appendix D3 provides the Phase Two conceptual site model (CSM), as documented in the draft Phase Two ESA (Jacobs 2020).

The City of Guelph (City) retained Jacobs to provide environmental services for the 1.14-hectare (ha) Site, which is in downtown Guelph, southwest of the Speed River (Attachment D3, Figures 2-1 and 2-2a). The Site is currently in use as a commercial parking lot and includes one laneway. No buildings are currently located onsite; however, buildings were historically present and associated with the use of portions of the Site for parkland, commercial, and industrial purposes. From approximately 1827 to 1879, the parcel associated with 55 Baker Street was used a public burial ground (community land use).

Jacobs developed the field program for the Phase Two ESA based on the results of the Phase One ESA (Pinchin 2018) and to provide general spatial coverage across the Site. The field components of the project included utility locating, archaeological clearances, monitoring well drilling and installation, soil and groundwater sampling, surveying, and water level elevation measurements. Jacobs and its subcontractors completed the field components, documented herein.

D2.1 Proposed Future Land Use

Jacobs understands the City is considering redeveloping the property for a mix of residential, commercial, community, and institutional use.

D2.2 Overview of Site Investigation

The Site underwent several subsurface environmental investigations between 1993 and 2020. The current Phase Two ESA activities on the Site were completed between July 2019 and April 2020. Phase Two ESA activities on the Phase Two Property consisted of soil borings, test pits, and the installation of groundwater monitoring wells.

Analytical data from a total of 14 historical investigative locations across the Site were considered reliable for use in the current Phase Two ESA. A total of 27 investigative locations were advanced across the Phase Two Property in 2019 and 2020. Analytical data from 36 soil sampling locations and an additional 5 groundwater-only sampling locations were used to evaluate contaminants of concern (COCs) as part of the Phase Two ESA (Jacobs 2020).

The objectives of the Phase Two ESA were to:

- Meet current Ontario Regulation (O. Reg.) 153/04, (MECP 2011a) requirements to support Record of Site Condition (RSC) filing.
- Investigate or further investigate areas of potential environmental concern (APECs) identified during the Phase One ESA (Pinchin 2018).
- Provide data to support a potential risk assessment (RA).

As summarized in Attachment D1, the Pinchin (2018) Phase One ESA (supplemented with Jacobs' review of that document) identified 21 APECs on the Phase Two Property, 9 which were attributed to onsite potentially contaminating activities (PCAs), and 12 which were attributed to offsite PCAs. These APECs and PCAs were the focus of the Phase Two ESA activities. Attachment D3, Figure 4-~~1~~2 shows the APECs identified in the Phase One ESA for the Phase Two Property, as well as the Phase Two ESA investigation locations.

The principal objective of the Phase Two ESA was to enable the assessment and update of current Site conditions, to identify general and current subsurface impacts that will need to be managed during Site redevelopment. The Phase Two ESA activities included the following main tasks:

- Arrange for public and private underground utility locates.
- Arrange for archeological services related to the historical use of the property as a burial ground.
- Develop a sampling and analysis plan (SAP) based on Phase One ESA findings and historical subsurface investigations.
- Drill boreholes during several field events:
  - July to August 2019 – Jacobs advanced 16 boreholes (BH200 through BH206 and MW100, MW101, MW102A, MW102B, MW103 through MW105, and MW107 through MW109) to a maximum depth of 8.23 metres below ground surface (mbgs). Soil samples were collected for chemical analysis. Ten boreholes were completed as monitoring wells.
  - September to December 2019 – Jacobs advanced nine boreholes (BH208 through BH211 and MW107B, MW110A, MW110B, MW111) to a maximum depth of 15.39 mbgs. Soil samples were collected from four of the locations. Four boreholes were completed as monitoring wells.
  - April 2020 – Jacobs advanced two boreholes (BH207 and MW113) to a maximum depth of 8.38 mbgs. Soil samples were collected, and one borehole was completed as a monitoring well.
- Collect at least two rounds of groundwater samples from the newly installed monitoring wells for COCs to address identified APECs.
- Conduct single-well hydraulic tests on five monitoring wells to improve the understanding of the subsurface materials' hydraulic properties across the Phase Two Property.
- Determine the applicable Site Condition Standards (SCS).
- Survey the monitoring wells to a geodetic benchmark.

Attachment D3, Figure 4-~~1~~2 shows the locations of the borings and wells advanced as part of this Phase Two ESA, as well as during historical investigations. The results of historical environmental studies were used as a screening method to focus the current Phase Two ESA work. Where reliable, as evaluated through a data quality evaluation (DQE), the historical results were used to supplement the Phase Two ESA results. In general, the historical data from 2008 were considered valid for inclusion in this Phase Two ESA.

D2.3 Quality Assurance and Quality Control

As part of the field quality assurance and quality control (QA/QC) program, the types of QA/QC samples collected included duplicate samples and trip blanks (for groundwater volatile analytes). Blind duplicate soil and groundwater samples were collected at a frequency of 1 duplicate sample for 10 field samples submitted. Trip blanks for VOCs were submitted to the laboratory for chemical analysis with each VOC groundwater batch submittal. These QA/QC samples are important in determining whether field, transport, or analytical activities and conditions may have biased the reported soil and groundwater results (for example, cross-contamination). Accurate soil and groundwater results are required to appropriately evaluate the Phase Two Property for the applicable SCS.

Jacobs received soil and groundwater certificates of analysis (COAs) from the laboratory electronically to reduce the possibility of transcription errors. Each sample collected by Jacobs as part of this Phase Two ESA investigation has an associated COA.

For the current investigation, the Jacobs project chemist evaluated the results though a data quality evaluation (DQE) process. Each sample was handled in accordance with the MECP *Analytical Protocols* for:

- Holding times
- Preservation method
- Storage requirement
- Container type

In combination with the field QA/QC program, the laboratory QA/QC program was evaluated to verify the accuracy, precision, and validity of the data reported by the laboratory. Various elements of the laboratory QA/QC program are used to evaluate the data:

- Blanks are analyzed to detect laboratory contaminations that can cause data to be biased high.
- Laboratory control samples (LCS) are used to evaluate the laboratory performance.
- Laboratory duplicates are used to measure precision in the laboratory.
- Matrix spikes (MS) are used to identify high or low bias caused by matrix interference.
- Surrogate spikes are used to evaluate the method performance that can cause high or low bias in the data.

The laboratory QA/QC program was evaluated by examining blanks, laboratory control samples, matrix spikes, and surrogate spike samples.

The precision of the data was verified through the review of the laboratory and field data quality indicators that include laboratory duplicate and field duplicate relative percent differences (RPD). Accuracy of the data was verified through the review of the LCS, MS) and surrogate recoveries, as well as the evaluation of laboratory method blank, trip blank data, and other method-specific criteria.

Detected and nondetected results associated with QC issues were flagged “J” and “UJ,” respectively, and are considered estimated. Sample results flagged “U” are considered nondetected due to detections in the laboratory blank.

The representativeness of the data was verified through the samples’ collection, storage, and preservation procedures and the verification of holding-time compliance. The comparability of the data was confirmed using standard analytical procedures and standard units for reporting. Completeness is a measure of the number of valid measurements obtained in relation to the total number of measurements planned. Valid data are defined as all data that are not rejected for project use. No data have been rejected. All data are considered valid.

The soil and groundwater analytical data evaluated as part of the DQE are considered valid and can be used to support the project decision-making process.

D2.4 Applicable Site Condition Standards

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

The items in Attachment D2-A, Table 2-3 were considered during the selection of the SCS, as outlined in O. Reg. 153/04 (MECP, 2011a).

The special conditions for environmentally sensitive areas under Sections 41 or 43.1 of O. Reg. 153/04 do not apply to the Phase Two Property:

- The Site is not considered an area of natural significance or to be within the proximity of an area of natural significance, based on the information reviewed as part of the Phase One ESA (Pinchin 2018).
- Jacobs analyzed ~~44~~45 soil samples for pH from 17 locations across the Phase Two Property~~.~~ (shown on Attachment D3, Figure 2-3). Based on the results of the Jacobs investigation, soil pH was found to range from 7.37 to 9.46. Soil pH was within the MECP's acceptable range for samples collected in both surface soil (from between surface to 1.5 mbgs, with a pH value in surface soil less than 5 or greater than 9) and subsurface soil (more than 1.5 mbgs with a pH value in subsurface soil less than 5 or greater than 11). Historical investigations reported elevated pH (greater than 9) in surface soil samples; however, brick fragments or concrete were present in the stratigraphy where samples with elevated pH were collected, based on a review of the borehole logs. This information suggests nonsoil materials may have been sampled, potentially biasing the historical soil pH results. Therefore, the historical results may not be representative of actual soil pH conditions. Based on this information, Jacobs has relied solely on the soil pH data collected during the recent investigation to determine the applicable SCS, and soil pH is within the MECP's acceptable range.
- The special conditions for land within 30 m of a water body under Section 43.1 of O. Reg. 153/04 do not apply to the Phase Two Property; No waterbodies are located on the Site or within 30 m of the Site. The Speed River is the nearest downgradient waterbody, located approximately 130 to 150 m north-northwest of the Site.
- The special conditions for shallow soil properties cited under Section 43.1 of O. Reg. 153/04 do not apply to the Phase Two Property; the depth to bedrock is greater than 2 m, as bedrock was encountered between 4.93 mbgs and 8.43 mbgs.

The adjacent properties within 250 m are serviced by a municipal water source. Since the groundwater near the Site does and will serve as a raw water supply for a drinking water system, the potable groundwater condition was applied.

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

Based on this information reviewed by the Qualified Person for ESAs (QPESA), the *Table 2 Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for coarse grained soil and residential/parkland/institutional land use* (Table 2 SCS) was applied to the Site.

D2.4.1 Description of Hydrogeological and Geological Interpretations that Differ from the Generic Standards

The following known hydrogeological and geological interpretations of the Site differ from the MECP assumptions used in the derivation of the generic SCS (MECP 2011c):

- The distance to the nearest downgradient surface water body
- The horizontal hydraulic gradient
- Hydraulic conductivity

These Site-specific differences have been considered in the Modified Generic Risk Assessment tool, as required, and used where appropriate.

D2.5 Additional Data Screening

As part of the Phase Two ESA, Jacobs thoroughly reviewed the soil and groundwater results to screen and identify COCs. Select soil and groundwater results, such as elevated laboratory reporting limits and parameters with no available criteria, were further evaluated and considered for their ability to accurately represent contaminants of potential concern (COPCs) and the Site conditions. At the discretion of the QPESA for the Site, some data were excluded from being carried through to the analytical database for the RA. The rationale for removing the data points is presented in Attachment D2-A, Table 6-7b (soil) and Table 6-10b (groundwater).

D2.6 Phase Two Environmental Site Assessment Results and Conclusions

Soil environmental conditions were characterized based on the evaluation of historical samples, in addition to the recent investigations conducted for the Phase Two ESA.

Soil conditions were characterized using the Phase Two ESA sampling and reliable historical data, comprising 95 soil samples from 36 locations across the Phase Two Property. Attachment D3, Figure 4-~~1~~2 shows the sample locations.

Soils on the Phase Two Property were found to be generally impacted with elevated concentrations of other regulated parameters (ORPs); specifically, electrical conductivity (EC) and sodium adsorption ratio (SAR). Localized metals (lead and mercury) were also identified in a limited area at the Phase Two Property. The presence of these parameters is consistent with the Site's historical and industrial land uses.

Groundwater across the Phase Two Property was evaluated using data from 39 samples collected from 15 monitoring wells. Refer to Attachment D3, Figure 4-~~1~~2 for sample locations.

Groundwater across the Phase Two Property was found to be generally impacted with elevated concentrations of sodium and chloride, with localized impacts of metals (specifically, cadmium).

Samples were analyzed for the following parameters, and were not found to exceed the Table 2 SCS for soil or groundwater:

- Polychlorinated biphenyls (PCBs)
- Benzene, toluene, ethylbenzene, and xylenes (BTEX)
- Volatile organic compounds (VOCs)
- Petroleum hydrocarbons (PHCs)
- Acid, base, neutral compounds (ABNs)
- Dioxins and furans (D/Fs).

D2.6.1 Soil Exceedances of the Table 2 Site Condition Standards

The following points summarize the quality of the soil samples that exceeded the Table 2 SCS:

- Elevated concentrations of EC and SAR were identified in soil across most of the Phase Two Property, except for the northeastern portions of the 152 and 160 Wyndham Street North parcels. Concentrations ranged from 0.0902 to 2.95 millisSiemens per centimetre (mS/cm) and 0.15 to 108 SAR, respectively. Maximum concentrations were identified at MW102B (EC) and MW113 (SAR) in the fill. Exceedances of EC and SAR in soil across the Phase Two Property were identified to a maximum depth of 0.792 mbgs (MW102B). The presence of EC and SAR at the Site is related to the application of salt on the parking lot surface during winter conditions. Under Paragraph 1 of Section 49.1 of the revised O. Reg. 153/04, the SCS is deemed to not be exceeded for the purpose of Part XV.1 of the Act if a substance is applied to surfaces for the safety of vehicular or pedestrian traffic under snow or ice conditions or both; therefore, EC and SAR are not considered to be COCs.
- Metals exceedances were limited to lead and mercury, which were identified in the southeastern portion of the Phase Two Property at MW101, within fill material between 0.46 and 0.61 mbgs. The other soil samples collected across the Phase Two Property had concentrations of metal parameters less than the Table 2 SCS, including samples Jacobs collected during the current investigation to confirm the absence of metals where historical exceedances[1] were identified.
- One historical sample (BH-14) identified PAH exceedances within the west-central portion of the Site: elevated concentration of dibenzo[a,h]anthracene (0.13 micrograms per gram [µg/g]) between 0.8 and 1.4 mbgs within the fill materials. In November 2019, BH208 was drilled in the same location as historical BH-14, and PAH samples were collected within the same sampling interval, as well as from a lower interval (2.29 to 2.44 mbgs), and the results were less than the Table 2 SCS. The combined average of the samples collected at the same depth interval met the Table 2 SCS. It is the QPESA's opinion that the historical exceedance was likely related to the presence of asphalt directly above the sampling location, and is not considered representative of soil conditions on the Site.

The CSM (Attachment D3) provides additional details regarding soil quality and delineation.

D2.7 Groundwater Exceedances of the Table 6 Site Condition Standards

The following points summarize the quality of the groundwater samples exceeding the Table 2 SCS:

- Chloride and sodium exceedances were identified in groundwater throughout the Phase Two Property. Maximum concentrations of chloride (9,610 micrograms per gram [µg/L]) and sodium (6,100,000 µg/L) in groundwater were identified at the northern end of the Site in MW102B. The presence of sodium and chloride at the Site is related to the application of salt on the parking lot surface during winter conditions. Under Paragraph 1 of Section 49.1 of the revised O. Reg. 153/04, the SCS is deemed to not be exceeded for the purpose of Part XV.1 of the Act if a substance is applied to surfaces for the safety of vehicular or pedestrian traffic under conditions of snow or ice, or both; therefore, chloride and sodium are not considered to be COCs.
- Metals exceedances in groundwater were limited to cadmium and identified at two monitoring wells (MW107 and MW113), near the southwestern property boundary. Maximum concentrations were

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[1] Historical metals exceedances (including for cadmium, copper, lead, and zinc) were identified in the northern and central portions of the Site (BH-19-MW6, BH-K3, SA9, BH-K2, and BH-06). These historical data were not collected or analyzed using O. Reg. 153/04 protocols; therefore, these data are not considered reliable for the Phase Two ESA. All historical metal exceedances were resampled in the current investigation and are documented in the Phase Two ESA (in draft) (Jacobs 2020).

reported at MW113 (6.17 µg/L), screened between 5.3 and 8.4 mbgs. Exceedances were vertically delineated by MW107B (13.5 to 15.4 mbgs), where concentrations were less than the Table 2 SCS.

- Elevated concentrations of chloroform were reported in samples, and the source of the exceedance was believed to be related to the municipal water that was used during the bedrock coring process. Based on the available information, the QPESA determined there was a discharge of drinking water (within the meaning of the Safe Drinking Water Act, 2002), resulting in chloroform exceeding the SCS. Under paragraph 2 of Section 49.1 of the revised O. Reg. 153/04, the SCS is deemed to not be exceeded for the purpose of Part XV.1 of the Act. Additional details are provided in the Phase Two ESA (in draft) (Jacobs 2020).

Refer to the CSM (Attachment D3) for additional details regarding groundwater quality and delineation.

D2.8 References

Jacobs Engineering Group Inc. (Jacobs). 2020. *Phase Two Environmental Site Assessment for 55 Baker Street, 152 Wyndham Street North, 160 Wyndham Street North and Park Lane, Guelph, ON.* Prepared for the City of Guelph. (In progress).

Ontario Ministry of the Environment, Conservation and Parks (MECP). 2011a. O. Reg. 153/04, made under the Environmental Protection Act, Records of Site Condition – Part XV.1 of the Act. As amended.

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

Ontario Ministry of the Environment, Conservation and Parks (MECP). 2011c. *Rationale for the Development of Soil and Ground Water Standards for Use at Contaminated Sites in Ontario*. April 15, 2011.

Pinchin Environmental Ltd. (Pinchin). 2018. *Phase One Environmental Site Assessment (Final), 55 Baker Street, 152, 160 Wyndham Street North, Chapel and Park Lane, Guelph, Ontario*. Prepared for the City of Guelph. October 30.

XCG Consultants Limited. 2008. *Phase II Environmental Site Assessment, Baker Street Redevelopment Site, Guelph, Ontario*. Prepared for The City of Guelph. December 19.

Attachment D2-A
Tables

Table 2-3. Items Considered for Site Condition Standards Selection

Phase Two Environmental Site Assessment, 55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Condition	Evaluation
Land use	The current land use is commercial and community. The proposed future land use is is a mix of residential, commercial, community, and institutional uses.
Potable or non-potable groundwater	The Site and adjacent properties within 250 m are serviced by a municipal water source. However, as the City of Guelph relies on groundwater for its water supply (City of Guelph 2018), the potable groundwater condition will be applied.
Proximity to surface water body	No waterbodies are located on the Site. The nearest waterbody is the Speed River, which is located approximately 130 m north-northeast (downgradient) of the Site.
Proximity to areas of natural significance or environmentally sensitive areas	The Site is not considered an area of natural significance or to be within the proximity of an area of natural significance based on the information reviewed as part of the Phase One ESA (Pinchin 2018). Kimberley Park is located approximately 65 m to the northeast. The status of Kimberley Park as an area of natural significance has not been confirmed. [a]
Depth to bedrock	A property is considered a shallow soil property if one-third or more of the area consists of soil depths of 2 mbgs or less, excluding non-soil surface treatment (that is, asphalt, concrete, or aggregate) (MECP 2011a). The depth to bedrock is greater than 2 m, as bedrock was encountered between 4.93 mbgs and 8.43 mbgs.
pH of soil	The Jacobs investigation found soil pH to range from 7.37 to 9.46 based on 45 samples taken from 17 locations (shown on Attachment D3, Figure 2-3). Soil pH was within the MECP's acceptable range for samples collected in both surface soil (from between surface to 1.5 mbgs, with a pH value in surface soil less than 5 or greater than 9) and subsurface soil (more than 1.5 mbgs with a pH value in subsurface soil less than 5 or greater than 11). Historical investigations have identified elevated pH (greater than 9) in surface soil; however, many of the borehole logs reported brick fragments or concrete present in the stratigraphy where samples with elevated pH were collected. This information suggests that non-soil materials may have been sampled, potentially biasing the historical soil pH results. Therefore, the historical results may not be representative of actual soil pH conditions. Considering this above information, Jacobs has solely relied on the soil pH data collected during recent investigation to determine the applicable SCS with respect to soil pH. On this basis, soil pH is within the MECP's acceptable range.
Soil texture	The soil condition standards for coarse-grained soils were used, based on the grain-size results, to be conservative and to account for the extensive presence of heterogeneous fill materials across the surface of the Site.

[a] The map that Pinchin (2008) refers to as the source of this information in their report is not included in the copy of the Phase One ESA provided to Jacobs. Online Ministry of Natural Resources and Forestry mapping accessed by Jacobs does not show an area of scientific or natural interest in the location of Kimberley Park, or within the Guelph city limits.

Notes:

ESA = environmental site assessment
Jacobs = Jacobs Engineering Group Inc.
m = metre(s)
mbgs = metre(s) below ground surface
MECP = Ministry of the Environment, Conservation and Parks
SCS = site condition standards
Site = 55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Table 6-7b. Rationale for the Removal of Soil COCs

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Parameter Group	Parameter	Category	Sample(s)	Comment/Rationale
INORGANICS	Sodium	Parameter with no Table 2 SCS but detected concentrations above the OTR value.	18 samples across the Site from 2019 and 2020.	18 of a total of 64 samples had detected concentrations greater than the OTR value of 216 µg/g. The remaining 46 samples had detected concentrations of sodium below the OTR value. Sodium risks are currently analyzed using SAR analysis. SAR results are discussed in Table 6-7c.. Based on the available information, at the discretion of the QPESA, sodium is not considered to be a COC for the Site.

Notes:

The rationale for exclusion of COCs listed in this table is based on the data collected as part of the ESA and only applies to this ESA.

µg/g = micrograms per gram

COC = contaminant of concern

O. Reg. = Ontario Regulation

OTR = Ontario Typical Range

QPESA = MECP Qualified Person for Environmental Site Assessment

SAR = sodium adsorption ratio

SCS = Site Condition Standards

Table 6-10b. Rationale for the Removal of Groundwater COCs
55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Parameter Group	Parameter	Category	Sample(s)	Comment/Rationale
METALS	Antimony	Parameter with existing SCS but RL exceedances only	Three samples (MW100, MW102A, MW102B) had RL exceedances of the SCS in September 2019 (COA L2343122)	One sample collected from each location listed had RL exceedances for antimony in September 2019. All other samples collected on the Phase Two Property had nondetected concentrations of the parameter, with the exception of one sample (MW108) that had detected concentrations of antimony, approximatlely an order-of-magnitude less than the SCS. Laboratory reports indicated that these detection limits were adjusted as the samples required dilution due to high concentrations of other target analytes (in this case, assumed to be sodium and chloride). Based on the available information, this parameter was determined to likely not be present at concentrations exceeding the SCS; therefore, at the discretion of the QPESA, was not considered to be a COC for the Phase Two Property.
METALS	Beryllium Cobalt Silver	Parameters with existing SCS but RL exceedances only	Seven samples (MW100 x 2, MW102A x 2, MW102B x 2, MW110A) had RL exceedances of the SCS in September 2019 (COA L2343122) and December 2019 (COA L2399298).	Two samples collected from MW100, MW102A and MW102B, and one sample collected from MW110A had RL exceedances for each of the noted metals in September and December 2019. All other samples collected on the Phase Two Property had nondetected concentrations of the noted metals, with the exception of three samples (September and December 2019 at MW108 and December 2019 at MW103) that had detected concentrations of cobalt approximatlely 2.5 times less than the SCS. Laboratory reports indicated that these detection limits were adjusted as the samples required dilution due to high concentrations of other target analytes (in this case, assumed to be sodium and chloride). Based on the available information, these parameters were determined to likely not be present at concentrations exceeding the SCS; therefore, at the discretion of the QPESA, were not considered to be COCs for the Phase Two Property.
METALS	Vanadium	Parameter with existing SCS but RL exceedances only	Eight samples (MW100 x 2, MW102A x 2, MW102B x 2, MW110A x 2) had RL exceedances of the SCS in September 2019 (COA L2343122) or November 2019 (COA L2387876), and December 2019 (COA L2399298).	Two samples collected from each location listed had RL exceedances for vanadium in September or November 2019, and December 2019. All other samples collected on the Phase Two Property had nondetected concentrations of the noted metal, with the exception of one sample (MW108) that had a detected concentration of vanadium approximatlely an order-of-magnitude less than the SCS. Laboratory reports indicated that these detection limits were adjusted as the samples required dilution due to high concentrations of other target analytes (in this case, assumed to be sodium and chloride).

Notes:

The rationale for exclusion of COCs listed in this table is based on the data collected as part of the ESA and only applies to this ESA.

µg/L = micrograms per gram
COA = certificate of analysis
COC = contaminant of concern
O. Reg. = Ontario Regulation

RL = laboratory reporting limit
PCA = potentially contaminating activity
QPESA = MECP Qualified Person for Environmental Site Assessment
SCS = Site Condition Standards

Attachment D3
Phase Two Conceptual Site Model

Phase Two Conceptual Site Model

Based on recent and historical Phase Two Environmental Site Assessment (ESA) work completed at the properties at 55 Baker Street, 152 Wyndham Street North, and 160 Wyndham Street North, as well as the right-of-way known as Park Lane in Guelph, Ontario (Phase Two Property or Site), this appendix provides a Phase Two conceptual site model (CSM), as required by Ontario Regulation (O. Reg.) 153/04 (MECP 2011a). The Site is located in downtown Guelph, southwest of the Speed River (~~Appendix C,~~ Figure 2-1) and is approximately 1.14 hectares (ha) in size. The Site is currently in use as a commercial parking lot and includes one laneway.

No buildings are currently located onsite; historical buildings (~~Appendix C,~~ Figure 2-2a) were associated portions of the Site being used for parkland, commercial, and industrial purposes. From approximately 1827 to 1879 the parcel associated with 55 Baker Street was used a public burial ground (community land use). In 1892, a curling club was completed on the southern portion of the Site, and between the late 1890s and early 1900s, an industrial building (sewing machine and accessory manufacturer) was constructed in the central western portion of the Site. The industrial building and curling club were demolished in the early to mid-1960s and mid- to late 1960s, respectively. Subsequently, the Site was redeveloped into an asphalt parking lot.

Historically, 152 and 160 Wyndham Street North were developed with commercial buildings during the mid-1800s. The northern portion of the parcel contained the American Hotel and a movie theatre, and an undertaker used the southern portion of the parcel. These properties were redeveloped for commercial retail use between 1916 and 1938, and remained so until between 2009 and 2013, at which point the buildings were demolished and replaced with an asphalt parking lot.

1(i) Potentially Contaminating Activities

The Phase One ESA (Pinchin 2018) identified several potentially contaminating activities (PCAs)~~, as presented on the Pinchin PCA figure in Appendix A.~~ within and outside the Site. Based on Jacobs Engineering Group Inc.'s (Jacobs') review of the Pinchin Phase One ESA (2018), as well as available historical environmental reports, aerial photographs, and fire insurance plans (FIPs), the following PCAs were identified on the Site, and resulted in an area of potential environmental concern (APEC) (shown on Figure 4-1a):

- 27 - Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles
- 28 - Gasoline and Associated Products Storage in Fixed Tanks
- 30 - Importation of Fill Material of Unknown Quality
- 34 – Metal Fabrication
- 48 - Salt Manufacturing, Processing and Bulk Storage
- 55 - Transformer Manufacturing, Processing and Use

The following PCAs were identified during the Phase One ESA (Pinchin 2018) outside the Phase Two Property, but on lands within 250 metres (m) of that property (that is, Phase Two Study Area) (shown on Figure 4-1b):

- 27 - Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles
- 28 - Gasoline and Associated Products Storage in Fixed Tanks
- 34 – Metal Fabrication
- 37 - Operation of Dry Cleaning Equipment (where chemicals are used)

1.(ii) Areas of Potential Environmental Concern

~~Appendix B,~~ Table 4-2 identifies the 8 APECs identified from onsite PCAs and the 13 APECs identified from offsite PCAs at the Phase Two Property. The following 21 APECs were identified within the Phase One ESA (Pinchin 2018) (APECs 1 through 16) and by Jacobs (APECs 17 through 21) for the Phase Two Property. (Note, these are grouped by area, rather than in numerical order.)

- APECs from Onsite PCAs
  - APEC-1: Historical Industrial Property Use: Coil wire springs, sewing machines, and accessories were historically manufactured at 55 Baker Street.
  - APEC-2: Unknown/Poor Quality Fill Material: – The XCG Phase II ESA (XCG 2008) identified fill material to 3.0 metres below ground surface (mbgs) at 55 Baker Street, and this is also likely located for the Wyndham properties, based on when they were developed (1862) after historical buildings had been demolished.
  - APEC-3: Historical Transformers: The 1960 FIP depicted an area of 55 Baker Street labelled as 'transformers.'
  - APEC-4: Use of Road Salts at the Property: The Site is currently used as a parking lot, and road salts are applied for the vehicular and pedestrian safety.
  - APEC-18: Former Oil Shed: The 1911 FIP showed a small oil shed in the southwestern corner of the White Sewing Machine of Canada parcel of land on 55 Baker Street.
  - APEC-19: Former Oil House: The 1911 FIP showed a small oil house on the former White Sewing Machine of Canada parcel, now the western portion of 152 Wyndham Street.
  - APEC-20: Former Coke Storage: The 1911 FIP showed a garage located on the northeastern portion of 55 Baker Street.
  - APEC-21: Former Garage: The 1960 FIP showed a garage located on the northeastern portion of 55 Baker Street.
- APECs from Offsite PCAs to the North
  - APEC-5: Historical Dry Cleaning: Potential dry cleaners were identified at 164 Woolwich Street.
  - APEC-6: Historical Retail Fuel Outlet and Automotive Repair/Servicing Operations: Former automotive operations were identified at 160 Woolwich Street.
  - APEC-7: Historical Dry Cleaning: Potential dry cleaners were identified at 152 Woolwich Street.
  - APEC-8: Historical Dry Cleaning: Potential dry cleaners were identified at 172 Wyndham Street North.
  - APEC-9: Historical Fuel Oil Underground Storage Tank (UST): A historical UST was identified at 176 Wyndham Street North.
  - APEC-10: Historical Automotive Repair: A former automotive repair shop was identified at 176 Wyndham Street.
  - APEC-17: Dry Cleaning, Historical Retail Fuel Outlet, and Automotive Repair: These operations were identified at 192 Woolwich Street and 51 Yarmouth Street.
- APECs from Offsite PCAs to the East
  - APEC-13: Historical Automotive Garage: A former garage was identified at 146 Wyndham Street North from 1930 to 1949.

  - APEC-15: Historical Dry Cleaning: Former dry cleaning operations were identified at 108 Wyndham Street North from 1917 to 1922.
- APECs from Offsite PCAs to the South
  - APEC-14: Historical Gasoline Spill: Based on database searches, a historical gasoline spill at the intersection of Chapel Lane and Baker Street occurred, with possible environmental impacts to land and water. The quantity and exact location are unknown.
  - APEC-16: Historical Aboveground Storage Tank (AST): Vent and fill pipes associated with an AST were observed at the corner of 20 Quebec Street, a southern adjacent property to the Site, and hydraulically down- and transgradient from the Site.
- APECs from Offsite PCAs to the West
  - APEC-11: Historical Offsite Industrial Operations: Cooke & Denison Machine and Tool Works was identified at 40 Baker Street from 1946 to 1960.
  - APEC-12: Historical Automotive Garage: A former garage was identified at 45 Baker Street from 1946 to 1960.

~~Appendix C,~~ Figure 4-~~1~~2 shows the locations of the APECs and the current and historical borehole and monitoring wells. ~~As Appendix B,~~ Table 6-4 shows, the Phase Two Property APECs have been investigated for the associated contaminants of potential concern (COPCs). ~~As Appendix C,~~ Figure 2-2b shows~~,~~ several underground and overhead utilities are present in this area, including a gas line, water line, storm sewer, and several overhead hydro lines.

1.(iii) Subsurface Utilities and Construction Features

Utilities (including sanitary and storm sewers and water lines) were active and connected during the Phase Two ESA investigation, and are still present in the subsurface. Based on these utility connections, there is potential for the preferential flow of COCs within utility corridors. However, based on the following factors, COCs are most likely to be transported (that is, to migrate) via groundwater:

- Depth of groundwater (at least 3.78 mbgs [perched] and 5.82 mbgs [bedrock])
- Suspected depth of underground utilities (1.5 mbgs or deeper)
- Presence of permeable materials onsite (fill, sand, and sand and gravel identified from surface to bedrock at an average depth of 5.99 mbgs)

~~Appendix C,~~ Figures 2-2a and 2-2b show building outlines and identified underground utilities, respectively, on the Phase Two Property.

2. Physical Setting

The topography over the Phase Two Property is moderately flat, with ground surface elevations ranging from 328.34 metres above sea level (masl) (MW113 in the south) to 330.16 masl (BH201 in the west). The Site slopes slightly from the western border towards the south, north, and east. Surface runoff at the Phase Two Property is expected to flow radially from the west in these directions but is directed towards onsite catchbasins. ~~Appendix C,~~ Figure 3-1 shows the regional topography and surface water drainage features. The Speed River is the nearest downgradient waterbody, located approximately 130 to 150 m north-northeast of the Site, and ground surface tends to slope north towards the river. Groundwater from the region is likely to eventually discharge to Speed River.

The City of Guelph (City) categorizes regions of Guelph within Wellhead Protection Areas (City 2012). The Site is within Wellhead Protection Area B (2-year travel time) for several of the City's municipal water supply wells. The nearest municipal wells to the Site include the Water Street, Edinburgh, Membro and Dean Wells (approximately 1.4 to 2.0 km south of the Site past the Eramosa River), and the Park and Emma Wells (approximately 1.3 to 1.5 km north of the Site past the Speed River).

The municipal groundwater resource is primarily drawn from the Gasport Formation, estimated to occur at least 45 mbgs. A lower-permeability Reformatory Member and Vinemount Member of the Eramosa Formation are generally understood to serve as a regional aquitard, situated above the Gasport and limestone formations of the Goat Island Formation (Brunton 2009).

The City is also part of the Grand River Source Protection Plan (Plan) (Lake Erie Region Source Protection Committee 2019). The Plan assigns Drinking Water Threat Vulnerability Scores across the region based on various risk factors; the Phase Two Property is assigned a Vulnerability Score of 10, the highest possible, indicating it is susceptible to potential contamination. The Site is also in a highly vulnerable aquifer and issues contributing area but is not in a significant groundwater recharge area or in a source water intake protection zone. ~~Appendix C,~~ Figure 3-2 shows the Plan mapping and location of nearest municipal wells.

2.(i) Stratigraphy

The Site is interpreted to consist of a predominantly sandy overburden overlying Guelph Formation dolostone bedrock. Within the northern portion of the Site, there is a thick silt deposit. Exhibit 1 summarizes the geological units encountered beneath the Site during the Phase Two ESA activities.

Exhibit 1: Site Stratigraphy

Geological Unit	Approximate Depth (mbgs)	Average Thickness (m)	Lithology
Asphalt	Up to 0.15		A thin layer of asphalt was observed.
Fill	0.15 to 3.91	1.87	Sand, sand and gravel, or silty sand were encountered. Silty clay and clayey silt were also observed. Anthropogenic materials such as brick, glass, metal products, and wood were commonly reported, as was iron oxide staining on the soil.
Native Overburden	0.81 to bedrock	See below	A sand matrix was encountered with interbedded layers of gravel and silt (described herein), extending to bedrock. The sand is generally brown, dense, and moist.
Silt Layer	2.13 to bedrock	3.58	A silt layer was encountered in the northern portion of the Site. The silt was generally described as brown or grey, fine to coarse sand, low to high plasticity, with traces of gravel.
Silt Lens	2.21 to 3.72	1.37	A smaller silt lens was observed in the southern portion of the Site and is disconnected from the larger silt layer in the north of the Site. The silt in this lens was described as brown, hard and moist, with dolostone bedrock fragments observed.
Gravel and Sand	1.52 to 5.94	2.16	A layer of gravel and sand was encountered in the southern portion of the Site. The material was generally described as brown, dense, with fine to medium sand, trace clay, and occasional cobbles and dolostone fragments.

Exhibit 1: Site Stratigraphy

Geological Unit	Approximate Depth (mbgs)	Average Thickness (m)	Lithology
Clay Lens	1.14 to 2.44	1.30	A clay lens was encountered at a single location in the middle of the Site. As some other fill materials were described as being clayey, it is possible this is layer is also anthropogenic.
Guelph Formation dolostone	4.57 to 8.46 (top of bedrock range)	N/A	Generally, this dolostone was highly weathered and fractured within the first 0.3 to 0.6 m of bedrock contact. It was also noted to be vuggy, with calcite mineralization. The average depth to bedrock is 5.99 mbgs for the Site.

Note:

N/A = not applicable

Geological cross-sections were prepared to show the Site stratigraphy. ~~Appendix C,~~ Figure 6-1 presents cross-section locations, and ~~Appendix C,~~ Figures 6-1a to 6-1d present cross-sections A-A′, B-B’, C-C’, and D-D,’ respectively.

Based on the Site-specific geology, the main units investigated during the Phase Two ESA were an overburden composed of sand and interbedded silt and gravel, and bedrock.

2.(ii) Hydrogeological Characteristics

There are two main hydrogeological units encountered at the Site: (1) perched groundwater above a silt strata in the northern portion of the Site, and (2) a shallow unconfined aquifer generally in the upper bedrock, but extending in places up into the overburden soil. These two hydrogeological units are hereafter referred to as ‘the perched groundwater’ and ‘the bedrock aquifer’.

Twenty-one monitoring wells (18 wells from the current investigation and 3 historical wells) were used at the Phase Two Property to investigate conditions associated with the perched groundwater and the bedrock aquifer:

- Eighteen are installed in the bedrock aquifer; and
- Three are installed to access the perched groundwater.

The bedrock monitoring wells are further defined as ‘bedrock wells’ for the 15 wells installed across or near the water table, and ‘deep bedrock wells’ for the three wells installed approximately 8 metres in to the bedrock, from 4.6 to 6.9 metres below the water table for site characterization purposes. The site has been paved as a parking lot and is anticipated to receive low recharge from precipitation.

~~Appendix C,~~ Figures 6-2a, 6-2b, and 6-2c present the interpreted groundwater elevation contours and flow directions within the bedrock (water table) using groundwater elevations collected during the monitoring events on September 11 and 18, 2019; December 18, 2019; and April 15, 2020, respectively.

Exhibit 2. Hydrogeological Characteristics

Groundwater Unit	Characteristic	Summary
Bedrock	Flow Direction	Groundwater flows radially from a high elevation on the western boundary of the Site towards the north, and east to southeast. The higher groundwater elevations in the western portion of the Site appear to be correlated with higher bedrock layer elevation, as well as the topographical elevation and regional flow direction towards the Speed River.
	Average Horizontal Hydraulic Conductivity	Range between September 18, 2019 and April 15, 2020: 4.6 x 10^{-7} to 2.0 x 10^{-4} m/s Geometric mean: 6.0 x 10^{-6} m/s The K of the bedrock was estimated based on slug testing in three wells (MW101, MW107, and MW109).
	Average Horizontal Hydraulic Gradient	Estimated range between September 18, 2019 and April 15, 2020: 0.009 to 0.025 m/m Estimated average between September 18, 2019 and April 15, 2020: 0.016 m/m The maximum groundwater elevations within the bedrock aquifer were measured during the April 2020 monitoring event and were likely associated with snow melt and increased precipitation in the spring. Elevated groundwater levels may have “flattened” the gradient compared to fall and winter.
	Groundwater Velocity	The horizontal linear groundwater flow velocity was estimated for the bedrock aquifer using the calculated geomean K value of 6.0 x 10^{-6} m/s, the estimated horizontal hydraulic gradient range of 0.009 to 0.025 m/m, and an estimated effective porosity of 0.1 for the weathered and fractured rock. The groundwater velocity within the bedrock is estimated to be approximately 24 to 47 m/y.
	Vertical Hydraulic Gradients	Vertical hydraulic gradients in the bedrock were calculated at two nested monitoring well sets: (1) MW107 and MW107B, and (2) MW110A and MW110B. The vertical hydraulic gradients observed were downwards and ranged from 0.062 m/m to 0.063 m/m at MW107 and MW107B and 0.042 m/m at MW110A and MW110B.

Notes:
cm/y = centimeters per year
COC = contaminant of concern
K = hydraulic conductivity
m/m = metre(s) per metre
m/s = metre(s) per second
m/y = metre(s) per year

The perched groundwater was observed at BH17-MW-5S, MW102A, and MW103 above a low-permeability silt aquitard layer. The K ranging from 3.6 x 10^{-8} to 7.4 x 10^{-7} metres per second (m/s), with a geometric mean of 1.6 x 10^{-7} m/s. Vertical hydraulic gradients observed in this unit (MW102A and MW102B) were downward, ranging between 0.621 and 0.634 m/m, due to the influence of the perched groundwater above the silt layer observed at this well nest. The flow direction, horizontal hydraulic gradient and groundwater velocity were not calculated as the perched groundwater was not present across the entire Site. The full extent of the perched groundwater is currently not fully understood but may have a similar extent to the silt layer.

2.(iii) Depth to Bedrock

The Guelph Formation Dolostone that underlies the Site was encountered between 4.57 and 8.43 mbgs (321.62 to 324.96 masl), with an average depth to bedrock of 5.99 mbgs (323.46 masl). The highest bedrock elevations were encountered along an approximate southwest-to-northeast transect of the Site (MW107, MW100, BH202, MW109, BH206). Note, higher groundwater elevations are also associated with these locations, and the groundwater contours presented on~~ Appendix C,~~ Figures 6-2a, 6-2b, and 6-2c appear to show a radial flow outward from this bedrock high, following the topography and moving towards the Speed River.

2.(iv) Depth to Water Table

The water table within the Phase Two Property is within the Guelph Formation dolostone bedrock unit; in the northern portion of the Site, perched groundwater is associated with a low-permeability silt layer.

The depth to the bedrock aquifer and the perched groundwater were assessed based on three groundwater level monitoring events (September 18, 2019; December 18, 2019; and April 15, 2020).

The depth to the bedrock aquifer ranged from 5.82 to 8.66 (322.90 to 321.13 masl). The depth to the perched groundwater ranged from 3.78 to 4.43 (325.74 to 325.04 masl) based on the three monitoring events.

2.(v) Applicable Site Condition Standards

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

Table 2-3 outlines the items Jacobs considered when selecting the SCS, as outlined in O. Reg. 153/04 (MECP 2011a), discussed here.

The special conditions for environmentally sensitive areas under Sections 41 or 43.1 of O. Reg. 153/04 do not apply to the Phase Two Property:

- The Site is not considered an area of natural significance or to be within the proximity of an area of natural significance, based on the information reviewed as part of the Phase One ESA (Pinchin 2018).
- Jacobs analyzed ~~44~~45 soil samples for pH from 17 locations across the Phase Two Property~~.~~ (shown on Figure 2-3). Based on the results of the Jacobs investigation, soil pH was found to range from 7.37 to 9.46. Soil pH was within the MECP's acceptable range for samples collected in both surface soil (from between surface to 1.5 mbgs, with a pH value in surface soil less than 5 or greater than 9) and subsurface soil (more than 1.5 mbgs with a pH value in subsurface soil less than 5 or greater than 11). Historical investigations reported elevated pH (greater than 9) in surface soil samples; however, brick fragments or concrete were present in the stratigraphy where samples with elevated pH were collected based on a review of the borehole logs. This information suggests nonsoil materials may have been sampled, potentially biasing the historical soil pH results. Therefore, the historical results may not be representative of actual soil pH conditions. Based on this information, Jacobs has relied solely on the soil pH data collected during the recent investigation to determine the applicable SCS, and soil pH is within the MECP's acceptable range.

- The special conditions for land within 30 m of a water body under Section 43.1 of O. Reg. 153/04 do not apply to the Phase Two Property; no waterbodies are located on the Site or within 30 m of the Site. The Speed River is the nearest downgradient waterbody, located approximately 130 to 150 m north-northwest of the Site.
- The special conditions for shallow soil properties cited under Section 43.1 of O. Reg. 153/04 do not apply to the Phase Two Property; the depth to bedrock is greater than 2 m, as bedrock was encountered between 4.93 mbgs and 8.43 mbgs.

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

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

Based on this information reviewed by the Qualified Person for ESAs (QPESA), the Table 2 Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for coarse grained soil and residential/parkland/institutional land use (Table 2 SCS) was applied to the Site.

2.(vi) Imported Soil

Fill materials were identified across the Site to a maximum depth of 3.91 mbgs, or between 326.32 masl and 329.47 masl, with an average thickness of 1.68 m. The fill is variable in composition; however, the majority of fill is sand, sand and gravel, or silty sand.

The Phase One ESA (Pinchin 2018) reports that “significant quantities of fill material” have been identified onsite through previous Phase Two ESA investigations.

No soil was imported to the Site as part of Jacobs’ recent Phase Two ESA activities.

2.(vii) Proposed Buildings and Other Structures

The City (2019) indicates the Site’s redevelopment will include the following components:

- New Guelph Public Library
- Residential housing
- Commercial/institutional buildings
- Parking
- Urban square

The buildings’ configuration is not known at this time.

3. Contaminants

3.(i-vi) Contaminants Exceeding Applicable Site Condition Standards in Soil and Groundwater

The Phase Two Property was found to be primarily impacted with salt-related analytes (that is, electrical conductivity [EC] and sodium adsorption ratio [SAR] in soil; sodium and chloride in groundwater). Localized metal impacts were identified in soil, and localized cadmium impacts were identified in groundwater. Polycyclic aromatic hydrocarbon (PAH) impacts identified from a historical investigation

(Kewen, 2001) were resampled and determined not to be representative of Site conditions. Elevated concentrations of chloroform in groundwater were attributed to well installation activities and not with PCAs or APECs.

Although identified as COPCs at the Site, the following parameters were not identified with exceedances of the Table 2 SCS onsite, either in soil or groundwater:

- Benzene, toluene, ethylbenzene, and xylenes (BTEX)
- Volatile organic compounds (VOCs)
- petroleum hydrocarbons (PHCs)
- Acid, base, neutral compounds (ABNs)
- Dioxins and furans (D&Fs)

~~Appendix B,~~ Tables 6-5 and 6-8 summarize the analytical results of the investigation for soil and groundwater, respectively, and compare these compare to the Table 2 SCS. Figures are provided that present the locations of soil samples (~~Appendix C,~~ Figures 6-4 through 6-12) and groundwater samples (~~Appendix C,~~ Figures 6-13 through 6~~-~~-19) analyzed and a comparison to the Table 2 SCS by analytical group. Where exceedances of the Table 2 SCS are present, at least one cross-section has been prepared presenting the inferred vertical extent of impacts by analytical group, and follows the plan view figure. Maximum concentrations of the parameters exceeding Table 2 SCS are shown in red text on the respective plan view and cross-sectional figures.

The following subsections discuss the soil and groundwater conditions found exceeding the Table 2 SCS on the Phase Two Property.

Other Regulated Parameters

EC and SAR exceedances of the Table 2 SCS were identified in soil across most of the Site, apart from the northeastern portions of the 152 and 160 Wyndham Street North parcels. Exceedances of the Table 2 SCS were also identified in groundwater for sodium and chloride across most of the Site (all monitoring wells were sampled, apart from MW109).

Exceedances of EC and SAR in soil were identified to a maximum depth of 7.92 mbgs (MW102B) and were present at depths extending from the ground surface to the bedrock surface. Maximum concentrations were identified at MW102B (EC) and MW113 (SAR) in the fill. Maximum concentrations of chloride and sodium in groundwater were identified at the northern end of the Site in MW102B.

~~Appendix C,~~ Figures 6-4 and 6-13 show the detected exceedances and locations analyzed for other regulated parameters for soil and groundwater, respectively.

The presence of EC and SAR in soil and sodium and chloride in groundwater is likely a result of the application of deicing materials on the parking lot surfaces (APEC-4). Section 49.1 of O. Reg. 153/104 states the SCS is deemed not to be exceeded for the purpose of Part XV.1 of the Environmental Protection Act when a substance that has been applied to surfaces for the safety of vehicular or pedestrian traffic under conditions of snow or ice, or both, exceeds the SCS. Results are details in ~~Appendix B,~~ Tables 6-7c and 6-10c; at the discretion of the QPESA and based on the revised regulation, these parameters are not considered to be COCs at the Phase Two Property.

Metals (including Mercury, Methylmercury, and Hexavalent Chromium)

Based on the current investigation, metals exceedances of the Table 2 SCS in soil were identified within the southeastern portion of the Phase Two Property at one location (MW101; ~~Appendix C,~~ Figure 6-5) and were limited to lead and mercury. These impacts are likely limited to the fill in the existing laneways, based on results and observations during drilling and test pitting activities, and extend to an estimated maximum of 3.0 mbgs based on fill depth in this area (~~Appendix C,~~ Figures 6-5a and 6-5b). The poor-quality fill was not observed at other locations.

Metals exceedances in groundwater were limited to cadmium. Exceedances occurred in two wells (MW107 and MW113) in the southwestern corner of the site (~~Appendix C,~~ Figure 6-14), with maximum concentrations (6.16 micrograms per litre [µg/L]) found at MW113 (screened in the bedrock aquifer at 5.3 to 8.4 mbgs).The cadmium exceedances at these locations have been vertically delineated by MW107B (screened in the deep bedrock, at 13.7 to 15.5 mbgs), where concentrations were less than the Table 2 SCS (~~Appendix C,~~ Figures 6-14a, 6-14b, and 6-14c).

Based on groundwater flow around monitoring wells MW107 and MW113, groundwater moves from these locations towards the southeastern portion of the Site. MW110A and MW101, located downgradient from the identified cadmium exceedances, have cadmium concentrations less than the Table 2 SCS. The identified cadmium impacts in groundwater are therefore not anticipated to migrate offsite.

Additional available downgradient data from MW106 (5.5 to 8.5 mbgs), which is located offsite, on adjacent City-owned property to the south, had reported concentrations of cadmium five times less than the Table 2 SCS. This, along with reported concentrations less than the Table 2 SCS at MW101 and MW110A, indicate onsite exceedances in groundwater are not likely migrating offsite to the nearest downgradient human receptors.

Metal exceedances in soil (lead and mercury) were identified within the fill (that is, not within native soils) and are potentially associated with historical industrial activities associated with the manufacturing of sewing machine accessories, and wire coils and springs (APEC-1) or general impacts associated with the fill identified onsite (APEC-2). Limited impacts were identified in groundwater at the Site (cadmium), which do not appear to correlate to the identified shallow metal impacts in soil. Therefore, it is unlikely that metal impacts in soil are acting as a source of contaminant mass contributing to the groundwater quality at the Phase Two Property. The onsite cadmium impacts may be related to the APECs associated with offsite and upgradient PCAs (to the west) (for example, APEC-11 for Industrial Operations, APEC-12 for Historical Automotive Garage) or other unknown sources.

Polycyclic Aromatic Hydrocarbons

PAH exceedances of the Table 2 SCS in soil were identified at one sample (historical BH-14, at 0.8 to 1.4 mbgs) within the west-central portion of the Site, containing an elevated concentration of dibenzo[a,h]anthracene within the fill materials. No exceedances of the Table 2 SCS were identified in native soils or in groundwater at the Site.

BH208 was advanced and sampled in the same location as historical BH-14, with PAH samples collected at 0.91-1.07 mbgs and 2.29 to 2.44 mbgs. The results were less than the Table 2 SCS, resulting in the combined average of the samples collected at the same depth interval also meeting the Table 2 SCS. It is the QPESA's opinion that the historical exceedance was likely related to the presence of asphalt directly above the sampling location and is not considered representative of soil conditions on the Site (~~Appendix B,~~ Table 6~~-~~-7c). PAHs are not considered a COC on the Phase Two Property.

~~Appendix C,~~ Figures 6-8 and 6-17 show locations investigated for PAHs in soil and groundwater, respectively, in plan view.

Volatile Organic Compounds

Concentrations of chloroform in groundwater samples were reported exceeding the SCS, and the source of the exceedance was believed to be related to the municipal water that was used during the bedrock coring process. Jacobs encountered similar issues during a previous drilling program in Guelph in 2018. For that project, two samples (one from the water truck and one from the water truck hose that was used during the coring activities) were analyzed for VOCs. The VOCs were nondetect in the municipal water samples, apart from bromodichloromethane (12.5 to 12.9 µg/L), dibromochloromethane (11.5 to 11.8 µg/L), and chloroform (9.8 to 10.1 µg/L). These analytes are trihalomethanes that are typically present in municipally treated water, substantiating that municipal water introduced during drilling activities was the likely source of trihalomethanes in groundwater. For the current project, VOCs were nondetect in groundwater apart from the same three analytes, and from one sample with low detections of 1,1-dichloroethane less than the Table 2 SCS.

Based on the available information, the QPESA determined there was a discharge of drinking water (within the meaning of the Safe Drinking Water Act [2002]), resulting in chloroform exceeding the SCS. Under Paragraph 2 of Section 49.1 of the revised O. Reg. 153/04, the SCS is deemed to not be exceeded for the purpose of Part XV.1 of the Act. Results are detailed in ~~Appendix B,~~ Table 6-10c, and at the discretion of the QPESA and the revised regulation, chloroform was not considered to be a COC for the Phase Two ESA.

3.(vii) Migration of Contaminants of Concern

COCs in soil were limited to lead and mercury in the fill unit, with no exceedances of the Table 2 SCS identified below approximately 3.7 mbgs (~~Appendix C,~~ Figure 6-5b). As the minimum water table in the bedrock at the Site was measured at 5.82 mbgs, soil impacts are above the water table (~~Appendix C,~~ Figure 6-5b); therefore, the potential for migration is limited.

Groundwater exceedances of the Table 2 SCS were limited to cadmium in two locations (MW113 and MW107) located along the southern and western boundaries, respectively, where a groundwater high is located with radial groundwater flow from this area. Cadmium meets the Table 2 SCS at MW107B, providing vertical delineation for MW107 and MW113, along with two other wells (MW110B and MW111) screened in the deeper unconfined bedrock. Cadmium impacts have not been identified in downgradient or cross-gradient locations (MW105, MW100, MW110, and MW101 [~~Appendix C,~~ Figure 6-14]), including available data from an offsite well (MW106) located adjacent to the southern edge of the property boundary. Based on this information, it is unlikely that the impacts are migrating off the Phase Two Property and the Site therefore meets the MECP drinking water component value (GW1) at the nearest offsite human receptors.

As there is no apparent soil source of the cadmium impacts onsite and groundwater impacts are found in the most upgradient locations onsite, these may be a result of migration from offsite sources from the west, or other urban fill (offsite); however, there is currently no direct evidence to confirm.

3.(viii) Climatic Conditions

Climatic or meteorological conditions that may have influenced the distribution and migration of COCs at the Phase Two Property include temporal fluctuations in groundwater levels. No atypical weather events that would be expected to influence COC transport are known to have occurred during Jacobs' investigation of the Phase Two Property. Changes in water elevations can affect the migration of contaminants.

3.(ix) Soil Vapour Intrusion

Vapour intrusion was not evaluated during this Phase Two ESA. No buildings are currently located on the Site. Buildings are planned as part of the redevelopment, but Jacobs understands all soil at the Phase Two Property will be removed to bedrock to facilitate the creation of underground parking. Therefore, soil vapour related to the existing concentrations in soil onsite will not be a concern under these future conditions.

Current or abandoned utilities may be a preferential pathway for potential contaminants, if present; however, as the utilities would be expected to be found in the depths corresponding to the presence of permeable fill and native sand and gravel (as discussed), the utility corridors are not expected to function as preferential pathways at the Phase Two Property.

4. Distribution of Contaminants

As Section 3 discussed, only metals in soil and groundwater exceeded the Table 2 SCS. As~~ Appendix C,~~ Figure 6-5 shows, soil exceedances for lead and mercury are limited to the southeastern corner of the Site. Similarly, groundwater exceedances of cadmium are localized to the southwestern portion of the Site, as ~~Appendix C, ~~Figure 6~~-~~-14 shows. Cross-section~~ Appendix C,~~ Figures 6-5a and 6-5b for soil, and Figures 6-14a through 6-14c for groundwater, provide the vertical distribution of the metal exceedances at the Site and the water table elevations. In soil, metals exceedances are inferred to extend to approximately 3.5 mbgs within the fill, while in groundwater exceedances are inferred to extend to approximately 14.0 mbgs.

~~Appendix C, ~~Figures 2-2a and 2-2b show building outlines and identified underground utilities on the Phase Two Property, respectively. As depth to utilities are unknown, these were not included on the applicable cross-section figures.

5. Contaminant Exposure Assessment

~~Appendix C, ~~Figures 6-20a-b and 6-21a-b present the human health and ecological contaminant pathway and receptor models, respectively, based on current and potential future Site conditions. ~~Appendix C,~~ Figures 6-20a and 6~~-~~-20b present the human health CSMs, with and without risk management measures, respectively.~~ Appendix C,~~ Figures 6-21a and 6-21b present the ecological conceptual site models, with and without risk management measures, respectively. The proposed future land use of the Site is residential, commercial, community, and institutional. The models present preliminary assessments of the exposure pathways that should be further investigated, should a risk assessment be completed for the Phase Two Property.

These figures identify the following five exposure pathways:

1) Release mechanisms – The Phase Two Property became impacted as a result of historical Site operations (refer to the discussion on PCAs and APECs), when COCs were released to the ground (for example, via a spill or leak) or when contaminated soil was imported to the Site and placed as fill.
2) Contaminant transport pathways – COCs released to soil may adsorb to soil or infiltrate deeper into the soil column. COCs in soil may also desorb and leach to groundwater or migrate vertically to the water table. COCs in soil can also be transported in the following ways: they can become airborne via wind or traffic erosion, be eroded by overland water flow, be taken up by vegetation planted in the soil, or volatilize to outdoor air or indoor enclosed spaces. COCs in groundwater can be transported via vertical or horizontal groundwater flow, volatilization to outdoor air or indoor enclosed spaces, and uptake by vegetation.

3) Human and ecological receptors located on, in, or under the Phase Two Property – Receptors currently present or expected to be present in the future at the Phase Two Property include:
   - Human Receptors – residents, visitors, indoor workers, outdoor workers, construction workers, and utility workers
   - Ecological Receptors - soil organisms, terrestrial plants, birds, and mammals
4) Receptor exposure points – COCs can be contacted directly in soil or indirectly in outdoor and indoor air. COCs were not identified in groundwater.
5) Routes of exposure – The primary routes of exposure by receptor type include:
   - Human Receptors
     - Direct contact with potable groundwater (ingestion or direct contact)
     - Direct contact with either soil or groundwater (incidental ingestion and dermal contact)
     - Inhalation of particulates (dust)
     - Inhalation of volatiles originating from a soil or groundwater source (indoor and outdoor air)
     - Ingestion of garden produce
   - Ecological Receptors
     - Direct contact with either soil or groundwater (ingestion and dermal)
     - Terrestrial plant root uptake from either soil or groundwater
     - Ingestion via terrestrial biota and prey

6. Nonstandard Delineation

Nonstandard delineation per O. Reg. 153/04 Schedule E, Section 7.1 was not conducted at the Site. Delineation was conducted to the requirements of O. Reg. 153/04 Schedule E, Section 7 for all COCs identified at the Site in soil and groundwater.

7. Reliance on Exemption on Site Condition Standard Exceedances

EC, SAR, sodium, chloride and chloroform exceeded the Table 2 SCS; however, were not considered to be COCs at the Property based on the exemptions in Section 49.1 of O. Reg. 153/04 for meeting the site condition standards.

EC, SAR, chloride and sodium were found widespread across the majority of the Site, at elevated concentrations. As the Site currently is in use as a commercial parking lot and laneway, the presence of EC, SAR, chloride and sodium at the Site are related to the application of salt on the parking lot surface during winter conditions. The application of salt has been used for the safety of vehicular and pedestrian traffic. Under Paragraph 1 of Section 49.1 of the revised O. Reg. 153/04, the SCS is deemed to not be exceeded for the purpose of Part XV.1 of the Environmental Protection Act should a substance be applied to surfaces for the safety of vehicular or pedestrian traffic under conditions of snow or ice or both. Therefore, at the discretion of the QPESA, EC and SAR were not considered to be COCs for the Phase Two Property.

Concentrations of chloroform in ground water exceeded the SCS, and the source of the exceedance was believed to be related to the municipal water that was used during the bedrock coring process. Based on a similar issue for a separate City project in 2018, water samples from the water truck and hose used during the coring activities reported elevated trihalomethanes: bromodichloromethane (12.5 to 12.9 µg/L), dibromochloromethane (11.5 to 11.8 µg/L), and chloroform (9.8 to 10.1 µg/L). These analytes are trihalomethanes that are typically present in municipally treated water, substantiating that municipal water introduced during drilling activities was the likely source of trihalomethanes in groundwater.

Based on the available information, the QPESA determined there was a discharge of drinking water (within the meaning of the Safe Drinking Water Act, 2002), resulting in chloroform exceeding the SCS. Under Paragraph 2 of Section 49.1 of the revised O. Reg. 153/04, the SCS is deemed to not be exceeded for the purpose of Part XV.1 of the Act. Therefore, at the discretion of the QPESA, chloroform was not considered to be a COC for the Phase Two ESA.

8. Reliance on Exemption related to Excess Soils

Jacobs did not rely on Paragraph 3 of Section 49.1 of the revised O. Reg. 153/04.

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~~Appendix A~~

~~Pinchin Phase One ESA Figure~~

~~Appendix B~~

Tables

Table 2-3. Items Considered for Site Condition Standards Selection

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Condition	Evaluation
Land use	The current land use is commercial and community. The proposed future land use is is a mix of residential, commercial, community, and institutional uses.
Potable or non-potable groundwater	The Site and adjacent properties within 250 m are serviced by a municipal water source. However, as the City of Guelph relies on groundwater for its water supply (City of Guelph 2018), the potable groundwater condition will be applied.
Proximity to surface water body	No waterbodies are located on the Site. The nearest waterbody is the Speed River, which is located approximately 130 m north-northeast (downgradient) of the Site.
Proximity to areas of natural significance or environmentally sensitive areas	The Site is not considered an area of natural significance or to be within the proximity of an area of natural significance based on the information reviewed as part of the Phase One ESA (Pinchin 2018). Kimberley Park is located approximately 65 m to the northeast. The status of Kimberley Park as an area of natural significance has not been confirmed. [a]
Depth to bedrock	A property is considered a shallow soil property if one-third or more of the area consists of soil depths of 2 mbgs or less, excluding non-soil surface treatment (that is, asphalt, concrete, or aggregate) (MECP 2011a). The depth to bedrock is greater than 2 m, as bedrock was encountered between 4.93 mbgs and 8.43 mbgs.
pH of soil	The Jacobs investigation found soil pH to range from 7.37 to 9.46 based on 45 samples taken from 17 locations (shown on Figure 2-3). Soil pH was within the MECP's acceptable range for samples collected in both surface soil (from between surface to 1.5 mbgs, with a pH value in surface soil less than 5 or greater than 9) and subsurface soil (more than 1.5 mbgs with a pH value in subsurface soil less than 5 or greater than 11). Historical investigations have identified elevated pH (greater than 9) in surface soil; however, many of the borehole logs reported brick fragments or concrete present in the stratigraphy where samples with elevated pH were collected. This information suggests that non-soil materials may have been sampled, potentially biasing the historical soil pH results. Therefore, the historical results may not be representative of actual soil pH conditions. Considering this above information, Jacobs has solely relied on the soil pH data collected during recent investigation to determine the applicable SCS with respect to soil pH. On this basis, soil pH is within the MECP's acceptable range.
Soil texture	The soil condition standards for coarse-grained soils were used, based on the grain-size results, to be conservative and to account for the extensive presence of heterogeneous fill materials across the surface of the Site.

[a] The map that Pinchin (2008) refers to as the source of this information in their report is not included in the copy of the Phase One ESA provided to Jacobs. Online Ministry of Natural Resources and Forestry mapping accessed by Jacobs does not show an area of scientific or natural interest in the location of Kimberley Park, or within the Guelph city limits.

Notes:

ESA = environmental site assessment
Jacobs = Jacobs Engineering Group Inc.
m = metre(s)
mbgs = metre(s) below ground surface
MECP = Ministry of the Environment, Conservation and Parks
SCS = site condition standards
Site = 55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Table 4-2. Areas of Potential Environmental Concern

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Areas of Potential Environmental Concern [a]		Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity [b]		Location of PCA (on-site or off-site) [c]	Contaminants of Potential Concern [d]	Media Potentially Impacted (Groundwater, soil and/or sediment)
APEC-1	Historical Industrial Property Use	55 Baker Street Park Lane	34	Metal Fabrication	Onsite	Metals (including As, Sb, Se, Hg, and Cr[VI]), B-HWS, CN-, EC, SAR, PHCs, PAHs, VOCs	Soil and Groundwater
APEC-2	Unknown/Poor Quality Fill Material	Entire Site	30	Importation of Fill Material of Unknown Quality	Onsite	Metals (including As, Sb, Se, Hg, and Cr[VI]), B-HWS, CN-, EC, SAR, PHCs, PAHs, VOCs	Soil and Groundwater
APEC-3	Historical Transformers	East-central portion of 55 Baker Street	55	Transformer Manufacturing, Processing and Use	Onsite	PHCs, BTEX, PCBs, PAHs	Soil
APEC-4	Use of Road Salts	Entire Site	48	Salt Manufacturing, Processing and Bulk Storage	Onsite	EC, SAR, sodium, chloride	Soil and Groundwater
APEC-5	Historical Dry Cleaning	North portion of 55 Baker Street	37	Operation of Dry Cleaning Equipment (where chemicals are used)	Offsite - North	VOCs	Groundwater
APEC-6	Historical Retail Fuel Outlet and automotive repair/servicing operations	North portion of 55 Baker Street	28	Gasoline and Associated Products Storage in Fixed Tanks	Offsite - North	PHCs, VOCs, PAHs, Metals (Lead)	Groundwater
APEC-7	Historical Dry Cleaning	North portion of 55 Baker Street	37	Operation of Dry Cleaning Equipment (where chemicals are used)	Offsite - North	VOCs	Groundwater
APEC-8	Historical Dry Cleaning	North portion of 160 Wyndham Street North and northeast portion of 55 Baker Street	37	Operation of Dry Cleaning Equipment (where chemicals are used)	Offsite - Northeast	VOCs	Groundwater
APEC-9	Historical Fuel Oil UST	North portion of 55 Baker Street	28	Gasoline and Associated Products Storage in Fixed Tanks	Offsite - Northeast	PHCs, VOCs, PAHs, Metals (Lead)	Groundwater
APEC-10	Historical Automotive Repair	Northeast portion of 55 Baker Street	27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	Offsite - Northeast	PHCs, VOCs, PAHs, Metals (Lead)	Groundwater
APEC-11	Historical Off-Site Industrial Operations	West-central portion of 55 Baker Street	34	Metal Fabrication	Offsite - West	PHCs, VOCs, PAHs, Metals (Lead)	Groundwater
APEC-12	Historical Automotive Garage	West-central portion of 55 Baker Street	27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	Offsite - West	PHCs, VOCs, PAHs, Metals (Lead)	Groundwater
APEC-13	Historical Automotive Garage	South portion of 152 Wyndham Street North	27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	Offsite - East	PHCs, VOCs, PAHs, Metals (Lead)	Groundwater
APEC-14	Historical Gasoline Spill	Southwest corner of 55 Baker Street	Other	Activity not defined in O. Reg. 153/04 Table 2 of Schedule D	Offsite - South	PHCs, PAHs, ~~Metals (Lead)~~[a], VOCs (MTBE)	Groundwater
APEC-15	Historical Dry Cleaning	Southeast portion of Park Lane	37	Operation of Dry Cleaning Equipment (where chemicals are used)	Offsite - East	VOCs	Groundwater
APEC-16	Historical UST	Southwest corner of 55 Baker Street	28	Gasoline and Associated Products Storage in Fixed Tanks	Offsite - South	PHCs, BTEX, PAHs, Metals (Lead)	Groundwater
APEC-17	Dry Cleaning, Historical Retail Fuel Outlet, and Automotive Repair	Northwest portion of 55 Baker Street	27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	Offsite - Northwest	PHCs, PAHs, Metals (including As, Sb, Se, Hg, and Cr[VI]), BTEX, VOCs	Groundwater
			28	Gasoline and Associated Products Storage in Fixed Tanks			
			37	Operation of Dry Cleaning Equipment (where chemicals are used)			
APEC-18	Former Oil Shed	Southwest portion of 55 Baker Street	28	Gasoline and Associated Products Storage in Fixed Tanks	Onsite	PHCs, PAHs, Metals (including As, Sb, Se, Hg, and Cr[VI]), BTEX, VOCs	Soil and Groundwater
APEC-19	Former Oil House	Western portion of 152 Wyndham Street North	28	Gasoline and Associated Products Storage in Fixed Tanks	Onsite	PHCs, PAHs, Metals (including As, Sb, Se, Hg, and Cr[VI]), BTEX, VOCs	Soil and Groundwater
APEC-20	Former Coke Storage	Northeast portion of 55 Baker Street	Other	Activity not defined in O. Reg. 153/04 Table 2 of Schedule D	Onsite	PHC, PAHs, Metals (including As, Sb, Se, Hg, and Cr[VI]), BTEX, VOCs, ABNs	Soil and Groundwater
APEC-21	Former Garage	Northeast portion of 55 Baker Street	27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	Onsite	PHCs, PAHs, Metals (including As, Sb, Se, Hg, and Cr[VI]), BTEX, VOCs	Soil and Groundwater

Notes:

[a.] APEC means the area on, in, or under a Phase One Property where one or more contaminants are potentially present, as determined through the Phase One ESA, including through (a) identification of past or present uses on, in, or under the Phase One Property; and (b) identification of PCAs.
APECs 1 to 16 were identified in the Pinchin (2018) Phase One ESA. APECs shaded in grey were identified by Jacobs. Metals as a COPC were removed from APEC-14 by Jacobs as the gasoline spill occurred in 2003

[b.] PCA – potentially contaminating activity means a use or activity as set out in Column A of Table 2 of Schedule D of O. Reg. 153/04 that is occurring or has occurred in a Phase One study area.

[c.] "Onsite" refers to within the Phase One/Two Property; "Offsite" refers to the Phase One Study Area.

[d.] Contaminants of potential concern were identified using the Method Groups as identified in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act, March 9, 2004, amended as of July 1, 2011.

ABN = Acid Base Neutrals
APEC = Area of Potential Environmental Concern
As = arsenic
B-HWS = hot water soluble boron
BTEX = benzene, toluene, ethylbenzene and xylenes
CN- = cyanide
Cr(VI) = hexavalent chromium
EC = electrical conductivity
Hg = mercury
MTBE = methyl tert-butyl ether

O. Reg. = Ontario Regulation
PAH = Polyaromatic Hydrocarbons
PCB = Polychlorinated biphenyl
PHC = Petroleum Hydrocarbons
SAR = sodium adsorption ratio
Sb = antimony
Se = selenium
UST = underground storage tank
VOC = Volatile Organic Compounds

Table 6-4. APEC Disposition Table

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Areas of Potential Environmental Concern (APEC)		PCA [a.]		Contaminants of Potential Concern [b]	Location Associated with APEC Area	Location Type	List of Parameter Groups Tested (Soil) [b.]	List of Parameter Groups Tested (GW) [b.]
APEC-1	Historical Industrial Property Use	34	Metal Fabrication	Metals (including As, Sb, Se, Hg, and Cr[VI]), B-HWS, CN-, EC, SAR, PHCs, PAHs, VOCs	BH-03	BH	BTEX, Metals (missing Uranium)*, PAHs, PHCs, VOCs	--
					BH-04	BH	Metals (missing Uranium)*, PCBs, PHCs	--
					BH-10	BH	Metals (missing Uranium)*, PAHs	--
					BH-11	BH	Metals (missing Uranium)*, PAHs, PHCs	--
					BH-14	BH	BTEX, Metals (missing Uranium)*, PAHs, PHCs, VOCs	--
					BH-16-MW2	BH	Metals (missing Uranium)*, PCBs, PHCs	--
					BH-17-MW5S	BH	Metals (missing Uranium)*, PHCs	--
					BH200	BH	BTEX, ORPs, Metals, PAHs, PCBs, PHCs, VOCs	--
					BH201	BH	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	--
					BH202	BH	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	--
					BH207	BH	PHCs	--
					BH208	BH	PAHs	--
					BH209	BH	Metals, PCBs	--
					MW100	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
					MW102A	MW	--	BTEX, ORPs, Metals, PAHs, PHCs
					MW102B	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
					MW103	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
					MW104	MW	ABNs, BTEX, ORPs, Metals, PAHs, PHCs, VOCs	ABNs, BTEX, ORPs, Metals, PAHs, PHCs
					MW105	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
					MW111	MW	--	ORPs, Metals
APEC-2	Unknown/Poor Quality Fill Material	30	Importation of Fill Material of Unknown Quality	Metals (including As, Sb, Se, Hg, and Cr[VI]), B-HWS, CN-, EC, SAR, PHCs, PAHs, VOCs	BH-03	BH	BTEX, Metals (missing Uranium)*, PAHs, PHCs, VOCs	--
					BH-04	BH	Metals (missing Uranium)*, PCBs, PHCs	--
					BH-05	BH	Metals (missing Uranium)*	--
					BH-06	BH	Metals (missing Uranium)*	--
					BH-07	BH	Metals (missing Uranium)*	--
					BH-08-MW4	BH	BTEX, Metals (missing Uranium)*, PCBs, PHCs, VOCs	--
					BH-09	BH	Metals (missing Uranium)*	--
					BH-10	BH	Metals (missing Uranium)*, PAHs	--
					BH-11	BH	Metals (missing Uranium)*, PAHs, PHCs	--
					BH-13	BH	Metals (missing Uranium)*, PHCs	--
					BH-14	BH	BTEX, Metals (missing Uranium)*, PAHs, PHCs, VOCs	--
					BH-15-MW3	BH	Metals (missing Uranium)*, PHCs	--
					BH-16-MW2	BH	Metals (missing Uranium)*, PCBs, PHCs	--
					BH-17-MW5S	BH	Metals (missing Uranium)*, PHCs	--
					BH200	BH	BTEX, ORPs, Metals, PAHs, PCBs, PHCs, VOCs	--
					BH201	BH	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	--
					BH202	BH	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	--
					BH203	BH	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	--
					BH204	BH	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	--
					BH205	BH	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	--
					BH206	BH	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	--
					BH207	BH	PHCs	--
					BH208	BH	PAHs	--
					BH209	BH	Metals, PCBs	--
					BH210	BH	Metals	--
					BH211	BH	Metals	--
					MW100	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
					MW101	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
					MW102A	MW	--	BTEX, ORPs, Metals, PAHs, PHCs
					MW102B	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
					MW103	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
					MW104	MW	ABNs, BTEX, ORPs, Metals, PAHs, PHCs, VOCs	ABNs, BTEX, ORPs, Metals, PAHs, PHCs
					MW105	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
					MW107	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs

Table 6-4. APEC Disposition Table

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Areas of Potential Environmental Concern (APEC)		PCA [a.]		Contaminants of Potential Concern [b]	Location Associated with APEC Area	Location Type	List of Parameter Groups Tested (Soil) [b.]	List of Parameter Groups Tested (GW) [b.]
					MW107B	MW	--	ORPs, Metals
					MW108	MW	BTEX, Dioxins/Furans, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
					MW109	MW	BTEX, Dioxins/Furans, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
					MW110A	MW	--	ORPs, Metals
					MW110B	MW	--	ORPs, Metals
					MW111	MW	--	ORPs, Metals
					MW113	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
APEC-3	Historical Transformers	55	Transformer Manufacturing, Processing and Use	PHCs, BTEX, PCBs, PAHs	BH200	BH	BTEX, ORPs, Metals, PAHs, PCBs, PHCs, VOCs	--
					BH209	BH	Metals, PCBs	--
APEC-4	Use of Road Salts	48	Salt Manufacturing, Processing and Bulk Storage	EC, SAR, sodium, chloride	BH-03	BH	BTEX, Metals (missing Uranium)*, PAHs, PHCs, VOCs	--
					BH-04	BH	Metals (missing Uranium)*, PCBs, PHCs	--
					BH-05	BH	Metals (missing Uranium)*	--
					BH-06	BH	Metals (missing Uranium)*	--
					BH-07	BH	Metals (missing Uranium)*	--
					BH-08-MW4	BH	BTEX, Metals (missing Uranium)*, PCBs, PHCs, VOCs	--
					BH-09	BH	Metals (missing Uranium)*	--
					BH-10	BH	Metals (missing Uranium)*, PAHs	--
					BH-11	BH	Metals (missing Uranium)*, PAHs, PHCs	--
					BH-13	BH	Metals (missing Uranium)*, PHCs	--
					BH-14	BH	BTEX, Metals (missing Uranium)*, PAHs, PHCs, VOCs	--
					BH-15-MW3	BH	Metals (missing Uranium)*, PHCs	--
					BH-16-MW2	BH	Metals (missing Uranium)*, PCBs, PHCs	--
					BH-17-MW5S	BH	Metals (missing Uranium)*, PHCs	--
					BH200	BH	BTEX, ORPs, Metals, PAHs, PCBs, PHCs, VOCs	--
					BH201	BH	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	--
					BH202	BH	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	--
					BH203	BH	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	--
					BH204	BH	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	--
					BH205	BH	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	--
					BH206	BH	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	--
					BH207	BH	PHCs	--
					BH208	BH	PAHs	--
					BH209	BH	Metals, PCBs	--
					BH210	BH	Metals	--
					BH211	BH	Metals	--
					MW100	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
					MW101	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
					MW102A	MW	--	BTEX, ORPs, Metals, PAHs, PHCs
					MW102B	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
					MW103	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
					MW104	MW	ABNs, BTEX, ORPs, Metals, PAHs, PHCs, VOCs	ABNs, BTEX, ORPs, Metals, PAHs, PHCs
					MW105	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
					MW107	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
					MW107B	MW	--	ORPs, Metals
					MW108	MW	BTEX, Dioxins/Furans, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
					MW109	MW	BTEX, Dioxins/Furans, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
					MW110A	MW	--	ORPs, Metals
					MW110B	MW	--	ORPs, Metals
					MW111	MW	--	ORPs, Metals
					MW113	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
APEC-5	Historical Dry Cleaning	37	Operation of Dry Cleaning Equipment (where chemicals are used)	VOCs	MW102A	MW	--	BTEX, ORPs, Metals, PAHs, PHCs
					MW102B	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs

Table 6-4. APEC Disposition Table

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Areas of Potential Environmental Concern (APEC)		PCA [a.]		Contaminants of Potential Concern [b]	Location Associated with APEC Area	Location Type	List of Parameter Groups Tested (Soil) [b.]	List of Parameter Groups Tested (GW) [b.]
APEC-6	Historical Retail Fuel Outlet and automotive repair/servicing operations	28	Gasoline and Associated Products Storage in Fixed Tanks	PHCs, VOCs, PAHs, Metals (Lead)	MW102A	MW	--	BTEX, ORPs, Metals, PAHs, PHCs
					MW102B	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
APEC-7	Historical Dry Cleaning	37	Operation of Dry Cleaning Equipment (where chemicals are used)	VOCs	MW102A	MW	--	BTEX, ORPs, Metals, PAHs, PHCs
					MW102B	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
APEC-8	Historical Dry Cleaning	37	Operation of Dry Cleaning Equipment (where chemicals are used)	VOCs	BH-03	BH	BTEX, Metals (missing Uranium)*, PAHs, PHCs, VOCs	--
					MW103	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
					MW104	MW	ABNs, BTEX, ORPs, Metals, PAHs, PHCs, VOCs	ABNs, BTEX, ORPs, Metals, PAHs, PHCs
					MW108	MW	BTEX, Dioxins/Furans, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
APEC-9	Historical Fuel Oil UST	28	Gasoline and Associated Products Storage in Fixed Tanks	PHCs, VOCs, PAHs, Metals (Lead)	MW102A	MW	--	BTEX, ORPs, Metals, PAHs, PHCs
					MW102B	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
APEC-10	Historical Automotive Repair	27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	PHCs, VOCs, PAHs, Metals (Lead)	MW103	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
APEC-11	Historical Off-Site Industrial Operations	34	Metal Fabrication	PHCs, VOCs, PAHs, Metals (Lead)	BH-14	BH	BTEX, Metals (missing Uranium)*, PAHs, PHCs, VOCs	--
					BH208	BH	PAHs	--
					MW105	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
APEC-12	Historical Automotive Garage	27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	PHCs, VOCs, PAHs, Metals (Lead)	BH-11	BH	Metals (missing Uranium)*, PAHs, PHCs	--
					BH201	BH	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	--
					MW105	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
APEC-13	Historical Automotive Garage	27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	PHCs, VOCs, PAHs, Metals (Lead)	BH206	BH	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	--
					MW109	MW	BTEX, Dioxins/Furans, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
APEC-14	Historical Gasoline Spill			PHCs, PAHs, Metals (Lead), VOCs (MTBE)	BH-07	BH	Metals (missing Uranium)*	--
					MW113	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
APEC-15	Historical Dry Cleaning	37	Operation of Dry Cleaning Equipment (where chemicals are used)	VOCs	MW101	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
APEC-16	Historical Above ground Storage Tank	28	Gasoline and Associated Products Storage in Fixed Tanks	PHCs, BTEX, PAHs, Metals (Lead)	BH-07	BH	Metals (missing Uranium)*	--
					MW113	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
APEC-17	Dry Cleaning, Historical Retail Fuel Outlet, and Automotive Repair	27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	PHCs, PAHs, Metals (including As, Sb, Se, Hg, and Cr[VI]), BTEX, VOCs	BH-17-MW5S	BH	Metals (missing Uranium)*, PHCs	--
		28	Gasoline and Associated Products Storage in Fixed Tanks		MW102A	MW	--	BTEX, ORPs, Metals, PAHs, PHCs
		37	Operation of Dry Cleaning Equipment (where chemicals are used)		MW102B	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
APEC-18	Former Oil Shed	28	Gasoline and Associated Products Storage in Fixed Tanks	PHCs, PAHs, Metals (including As, Sb, Se, Hg, and Cr[VI]), BTEX, VOCs	BH-08-MW4	BH	BTEX, Metals (missing Uranium)*, PCBs, PHCs, VOCs	--
					MW107	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
					MW107B	MW	--	ORPs, Metals
APEC-19	Former Oil House	28	Gasoline and Associated Products Storage in Fixed Tanks	PHCs, PAHs, Metals (including As, Sb, Se, Hg, and Cr[VI]), BTEX, VOCs	MW109	MW	BTEX, Dioxins/Furans, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs
APEC-20	Former Coke Storage			PHC, PAHs, Metals (including As, Sb, Se, Hg, and Cr[VI]), BTEX, VOCs, ABNs	BH-03	BH	BTEX, Metals (missing Uranium)*, PAHs, PHCs, VOCs	--
					MW104	MW	ABNs, BTEX, ORPs, Metals, PAHs, PHCs, VOCs	ABNs, BTEX, ORPs, Metals, PAHs, PHCs
APEC-21	Former Garage	27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	PHCs, PAHs, Metals (including As, Sb, Se, Hg, and Cr[VI]), BTEX, VOCs	BH-03	BH	BTEX, Metals (missing Uranium)*, PAHs, PHCs, VOCs	--
					MW104	MW	ABNs, BTEX, ORPs, Metals, PAHs, PHCs, VOCs	ABNs, BTEX, ORPs, Metals, PAHs, PHCs

Table 6-4. APEC Disposition Table

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Areas of Potential Environmental Concern (APEC)	PCA [a.]	Contaminants of Potential Concern [b]	Location Associated with APEC Area	Location Type	List of Parameter Groups Tested (Soil) [b.]	List of Parameter Groups Tested (GW) [b.]

Notes:

[a] PCA – potentially contaminating activity means a use or activity as set out in Column A of Table 2 of Schedule D of O. Reg. 153/04 that is occurring or has occurred in a Phase One study area.

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

*Samples from 2008 were collected in accordance with O. Reg. 153/04, but are missing analysis of uranium, which was not regulated under the Regulation at the time of investigation. This data is considered valid for RSC purposes.

"--" = no data for the specified media

As = arsenic
ABNs = acid base neutral compounds
APEC = area of potential environmental concern
BH = borehole
B-HWS = boron - hot water soluble
BTEX = benzene, toluene, ethylbenzene, xylene
CN- = cyanide
COC = contaminant of concern
CrVI = hexavalent chromium
EC = electrical conductivity
ERIS = environmental risk information services
FIP = fire insurance plan
GW = groundwater
Hg = mercury
MECP = Ontario Ministry of Environment, Conservation and Parks
MW = monitoring well
PAHs = polyaromatic hydrocarbons
PCA = potentially contaminating activity
PCBs = polychlorinated biphenyls
PHCs = petroleum hydrocarbons
SAR = sodium adsorption ratio
Sb = antimony
Se = selenium
UST = underground storage tank
VOCs = volatile organic compounds

Table 6-5. Summary of Analytical Results in Soil
55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane,
Guelph, Ontario

		Location	BH-03	BH-04	BH-05	BH-06	BH-07	BH-08-MW4		BH-09	BH-10	BH-11	BH-13	BH-14	BH-15-MW3	BH-16-MW2	BH-17-MW5S	BH200			
		Sample ID	BH-3 (SS2)	BH-4 (SS2)	BH-5 (SS2)	BH-6 (SS5)	BH-7 (SS2)	BH-8 (SS4)	BH-X-NOV25	BH-9 (SS3)	BH-10 (SS1)	BH-11 (SS2)	BH-13 (SS3)	BH-14 (SS2)	BH-15 (SS1)	BH-16 (SS2)	BH-17 (SS3)	DUP1	BH200-35-40	BH200-7.5-9.5	BH200-15-17
		Sample Date	11/27/2008	11/26/2008	11/25/2008	11/25/2008	11/25/2008	11/25/2008	11/25/2008	11/26/2008	11/27/2008	11/27/2008	11/25/2008	11/25/2008	11/26/2008	11/26/2008	11/27/2008	7/23/2019	7/23/2019	8/12/2019	8/12/2019
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N
		Start Depth	0.8	0.8	0.8	3.1	0.8	2.3	2.3	1.5	0	0.8	1.5	0.8	0	0.8	1.5	0.89	0.89	2.29	4.57
		End Depth	1.4	1.4	1.4	3.7	1.2	2.9	2.9	2.2	0.6	1.4	2	1.4	0.6	1.4	2.1	1.01	1.01	2.9	5.18
Analyte	**Units**	**Table 2 SCS [a]**																			
Acids, Bases, Neutrals (ABNs)																					
1,1'-Biphenyl	ug/g	0.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	ug/g	0.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	ug/g	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	ug/g	38	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	ug/g	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	ug/g	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	ug/g	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	ug/g	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	ug/g	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	ug/g	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
bis (2-Chloroisopropyl) ether	ug/g	0.67	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	ug/g	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	ug/g	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	ug/g	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	ug/g	9.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxins/Furans																					
1,2,3,4,6,7,8-HpCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8-HpCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8,9-HpCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PeCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PeCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,6,7,8-HxCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,7,8-PeCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lower Bound PCDD/F TEQ (WHO 2005)	pg/g	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mid Point PCDD/F TEQ (WHO 2005)	pg/g	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total HpCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total HpCDD # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total HpCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total HpCDF # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total HxCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total HxCDD # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total HxCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total HxCDF # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total PeCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total PeCDD # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total PeCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total PeCDF # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total TCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total TCDD # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total TCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total TCDF # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Upper Bound PCDD/F TEQ (WHO 2005)	pg/g	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Inorganics																					
Conductivity	mS/cm	0.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.499**	**0.486**	**0.373**	--
Cyanide, Weak Acid Dissociable	ug/g	0.051	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U	0.05 U	--
pH	pH UNITS	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**7.37**	**7.44**	**8.19**	--
Sodium Absorption Ratio	SAR	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**10.1**	**7.63**	**5.12**	**10.2**
Metals																					
Antimony	ug/g	7.5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
Arsenic	ug/g	18	**1**	**2**	**2**	**1**	**2**	**1**	**1**	**2**	**2**	**1**	**1**	**2**	**4**	**3**	1 U	**3**	**3.2**	**1.8**	--
Barium	ug/g	390	**18**	**37**	**12**	**11**	**12**	**12**	**11**	**17**	**17**	**18**	**31**	**28**	**34**	**35**	**10**	**36.5**	**41.4**	**9.4**	--
Beryllium	ug/g	4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--
Boron	ug/g	120	0.1 U	0.1 U	0.1 U	0.1 U	**0.1**	0.1 U	0.1 U	0.1 U	**0.1**	0.1 U	0.1 U	**0.2**	**0.2**	**0.7**	0.1 U	5 U	**6.3**	5 U	--
Boron (Hot Water Ext.)	ug/g	1.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.29**	**0.26**	0.1 U	--
Cadmium	ug/g	1.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--
Chromium	ug/g	160	**7**	**12**	**5**	**4**	**6**	**5**	**6**	**7**	**6**	**8**	**4**	**7**	**9**	**12**	**5**	**12.9**	**15.2**	**5.6**	--
Chromium, Hexavalent (Cr6+)	ug/g	8	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.2 U	0.2 U	0.2 U	--
Cobalt	ug/g	22	**3**	**6**	**2**	**2**	**2**	**2**	**2**	**3**	**3**	**3**	**1**	**2**	**3**	**5**	**2**	**3.9**	**4.8**	**1.7**	--
Copper	ug/g	140	**8**	**11**	**5**	**4**	**8**	**6**	**6**	**8**	**11**	**8**	**7**	**16**	**22**	**11**	**6**	**11.9**	**12.7**	**10.2**	--

Table 6-5. Summary of Analytical Results in Soil

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane,
Guelph, Ontario

Location			BH-03	BH-04	BH-05	BH-06	BH-07	BH-08-MW4		BH-09	BH-10	BH-11	BH-13	BH-14	BH-15-MW3	BH-16-MW2	BH-17-MW5S	BH200			
Sample ID			BH-3 (SS2)	BH-4 (SS2)	BH-5 (SS2)	BH-6 (SS5)	BH-7 (SS2)	BH-8 (SS4)	BH-X-NOV25	BH-9 (SS3)	BH-10 (SS1)	BH-11 (SS2)	BH-13 (SS3)	BH-14 (SS2)	BH-15 (SS1)	BH-16 (SS2)	BH-17 (SS3)	DUP1	BH200-35-40	BH200-7.5-9.5	BH200-15-17
Sample Date			11/27/2008	11/26/2008	11/25/2008	11/25/2008	11/25/2008	11/25/2008	11/25/2008	11/26/2008	11/27/2008	11/27/2008	11/25/2008	11/25/2008	11/26/2008	11/26/2008	11/27/2008	7/23/2019	7/23/2019	8/12/2019	8/12/2019
Sample Type			N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N
Start Depth			0.8	0.8	0.8	3.1	0.8	2.3	2.3	1.5	0	0.8	1.5	0.8	0	0.8	1.5	0.89	0.89	2.29	4.57
End Depth			1.4	1.4	1.4	3.7	1.2	2.9	2.9	2.2	0.6	1.4	2	1.4	0.6	1.4	2.1	1.01	1.01	2.9	5.18
Analyte	Units	Table 2 SCS [a]																			
Lead	ug/g	120	**14**	**12**	**15**	**199**	**18**	**8**	**14**	**13**	**17**	**11**	**35**	**29**	**52**	**16**	**6**	**18.8**	**17.2**	**6.3**	--
Mercury	ug/g	0.27	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**0.23**	**0.09**	**0.09**	0.05 U	0.05 U	**0.0314**	**0.0247**	0.005 U	--
Methyl Mercury	mg/kg	0.0084	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	ug/g	6.9	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
Nickel	ug/g	100	**5**	**11**	**4**	**3**	**4**	**3**	**3**	**5**	**5**	**5**	**2**	**4**	**7**	**9**	**3**	**8.3**	**9.8**	**3.4**	--
Selenium	ug/g	2.4	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
Silver	ug/g	20	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--
Thallium	ug/g	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1**	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	--
Uranium	ug/g	23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U	1 U	--
Vanadium	ug/g	86	**8**	**14**	**6**	**4**	**5**	**4**	**4**	**7**	**8**	**9**	**3**	**10**	**13**	**17**	**12**	**25.9**	**30.9**	**10.8**	--
Zinc	ug/g	340	**102**	**57**	**91**	**71**	**66**	**47**	**49**	**172**	**99**	**44**	**79**	**63**	**124**	**103**	**31**	**81.3**	**76.7**	**41.9**	--
Other																					
Calcium	mg/l	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**7.59**	**9.5**	**6.47**	**8.55**
Magnesium	mg/l	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.98 J**	**4.16 J**	**2.06**	**1.84**
Sodium	mg/l	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**111**	**112**	**58.4**	**126**
Polyaromatic Hydrocarbons (PAHs)																					
1-Methylnaphthalene	ug/g	0.99	0.05 U	--	--	--	--	--	--	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.03 U	0.03 U	0.03 U	--
2-(1-)Methylnaphthalene	ug/g	0.99	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.042 U	0.042 U	0.042 U	--
2-Methylnaphthalene	ug/g	0.99	0.05 U	--	--	--	--	--	--	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.03 U	0.03 U	0.03 U	--
Acenaphthene	ug/g	7.9	0.05 U	--	--	--	--	--	--	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	--
Acenaphthylene	ug/g	0.15	0.05 U	--	--	--	--	--	--	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	--
Anthracene	ug/g	0.67	0.05 U	--	--	--	--	--	--	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	--
Benzo(a)anthracene	ug/g	0.5	0.05 U	--	--	--	--	--	--	--	0.05 U	0.05 U	--	**0.14**	--	--	--	0.05 U	0.05 U	0.05 U	--
Benzo(a)pyrene	ug/g	0.3	0.02 U	--	--	--	--	--	--	--	0.02 U	0.02 U	--	**0.24**	--	--	--	0.05 U	0.05 U	0.05 U	--
Benzo(b)fluoranthene	ug/g	0.78	0.05 U	--	--	--	--	--	--	--	0.05 U	0.05 U	--	**0.18**	--	--	--	0.05 U	0.05 U	0.05 U	--
Benzo(g,h,i)perylene	ug/g	6.6	0.05 U	--	--	--	--	--	--	--	0.05 U	0.05 U	--	**0.22**	--	--	--	0.05 U	0.05 U	0.05 U	--
Benzo(k)fluoranthene	ug/g	0.78	0.05 U	--	--	--	--	--	--	--	0.05 U	0.05 U	--	**0.11**	--	--	--	0.05 U	0.05 U	0.05 U	--
Chrysene	ug/g	7	0.05 U	--	--	--	--	--	--	--	0.05 U	0.05 U	--	**0.18**	--	--	--	0.05 U	0.05 U	0.05 U	--
Dibenzo(a,h)anthracene	ug/g	0.1	0.05 U	--	--	--	--	--	--	--	0.05 U	0.05 U	--	**0.13**	--	--	--	0.05 U	0.05 U	0.05 U	--
Fluoranthene	ug/g	0.69	0.05 U	--	--	--	--	--	--	--	0.05 U	0.05 U	--	**0.19**	--	--	--	0.05 U	0.05 U	0.05 U	--
Fluorene	ug/g	62	0.05 U	--	--	--	--	--	--	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	--
Indeno(1,2,3-Cd)Pyrene	ug/g	0.38	0.05 U	--	--	--	--	--	--	--	0.05 U	0.05 U	--	**0.14**	--	--	--	0.05 U	0.05 U	0.05 U	--
Naphthalene	ug/g	0.6	0.05 U	--	--	--	--	--	--	--	0.05 U	0.05 U	--	0.05 U	--	--	--	0.013 U	0.013 U	0.013 U	--
Phenanthrene	ug/g	6.2	0.05 U	--	--	--	--	--	--	--	0.05 U	0.05 U	--	**0.09**	--	--	--	0.046 U	0.046 U	0.046 U	--
Pyrene	ug/g	78	0.05 U	--	--	--	--	--	--	--	0.05 U	0.05 U	--	**0.17**	--	--	--	0.05 U	0.05 U	0.05 U	--
Polychlorinated Biphenyls (PCBs)																					
Aroclor 1242	ug/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01 U	0.01 U	--	--
Aroclor 1248	ug/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01 U	0.01 U	--	--
Aroclor 1254	ug/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01 U	0.01 U	--	--
Aroclor 1260	ug/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01 U	0.01 U	--	--
PCB, Total	ug/g	0.35	--	0.01 U	--	--	--	0.01 U	0.01 U	--	--	--	--	--	--	0.01 U	--	0.02 U	0.02 U	--	--
Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)																					
Benzene	ug/g	0.21	0.002 U	--	--	--	--	0.002 U	0.002 U	--	--	--	--	0.002 U	--	--	--	0.0068 U	0.0068 U	0.0068 U	--
Ethylbenzene	ug/g	1.1	0.002 U	--	--	--	--	0.002 U	0.002 U	--	--	--	--	0.002 U	--	--	--	0.018 U	0.018 U	0.018 U	--
Toluene	ug/g	2.3	**0.003**	--	--	--	--	0.002 U	0.002 U	--	--	--	--	0.002 U	--	--	--	0.08 U	0.08 U	0.08 U	--
Xylene, o	ug/g	NV	0.002 U	--	--	--	--	0.002 U	0.002 U	--	--	--	--	0.002 U	--	--	--	0.02 U	0.02 U	0.02 U	--
Xylenes, m & p	ug/g	NV	0.002 U	--	--	--	--	0.002 U	0.002 U	--	--	--	--	0.002 U	--	--	--	0.03 U	0.03 U	0.03 U	--
Xylenes, Total	ug/g	3.1	0.002 U	--	--	--	--	0.002 U	0.002 U	--	--	--	--	0.002 U	--	--	--	0.05 U	0.05 U	0.05 U	--
Petroleum Hydrocarbons (PHCs)																					
Gravimetric Heavy Hydrocarbons	ug/g	2800	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	ug/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	5 U	5 U	--
Petroleum Hydrocarbons F1 (C6-C10)	ug/g	55	5 U	5 U	--	--	--	5 U	5 U	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthaler	ug/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	10 U	10 U	--
Petroleum Hydrocarbons F2 (C10-C16)	ug/g	98	10 U	10 U	--	--	--	10 U	10 U	--	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	ug/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50 U	50 U	50 U	--
Petroleum Hydrocarbons F3 (C16-C34)	ug/g	300	50 U	50 U	--	--	--	50 U	50 U	--	--	50 U	**56**	50 U	**107**	50 U	50 U	50 U	50 U	50 U	--
Petroleum Hydrocarbons F4 (C34-C50)	ug/g	2800	50 U	50 U	--	--	--	50 U	50 U	--	--	50 U	**600**	**56**	**900**	50 U	50 U	50 U	50 U	50 U	--
Total Petroleum Hydrocarbons (C6 to C50)	ug/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	72 U	72 U	72 U	--
Physical/Chemistry																					
Average Fraction Organic Carbon	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Clay (less than 0.005mm), USCS	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Coarse Sand (2.0 to 4.75mm), USCS	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fine Sand (0.074 to 0.425mm), USCS	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fraction Organic Carbon	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fraction Organic Carbon (Rep1)	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fraction Organic Carbon (Rep2)	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Gravel (4.75 to 76mm), USCS	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Medium Sand (0.425 to 2.0mm), USCS	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Moisture	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**10.8**	**10.9**	**4.42**	--
Silt (0.005 to 0.074mm), USCS	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5. Summary of Analytical Results in Soil

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane,
Guelph, Ontario

Location			BH-03	BH-04	BH-05	BH-06	BH-07	BH-08-MW4		BH-09	BH-10	BH-11	BH-13	BH-14	BH-15-MW3	BH-16-MW2	BH-17-MW5S	BH200			
Sample ID			BH-3 (SS2)	BH-4 (SS2)	BH-5 (SS2)	BH-6 (SS5)	BH-7 (SS2)	BH-8 (SS4)	BH-X-NOV25	BH-9 (SS3)	BH-10 (SS1)	BH-11 (SS2)	BH-13 (SS3)	BH-14 (SS2)	BH-15 (SS1)	BH-16 (SS2)	BH-17 (SS3)	DUP1	BH200-35-40	BH200-7.5-9.5	BH200-15-17
Sample Date			11/27/2008	11/26/2008	11/25/2008	11/25/2008	11/25/2008	11/25/2008	11/25/2008	11/26/2008	11/27/2008	11/27/2008	11/25/2008	11/25/2008	11/26/2008	11/26/2008	11/27/2008	7/23/2019	7/23/2019	8/12/2019	8/12/2019
Sample Type			N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N
Start Depth			0.8	0.8	0.8	3.1	0.8	2.3	2.3	1.5	0	0.8	1.5	0.8	0	0.8	1.5	0.89	0.89	2.29	4.57
End Depth			1.4	1.4	1.4	3.7	1.2	2.9	2.9	2.2	0.6	1.4	2	1.4	0.6	1.4	2.1	1.01	1.01	2.9	5.18
Analyte	Units	Table 2 SCS [a]																			
Total Organic Carbon	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Organic Carbon (Rep1)	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Organic Carbon (Rep2)	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Volatile Organic Carbons (VOCs)																					
1,1,1,2-Tetrachloroethane	ug/g	0.058	0.008 U	--	--	--	--	0.008 U	0.008 U	--	--	--	--	0.008 U	--	--	--	0.05 U	0.05 U	0.05 U	--
1,1,1-Trichloroethane	ug/g	0.38	0.008 U	--	--	--	--	0.008 U	0.008 U	--	--	--	--	0.008 U	--	--	--	0.05 U	0.05 U	0.05 U	--
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.004 U	--	--	--	--	0.004 U	0.004 U	--	--	--	--	0.004 U	--	--	--	0.05 U	0.05 U	0.05 U	--
1,1,2-Trichloroethane	ug/g	0.05	0.002 U	--	--	--	--	0.002 U	0.002 U	--	--	--	--	0.002 U	--	--	--	0.05 U	0.05 U	0.05 U	--
1,1-Dichloroethane	ug/g	0.47	0.002 U	--	--	--	--	0.002 U	0.002 U	--	--	--	--	0.002 U	--	--	--	0.05 U	0.05 U	0.05 U	--
1,1-Dichloroethene	ug/g	0.05	0.002 U	--	--	--	--	0.002 U	0.002 U	--	--	--	--	0.002 U	--	--	--	0.05 U	0.05 U	0.05 U	--
1,2-Dibromoethane	ug/g	0.05	0.004 U	--	--	--	--	0.004 U	0.004 U	--	--	--	--	0.004 U	--	--	--	0.05 U	0.05 U	0.05 U	--
1,2-Dichlorobenzene	ug/g	1.2	0.002 U	--	--	--	--	0.002 U	0.002 U	--	--	--	--	0.002 U	--	--	--	0.05 U	0.05 U	0.05 U	--
1,2-Dichloroethane	ug/g	0.05	0.002 U	--	--	--	--	0.002 U	0.002 U	--	--	--	--	0.002 U	--	--	--	0.05 U	0.05 U	0.05 U	--
1,2-Dichloropropane	ug/g	0.05	0.002 U	--	--	--	--	0.002 U	0.002 U	--	--	--	--	0.002 U	--	--	--	0.05 U	0.05 U	0.05 U	--
1,3-Dichlorobenzene	ug/g	4.8	0.002 U	--	--	--	--	0.002 U	0.002 U	--	--	--	--	0.002 U	--	--	--	0.05 U	0.05 U	0.05 U	--
1,3-Dichloropropene	ug/g	0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.042 U	0.042 U	0.042 U	--
1,4-Dichlorobenzene	ug/g	0.083	0.002 U	--	--	--	--	0.002 U	0.002 U	--	--	--	--	0.002 U	--	--	--	0.05 U	0.05 U	0.05 U	--
2-Butanone	ug/g	16	0.2 U	--	--	--	--	0.2 U	0.2 U	--	--	--	--	0.2 U	--	--	--	0.5 U	0.5 U	0.5 U	--
4-Methyl-2-Pentanone	ug/g	1.7	0.2 U	--	--	--	--	0.2 U	0.2 U	--	--	--	--	0.2 U	--	--	--	0.5 U	0.5 U	0.5 U	--
Acetone	ug/g	16	0.5 U	--	--	--	--	0.5 U	0.5 U	--	--	--	--	0.5 U	--	--	--	0.5 U	0.5 U	0.5 U	--
Bromodichloromethane	ug/g	1.5	0.005 U	--	--	--	--	0.005 U	0.005 U	--	--	--	--	0.005 U	--	--	--	0.05 U	0.05 U	0.05 U	--
Bromoform	ug/g	0.27	0.002 U	--	--	--	--	0.002 U	0.002 U	--	--	--	--	0.002 U	--	--	--	0.05 U	0.05 U	0.05 U	--
Bromomethane	ug/g	0.05	0.003 U	--	--	--	--	0.003 U	0.003 U	--	--	--	--	0.003 U	--	--	--	0.05 U	0.05 U	0.05 U	--
Carbon tetrachloride	ug/g	0.05	0.002 U	--	--	--	--	0.002 U	0.002 U	--	--	--	--	0.002 U	--	--	--	0.05 U	0.05 U	0.05 U	--
Chlorobenzene	ug/g	2.4	0.002 U	--	--	--	--	0.002 U	0.002 U	--	--	--	--	0.002 U	--	--	--	0.05 U	0.05 U	0.05 U	--
Chlorodibromomethane	ug/g	2.3	0.003 U	--	--	--	--	0.003 U	0.003 U	--	--	--	--	0.003 U	--	--	--	0.05 U	0.05 U	0.05 U	--
Chloroform	ug/g	0.05	0.006 U	--	--	--	--	0.006 U	0.006 U	--	--	--	--	0.006 U	--	--	--	0.05 U	0.05 U	0.05 U	--
cis-1,2-Dichloroethene	ug/g	1.9	0.02 U	--	--	--	--	0.02 U	0.02 U	--	--	--	--	0.02 U	--	--	--	0.05 U	0.05 U	0.05 U	--
cis-1,3-Dichloropropene	ug/g	NV	0.003 U	--	--	--	--	0.003 U	0.003 U	--	--	--	--	0.003 U	--	--	--	0.03 U	0.03 U	0.03 U	--
Dichlorodifluoromethane	ug/g	16	0.03 U	--	--	--	--	0.03 U	0.03 U	--	--	--	--	0.03 U	--	--	--	0.05 U	0.05 U	0.05 U	--
Dichloromethane	ug/g	0.1	0.003 U	--	--	--	--	0.003 U	0.003 U	--	--	--	--	0.003 U	--	--	--	0.05 U	0.05 U	0.05 U	--
Methyl tert-butyl ether (MTBE)	ug/g	0.75	0.2 U	--	--	--	--	0.2 U	0.2 U	--	--	--	--	0.2 U	--	--	--	0.05 U	0.05 U	0.05 U	--
n-Hexane	ug/g	2.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U	0.05 U	--
Styrene	ug/g	0.7	0.002 U	--	--	--	--	0.002 U	0.002 U	--	--	--	--	0.002 U	--	--	--	0.05 U	0.05 U	0.05 U	--
Tetrachloroethene	ug/g	0.28	0.002 U	--	--	--	--	0.002 U	0.002 U	--	--	--	--	0.002 U	--	--	--	0.05 U	0.05 U	0.05 U	--
trans-1,2-Dichloroethene	ug/g	0.084	0.002 U	--	--	--	--	0.002 U	0.002 U	--	--	--	--	0.002 U	--	--	--	0.05 U	0.05 U	0.05 U	--
trans-1,3-Dichloropropene	ug/g	NV	0.003 U	--	--	--	--	0.003 U	0.003 U	--	--	--	--	0.003 U	--	--	--	0.03 U	0.03 U	0.03 U	--
Trichloroethylene	ug/g	0.061	0.004 U	--	--	--	--	0.004 U	0.004 U	--	--	--	--	**0.004**	--	--	--	0.01 U	0.01 U	0.01 U	--
Trichlorofluoromethane	ug/g	4	0.03 U	--	--	--	--	0.03 U	0.03 U	--	--	--	--	0.03 U	--	--	--	0.05 U	0.05 U	0.05 U	--
Vinyl Chloride	ug/g	0.02	0.003 U	--	--	--	--	0.003 U	0.003 U	--	--	--	--	0.003 U	--	--	--	0.02 U	0.02 U	0.02 U	--

[a] MECP (2011) Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

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

Notes:
Bold denote positive detection at or above reportable detection limit
Shading denotes detected results that exceeds the applicable standard
U = Analyte not detected
ug/L = microgram(s) per litre
ug/g = microgram per gram
mg/L = milligram(s) per litre
mS/cm = millisiemen per centimeter
SAR = Sodiuim Absorption Ratio
ID = identification
NV = no value available in applicable standards
-- = Analyte not analyzed

Table 6-5. Summary of Analytical Results in Soil

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane,

Guelph, Ontario

		Location	**BH201**						**BH202**				**BH203**			**BH204**			
		Sample ID	**BH201-1-1.5'**	**BH201-4-4.5'**	**BH201-7.5-9.5**	**BH201-12.5-12.11**	**BH201-12.11"-13.2**	**BH201-25-27**	**BH202-2-2.5'**	**DUP11**	**BH202-10-12**	**BH202-15-16.5**	**BH203-0.5-2**	**BH203-7.5-9.5**	**BH203-15-17**	**BH204 - 2.5-3.5'**	**BH204-11-12**	**BH204-15-15.11**	**BH204-17.5-18.9**
		Sample Date	**7/24/2019**	**7/24/2019**	**8/21/2019**	**8/21/2019**	**8/21/2019**	**8/21/2019**	**7/22/2019**	**8/12/2019**	**8/12/2019**	**8/12/2019**	**8/20/2019**	**8/20/2019**	**8/20/2019**	**7/30/2019**	**8/22/2019**	**8/22/2019**	**8/22/2019**
		Sample Type	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**FD**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
		Start Depth	**0.3**	**1.22**	**2.29**	**3.81**	**3.94**	**7.62**	**0.61**	**3.05**	**3.05**	**4.57**	**0.15**	**2.29**	**4.57**	**0.76**	**3.35**	**4.57**	**5.33**
		End Depth	**0.46**	**1.37**	**2.9**	**3.94**	**4.02**	**8.23**	**0.76**	**3.66**	**3.66**	**5.03**	**0.61**	**2.9**	**5.18**	**1.07**	**3.66**	**4.85**	**5.71**
Analyte	**Units**	**Table 2 SCS [a]**																	
Acids, Bases, Neutrals (ABNs)																			
1,1'-Biphenyl	ug/g	0.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	ug/g	0.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	ug/g	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	ug/g	38	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	ug/g	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	ug/g	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	ug/g	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	ug/g	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	ug/g	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	ug/g	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
bis (2-Chloroisopropyl) ether	ug/g	0.67	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	ug/g	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	ug/g	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	ug/g	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	ug/g	9.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxins/Furans																			
1,2,3,4,6,7,8-HpCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8-HpCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8,9-HpCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PeCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PeCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,6,7,8-HxCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,7,8-PeCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lower Bound PCDD/F TEQ (WHO 2005)	pg/g	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mid Point PCDD/F TEQ (WHO 2005)	pg/g	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total HpCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total HpCDD # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total HpCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total HpCDF # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total HxCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total HxCDD # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total HxCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total HxCDF # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total PeCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total PeCDD # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total PeCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total PeCDF # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total TCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total TCDD # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total TCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total TCDF # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Upper Bound PCDD/F TEQ (WHO 2005)	pg/g	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Inorganics																			
Conductivity	mS/cm	0.7	**0.332**	**0.655**	**1.04**	--	**1.03**	**0.553**	**0.96**	**1.86**	**1.97**	**1.8**	**0.75**	**1.26**	**1.31**	**0.61**	**0.508**	--	--
Cyanide, Weak Acid Dissociable	ug/g	0.051	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
pH	pH UNITS	NV	**8.11**	**7.98**	**8.09**	--	--	--	**8.12**	**8.31**	**8.18**	--	--	**8.33**	--	--	**8.06**	--	--
Sodium Absorption Ratio	SAR	5	**7.34**	**22.7**	**23.3**	--	**47.6 J**	**4.27**	**26.1**	**43.5**	**70.3 J**	**36.9**	**5.24**	**19**	**16.2**	**11.1**	**7.51**	**6.49**	**8.4**
Metals																			
Antimony	ug/g	7.5	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	--	--
Arsenic	ug/g	18	**3.9**	**1.8**	**1.6**	--	--	--	**1.9**	1 U	1 U	--	**2.5**	**1.9**	--	**3.3**	**1.8**	--	--
Barium	ug/g	390	**32**	**16.8**	**17.6**	--	--	--	**16**	**8.4**	**9.1**	--	**29.7**	**18.4**	--	**54.3**	**12.2**	--	--
Beryllium	ug/g	4	0.5 U	0.5 U	0.5 U	--	--	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	--	--
Boron	ug/g	120	**6.7**	5 U	5 U	--	--	--	5 U	5 U	5 U	--	**5.3**	**5.6**	--	5 U	5 U	--	--
Boron (Hot Water Ext.)	ug/g	1.5	0.1 U	0.1 U	0.1 U	--	--	--	0.1 U	0.1 U	0.1 U	--	**0.15**	0.1 U	--	**0.46**	**0.12**	--	--
Cadmium	ug/g	1.2	0.5 U	0.5 U	0.5 U	--	--	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	--	--
Chromium	ug/g	160	**11.9**	**7.6**	**6.9**	--	--	--	**7.8**	**4.9**	**5.2**	--	**8.2**	**7.9**	--	**15.2**	**6.5**	--	--
Chromium, Hexavalent (Cr6+)	ug/g	8	0.2 U	0.2 U	0.2 U	--	--	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--	**0.36**	0.2 U	--	--
Cobalt	ug/g	22	**4.5**	**2.7**	**2.5**	--	--	--	**2.6**	**1.4**	**1.4**	--	**2**	**2.7**	--	**4.8**	**2.2**	--	--
Copper	ug/g	140	**18.9**	**7.8**	**6.2**	--	--	--	**7.3**	**3.4**	**3.9**	--	**9.2**	**7.4**	--	**9.7**	**5.9**	--	--

Table 6-5. Summary of Analytical Results in Soil
55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane,
Guelph, Ontario

		Location	BH201						BH202				BH203			BH204			
		Sample ID	BH201-1-1.5'	BH201-4-4.5'	BH201-7.5-9.5	BH201-12.5-12.11	BH201-12.11"-13.2	BH201-25-27	BH202-2-2.5'	DUP11	BH202-10-12	BH202-15-16.5	BH203-0.5-2	BH203-7.5-9.5	BH203-15-17	BH204 - 2.5-3.5'	BH204-11-12	BH204-15-15.11	BH204-17.5-18.9
		Sample Date	7/24/2019	7/24/2019	8/21/2019	8/21/2019	8/21/2019	8/21/2019	7/22/2019	8/12/2019	8/12/2019	8/12/2019	8/20/2019	8/20/2019	8/20/2019	7/30/2019	8/22/2019	8/22/2019	8/22/2019
		Sample Type	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N
		Start Depth	0.3	1.22	2.29	3.81	3.94	7.62	0.61	3.05	3.05	4.57	0.15	2.29	4.57	0.76	3.35	4.57	5.33
		End Depth	0.46	1.37	2.9	3.94	4.02	8.23	0.76	3.66	3.66	5.03	0.61	2.9	5.18	1.07	3.66	4.85	5.71
Analyte	**Units**	**Table 2 SCS [a]**																	
Lead	ug/g	120	**34.9**	**8.9**	**6.8**	--	--	--	**11.1**	**4**	**5**	--	**30.6**	**10.8**	--	**25.3**	**15.4**	--	--
Mercury	ug/g	0.27	**0.0192**	**0.0078**	**0.0057**	--	--	--	**0.0065**	0.005 U	0.005 U	--	**0.24**	0.005 U	--	**0.0848**	0.005 U	--	--
Methyl Mercury	mg/kg	0.0084	--	--	--	--	--	--	--	--	--	--	5E-05 U	--	--	--	--	--	--
Molybdenum	ug/g	6.9	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	--	--
Nickel	ug/g	100	**9.3**	**5.7**	**5.5**	--	--	--	**5.4**	**2.7**	**3.1**	--	**5.1**	**5.6**	--	**8.6**	**5**	--	--
Selenium	ug/g	2.4	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	--	--
Silver	ug/g	20	0.2 U	0.2 U	0.2 U	--	--	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	--	--
Thallium	ug/g	1	0.5 U	0.5 U	0.5 U	--	--	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	--	--
Uranium	ug/g	23	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	--	--
Vanadium	ug/g	86	**24**	**14.1**	**13.2**	--	--	--	**14.7**	**10.1**	**9.9**	--	**13.3**	**15.5**	--	**32.8**	**13.8**	--	--
Zinc	ug/g	340	**246**	**70.8**	**41.5**	--	--	--	**80.9**	**32.4**	**36.9**	--	**89.5**	**72**	--	**73.6**	**53.5**	--	--
Other																			
Calcium	mg/l	NV	**3.62**	**1.52**	**3.09**	--	**1.31**	**15.8**	**2.12**	**4.04**	**2.1**	**3.34**	**3.15**	**3.79**	**7.03**	**7.86**	**6.34**	**4.37**	**3.9**
Magnesium	mg/l	NV	**3.5**	**0.66**	**1**	--	0.5 U	**4.77**	**1.29**	**0.54**	0.5 U	**1.6**	**6.32**	**1.72**	**5.64**	**1.82**	**1.1**	**1.37**	**0.85**
Sodium	mg/l	NV	**81.7**	**133**	**184**	--	**198**	**75.5**	**195**	**351**	**370**	**328**	**70.1**	**178**	**238**	**133**	**77.9**	**60.7**	**70.2**
Polyaromatic Hydrocarbons (PAHs)																			
1-Methylnaphthalene	ug/g	0.99	0.03 U	0.03 U	0.03 U	--	--	--	0.03 U	0.03 U	0.03 U	--	0.03 U	0.03 U	--	0.03 U	0.03 U	--	--
2-(1-)Methylnaphthalene	ug/g	0.99	0.042 U	0.042 U	0.042 U	--	--	--	0.042 U	0.042 U	0.042 U	--	0.042 U	0.042 U	--	0.042 U	0.042 U	--	--
2-Methylnaphthalene	ug/g	0.99	0.03 U	0.03 U	0.03 U	--	--	--	0.03 U	0.03 U	0.03 U	--	0.03 U	0.03 U	--	0.03 U	0.03 U	--	--
Acenaphthene	ug/g	7.9	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
Acenaphthylene	ug/g	0.15	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
Anthracene	ug/g	0.67	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
Benzo(a)anthracene	ug/g	0.5	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
Benzo(a)pyrene	ug/g	0.3	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	--	**0.073**	0.05 U	--	0.05 U	0.05 U	--	--
Benzo(b)fluoranthene	ug/g	0.78	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	--	**0.104**	0.05 U	--	0.05 U	0.05 U	--	--
Benzo(g,h,i)perylene	ug/g	6.6	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	--	**0.102**	0.05 U	--	0.05 U	0.05 U	--	--
Benzo(k)fluoranthene	ug/g	0.78	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
Chrysene	ug/g	7	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	--	**0.056**	0.05 U	--	0.05 U	0.05 U	--	--
Dibenzo(a,h)anthracene	ug/g	0.1	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
Fluoranthene	ug/g	0.69	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	--	**0.063**	0.05 U	--	**0.063**	0.05 U	--	--
Fluorene	ug/g	62	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
Indeno(1,2,3-Cd)Pyrene	ug/g	0.38	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	--	**0.065**	0.05 U	--	0.05 U	0.05 U	--	--
Naphthalene	ug/g	0.6	0.013 U	0.013 U	0.013 U	--	--	--	0.013 U	0.013 U	0.013 U	--	0.013 U	0.013 U	--	0.013 U	0.013 U	--	--
Phenanthrene	ug/g	6.2	0.046 U	0.046 U	0.046 U	--	--	--	0.046 U	0.046 U	0.046 U	--	0.046 U	0.046 U	--	0.046 U	0.046 U	--	--
Pyrene	ug/g	78	0.05 U	0.05 U	0.05 U	--	--	--	0.05 U	0.05 U	0.05 U	--	**0.067**	0.05 U	--	**0.057**	0.05 U	--	--
Polychlorinated Biphenyls (PCBs)																			
Aroclor 1242	ug/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	ug/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	ug/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	ug/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	ug/g	0.35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)																			
Benzene	ug/g	0.21	0.0068 U	0.0068 U	0.0068 U	0.0068 U	--	--	0.0068 U	0.0068 U	0.0068 U	--	0.0068 U	0.0068 U	--	0.0068 U	0.0068 U	--	--
Ethylbenzene	ug/g	1.1	0.018 U	0.018 U	0.018 U	0.018 U	--	--	0.018 U	0.018 U	0.018 U	--	0.018 U	0.018 U	--	0.018 U	0.018 U	--	--
Toluene	ug/g	2.3	0.08 U	0.08 U	0.08 U	0.08 U	--	--	0.08 U	0.08 U	0.08 U	--	0.08 U	0.08 U	--	0.08 U	0.08 U	--	--
Xylene, o	ug/g	NV	0.02 U	0.02 U	0.02 U	0.02 U	--	--	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	--	0.02 U	0.02 U	--	--
Xylenes, m & p	ug/g	NV	0.03 U	0.03 U	0.03 U	0.03 U	--	--	0.03 U	0.03 U	0.03 U	--	0.03 U	0.03 U	--	0.03 U	0.03 U	--	--
Xylenes, Total	ug/g	3.1	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
Petroleum Hydrocarbons (PHCs)																			
Gravimetric Heavy Hydrocarbons	ug/g	2800	--	--	--	**1290**	--	--	--	--	--	--	**1710**	--	--	--	--	--	--
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	ug/g	NV	5 U	5 U	5 U	5 U	--	--	5 U	5 U	5 U	--	5 U	5 U	--	5 U	5 U	--	--
Petroleum Hydrocarbons F1 (C6-C10)	ug/g	55	5 U	5 U	5 U	5 U	--	--	5 U	5 U	5 U	--	5 U	5 U	--	5 U	5 U	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthaler	ug/g	NV	10 U	10 U	10 U	--	--	--	10 U	10 U	10 U	--	20 U	10 U	--	10 U	10 U	--	--
Petroleum Hydrocarbons F2 (C10-C16)	ug/g	98	10 U	10 U	10 U	10 U	--	--	10 U	10 U	10 U	--	20 U	10 U	--	10 U	10 U	--	--
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	ug/g	NV	50 U	50 U	50 U	--	--	--	50 U	50 U	50 U	--	**190**	50 U	--	50 U	50 U	--	--
Petroleum Hydrocarbons F3 (C16-C34)	ug/g	300	50 U	50 U	50 U	**290**	--	--	50 U	50 U	50 U	--	**190**	50 U	--	50 U	50 U	--	--
Petroleum Hydrocarbons F4 (C34-C50)	ug/g	2800	50 U	50 U	50 U	**535**	--	--	50 U	50 U	50 U	--	**520**	50 U	--	50 U	50 U	--	--
Total Petroleum Hydrocarbons (C6 to C50)	ug/g	NV	72 U	72 U	72 U	**826**	--	--	72 U	72 U	72 U	--	**710**	72 U	--	72 U	72 U	--	--
Physical/Chemistry																			
Average Fraction Organic Carbon	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.0087**	0.001 U	--	--
Clay (less than 0.005mm), USCS	%	NV	**8.6**	--	--	--	--	--	**12.4**	--	--	--	--	--	--	--	--	--	--
Coarse Sand (2.0 to 4.75mm), USCS	%	NV	**19.3**	--	--	--	--	--	**3.1**	--	--	--	--	--	--	--	--	--	--
Fine Sand (0.074 to 0.425mm), USCS	%	NV	**11.2**	--	--	--	--	--	**30.8**	--	--	--	--	--	--	--	--	--	--
Fraction Organic Carbon	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.0086**	0.001 U	--	--
Fraction Organic Carbon (Rep1)	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.0089**	--	--	--
Fraction Organic Carbon (Rep2)	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Gravel (4.75 to 76mm), USCS	%	NV	**30.1**	--	--	--	--	--	**19.9**	--	--	--	--	--	--	--	--	--	--
Medium Sand (0.425 to 2.0mm), USCS	%	NV	**25.4**	--	--	--	--	--	**9.3**	--	--	--	--	--	--	--	--	--	--
Moisture	%	NV	**4.11**	**8.41**	**11**	**8.05**	--	--	**5.69**	**7.33**	**6.27**	--	**4.29**	**6.81**	--	**16.4**	**6.34**	--	--
Silt (0.005 to 0.074mm), USCS	%	NV	**5.6**	--	--	--	--	--	**24.7**	--	--	--	--	--	--	--	--	--	--

Table 6-5. Summary of Analytical Results in Soil

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane,
Guelph, Ontario

		Location	BH201						BH202				BH203			BH204			
		Sample ID	**BH201-1-1.5'**	**BH201-4-4.5'**	**BH201-7.5-9.5**	**BH201-12.5-12.11**	**BH201-12.11"-13.2**	**BH201-25-27**	**BH202-2-2.5'**	**DUP11**	**BH202-10-12**	**BH202-15-16.5**	**BH203-0.5-2**	**BH203-7.5-9.5**	**BH203-15-17**	**BH204 - 2.5-3.5'**	**BH204-11-12**	**BH204-15-15.11**	**BH204-17.5-18.9**
		Sample Date	**7/24/2019**	**7/24/2019**	**8/21/2019**	**8/21/2019**	**8/21/2019**	**8/21/2019**	**7/22/2019**	**8/12/2019**	**8/12/2019**	**8/12/2019**	**8/20/2019**	**8/20/2019**	**8/20/2019**	**7/30/2019**	**8/22/2019**	**8/22/2019**	**8/22/2019**
		Sample Type	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**FD**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
		Start Depth	**0.3**	**1.22**	**2.29**	**3.81**	**3.94**	**7.62**	**0.61**	**3.05**	**3.05**	**4.57**	**0.15**	**2.29**	**4.57**	**0.76**	**3.35**	**4.57**	**5.33**
		End Depth	**0.46**	**1.37**	**2.9**	**3.94**	**4.02**	**8.23**	**0.76**	**3.66**	**3.66**	**5.03**	**0.61**	**2.9**	**5.18**	**1.07**	**3.66**	**4.85**	**5.71**
Analyte	**Units**	**Table 2 SCS [a]**																	
Total Organic Carbon	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.86**	0.1 U	--	--
Total Organic Carbon (Rep1)	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.89**	--	--	--
Total Organic Carbon (Rep2)	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Volatile Organic Carbons (VOCs)																			
1,1,1,2-Tetrachloroethane	ug/g	0.058	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
1,1,1-Trichloroethane	ug/g	0.38	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
1,1,2-Trichloroethane	ug/g	0.05	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
1,1-Dichloroethane	ug/g	0.47	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
1,1-Dichloroethene	ug/g	0.05	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
1,2-Dibromoethane	ug/g	0.05	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
1,2-Dichlorobenzene	ug/g	1.2	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
1,2-Dichloroethane	ug/g	0.05	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
1,2-Dichloropropane	ug/g	0.05	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
1,3-Dichlorobenzene	ug/g	4.8	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
1,3-Dichloropropene	ug/g	0.05	0.042 U	0.042 U	0.042 U	0.042 U	--	--	0.042 U	0.042 U	0.042 U	--	0.042 U	0.042 U	--	0.042 U	0.042 U	--	--
1,4-Dichlorobenzene	ug/g	0.083	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
2-Butanone	ug/g	16	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	--	--
4-Methyl-2-Pentanone	ug/g	1.7	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	--	--
Acetone	ug/g	16	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	--	--
Bromodichloromethane	ug/g	1.5	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
Bromoform	ug/g	0.27	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
Bromomethane	ug/g	0.05	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
Carbon tetrachloride	ug/g	0.05	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
Chlorobenzene	ug/g	2.4	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
Chlorodibromomethane	ug/g	2.3	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
Chloroform	ug/g	0.05	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
cis-1,2-Dichloroethene	ug/g	1.9	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
cis-1,3-Dichloropropene	ug/g	NV	0.03 U	0.03 U	0.03 U	0.03 U	--	--	0.03 U	0.03 U	0.03 U	--	0.03 U	0.03 U	--	0.03 U	0.03 U	--	--
Dichlorodifluoromethane	ug/g	16	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 UJ	0.05 U	--	--
Dichloromethane	ug/g	0.1	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	0.063 U	0.05 U	--	0.05 U	0.05 U	--	--
Methyl tert-butyl ether (MTBE)	ug/g	0.75	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
n-Hexane	ug/g	2.8	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
Styrene	ug/g	0.7	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
Tetrachloroethene	ug/g	0.28	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
trans-1,2-Dichloroethene	ug/g	0.084	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
trans-1,3-Dichloropropene	ug/g	NV	0.03 U	0.03 U	0.03 U	0.03 U	--	--	0.03 U	0.03 U	0.03 U	--	0.03 U	0.03 U	--	0.03 U	0.03 U	--	--
Trichloroethylene	ug/g	0.061	0.01 U	0.01 U	0.01 U	0.01 U	--	--	0.01 U	0.01 U	0.01 U	--	0.01 U	0.01 U	--	0.01 U	0.01 U	--	--
Trichlorofluoromethane	ug/g	4	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--
Vinyl Chloride	ug/g	0.02	0.02 U	0.02 U	0.02 U	0.02 U	--	--	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	--	0.02 U	0.02 U	--	--

[a] MECP (2011) Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

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

Notes:
Bold denote positive detection at or above reportable detection limit
Shading denotes detected results that exceeds the applicable standard
U = Analyte not detected
ug/L = microgram(s) per litre
ug/g = microgram per gram
mg/L = milligram(s) per litre
mS/cm = millisiemen per centimeter
SAR = Sodiuim Absorption Ratio
ID = identification
NV = no value available in applicable standards
-- = Analyte not analyzed

Table 6-5. Summary of Analytical Results in Soil

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane,
Guelph, Ontario

		Location	BH205						BH206				BH207		BH208			BH209			
		Sample ID	DUP10	BH205-0.5-2	BH205-2.5-4.5	BH205-7.5-9.5	BH205-10-12	BH205-12.5-15	BH206-1-2'	BH206-7.5-9.5	BH206-12.5-14.5	DUP15	BH207I-1-2	BH207I-7.5-9.5	BH208-3-3.5	DUP 4	BH208-7.5-8	DUP 2	DUP 3	BH209-0.4-0.75	BH209-2-2.4
		Sample Date	8/12/2019	8/12/2019	8/12/2019	8/12/2019	8/12/2019	8/12/2019	7/25/2019	8/19/2019	8/19/2019	8/19/2019	4/9/2020	4/9/2020	11/12/2019	11/21/2019	11/21/2019	11/13/2019	11/13/2019	11/13/2019	11/13/2019
		Sample Type	FD	N	N	N	N	N	N	N	N	FD	N	N	N	FD	N	FD	FD	N	N
		Start Depth	2.29	0	0.76	2.29	3.05	3.81	0.3	2.29	3.81	3.81	0.3	2.29	0.91	2.29	2.29	0.12	0.61	0.12	0.61
		End Depth	2.9	0.61	1.37	2.9	3.66	4.57	0.61	2.9	4.42	4.42	0.61	2.9	1.07	2.44	2.44	0.23	0.73	0.23	0.73
Analyte	**Units**	**Table 2 SCS [a]**																			
Acids, Bases, Neutrals (ABNs)																					
1,1'-Biphenyl	ug/g	0.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	ug/g	0.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	ug/g	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	ug/g	38	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	ug/g	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	ug/g	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	ug/g	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	ug/g	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	ug/g	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	ug/g	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
bis (2-Chloroisopropyl) ether	ug/g	0.67	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	ug/g	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	ug/g	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	ug/g	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	ug/g	9.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxins/Furans																					
1,2,3,4,6,7,8-HpCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8-HpCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8,9-HpCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PeCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PeCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,6,7,8-HxCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,7,8-PeCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lower Bound PCDD/F TEQ (WHO 2005)	pg/g	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mid Point PCDD/F TEQ (WHO 2005)	pg/g	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total HpCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total HpCDD # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total HpCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total HpCDF # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total HxCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total HxCDD # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total HxCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total HxCDF # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total PeCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total PeCDD # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total PeCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total PeCDF # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total TCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total TCDD # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total TCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total TCDF # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Upper Bound PCDD/F TEQ (WHO 2005)	pg/g	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Inorganics																					
Conductivity	mS/cm	0.7	--	**0.445**	--	--	**0.53**	--	**0.179**	**0.554**	**0.628**	**0.643**	--	--	--	--	--	--	--	--	--
Cyanide, Weak Acid Dissociable	ug/g	0.051	--	0.05 U	--	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--
pH	pH UNITS	NV	--	**8.06**	--	--	**8.3**	--	**8.07**	**7.94**	**7.89**	**7.91**	--	--	--	--	--	--	--	--	--
Sodium Absorption Ratio	SAR	5	--	**10.1**	--	--	**23.3 J**	**7.18**	**0.17**	**2.75**	**1.55**	**1.64**	--	--	--	--	--	--	--	--	--
Metals																					
Antimony	ug/g	7.5	--	1 U	--	--	1 U	--	1 U	1 U	1 U	1 U	--	--	--	--	--	--	1 U	1 U	1 U
Arsenic	ug/g	18	--	**3.2**	--	--	**1.3**	--	**2.2**	**2.7**	**2.6**	**2.5**	--	--	--	--	--	--	**2.5**	**3.1**	**2.7**
Barium	ug/g	390	--	**37.3**	--	--	**8.6**	--	**13**	**47.8**	**45.9**	**43.4**	--	--	--	--	--	--	**28.7**	**26.4**	**31.4**
Beryllium	ug/g	4	--	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U
Boron	ug/g	120	--	**5**	--	--	5 U	--	5 U	**8.2**	**9.1**	**6.9**	--	--	--	--	--	--	5 U	5 U	5 U
Boron (Hot Water Ext.)	ug/g	1.5	--	**0.14**	--	--	0.1 U	--	0.1 U	**0.21**	**0.11**	**0.11**	--	--	--	--	--	--	--	--	--
Cadmium	ug/g	1.2	--	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U
Chromium	ug/g	160	--	**8.8**	--	--	**5.1**	--	**5.9**	**17**	**16.6**	**15.1**	--	--	--	--	--	--	**11.6**	**5.6**	**12.5**
Chromium, Hexavalent (Cr6+)	ug/g	8	--	0.2 U	--	--	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--	--	--	--
Cobalt	ug/g	22	--	**2.5**	--	--	**1.5**	--	**2.5**	**7**	**6.5**	**6.2**	--	--	--	--	--	--	**4.2**	**2.7**	**4.4**
Copper	ug/g	140	--	**11.4**	--	--	**5.1**	--	**10**	**14.3**	**13.4**	**13.4**	--	--	--	--	--	--	**9.8**	**23.6**	**11**

Table 6-5. Summary of Analytical Results in Soil

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane,
Guelph, Ontario

		Location	BH205						BH206				BH207		BH208			BH209			
		Sample ID	DUP10	BH205-0.5-2	BH205-2.5-4.5	BH205-7.5-9.5	BH205-10-12	BH205-12.5-15	BH206-1-2'	BH206-7.5-9.5	BH206-12.5-14.5	DUP15	BH207I-1-2	BH207I-7.5-9.5	BH208-3-3.5	DUP 4	BH208-7.5-8	DUP 2	DUP 3	BH209-0.4-0.75	BH209-2-2.4
		Sample Date	8/12/2019	8/12/2019	8/12/2019	8/12/2019	8/12/2019	8/12/2019	7/25/2019	8/19/2019	8/19/2019	8/19/2019	4/9/2020	4/9/2020	11/12/2019	11/21/2019	11/21/2019	11/13/2019	11/13/2019	11/13/2019	11/13/2019
		Sample Type	FD	N	N	N	N	N	N	N	N	FD	N	N	N	FD	N	FD	FD	N	N
		Start Depth	2.29	0	0.76	2.29	3.05	3.81	0.3	2.29	3.81	3.81	0.3	2.29	0.91	2.29	2.29	0.12	0.61	0.12	0.61
		End Depth	2.9	0.61	1.37	2.9	3.66	4.57	0.61	2.9	4.42	4.42	0.61	2.9	1.07	2.44	2.44	0.23	0.73	0.23	0.73
Analyte	**Units**	**Table 2 SCS [a]**																			
Lead	ug/g	120	--	**34.7**	--	--	**5.9**	--	**11.3**	**13.3**	**12.7**	**11.9**	--	--	--	--	--	--	**8.9**	**15.9**	**9.2**
Mercury	ug/g	0.27	--	**0.0809**	--	--	0.005 U	--	**0.0058**	**0.0159**	**0.0098**	**0.0101**	--	--	--	--	--	--	**0.018**	**0.0079**	**0.0198**
Methyl Mercury	mg/kg	0.0084	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	ug/g	6.9	--	1 U	--	--	1 U	--	1 U	1 U	1 U	1 U	--	--	--	--	--	--	1 U	1 U	1 U
Nickel	ug/g	100	--	**6**	--	--	**3.3**	--	**5**	**15.4**	**13.7**	**13.1**	--	--	--	--	--	--	**8.2**	**6.6**	**9.5**
Selenium	ug/g	2.4	--	1 U	--	--	1 U	--	1 U	1 U	1 U	1 U	--	--	--	--	--	--	1 U	1 U	1 U
Silver	ug/g	20	--	0.2 U	--	--	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--	0.2 U	0.2 U	0.2 U
Thallium	ug/g	1	--	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U
Uranium	ug/g	23	--	1 U	--	--	1 U	--	1 U	1 U	1 U	1 U	--	--	--	--	--	--	1 U	1 U	1 U
Vanadium	ug/g	86	--	**16.1**	--	--	**10.4**	--	**14.4**	**27.4**	**26.3**	**24.9**	--	--	--	--	--	--	**23.9**	**13.2**	**24.3**
Zinc	ug/g	340	--	**124**	--	--	**51.1**	--	**90**	**72.3**	**73.4**	**71.7**	--	--	--	--	--	--	**40.9**	**114**	**43.1**
Other																					
Calcium	mg/l	NV	--	**3.58**	--	--	**1.38**	**13.4**	**17.7**	**23.1**	**51.1**	**51.2**	--	--	--	--	--	--	--	--	--
Magnesium	mg/l	NV	--	**1.74**	--	--	0.5 U	**11.4**	**4.74**	**9.09**	**11.2**	**10.9**	--	--	--	--	--	--	--	--	--
Sodium	mg/l	NV	--	**92.7**	--	--	**99.3**	**148**	**3.21**	**61.7**	**47**	**49.6**	--	--	--	--	--	--	--	--	--
Polyaromatic Hydrocarbons (PAHs)																					
1-Methylnaphthalene	ug/g	0.99	--	--	0.06 U	--	0.03 U	--	0.03 U	0.03 U	0.03 U	0.03 U	--	--	**0.032**	0.03 U	0.03 U	--	--	--	--
2-(1-)Methylnaphthalene	ug/g	0.99	--	--	0.085 U	--	0.042 U	--	0.042 U	0.042 U	0.042 U	0.042 U	--	--	**0.067**	0.042 U	0.042 U	--	--	--	--
2-Methylnaphthalene	ug/g	0.99	--	--	0.06 U	--	0.03 U	--	0.03 U	0.03 U	0.03 U	0.03 U	--	--	**0.034**	0.03 U	0.03 U	--	--	--	--
Acenaphthene	ug/g	7.9	--	--	0.05 U	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	--	--
Acenaphthylene	ug/g	0.15	--	--	0.05 U	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	--	--
Anthracene	ug/g	0.67	--	--	0.05 U	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	--	--
Benzo(a)anthracene	ug/g	0.5	--	--	**0.098**	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	**0.087**	0.05 U	0.05 U	--	--	--	--
Benzo(a)pyrene	ug/g	0.3	--	--	**0.134**	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	**0.085**	0.05 U	0.05 U	--	--	--	--
Benzo(b)fluoranthene	ug/g	0.78	--	--	**0.178**	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	**0.106**	0.05 U	0.05 U	--	--	--	--
Benzo(g,h,i)perylene	ug/g	6.6	--	--	**0.208**	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	**0.237**	0.05 U	0.05 U	--	--	--	--
Benzo(k)fluoranthene	ug/g	0.78	--	--	0.05 U	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	--	--
Chrysene	ug/g	7	--	--	**0.145**	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	**0.113**	0.05 U	0.05 U	--	--	--	--
Dibenzo(a,h)anthracene	ug/g	0.1	--	--	0.05 U	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	--	--
Fluoranthene	ug/g	0.69	--	--	**0.133**	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	**0.16**	0.05 U	0.05 U	--	--	--	--
Fluorene	ug/g	62	--	--	0.05 U	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.05 U	--	--	--	--
Indeno(1,2,3-Cd)Pyrene	ug/g	0.38	--	--	**0.111**	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	**0.077**	0.05 U	0.05 U	--	--	--	--
Naphthalene	ug/g	0.6	--	--	0.065 U	--	0.013 U	--	0.013 U	0.013 U	0.013 U	0.013 U	--	--	**0.039**	0.013 U	0.013 U	--	--	--	--
Phenanthrene	ug/g	6.2	--	--	**0.123**	--	0.046 U	--	0.046 U	0.046 U	0.046 U	0.046 U	--	--	**0.11**	0.046 U	0.046 U	--	--	--	--
Pyrene	ug/g	78	--	--	**0.134**	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	**0.139**	0.05 U	0.05 U	--	--	--	--
Polychlorinated Biphenyls (PCBs)																					
Aroclor 1242	ug/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01 U	--	0.01 U	0.01 U
Aroclor 1248	ug/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01 U	--	0.01 U	0.01 U
Aroclor 1254	ug/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01 U	--	0.01 U	0.01 U
Aroclor 1260	ug/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01 U	--	0.01 U	0.01 U
PCB, Total	ug/g	0.35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02 U	--	0.02 U	0.02 U
Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)																					
Benzene	ug/g	0.21	0.0068 U	--	--	0.0068 U	0.0068 U	--	0.0068 U	0.0068 U	0.0068 U	0.0068 U	--	--	--	--	--	--	--	--	--
Ethylbenzene	ug/g	1.1	0.018 U	--	--	0.018 U	0.018 U	--	0.018 U	0.018 U	0.018 U	0.018 U	--	--	--	--	--	--	--	--	--
Toluene	ug/g	2.3	0.08 U	--	--	0.08 U	0.08 U	--	0.08 U	0.08 U	0.08 U	0.08 U	--	--	--	--	--	--	--	--	--
Xylene, o	ug/g	NV	0.02 U	--	--	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	--	--	--	--	--	--	--	--	--
Xylenes, m & p	ug/g	NV	0.03 U	--	--	0.03 U	0.03 U	--	0.03 U	0.03 U	0.03 U	0.03 U	--	--	--	--	--	--	--	--	--
Xylenes, Total	ug/g	3.1	0.05 U	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons (PHCs)																					
Gravimetric Heavy Hydrocarbons	ug/g	2800	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	ug/g	NV	5 U	--	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F1 (C6-C10)	ug/g	55	5 U	--	--	5 U	5 U	--	5 U	5 U	5 U	5 UJ	5 U	5 U	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthaler	ug/g	NV	--	--	--	--	10 U	--	10 U	10 U	10 U	10 U	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F2 (C10-C16)	ug/g	98	10 U	--	--	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	ug/g	NV	--	--	--	--	50 U	--	50 U	50 U	50 U	50 U	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F3 (C16-C34)	ug/g	300	50 U	--	--	50 U	50 U	--	50 U	50 U	50 U	50 U	50 U	50 U	--	--	--	--	--	--	--
Petroleum Hydrocarbons F4 (C34-C50)	ug/g	2800	50 U	--	--	50 U	50 U	--	50 U	50 U	50 U	50 U	50 U	50 U	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (C6 to C50)	ug/g	NV	72 U	--	--	72 U	72 U	--	72 U	72 U	72 U	72 U	72 U	72 U	--	--	--	--	--	--	--
Physical/Chemistry																					
Average Fraction Organic Carbon	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Clay (less than 0.005mm), USCS	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Coarse Sand (2.0 to 4.75mm), USCS	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fine Sand (0.074 to 0.425mm), USCS	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fraction Organic Carbon	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fraction Organic Carbon (Rep1)	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fraction Organic Carbon (Rep2)	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Gravel (4.75 to 76mm), USCS	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Medium Sand (0.425 to 2.0mm), USCS	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Moisture	%	NV	**5.43**	**5.69**	**4.77**	**5.25**	**8.11**	--	**4.22**	**8.42**	**9.72**	**9.36**	**5.33**	**10.9**	**8.45**	**6.66**	**6.6**	**2.41**	**8.32**	**2.68**	**7.8**
Silt (0.005 to 0.074mm), USCS	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5. Summary of Analytical Results in Soil

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane,
Guelph, Ontario

		Location	BH205						BH206				BH207		BH208			BH209			
		Sample ID	DUP10	BH205-0.5-2	BH205-2.5-4.5	BH205-7.5-9.5	BH205-10-12	BH205-12.5-15	BH206-1-2'	BH206-7.5-9.5	BH206-12.5-14.5	DUP15	BH207I-1-2	BH207I-7.5-9.5	BH208-3-3.5	DUP 4	BH208-7.5-8	DUP 2	DUP 3	BH209-0.4-0.75	BH209-2-2.4
		Sample Date	8/12/2019	8/12/2019	8/12/2019	8/12/2019	8/12/2019	8/12/2019	7/25/2019	8/19/2019	8/19/2019	8/19/2019	4/9/2020	4/9/2020	11/12/2019	11/21/2019	11/21/2019	11/13/2019	11/13/2019	11/13/2019	11/13/2019
		Sample Type	FD	N	N	N	N	N	N	N	N	FD	N	N	N	FD	N	FD	FD	N	N
		Start Depth	2.29	0	0.76	2.29	3.05	3.81	0.3	2.29	3.81	3.81	0.3	2.29	0.91	2.29	2.29	0.12	0.61	0.12	0.61
		End Depth	2.9	0.61	1.37	2.9	3.66	4.57	0.61	2.9	4.42	4.42	0.61	2.9	1.07	2.44	2.44	0.23	0.73	0.23	0.73
Analyte	**Units**	**Table 2 SCS [a]**																			
Total Organic Carbon	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Organic Carbon (Rep1)	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Organic Carbon (Rep2)	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Volatile Organic Carbons (VOCs)																					
1,1,1,2-Tetrachloroethane	ug/g	0.058	0.05 U	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	ug/g	0.38	0.05 U	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05 U	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	ug/g	0.05	0.05 U	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	ug/g	0.47	0.05 U	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--
1,1-Dichloroethene	ug/g	0.05	0.05 U	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--
1,2-Dibromoethane	ug/g	0.05	0.05 U	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	ug/g	1.2	0.05 U	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--
1,2-Dichloroethane	ug/g	0.05	0.05 U	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--
1,2-Dichloropropane	ug/g	0.05	0.05 U	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	ug/g	4.8	0.05 U	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--
1,3-Dichloropropene	ug/g	0.05	0.042 U	--	--	0.042 U	0.042 U	--	0.042 U	0.042 U	0.042 U	0.042 U	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	ug/g	0.083	0.05 U	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--
2-Butanone	ug/g	16	0.5 U	--	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	--	--	--
4-Methyl-2-Pentanone	ug/g	1.7	0.5 U	--	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	--	--	--
Acetone	ug/g	16	0.5 U	--	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	--	--	--
Bromodichloromethane	ug/g	1.5	0.05 U	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--
Bromoform	ug/g	0.27	0.05 U	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--
Bromomethane	ug/g	0.05	0.05 U	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	ug/g	0.05	0.05 U	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--
Chlorobenzene	ug/g	2.4	0.05 U	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--
Chlorodibromomethane	ug/g	2.3	0.05 U	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--
Chloroform	ug/g	0.05	0.05 U	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	ug/g	1.9	0.05 U	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	ug/g	NV	0.03 U	--	--	0.03 U	0.03 U	--	0.03 U	0.03 U	0.03 U	0.03 U	--	--	--	--	--	--	--	--	--
Dichlorodifluoromethane	ug/g	16	0.05 U	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--
Dichloromethane	ug/g	0.1	0.05 U	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--
Methyl tert-butyl ether (MTBE)	ug/g	0.75	0.05 U	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--
n-Hexane	ug/g	2.8	0.05 U	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--
Styrene	ug/g	0.7	0.05 U	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--
Tetrachloroethene	ug/g	0.28	0.05 U	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	ug/g	0.084	0.05 U	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--
trans-1,3-Dichloropropene	ug/g	NV	0.03 U	--	--	0.03 U	0.03 U	--	0.03 U	0.03 U	0.03 U	0.03 U	--	--	--	--	--	--	--	--	--
Trichloroethylene	ug/g	0.061	0.01 U	--	--	0.01 U	0.01 U	--	0.01 U	0.01 U	0.01 U	0.01 U	--	--	--	--	--	--	--	--	--
Trichlorofluoromethane	ug/g	4	0.05 U	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--
Vinyl Chloride	ug/g	0.02	0.02 U	--	--	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	--	--	--	--	--	--	--	--	--

[a] MECP (2011) Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

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

Notes:

Bold denote positive detection at or above reportable detection limit

Shading denotes detected results that exceeds the applicable standard

U = Analyte not detected

ug/L = microgram(s) per litre

ug/g = microgram per gram

mg/L = milligram(s) per litre

mS/cm = millisiemen per centimeter

SAR = Sodiuim Absorption Ratio

ID = identification

NV = no value available in applicable standards

-- = Analyte not analyzed

Table 6-5. Summary of Analytical Results in Soil

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane,
Guelph, Ontario

		Location	BH210		BH211	MW100			MW101			MW102B				MW103			
		Sample ID	BH210-3.5	BH210-6.5-7	BH211-10-12	MW100-1.25-1.5'	MW100-7.5-9.5	MW100-15-17	MW101-1.5-2'	MW101-7.5-9.5	MW101-20-20.5	MW102-20-25	MW102-7.5-9.5	MW102-12.5-14.5	MW102-25-26	MW103-2-2.5'	MW103-12.5-14	MW103-17.5-19.5	MW103-22.5-24.5
		Sample Date	11/21/2019	11/21/2019	11/21/2019	7/24/2019	8/22/2019	8/22/2019	7/26/2019	8/21/2019	8/21/2019	7/23/2019	8/26/2019	8/26/2019	8/26/2019	7/22/2019	8/14/2019	8/14/2019	8/14/2019
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Start Depth	0.99	1.98	3.05	0.41	2.29	4.57	0.46	2.29	6.1	0.51	2.29	3.81	7.62	0.56	3.81	5.33	6.86
		End Depth	1.14	2.13	3.66	0.46	2.9	5.18	0.61	2.9	6.25	0.63	2.9	4.42	7.92	0.71	4.27	5.94	7.47
Analyte	**Units**	**Table 2 SCS ^{a}**																	
Acids, Bases, Neutrals (ABNs)																			
1,1'-Biphenyl	ug/g	0.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	ug/g	0.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	ug/g	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	ug/g	38	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	ug/g	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	ug/g	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	ug/g	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	ug/g	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	ug/g	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	ug/g	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
bis (2-Chloroisopropyl) ether	ug/g	0.67	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	ug/g	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	ug/g	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	ug/g	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	ug/g	9.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxins/Furans																			
1,2,3,4,6,7,8-HpCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8-HpCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8,9-HpCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PeCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PeCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,6,7,8-HxCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,7,8-PeCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lower Bound PCDD/F TEQ (WHO 2005)	pg/g	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mid Point PCDD/F TEQ (WHO 2005)	pg/g	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total HpCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total HpCDD # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total HpCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total HpCDF # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total HxCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total HxCDD # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total HxCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total HxCDF # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total PeCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total PeCDD # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total PeCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total PeCDF # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total TCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total TCDD # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total TCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total TCDF # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Upper Bound PCDD/F TEQ (WHO 2005)	pg/g	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Inorganics																			
Conductivity	mS/cm	0.7	--	--	--	**0.981**	**1.31**	**1.4**	**1.56**	**0.303**	--	**2.95**	**1.49**	**1.49**	**0.826**	**1.07**	**1.9**	**1.04**	**1.08**
Cyanide, Weak Acid Dissociable	ug/g	0.051	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
pH	pH UNITS	NV	--	--	--	**8.12**	**8.28**	--	--	**8.12**	--	**7.93**	**7.51**	**7.85**	--	**7.52**	**7.98**	**7.95**	--
Sodium Absorption Ratio	SAR	5	--	--	--	**8.27**	**65.9 J**	**16.3**	**16.6**	**9 J**	**14.3**	**94.2 J**	**18.1**	**41.2**	**5.01**	**18.6**	**26.7**	**13.2**	**12.7**
Metals																			
Antimony	ug/g	7.5	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	**1**	1 U	--	1 U	1 U	1 U	--
Arsenic	ug/g	18	**3.5**	**4.2**	**1.7**	**6.6**	**1.2**	--	**5.2**	**2.2**	--	**2.4**	**2.4**	**2.4**	--	**3**	**1.9**	**2.9**	--
Barium	ug/g	390	**38.2**	**42.7**	**18**	**111**	**8.8**	--	**90.7**	**21.3**	--	**29.7**	**65.4**	**37.8**	--	**28.6**	**23.5**	**110**	--
Beryllium	ug/g	4	0.5 U	0.5 U	0.5 U	**0.98**	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	**0.62**	--
Boron	ug/g	120	**5.1**	**5.7**	5 U	**10.5**	5 U	--	**6.5**	**6.8**	--	**7.6**	**6.1**	**7.3**	--	5 U	**5.5**	**10.9**	--
Boron (Hot Water Ext.)	ug/g	1.5	--	--	--	**0.81**	0.1 U	--	**0.72**	**0.17**	--	0.1 U	**0.15**	**0.11**	--	**0.39**	0.1 U	0.1 U	--
Cadmium	ug/g	1.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--
Chromium	ug/g	160	**11**	**14.1**	**6.6**	**29.3**	**4.9**	--	**16.8**	**9.8**	--	**12**	**21.3**	**14.2**	--	**15.4**	**8.8**	**24.6**	--
Chromium, Hexavalent (Cr6+)	ug/g	8	--	--	--	**1.04**	0.2 U	--	**0.51**	0.2 U	--	**0.23**	**0.97**	0.2 U	--	0.2 U	0.2 U	0.2 U	--
Cobalt	ug/g	22	**3.7**	**4.6**	**2.1**	**7.1**	**1.4**	--	**4.8**	**3.2**	--	**4.5**	**4.5**	**5.4**	--	**4.6**	**3.4**	**8.6**	--
Copper	ug/g	140	**10.4**	**13.8**	**7.4**	**17**	**4**	--	**21.1**	**9.3**	--	**10**	**33.1**	**13.4**	--	**8.7**	**8.4**	**18.8**	--

Table 6-5. Summary of Analytical Results in Soil

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane,
Guelph, Ontario

		Location	BH210		BH211	MW100			MW101			MW102B				MW103			
		Sample ID	BH210-3.5	BH210-6.5-7	BH211-10-12	MW100-1.25-1.5'	MW100-7.5-9.5	MW100-15-17	MW101-1.5-2'	MW101-7.5-9.5	MW101-20-20.5	MW102-20-25	MW102-7.5-9.5	MW102-12.5-14.5	MW102-25-26	MW103-2-2.5'	MW103-12.5-14	MW103-17.5-19.5	MW103-22.5-24.5
		Sample Date	11/21/2019	11/21/2019	11/21/2019	7/24/2019	8/22/2019	8/22/2019	7/26/2019	8/21/2019	8/21/2019	7/23/2019	8/26/2019	8/26/2019	8/26/2019	7/22/2019	8/14/2019	8/14/2019	8/14/2019
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Start Depth	0.99	1.98	3.05	0.41	2.29	4.57	0.46	2.29	6.1	0.51	2.29	3.81	7.62	0.56	3.81	5.33	6.86
		End Depth	1.14	2.13	3.66	0.46	2.9	5.18	0.61	2.9	6.25	0.63	2.9	4.42	7.92	0.71	4.27	5.94	7.47
Analyte	Units	Table 2 SCS [a]																	
Lead	ug/g	120	**38.4**	**16.9**	**18.7**	**25.2**	**6.5**	--	**207**	**13.4**	--	**15.4**	**24.9**	**9.9**	--	**29.4**	**11.2**	**8.9**	--
Mercury	ug/g	0.27	--	--	--	**0.117**	0.005 U	--	**0.889**	**0.0138**	--	**0.0151**	**0.0513**	**0.008**	--	**0.0595**	**0.0068**	**0.0122**	--
Methyl Mercury	mg/kg	0.0084	--	--	--	--	--	--	5E-05 U	--	--	--	--	--	--	--	--	--	--
Molybdenum	ug/g	6.9	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	--	1 U	1 U	1 U	--
Nickel	ug/g	100	**9.5**	**11**	**4.7**	**19**	**3.3**	--	**9.4**	**7.2**	--	**9.7**	**11.1**	**11.6**	--	**8.8**	**6.8**	**19.5**	--
Selenium	ug/g	2.4	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	--	1 U	1 U	1 U	--
Silver	ug/g	20	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	**0.21**	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--
Thallium	ug/g	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--
Uranium	ug/g	23	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	--	1 U	1 U	1 U	--
Vanadium	ug/g	86	**23.9**	**32.4**	**13.1**	**50.8**	**8.9**	--	**28.4**	**17**	--	**21.8**	**21.7**	**23.9**	--	**34.3**	**18.2**	**34.6**	--
Zinc	ug/g	340	**120**	**106**	**83.1**	**155**	**42.1**	--	**235**	**94.2**	--	**60.5**	**129**	**114**	--	**70.3**	**69.8**	**49.9**	--
Other																			
Calcium	mg/l	NV	--	--	--	**19.6**	**1.03**	**9.93**	**15.9**	**2.75**	**2.45**	**3.22**	**8.23**	**2.23**	**30.1**	**8.05**	**10.7**	**10.8**	**12.9**
Magnesium	mg/l	NV	--	--	--	**27.2**	0.5 U	**4.9**	**3.61**	0.5 U	**1.22**	0.5 U	**7.2**	**0.91**	**6.79**	**2.74**	**1.11**	**2.59**	**3.33**
Sodium	mg/l	NV	--	--	--	**241**	**243**	**251**	**281**	**54.2**	**110**	**614**	**295**	**289**	**117**	**239**	**343**	**186**	**198**
Polyaromatic Hydrocarbons (PAHs)																			
1-Methylnaphthalene	ug/g	0.99	--	--	--	0.03 U	0.03 U	--	0.03 U	0.03 U	--	0.03 U	0.03 U	0.03 U	--	0.03 U	0.03 U	0.03 U	--
2-(1-)Methylnaphthalene	ug/g	0.99	--	--	--	0.042 U	0.042 U	--	0.042 U	0.042 U	--	0.042 U	0.042 U	0.042 U	--	0.042 U	0.042 U	0.042 U	--
2-Methylnaphthalene	ug/g	0.99	--	--	--	0.03 U	0.03 U	--	0.03 U	0.03 U	--	0.03 U	0.03 U	0.03 U	--	0.03 U	0.03 U	0.03 U	--
Acenaphthene	ug/g	7.9	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
Acenaphthylene	ug/g	0.15	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
Anthracene	ug/g	0.67	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
Benzo(a)anthracene	ug/g	0.5	--	--	--	0.05 U	0.05 U	--	**0.095**	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
Benzo(a)pyrene	ug/g	0.3	--	--	--	0.05 U	0.05 U	--	**0.093**	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
Benzo(b)fluoranthene	ug/g	0.78	--	--	--	0.05 U	0.05 U	--	**0.153**	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
Benzo(g,h,i)perylene	ug/g	6.6	--	--	--	0.05 U	0.05 U	--	**0.11**	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
Benzo(k)fluoranthene	ug/g	0.78	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
Chrysene	ug/g	7	--	--	--	0.05 U	0.05 U	--	**0.107**	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
Dibenzo(a,h)anthracene	ug/g	0.1	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
Fluoranthene	ug/g	0.69	--	--	--	0.05 U	0.05 U	--	**0.185**	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
Fluorene	ug/g	62	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
Indeno(1,2,3-Cd)Pyrene	ug/g	0.38	--	--	--	0.05 U	0.05 U	--	**0.084**	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
Naphthalene	ug/g	0.6	--	--	--	0.013 U	0.013 U	--	0.013 U	0.013 U	--	0.013 U	0.013 U	0.013 U	--	0.013 U	0.013 U	0.013 U	--
Phenanthrene	ug/g	6.2	--	--	--	0.046 U	0.046 U	--	**0.119**	0.046 U	--	0.046 U	0.046 U	0.046 U	--	0.046 U	0.046 U	0.046 U	--
Pyrene	ug/g	78	--	--	--	0.05 U	0.05 U	--	**0.178**	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
Polychlorinated Biphenyls (PCBs)																			
Aroclor 1242	ug/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	ug/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	ug/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	ug/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	ug/g	0.35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)																			
Benzene	ug/g	0.21	--	--	--	0.0068 U	0.0068 U	--	0.0068 U	0.0068 U	--	0.0068 U	0.0068 U	0.0068 U	--	0.0068 U	0.0068 U	0.0068 U	--
Ethylbenzene	ug/g	1.1	--	--	--	0.018 U	0.018 U	--	0.018 U	0.018 U	--	0.018 U	0.018 U	0.018 U	--	0.018 U	0.018 U	0.018 U	--
Toluene	ug/g	2.3	--	--	--	0.08 U	0.08 U	--	0.08 U	0.08 U	--	0.08 U	0.08 U	0.08 U	--	0.08 U	0.08 U	0.08 U	--
Xylene, o	ug/g	NV	--	--	--	0.02 U	0.02 U	--	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	--
Xylenes, m & p	ug/g	NV	--	--	--	0.03 U	0.03 U	--	0.03 U	0.03 U	--	0.03 U	0.03 U	0.03 U	--	0.03 U	0.03 U	0.03 U	--
Xylenes, Total	ug/g	3.1	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
Petroleum Hydrocarbons (PHCs)																			
Gravimetric Heavy Hydrocarbons	ug/g	2800	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	ug/g	NV	--	--	--	5 U	5 U	--	5 U	5 U	--	5 U	5 U	5 U	--	5 U	5 U	5 U	--
Petroleum Hydrocarbons F1 (C6-C10)	ug/g	55	--	--	--	5 U	5 U	--	5 U	5 U	--	5 U	5 U	5 U	--	5 U	5 U	5 U	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthaler	ug/g	NV	--	--	--	10 U	10 U	--	10 U	10 U	--	10 U	10 U	10 U	--	10 U	10 U	10 U	--
Petroleum Hydrocarbons F2 (C10-C16)	ug/g	98	--	--	--	10 U	10 U	--	10 U	10 U	--	10 U	10 U	10 U	--	10 U	10 U	10 U	--
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	ug/g	NV	--	--	--	50 U	50 U	--	50 U	50 U	--	50 U	50 U	50 U	--	50 U	50 U	50 U	--
Petroleum Hydrocarbons F3 (C16-C34)	ug/g	300	--	--	--	50 U	50 U	--	50 U	50 U	--	50 U	50 U	50 U	--	50 U	50 U	50 U	--
Petroleum Hydrocarbons F4 (C34-C50)	ug/g	2800	--	--	--	50 U	50 U	--	50 U	50 U	--	50 U	**71**	50 U	--	50 U	50 U	50 U	--
Total Petroleum Hydrocarbons (C6 to C50)	ug/g	NV	--	--	--	72 U	72 U	--	72 U	72 U	--	72 U	72 U	72 U	--	72 U	72 U	72 U	--
Physical/Chemistry																			
Average Fraction Organic Carbon	None	NV	--	--	--	**0.0049**	0.001 U	0.001 U	--	--	--	**0.0011**	**0.0013**	0.001 U	0.001 U	**0.0118**	0.001 U	**0.0034**	--
Clay (less than 0.005mm), USCS	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Coarse Sand (2.0 to 4.75mm), USCS	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fine Sand (0.074 to 0.425mm), USCS	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fraction Organic Carbon	None	NV	--	--	--	**0.0047**	0.001 U	0.001 U	--	--	--	**0.001**	**0.0013**	0.001 U	0.001 U	**0.0117**	0.001 U	**0.0028**	--
Fraction Organic Carbon (Rep1)	None	NV	--	--	--	**0.0049**	--	--	--	--	--	**0.0011**	--	--	--	**0.0118**	--	**0.0035**	--
Fraction Organic Carbon (Rep2)	None	NV	--	--	--	**0.0052**	--	--	--	--	--	--	--	--	--	**0.0119**	--	**0.0039**	--
Gravel (4.75 to 76mm), USCS	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Medium Sand (0.425 to 2.0mm), USCS	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Moisture	%	NV	--	--	--	**19.9**	**6.59**	--	**10.3**	**7.89**	--	**14**	**13**	**10.9**	--	**16.9**	**10.8**	**9.01**	--
Silt (0.005 to 0.074mm), USCS	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5. Summary of Analytical Results in Soil

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane,
Guelph, Ontario

		Location	**BH210**		**BH211**	**MW100**			**MW101**			**MW102B**				**MW103**			
		Sample ID	**BH210-3.5**	**BH210-6.5-7**	**BH211-10-12**	**MW100-1.25-1.5'**	**MW100-7.5-9.5**	**MW100-15-17**	**MW101-1.5-2'**	**MW101-7.5-9.5**	**MW101-20-20.5**	**MW102-20-25**	**MW102-7.5-9.5**	**MW102-12.5-14.5**	**MW102-25-26**	**MW103-2-2.5'**	**MW103-12.5-14**	**MW103-17.5-19.5**	**MW103-22.5-24.5**
		Sample Date	**11/21/2019**	**11/21/2019**	**11/21/2019**	**7/24/2019**	**8/22/2019**	**8/22/2019**	**7/26/2019**	**8/21/2019**	**8/21/2019**	**7/23/2019**	**8/26/2019**	**8/26/2019**	**8/26/2019**	**7/22/2019**	**8/14/2019**	**8/14/2019**	**8/14/2019**
		Sample Type	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
		Start Depth	**0.99**	**1.98**	**3.05**	**0.41**	**2.29**	**4.57**	**0.46**	**2.29**	**6.1**	**0.51**	**2.29**	**3.81**	**7.62**	**0.56**	**3.81**	**5.33**	**6.86**
		End Depth	**1.14**	**2.13**	**3.66**	**0.46**	**2.9**	**5.18**	**0.61**	**2.9**	**6.25**	**0.63**	**2.9**	**4.42**	**7.92**	**0.71**	**4.27**	**5.94**	**7.47**
Analyte	**Units**	**Table 2 SCS [a]**																	
Total Organic Carbon	%	NV	--	--	--	**0.47**	0.1 U	0.1 U	--	--	--	**0.1**	**0.13**	0.1 U	0.1 U	**1.17**	0.1 U	**0.28**	--
Total Organic Carbon (Rep1)	%	NV	--	--	--	**0.49**	--	--	--	--	--	**0.11**	--	--	--	**1.18**	--	**0.35**	--
Total Organic Carbon (Rep2)	%	NV	--	--	--	**0.52**	--	--	--	--	--	--	--	--	--	**1.19**	--	**0.39**	--
Volatile Organic Carbons (VOCs)																			
1,1,1,2-Tetrachloroethane	ug/g	0.058	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
1,1,1-Trichloroethane	ug/g	0.38	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
1,1,2,2-Tetrachloroethane	ug/g	0.05	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
1,1,2-Trichloroethane	ug/g	0.05	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
1,1-Dichloroethane	ug/g	0.47	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
1,1-Dichloroethene	ug/g	0.05	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
1,2-Dibromoethane	ug/g	0.05	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
1,2-Dichlorobenzene	ug/g	1.2	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
1,2-Dichloroethane	ug/g	0.05	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
1,2-Dichloropropane	ug/g	0.05	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
1,3-Dichlorobenzene	ug/g	4.8	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
1,3-Dichloropropene	ug/g	0.05	--	--	--	0.042 U	0.042 U	--	0.042 U	0.042 U	--	0.042 U	0.042 U	0.042 U	--	0.042 U	0.042 U	0.042 U	--
1,4-Dichlorobenzene	ug/g	0.083	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
2-Butanone	ug/g	16	--	--	--	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--
4-Methyl-2-Pentanone	ug/g	1.7	--	--	--	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--
Acetone	ug/g	16	--	--	--	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--
Bromodichloromethane	ug/g	1.5	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
Bromoform	ug/g	0.27	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
Bromomethane	ug/g	0.05	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
Carbon tetrachloride	ug/g	0.05	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
Chlorobenzene	ug/g	2.4	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
Chlorodibromomethane	ug/g	2.3	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
Chloroform	ug/g	0.05	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
cis-1,2-Dichloroethene	ug/g	1.9	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
cis-1,3-Dichloropropene	ug/g	NV	--	--	--	0.03 U	0.03 U	--	0.03 U	0.03 U	--	0.03 U	0.03 U	0.03 U	--	0.03 U	0.03 U	0.03 U	--
Dichlorodifluoromethane	ug/g	16	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
Dichloromethane	ug/g	0.1	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
Methyl tert-butyl ether (MTBE)	ug/g	0.75	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
n-Hexane	ug/g	2.8	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 UJ	0.05 UJ	--	0.05 U	0.05 U	0.05 U	--
Styrene	ug/g	0.7	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
Tetrachloroethene	ug/g	0.28	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
trans-1,2-Dichloroethene	ug/g	0.084	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
trans-1,3-Dichloropropene	ug/g	NV	--	--	--	0.03 U	0.03 U	--	0.03 U	0.03 U	--	0.03 U	0.03 U	0.03 U	--	0.03 U	0.03 U	0.03 U	--
Trichloroethylene	ug/g	0.061	--	--	--	0.01 U	0.01 U	--	0.01 U	0.01 U	--	0.01 U	0.01 U	0.01 U	--	0.01 U	0.01 U	0.01 U	--
Trichlorofluoromethane	ug/g	4	--	--	--	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	--
Vinyl Chloride	ug/g	0.02	--	--	--	0.02 U	0.02 U	--	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	--

[a] MECP (2011) Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

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

Notes:
Bold denote positive detection at or above reportable detection limit
Shading denotes detected results that exceeds the applicable standard
U = Analyte not detected
ug/L = microgram(s) per litre
ug/g = microgram per gram
mg/L = milligram(s) per litre
mS/cm = millisiemen per centimeter
SAR = Sodiuim Absorption Ratio
ID = identification
NV = no value available in applicable standards
-- = Analyte not analyzed

Table 6-5. Summary of Analytical Results in Soil

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane,
Guelph, Ontario

		Location	MW104					MW105					MW107			MW108		
		Sample ID	MW104-2.5-3'	DUP13	MW104-22-23	MW104-7-9	MW104-15-17	DUP12	MW105-5-6	MW105-10-12	MW105-15-17	MW105-21.5-22	MW107-2.5-4.5	MW107-7.5-9.5	MW107-15-16.5	MW108-5-6'	MW108-12.5-14.5	MW108-17.5-19
		Sample Date	7/22/2019	8/13/2019	8/13/2019	8/13/2019	8/13/2019	8/13/2019	8/13/2019	8/13/2019	8/13/2019	8/13/2019	8/19/2019	8/19/2019	8/19/2019	7/25/2019	8/16/2019	8/16/2019
		Sample Type	N	FD	N	N	N	FD	N	N	N	N	N	N	N	N	N	N
		Start Depth	0.61	2.13	6.1	2.13	4.57	4.57	1.52	3.05	4.57	6.55	0.76	2.29	4.57	1.52	3.81	5.33
		End Depth	0.91	2.74	6.71	2.74	5.18	5.18	1.83	3.66	5.18	6.71	1.37	2.9	5.03	1.83	4.42	5.79
Analyte	**Units**	**Table 2 SCS [a]**																
Acids, Bases, Neutrals (ABNs)																		
1,1'-Biphenyl	ug/g	0.31	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	ug/g	0.36	0.05 U	0.05 U	--	0.05 U	0.05 U	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	ug/g	0.5	0.14 U	0.14 U	--	0.14 U	0.14 U	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	ug/g	38	0.1 U	0.1 U	--	0.1 U	0.1 U	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	ug/g	2	1 U	1 U	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	ug/g	0.5	0.1 U	0.1 U	--	0.1 U	0.1 U	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	ug/g	0.5	0.1 U	0.1 U	--	0.1 U	0.1 U	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	ug/g	1	0.1 U	0.1 U	--	0.1 U	0.1 U	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	ug/g	0.5	0.1 U	0.1 U	--	0.1 U	0.1 U	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	ug/g	0.5	0.1 U	0.1 U	--	0.1 U	0.1 U	--	--	--	--	--	--	--	--	--	--	--
bis (2-Chloroisopropyl) ether	ug/g	0.67	0.1 U	0.1 U	--	0.1 U	0.1 U	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	ug/g	5	0.1 U	0.1 U	--	0.1 U	0.1 U	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	ug/g	0.5	0.1 U	0.1 U	--	0.1 U	0.1 U	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	ug/g	0.5	0.1 U	0.1 U	--	0.1 U	0.1 U	--	--	--	--	--	--	--	--	--	--	--
Phenol	ug/g	9.4	0.1 U	0.1 U	--	0.1 U	0.1 U	--	--	--	--	--	--	--	--	--	--	--
Dioxins/Furans																		
1,2,3,4,6,7,8-HpCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.133 J**	--	--
1,2,3,4,6,7,8-HpCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.068 UJ	--	--
1,2,3,4,7,8,9-HpCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.019 U	--	--
1,2,3,4,7,8-HxCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.021 U	--	--
1,2,3,4,7,8-HxCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.018 U	--	--
1,2,3,6,7,8-HxCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.023 J**	--	--
1,2,3,6,7,8-HxCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.019 U	--	--
1,2,3,7,8,9-HxCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02 U	--	--
1,2,3,7,8,9-HxCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.025 UJ	--	--
1,2,3,7,8-PeCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.023 U	--	--
1,2,3,7,8-PeCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.023 U	--	--
2,3,4,6,7,8-HxCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.018 U	--	--
2,3,4,7,8-PeCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.018 U	--	--
2,3,7,8-TCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.022 U	--	--
2,3,7,8-TCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.021 U	--	--
Lower Bound PCDD/F TEQ (WHO 2005)	pg/g	13	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.0017**	--	--
Mid Point PCDD/F TEQ (WHO 2005)	pg/g	13	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.0387**	--	--
OCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.06 J**	--	--
OCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.175 UJ	--	--
Total HpCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.247**	--	--
Total HpCDD # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	**2**	--	--
Total HpCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.045**	--	--
Total HpCDF # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	**1**	--	--
Total HxCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.051**	--	--
Total HxCDD # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	**1**	--	--
Total HxCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.025 U	--	--
Total HxCDF # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	**0**	--	--
Total PeCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.023 U	--	--
Total PeCDD # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	**0**	--	--
Total PeCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.023 U	--	--
Total PeCDF # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	**0**	--	--
Total TCDD	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.022 U	--	--
Total TCDD # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	**0**	--	--
Total TCDF	pg/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.021 U	--	--
Total TCDF # Homologues	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	**0**	--	--
Upper Bound PCDD/F TEQ (WHO 2005)	pg/g	13	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.0702**	--	--
Inorganics																		
Conductivity	mS/cm	0.7	**0.969**	**0.911**	**1**	**1.13**	**1.11**	**0.841**	**0.52**	**1.27**	**0.859**	**1.01**	**0.376**	**1.71**	**1.35**	**0.0902**	**0.509**	**0.281**
Cyanide, Weak Acid Dissociable	ug/g	0.051	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
pH	pH UNITS	NV	**7.96**	**8.04**	--	**8.04**	**7.87**	**8.09**	**9.46**	**8.26**	**8.08**	--	**8.24**	**8.33**	--	**8.1**	**7.69**	**7.98**
Sodium Absorption Ratio	SAR	5	**24**	**60.2 J**	**5.77**	**69.3 J**	**10.3**	**60 J**	**29.9 J**	**79.8 J**	**40 J**	**23.8**	**11.4**	**25.2**	**19.1**	**0.15**	**2.51**	**2.22**
Metals																		
Antimony	ug/g	7.5	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U
Arsenic	ug/g	18	**2**	**1.9**	--	**1.5**	**2.1**	**2.3**	**2.1**	**1.7**	**2.2**	--	**3**	**1.4**	--	**2.1**	**1.7**	**2**
Barium	ug/g	390	**18.7**	**24.5 J**	--	**14.6 J**	**67.1**	**45.6**	**11.8**	**16.2**	**42.1**	--	**15.2**	**11.3**	--	**11.2**	**36.6**	**57.2**
Beryllium	ug/g	4	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U
Boron	ug/g	120	5 U	**5.5**	--	5 U	**7.6**	**7.4**	**5.6**	**5.5**	**7**	--	**6.4**	5 U	--	5 U	**6.6**	**8.8**
Boron (Hot Water Ext.)	ug/g	1.5	0.1 U	0.1 U	--	0.1 U	0.1 U	**0.13**	**0.12**	0.1 U	**0.13**	--	0.1 U	0.1 U	--	0.1 U	**0.17**	**0.13**
Cadmium	ug/g	1.2	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U
Chromium	ug/g	160	**9**	**9.6**	--	**8.2**	**18.6**	**16.1**	**6.1**	**7.5**	**15.4**	--	**12.9**	**6.2**	--	**5.8**	**12.1**	**18.4**
Chromium, Hexavalent (Cr6+)	ug/g	8	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	**0.54**	0.2 U	--	0.2 U	0.2 U	**0.26**
Cobalt	ug/g	22	**3.6**	**3.7**	--	**2.7**	**6.6**	**6.2**	**2**	**2.5**	**5.9**	--	**2.9**	**1.8**	--	**2.2**	**3.9**	**6.2**
Copper	ug/g	140	**8.7**	**8**	--	**6.4**	**14.3**	**13.1**	**10.3**	**7**	**12.3**	--	**14.9**	**8.7**	--	**8.4**	**10.2**	**14.3**

Table 6-5. Summary of Analytical Results in Soil

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane,
Guelph, Ontario

		Location	MW104					MW105					MW107			MW108		
		Sample ID	MW104-2.5-3'	DUP13	MW104-22-23	MW104-7-9	MW104-15-17	DUP12	MW105-5-6	MW105-10-12	MW105-15-17	MW105-21.5-22	MW107-2.5-4.5	MW107-7.5-9.5	MW107-15-16.5	MW108-5-6'	MW108-12.5-14.5	MW108-17.5-19
		Sample Date	7/22/2019	8/13/2019	8/13/2019	8/13/2019	8/13/2019	8/13/2019	8/13/2019	8/13/2019	8/13/2019	8/13/2019	8/19/2019	8/19/2019	8/19/2019	7/25/2019	8/16/2019	8/16/2019
		Sample Type	N	FD	N	N	N	FD	N	N	N	N	N	N	N	N	N	N
		Start Depth	0.61	2.13	6.1	2.13	4.57	4.57	1.52	3.05	4.57	6.55	0.76	2.29	4.57	1.52	3.81	5.33
		End Depth	0.91	2.74	6.71	2.74	5.18	5.18	1.83	3.66	5.18	6.71	1.37	2.9	5.03	1.83	4.42	5.79
Analyte	**Units**	**Table 2 SCS [a]**																
Lead	ug/g	120	**9.4**	**9.5**	--	**9**	**7.5**	**9**	**34.6**	**10.1**	**9**	--	**16**	**9.5**	--	**9.4**	**10.1**	**12.9**
Mercury	ug/g	0.27	**0.0061**	**0.0058**	--	**0.006**	**0.011**	**0.0099**	**0.0082**	0.005 U	**0.009**	--	**0.0148**	0.005 U	--	0.005 U	**0.0099**	**0.0123**
Methyl Mercury	mg/kg	0.0084	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	ug/g	6.9	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U
Nickel	ug/g	100	**7**	**7.9**	--	**5.3**	**14.8**	**14.1**	**5**	**5.3**	**12.9**	--	**6.6**	**3.8**	--	**4.6**	**8.6**	**14.2**
Selenium	ug/g	2.4	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U
Silver	ug/g	20	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U
Thallium	ug/g	1	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U
Uranium	ug/g	23	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U
Vanadium	ug/g	86	**17.8**	**16.1**	--	**16.2**	**27.6**	**24.8**	**12.4**	**14.1**	**24.1**	--	**19.2**	**11.8**	--	**14.5**	**20.5**	**27.8**
Zinc	ug/g	340	**55.1**	**64.5**	--	**41.4**	**64**	**51.9**	**216**	**78.2**	**50.7**	--	**66**	**88.3**	--	**65.9**	**55.4**	**81**
Other																		
Calcium	mg/l	NV	**1.47**	**0.74**	**28.1**	**0.73**	**19.4**	**0.66**	**0.75**	**0.68**	0.5 U	**3.16**	**1.63**	**8.04**	**8.06**	**7.84**	**15.7**	**5.43**
Magnesium	mg/l	NV	**1.93**	0.5 U	**9.26**	0.5 U	**3.97**	0.5 U	0.5 U	0.5 U	0.5 U	**0.9**	**0.98**	**1.71**	**2.64**	**2.49**	**6.33**	**2.01**
Sodium	mg/l	NV	**188**	**188**	**138**	**215**	**191**	**177**	**94.1**	**239**	**168**	**186**	**74.4**	**302**	**245**	**1.93**	**46.6**	**23.8**
Polyaromatic Hydrocarbons (PAHs)																		
1-Methylnaphthalene	ug/g	0.99	0.03 U	0.03 U	--	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	--	0.03 U	0.03 U	--	0.03 U	0.03 U	0.03 U
2-(1-)Methylnaphthalene	ug/g	0.99	0.042 U	0.042 U	--	0.042 U	0.042 U	0.042 U	0.042 U	0.042 U	0.042 U	--	0.042 U	0.042 U	--	0.042 U	0.042 U	0.042 U
2-Methylnaphthalene	ug/g	0.99	0.03 U	0.03 U	--	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	--	0.03 U	0.03 U	--	0.03 U	0.03 U	0.03 U
Acenaphthene	ug/g	7.9	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
Acenaphthylene	ug/g	0.15	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	**0.054**	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
Anthracene	ug/g	0.67	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
Benzo(a)anthracene	ug/g	0.5	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	**0.086 J**	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
Benzo(a)pyrene	ug/g	0.3	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	**0.143**	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
Benzo(b)fluoranthene	ug/g	0.78	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	**0.167**	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
Benzo(g,h,i)perylene	ug/g	6.6	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	**0.162**	0.05 U	0.05 U	--	**0.067**	0.05 U	--	0.05 U	0.05 U	0.05 U
Benzo(k)fluoranthene	ug/g	0.78	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
Chrysene	ug/g	7	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	**0.09**	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
Dibenzo(a,h)anthracene	ug/g	0.1	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
Fluoranthene	ug/g	0.69	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	**0.125**	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
Fluorene	ug/g	62	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
Indeno(1,2,3-Cd)Pyrene	ug/g	0.38	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	**0.133**	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
Naphthalene	ug/g	0.6	0.013 U	0.013 U	--	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	--	0.013 U	0.013 U	--	0.013 U	0.013 U	0.013 U
Phenanthrene	ug/g	6.2	0.046 U	0.046 U	--	0.046 U	0.046 U	0.046 U	**0.063**	0.046 U	0.046 U	--	0.046 U	0.046 U	--	0.046 U	0.046 U	0.046 U
Pyrene	ug/g	78	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	**0.118**	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
Polychlorinated Biphenyls (PCBs)																		
Aroclor 1242	ug/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	ug/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	ug/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	ug/g	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB, Total	ug/g	0.35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)																		
Benzene	ug/g	0.21	0.0068 U	--	--	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	--	0.0068 U	0.0068 U	--	0.0068 U	0.0068 U	0.0068 U
Ethylbenzene	ug/g	1.1	0.018 U	--	--	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	--	0.018 U	0.018 U	--	0.018 U	0.018 U	0.018 U
Toluene	ug/g	2.3	0.08 U	--	--	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	--	0.08 U	0.08 U	--	0.08 U	0.08 U	0.08 U
Xylene, o	ug/g	NV	0.02 U	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U
Xylenes, m & p	ug/g	NV	0.03 U	--	--	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	--	0.03 U	0.03 U	--	0.03 U	0.03 U	0.03 U
Xylenes, Total	ug/g	3.1	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
Petroleum Hydrocarbons (PHCs)																		
Gravimetric Heavy Hydrocarbons	ug/g	2800	--	--	--	--	--	--	**610**	--	--	--	**2110**	--	--	--	--	--
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	ug/g	NV	5 U	--	--	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	--	5 U	5 U	5 U
Petroleum Hydrocarbons F1 (C6-C10)	ug/g	55	5 U	--	--	5 U	5 U	5 U	5 U	5 U	5 U	--	5 UJ	5 UJ	--	5 U	5 U	5 U
Petroleum Hydrocarbons F2 (C10-C16 less Naphthaler	ug/g	NV	10 U	--	--	10 U	10 U	10 U	10 U	10 U	10 U	--	20 U	10 U	--	10 U	10 U	10 U
Petroleum Hydrocarbons F2 (C10-C16)	ug/g	98	10 U	--	--	10 U	10 U	10 U	10 U	10 U	10 U	--	20 U	10 U	--	10 U	10 U	10 U
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	ug/g	NV	50 U	--	--	50 U	50 U	50 U	**123**	50 U	50 U	--	**300**	50 U	--	50 U	50 U	50 U
Petroleum Hydrocarbons F3 (C16-C34)	ug/g	300	50 U	--	--	50 U	50 U	50 U	**124**	50 U	50 U	--	**300**	50 U	--	50 U	50 U	50 U
Petroleum Hydrocarbons F4 (C34-C50)	ug/g	2800	50 U	--	--	50 U	50 U	50 U	**250**	50 U	50 U	--	**800**	50 U	--	50 U	50 U	50 U
Total Petroleum Hydrocarbons (C6 to C50)	ug/g	NV	72 U	--	--	72 U	72 U	72 U	**374**	72 U	72 U	--	**1090**	72 U	--	72 U	72 U	72 U
Physical/Chemistry																		
Average Fraction Organic Carbon	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.001 U	0.001 U	**0.0019**
Clay (less than 0.005mm), USCS	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Coarse Sand (2.0 to 4.75mm), USCS	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fine Sand (0.074 to 0.425mm), USCS	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fraction Organic Carbon	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.001 U	0.001 U	**0.0018**
Fraction Organic Carbon (Rep1)	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.0019**
Fraction Organic Carbon (Rep2)	None	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.002**
Gravel (4.75 to 76mm), USCS	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Medium Sand (0.425 to 2.0mm), USCS	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Moisture	%	NV	**8.51**	**7.19**	--	**8.77**	**8.62**	**8.54**	**3.46**	**7.46**	**9.3**	--	**6.31**	**6.96**	--	**4.2**	**11.4**	**8.1**
Silt (0.005 to 0.074mm), USCS	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5. Summary of Analytical Results in Soil

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane,
Guelph, Ontario

		Location	MW104					MW105					MW107			MW108		
		Sample ID	**MW104-2.5-3'**	**DUP13**	**MW104-22-23**	**MW104-7-9**	**MW104-15-17**	**DUP12**	**MW105-5-6**	**MW105-10-12**	**MW105-15-17**	**MW105-21.5-22**	**MW107-2.5-4.5**	**MW107-7.5-9.5**	**MW107-15-16.5**	**MW108-5-6'**	**MW108-12.5-14.5**	**MW108-17.5-19**
		Sample Date	**7/22/2019**	**8/13/2019**	**8/13/2019**	**8/13/2019**	**8/13/2019**	**8/13/2019**	**8/13/2019**	**8/13/2019**	**8/13/2019**	**8/13/2019**	**8/19/2019**	**8/19/2019**	**8/19/2019**	**7/25/2019**	**8/16/2019**	**8/16/2019**
		Sample Type	**N**	**FD**	**N**	**N**	**N**	**FD**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
		Start Depth	**0.61**	**2.13**	**6.1**	**2.13**	**4.57**	**4.57**	**1.52**	**3.05**	**4.57**	**6.55**	**0.76**	**2.29**	**4.57**	**1.52**	**3.81**	**5.33**
		End Depth	**0.91**	**2.74**	**6.71**	**2.74**	**5.18**	**5.18**	**1.83**	**3.66**	**5.18**	**6.71**	**1.37**	**2.9**	**5.03**	**1.83**	**4.42**	**5.79**
Analyte	**Units**	**Table 2 SCS [a]**																
Total Organic Carbon	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	0.1 U	**0.18**
Total Organic Carbon (Rep1)	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.19**
Total Organic Carbon (Rep2)	%	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.2**
Volatile Organic Carbons (VOCs)																		
1,1,1,2-Tetrachloroethane	ug/g	0.058	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
1,1,1-Trichloroethane	ug/g	0.38	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
1,1,2-Trichloroethane	ug/g	0.05	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
1,1-Dichloroethane	ug/g	0.47	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
1,1-Dichloroethene	ug/g	0.05	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
1,2-Dibromoethane	ug/g	0.05	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
1,2-Dichlorobenzene	ug/g	1.2	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
1,2-Dichloroethane	ug/g	0.05	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
1,2-Dichloropropane	ug/g	0.05	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
1,3-Dichlorobenzene	ug/g	4.8	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
1,3-Dichloropropene	ug/g	0.05	0.042 U	--	--	0.042 U	0.042 U	0.042 U	0.042 U	0.042 U	0.042 U	--	0.042 U	0.042 U	--	0.042 U	0.042 U	0.042 U
1,4-Dichlorobenzene	ug/g	0.083	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
2-Butanone	ug/g	16	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U
4-Methyl-2-Pentanone	ug/g	1.7	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U
Acetone	ug/g	16	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U
Bromodichloromethane	ug/g	1.5	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
Bromoform	ug/g	0.27	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
Bromomethane	ug/g	0.05	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
Carbon tetrachloride	ug/g	0.05	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
Chlorobenzene	ug/g	2.4	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
Chlorodibromomethane	ug/g	2.3	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
Chloroform	ug/g	0.05	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
cis-1,2-Dichloroethene	ug/g	1.9	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
cis-1,3-Dichloropropene	ug/g	NV	0.03 U	--	--	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	--	0.03 U	0.03 U	--	0.03 U	0.03 U	0.03 U
Dichlorodifluoromethane	ug/g	16	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
Dichloromethane	ug/g	0.1	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
Methyl tert-butyl ether (MTBE)	ug/g	0.75	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
n-Hexane	ug/g	2.8	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
Styrene	ug/g	0.7	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
Tetrachloroethene	ug/g	0.28	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
trans-1,2-Dichloroethene	ug/g	0.084	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
trans-1,3-Dichloropropene	ug/g	NV	0.03 U	--	--	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	--	0.03 U	0.03 U	--	0.03 U	0.03 U	0.03 U
Trichloroethylene	ug/g	0.061	0.01 U	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	--	0.01 U	0.01 U	--	0.01 U	0.01 U	0.01 U
Trichlorofluoromethane	ug/g	4	0.05 U	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
Vinyl Chloride	ug/g	0.02	0.02 U	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U

[a] MECP (2011) Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

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

Notes:

Bold denote positive detection at or above reportable detection limit

Shading denotes detected results that exceeds the applicable standard

U = Analyte not detected

ug/L = microgram(s) per litre

ug/g = microgram per gram

mg/L = milligram(s) per litre

mS/cm = millisiemen per centimeter

SAR = Sodiuim Absorption Ratio

ID = identification

NV = no value available in applicable standards

-- = Analyte not analyzed

Table 6-5. Summary of Analytical Results in Soil

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane,
Guelph, Ontario

		Location	MW109					MW113	
		Sample ID	**MW109-2.5-3.5'**	**DUP14**	**MW109-8-9.5**	**MW109-12.5-14.5**	**MW109-16-17**	**MW113-2.5-4.5**	**MW113-6.5-8.5**
		Sample Date	**7/25/2019**	**8/15/2019**	**8/15/2019**	**8/15/2019**	**8/15/2019**	**4/9/2020**	**4/9/2020**
		Sample Type	**N**	**FD**	**N**	**N**	**N**	**N**	**N**
		Start Depth	**0.76**	**3.81**	**2.29**	**3.81**	**4.88**	**0.76**	**1.98**
		End Depth	**1.07**	**4.42**	**2.9**	**4.42**	**5.18**	**1.37**	**2.59**
Analyte	**Units**	**Table 2 SCS [a]**							
Acids, Bases, Neutrals (ABNs)									
1,1'-Biphenyl	ug/g	0.31	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	ug/g	0.36	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	ug/g	0.5	--	--	--	--	--	--	--
2,4-Dimethylphenol	ug/g	38	--	--	--	--	--	--	--
2,4-Dinitrophenol	ug/g	2	--	--	--	--	--	--	--
2,4-Dinitrotoluene	ug/g	0.5	--	--	--	--	--	--	--
2,6-Dinitrotoluene	ug/g	0.5	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	ug/g	1	--	--	--	--	--	--	--
4-Chloroaniline	ug/g	0.5	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	ug/g	0.5	--	--	--	--	--	--	--
bis (2-Chloroisopropyl) ether	ug/g	0.67	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	ug/g	5	--	--	--	--	--	--	--
Diethylphthalate	ug/g	0.5	--	--	--	--	--	--	--
Dimethylphthalate	ug/g	0.5	--	--	--	--	--	--	--
Phenol	ug/g	9.4	--	--	--	--	--	--	--
Dioxins/Furans									
1,2,3,4,6,7,8-HpCDD	pg/g	NV	**0.808 J**	--	--	--	--	--	--
1,2,3,4,6,7,8-HpCDF	pg/g	NV	**0.29 J**	--	--	--	--	--	--
1,2,3,4,7,8,9-HpCDF	pg/g	NV	0.02 U	--	--	--	--	--	--
1,2,3,4,7,8-HxCDD	pg/g	NV	0.027 U	--	--	--	--	--	--
1,2,3,4,7,8-HxCDF	pg/g	NV	0.027 U	--	--	--	--	--	--
1,2,3,6,7,8-HxCDD	pg/g	NV	**0.04 J**	--	--	--	--	--	--
1,2,3,6,7,8-HxCDF	pg/g	NV	0.027 U	--	--	--	--	--	--
1,2,3,7,8,9-HxCDD	pg/g	NV	0.026 U	--	--	--	--	--	--
1,2,3,7,8,9-HxCDF	pg/g	NV	0.036 U	--	--	--	--	--	--
1,2,3,7,8-PeCDD	pg/g	NV	0.017 U	--	--	--	--	--	--
1,2,3,7,8-PeCDF	pg/g	NV	0.024 U	--	--	--	--	--	--
2,3,4,6,7,8-HxCDF	pg/g	NV	0.026 U	--	--	--	--	--	--
2,3,4,7,8-PeCDF	pg/g	NV	**0.024 J**	--	--	--	--	--	--
2,3,7,8-TCDD	pg/g	NV	0.025 U	--	--	--	--	--	--
2,3,7,8-TCDF	pg/g	NV	0.024 U	--	--	--	--	--	--
Lower Bound PCDD/F TEQ (WHO 2005)	pg/g	13	**0.0146**	--	--	--	--	--	--
Mid Point PCDD/F TEQ (WHO 2005)	pg/g	13	**0.0558**	--	--	--	--	--	--
OCDD	pg/g	NV	**7.3**	--	--	--	--	--	--
OCDF	pg/g	NV	**0.862 J**	--	--	--	--	--	--
Total HpCDD	pg/g	NV	**1.48**	--	--	--	--	--	--
Total HpCDD # Homologues	None	NV	**2**	--	--	--	--	--	--
Total HpCDF	pg/g	NV	**0.622**	--	--	--	--	--	--
Total HpCDF # Homologues	None	NV	**1**	--	--	--	--	--	--
Total HxCDD	pg/g	NV	**0.111**	--	--	--	--	--	--
Total HxCDD # Homologues	None	NV	**2**	--	--	--	--	--	--
Total HxCDF	pg/g	NV	**0.124**	--	--	--	--	--	--
Total HxCDF # Homologues	None	NV	**1**	--	--	--	--	--	--
Total PeCDD	pg/g	NV	0.017 U	--	--	--	--	--	--
Total PeCDD # Homologues	None	NV	**0**	--	--	--	--	--	--
Total PeCDF	pg/g	NV	**0.04**	--	--	--	--	--	--
Total PeCDF # Homologues	None	NV	**1**	--	--	--	--	--	--
Total TCDD	pg/g	NV	**0.058**	--	--	--	--	--	--
Total TCDD # Homologues	None	NV	**1**	--	--	--	--	--	--
Total TCDF	pg/g	NV	0.024 U	--	--	--	--	--	--
Total TCDF # Homologues	None	NV	**0**	--	--	--	--	--	--
Upper Bound PCDD/F TEQ (WHO 2005)	pg/g	13	**0.0869**	--	--	--	--	--	--
Inorganics									
Conductivity	mS/cm	0.7	**0.208**	**0.177**	**0.394**	**0.167**	--	**1.66**	**1.87**
Cyanide, Weak Acid Dissociable	ug/g	0.051	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
pH	pH UNITS	NV	**7.83**	**8**	**7.96**	**7.98**	--	**7.93**	**8.13**
Sodium Absorption Ratio	SAR	5	**8.8**	**5.29**	**16.5 J**	**5.24**	**5.23**	**45.6**	**108 J**
Metals									
Antimony	ug/g	7.5	1 U	1 U	1 U	1 U	--	1 U	1 U
Arsenic	ug/g	18	**1.2**	**2.3**	**2.2**	**2.4**	--	**3.4**	**2.8**
Barium	ug/g	390	**12.8**	**41**	**34.1**	**48.4**	--	**34.7**	**21.1**
Beryllium	ug/g	4	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U
Boron	ug/g	120	5 U	**6.8**	**6.3**	**6.3**	--	5 U	**6.2**
Boron (Hot Water Ext.)	ug/g	1.5	0.1 U	0.1 U	**0.12**	0.1 U	--	**0.19**	0.1 U
Cadmium	ug/g	1.2	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U
Chromium	ug/g	160	**5.8**	**13.7**	**12.8**	**14.3**	--	**16.2**	**11.5**
Chromium, Hexavalent (Cr6+)	ug/g	8	0.2 U	0.2 U	0.2 U	0.2 U	--	**0.31**	**0.44**
Cobalt	ug/g	22	**1.6**	**5.8**	**5.1**	**6.2**	--	**4**	**3.8**
Copper	ug/g	140	**4**	**12**	**12**	**12.9**	--	**16.1**	**10.4**

Table 6-5. Summary of Analytical Results in Soil

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane,
Guelph, Ontario

		Location	MW109					MW113	
		Sample ID	**MW109-2.5-3.5'**	**DUP14**	**MW109-8-9.5**	**MW109-12.5-14.5**	**MW109-16-17**	**MW113-2.5-4.5**	**MW113-6.5-8.5**
		Sample Date	**7/25/2019**	**8/15/2019**	**8/15/2019**	**8/15/2019**	**8/15/2019**	**4/9/2020**	**4/9/2020**
		Sample Type	**N**	**FD**	**N**	**N**	**N**	**N**	**N**
		Start Depth	**0.76**	**3.81**	**2.29**	**3.81**	**4.88**	**0.76**	**1.98**
		End Depth	**1.07**	**4.42**	**2.9**	**4.42**	**5.18**	**1.37**	**2.59**
Analyte	**Units**	**Table 2 SCS [a]**							
Lead	ug/g	120	**5.9**	**11.2**	**13**	**14.5**	--	**41.6**	**16.6**
Mercury	ug/g	0.27	**0.0071**	**0.0104**	**0.0132**	**0.0111**	--	**0.0623**	0.005 U
Methyl Mercury	mg/kg	0.0084	--	--	--	--	--	--	--
Molybdenum	ug/g	6.9	1 U	1 U	1 U	1 U	--	1 U	1 U
Nickel	ug/g	100	**3.8**	**11.8**	**10.8**	**13**	--	**8.3**	**8.2**
Selenium	ug/g	2.4	1 U	1 U	1 U	1 U	--	1 U	1 U
Silver	ug/g	20	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U
Thallium	ug/g	1	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U
Uranium	ug/g	23	1 U	1 U	1 U	1 U	--	1 U	1 U
Vanadium	ug/g	86	**10.6**	**22.4**	**21.7**	**23**	--	**24.7**	**17.7**
Zinc	ug/g	340	**26.6**	**57.1**	**87**	**64.7**	--	**108**	**94.9**
Other									
Calcium	mg/l	NV	**1.39**	**2.8**	**2.16**	**2.64**	**1.67**	**2.84**	**0.79**
Magnesium	mg/l	NV	**0.57**	**0.97**	0.5 U	**0.92**	**0.72**	**0.5**	0.5 U
Sodium	mg/l	NV	**48.8**	**40.3**	**88.1**	**38.8**	**32.1**	**317**	**349**
Polyaromatic Hydrocarbons (PAHs)									
1-Methylnaphthalene	ug/g	0.99	0.03 U	0.03 U	0.03 U	0.03 U	--	0.03 U	0.03 U
2-(1-)Methylnaphthalene	ug/g	0.99	0.042 U	0.042 U	0.042 U	0.042 U	--	0.042 U	0.042 U
2-Methylnaphthalene	ug/g	0.99	0.03 U	0.03 U	0.03 U	0.03 U	--	0.03 U	0.03 U
Acenaphthene	ug/g	7.9	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
Acenaphthylene	ug/g	0.15	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
Anthracene	ug/g	0.67	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
Benzo(a)anthracene	ug/g	0.5	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
Benzo(a)pyrene	ug/g	0.3	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
Benzo(b)fluoranthene	ug/g	0.78	0.05 U	0.05 U	0.05 U	0.05 U	--	**0.055**	0.05 U
Benzo(g,h,i)perylene	ug/g	6.6	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
Benzo(k)fluoranthene	ug/g	0.78	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
Chrysene	ug/g	7	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
Dibenzo(a,h)anthracene	ug/g	0.1	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
Fluoranthene	ug/g	0.69	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
Fluorene	ug/g	62	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
Indeno(1,2,3-Cd)Pyrene	ug/g	0.38	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
Naphthalene	ug/g	0.6	0.013 U	0.013 U	0.013 U	0.013 U	--	0.013 U	0.013 U
Phenanthrene	ug/g	6.2	0.046 U	0.046 U	0.046 U	0.046 U	--	0.046 U	0.046 U
Pyrene	ug/g	78	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
Polychlorinated Biphenyls (PCBs)									
Aroclor 1242	ug/g	NV	--	--	--	--	--	--	--
Aroclor 1248	ug/g	NV	--	--	--	--	--	--	--
Aroclor 1254	ug/g	NV	--	--	--	--	--	--	--
Aroclor 1260	ug/g	NV	--	--	--	--	--	--	--
PCB, Total	ug/g	0.35	--	--	--	--	--	--	--
Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)									
Benzene	ug/g	0.21	0.0068 U	0.0068 U	0.0068 U	0.0068 U	--	0.0068 U	0.0068 U
Ethylbenzene	ug/g	1.1	0.018 U	0.018 U	0.018 U	0.018 U	--	0.018 U	0.018 U
Toluene	ug/g	2.3	0.08 U	0.08 U	0.08 U	0.08 U	--	0.08 U	0.08 U
Xylene, o	ug/g	NV	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U
Xylenes, m & p	ug/g	NV	0.03 U	0.03 U	0.03 U	0.03 U	--	0.03 U	0.03 U
Xylenes, Total	ug/g	3.1	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
Petroleum Hydrocarbons (PHCs)									
Gravimetric Heavy Hydrocarbons	ug/g	2800	--	--	--	--	--	**550**	--
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	ug/g	NV	5 U	5 U	5 U	5 U	--	5 U	5 U
Petroleum Hydrocarbons F1 (C6-C10)	ug/g	55	5 U	5 U	5 U	5 U	--	5 U	5 U
Petroleum Hydrocarbons F2 (C10-C16 less Naphthaler	ug/g	NV	10 U	10 U	10 U	10 U	--	10 U	10 U
Petroleum Hydrocarbons F2 (C10-C16)	ug/g	98	10 U	10 U	10 U	10 U	--	10 U	10 U
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	ug/g	NV	50 U	50 U	50 U	50 U	--	**54**	50 U
Petroleum Hydrocarbons F3 (C16-C34)	ug/g	300	50 U	50 U	50 U	50 U	--	**54**	50 U
Petroleum Hydrocarbons F4 (C34-C50)	ug/g	2800	50 U	50 U	50 U	50 U	--	**181**	50 U
Total Petroleum Hydrocarbons (C6 to C50)	ug/g	NV	72 U	72 U	72 U	72 U	--	**235**	72 U
Physical/Chemistry									
Average Fraction Organic Carbon	None	NV	--	--	0.001 U	0.001 U	0.001 U	--	--
Clay (less than 0.005mm), USCS	%	NV	--	--	--	--	--	--	--
Coarse Sand (2.0 to 4.75mm), USCS	%	NV	--	--	--	--	--	--	--
Fine Sand (0.074 to 0.425mm), USCS	%	NV	--	--	--	--	--	--	--
Fraction Organic Carbon	None	NV	--	--	0.001 U	0.001 U	0.001 U	--	--
Fraction Organic Carbon (Rep1)	None	NV	--	--	--	**0.001**	--	--	--
Fraction Organic Carbon (Rep2)	None	NV	--	--	--	--	--	--	--
Gravel (4.75 to 76mm), USCS	%	NV	--	--	--	--	--	--	--
Medium Sand (0.425 to 2.0mm), USCS	%	NV	--	--	--	--	--	--	--
Moisture	%	NV	**6.56**	**10.7**	**8.42**	**9.71**	--	**8.79**	**5.03**
Silt (0.005 to 0.074mm), USCS	%	NV	--	--	--	--	--	--	--

Table 6-5. Summary of Analytical Results in Soil

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane,
Guelph, Ontario

		Location	MW109					MW113	
		Sample ID	**MW109-2.5-3.5'**	**DUP14**	**MW109-8-9.5**	**MW109-12.5-14.5**	**MW109-16-17**	**MW113-2.5-4.5**	**MW113-6.5-8.5**
		Sample Date	**7/25/2019**	**8/15/2019**	**8/15/2019**	**8/15/2019**	**8/15/2019**	**4/9/2020**	**4/9/2020**
		Sample Type	**N**	**FD**	**N**	**N**	**N**	**N**	**N**
		Start Depth	**0.76**	**3.81**	**2.29**	**3.81**	**4.88**	**0.76**	**1.98**
		End Depth	**1.07**	**4.42**	**2.9**	**4.42**	**5.18**	**1.37**	**2.59**
Analyte	**Units**	**Table 2 SCS [a]**							
Total Organic Carbon	%	NV	--	--	0.1 U	0.1 U	0.1 U	--	--
Total Organic Carbon (Rep1)	%	NV	--	--	--	**0.1**	--	--	--
Total Organic Carbon (Rep2)	%	NV	--	--	--	--	--	--	--
Volatile Organic Carbons (VOCs)									
1,1,1,2-Tetrachloroethane	ug/g	0.058	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
1,1,1-Trichloroethane	ug/g	0.38	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
1,1,2-Trichloroethane	ug/g	0.05	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
1,1-Dichloroethane	ug/g	0.47	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
1,1-Dichloroethene	ug/g	0.05	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
1,2-Dibromoethane	ug/g	0.05	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
1,2-Dichlorobenzene	ug/g	1.2	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
1,2-Dichloroethane	ug/g	0.05	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
1,2-Dichloropropane	ug/g	0.05	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
1,3-Dichlorobenzene	ug/g	4.8	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
1,3-Dichloropropene	ug/g	0.05	0.042 U	0.042 U	0.042 U	0.042 U	--	0.042 U	0.042 U
1,4-Dichlorobenzene	ug/g	0.083	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
2-Butanone	ug/g	16	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U
4-Methyl-2-Pentanone	ug/g	1.7	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U
Acetone	ug/g	16	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U
Bromodichloromethane	ug/g	1.5	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
Bromoform	ug/g	0.27	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
Bromomethane	ug/g	0.05	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
Carbon tetrachloride	ug/g	0.05	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
Chlorobenzene	ug/g	2.4	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
Chlorodibromomethane	ug/g	2.3	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
Chloroform	ug/g	0.05	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
cis-1,2-Dichloroethene	ug/g	1.9	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
cis-1,3-Dichloropropene	ug/g	NV	0.03 U	0.03 U	0.03 U	0.03 U	--	0.03 U	0.03 U
Dichlorodifluoromethane	ug/g	16	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 UJ	0.05 UJ
Dichloromethane	ug/g	0.1	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
Methyl tert-butyl ether (MTBE)	ug/g	0.75	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
n-Hexane	ug/g	2.8	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
Styrene	ug/g	0.7	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
Tetrachloroethene	ug/g	0.28	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
trans-1,2-Dichloroethene	ug/g	0.084	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
trans-1,3-Dichloropropene	ug/g	NV	0.03 U	0.03 U	0.03 U	0.03 U	--	0.03 U	0.03 U
Trichloroethylene	ug/g	0.061	0.01 U	0.01 U	0.01 U	0.01 U	--	0.01 U	0.01 U
Trichlorofluoromethane	ug/g	4	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U
Vinyl Chloride	ug/g	0.02	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U

[a] MECP (2011) Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

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

Notes:
Bold denote positive detection at or above reportable detection limit
Shading denotes detected results that exceeds the applicable standard
U = Analyte not detected
ug/L = microgram(s) per litre
ug/g = microgram per gram
mg/L = milligram(s) per litre
mS/cm = millisiemen per centimeter
SAR = Sodiuim Absorption Ratio
ID = identification
NV = no value available in applicable standards
-- = Analyte not analyzed

Table 6-7c. Rationale for the Exclusion of Soil COCs
55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Parameter Group	Parameter	Category	Sample(s)	Comment/Rationale
PAH	Dibenzo[a,h]anthracene	Parameter with existing SCS and detected exceedance.	1 sample from BH-14 (0.8 to 1.4 mbgs) from 2008 (COA L712303).	One exceedances of dibenzo[a,h]anthracene was detected across the Phase Two Property from a historical sample at BH-14. In November 2019, BH208 was drilled in the same area as BH-14, and samples were collected between 0.91 to 1.07 mbgs, and 2.3 to 2.44 mbgs. The results from the two locations were averaged below the SCS. Based on the available information, this parameter was determined to likely not be present at concentrations exceeding the SCS; therefore, at the discretion of the QPESA, was not considered to be a COC for the Phase Two Property.
INORGANICS	Conductivity (EC) Sodium Adsorption Ratio (SAR)	Parameter with Table 2 SCS and exemptions in Section 49.1 of O. Reg. 153/04	34 (EC) and 56 (SAR) samples across the Site from 2019 and 2020.	The presence of EC and SAR at the Site are related to the application of salt on the parking lot surface during winter conditions. The application of salt has been used for the safety of vehicular and pedestrian traffic. Under Section 49.1 of the revised O. Reg. 153/04, the SCS is deemed to not be exceeded for the purpose of Part XV.1 of the Act should a substance be applied to surfaces for hte safety of vehicularor pedestrian traffic under conditions of snow or ice or both. Therefore, at the discretion of the QPESA, EC and SAR were not considered to be COCs for the Phase Two Property.

Notes:

The rationale for exclusion of COCs listed in this table is based on the data collected as part of the ESA and only applies to this ESA.

µg/g = micrograms per gram
COA = certificate of analysis
COC = contaminant of concern
EC = electrical conductivity
mbgs = metres below ground surface
O. Reg. = Ontario Regulation
PAH = polycyclic aromatic hydrocarbon
QPESA = MECP Qualified Person for Environmental Site Assessment
SAR = sodium adsorption ratio
SCS = Site Condition Standards

Table 6-8. Summary of Analytical Results in Groundwater

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane,
Guelph, Ontario

		Location	MW100		MW101			MW102A		MW102B		MW103			MW104				MW105	MW107			
		Sample ID	MW100	MW100	MW101	MW101	MW101	MW102A	MW102A	MW102B	MW102B	DUP1	MW103	MW103	DUP2	MW104	DUP3	MW104	MW105	DUP3	MW107	MW107	MW107
		Sample Date	9/6/2019	12/19/2019	9/5/2019	9/24/2019	12/20/2019	9/6/2019	12/19/2019	9/6/2019	12/19/2019	9/5/2019	9/5/2019	12/18/2019	9/5/2019	9/5/2019	12/20/2019	12/20/2019	9/6/2019	9/6/2019	9/6/2019	9/24/2019	12/18/2019
		Sample Type	N	N	N	N	N	N	N	N	N	FD	N	N	FD	N	FD	N	N	FD	N	N	N
		Start Depth	5.49	5.49	5.71	5.71	5.71	2.13	2.13	8.84	8.84	2.13	2.13	2.13	5.94	5.94	5.94	5.94	5.64	5.33	5.33	5.33	5.33
		End Depth	8.53	8.53	8.76	8.76	8.76	5.18	5.18	10.36	10.36	5.18	5.18	5.18	8.99	8.99	8.99	8.99	8.69	8.38	8.38	8.38	8.38
Analyte	**Units**	**Table 2 SCS [a]**																					
Acids, Bases, Neutrals (ABNs)																							
1,1'-Biphenyl	ug/l	0.5	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	0.4 U	0.4 U	0.4 U	--	--	--	--	--
1,2,4-Trichlorobenzene	ug/l	70	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	0.4 U	0.4 U	0.4 U	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	ug/l	5	--	--	--	--	--	--	--	--	--	--	--	--	0.57 U	0.57 U	0.57 U	0.57 U	--	--	--	--	--
2,4-Dimethylphenol	ug/l	59	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--
2,4-Dinitrophenol	ug/l	10	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U	1 U	1 U	--	--	--	--	--
2,4-Dinitrotoluene	ug/l	5	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	0.4 U	0.4 U	0.4 U	--	--	--	--	--
2,6-Dinitrotoluene	ug/l	5	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	0.4 U	0.4 U	0.4 U	--	--	--	--	--
3,3'-Dichlorobenzidine	ug/l	0.5	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	0.4 U	0.4 U	0.4 U	--	--	--	--	--
4-Chloroaniline	ug/l	10	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	0.4 U	0.4 U	0.4 U	--	--	--	--	--
Bis (2-chloroethyl) ether	ug/l	5	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	0.4 U	0.4 U	0.4 U	--	--	--	--	--
bis (2-Chloroisopropyl) ether	ug/l	120	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	0.4 U	0.4 U	0.4 U	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	ug/l	10	--	--	--	--	--	--	--	--	--	--	--	--	**2.3**	**2**	2 U	2 U	--	--	--	--	--
Diethylphthalate	ug/l	38	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--
Dimethylphthalate	ug/l	38	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--
Phenol	ug/l	890	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--
Inorganics																							
Chloride (Cl)	mg/l	790	**6970**	**8010**	**1380**	--	**370**	**6010**	**8140**	**9610**	**8500**	**4980**	**6580**	**5890**	--	**2660**	--	**4170**	**2170**	**918**	**969**	--	**722**
Conductivity	mS/cm	NV	**20.1**	**23**	**4.18**	--	**1.76**	**17.9**	**23.5**	**27**	**24.3**	**14.5**	**14.6**	**15.4**	--	**7.24**	--	**11**	**5.92**	**3.17**	**3.22**	--	**2.71**
Cyanide, Weak Acid Dissociable	ug/l	66	**2.8**	2 U	2 U	--	2 U	2 U	**8.4**	2 U	2 U	**2.5**	2 U	2 U	--	2 U	--	2 U	2 U	2 U	2 U	--	2 U
pH	pH UNITS	NV	**7.77**	**7.82**	**7.86**	--	**7.76**	**7.43**	**7.49**	**7.14**	**7.34**	**7.44**	**7.55**	**7.53**	--	**7.8**	--	**7.47**	**8.08**	**7.66**	**7.76**	--	**7.78**
Sodium	ug/l	490000	**4590000**	--	**725000**	--	--	**3960000**	--	**6100000**	--	**3150000**	**3140000**	--	--	**1360000**	--	--	**1200000**	**506000**	**505000**	**436000**	--
Sodium Absorption Ratio	SAR	NV	0.1 U	--	**21.8 J**	--	--	0.1 U	--	**22 J**	--	130 UJ	130 UJ	--	--	130 UJ	--	--	130 UJ	**5.8 J**	**5.8 J**	--	--
Metals																							
Antimony	ug/l	6	10 U	--	1 U	--	--	10 U	--	10 U	--	1 U	1 U	--	--	1 U	--	--	1 U	1 U	1 U	1 U	--
Arsenic	ug/l	25	10 U	--	1 U	--	--	10 U	--	10 U	--	**1.2**	1 U	--	--	1 U	--	--	1 U	1 U	1 U	1 U	--
Barium	ug/l	1000	**356**	**392**	**87.1**	--	**53.1**	**462**	**526**	**619**	**556**	**403**	**406**	**378**	--	**164**	--	**225**	**136**	**99.2**	**94.1**	**87.8**	**87.2**
Beryllium	ug/l	4	10 U	10 U	1 U	--	1 U	10 U	10 U	10 U	10 U	1 U	1 U	1 U	--	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U
Boron	ug/l	5000	1000 U	1000 U	100 U	--	100 U	1000 U	1000 U	1000 U	1000 U	100 U	100 U	100 U	--	100 U	--	100 U	100 U	100 U	100 U	100 U	100 U
Cadmium	ug/l	2.7	**1.1**	**0.72**	0.05 U	--	0.05 U	0.5 U	0.5 U	**1.02**	**0.78**	**0.134**	**0.131**	**0.128**	--	0.05 U	--	0.05 U	**0.75**	**2.98**	**3.01**	**3.13**	**3.37**
Chromium	ug/l	50	50 U	50 U	5 U	--	5 U	50 U	50 U	50 U	50 U	5 U	5 U	5 U	--	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U
Chromium, Hexavalent (Cr6+)	ug/l	25	**3.87**	**4.15**	**0.55**	--	**0.51**	0.5 U	**0.51**	**1.28**	**0.51**	0.5 U	**0.56**	0.5 U	--	0.5 U	--	0.5 U	**2.01**	**3.62**	**3.8**	--	**0.87**
Cobalt	ug/l	3.8	10 U	10 U	1 U	--	1 U	10 U	10 U	10 U	10 U	1 U	1 U	**1.4**	--	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U
Copper	ug/l	87	20 U	20 U	**2.4**	--	**2.2**	20 U	20 U	20 U	20 U	**3.1 J**	**4.4 J**	**3**	--	**2.1**	--	**2.5**	2 U	**2.4**	2 U	**2.2**	2 U
Lead	ug/l	10	5 U	5 U	0.5 U	--	0.5 U	5 U	5 U	5 U	5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Mercury	ug/l	0.29	0.005 U	0.005 U	0.005 U	--	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	--	0.005 U	--	0.005 U	0.005 U	**0.0054**	0.005 U	--	0.005 U
Molybdenum	ug/l	70	5 U	5 U	**6.26**	--	**1.95**	5 U	5 U	**13.3**	5 U	**4.87**	**4.93**	**3.13**	--	**17.6**	--	**3.97**	**13**	**1.14**	**1.05**	**0.9**	**1.09**
Nickel	ug/l	100	50 U	50 U	5 U	--	5 U	50 U	50 U	50 U	50 U	5 U	5 U	5 U	--	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U
Selenium	ug/l	10	5 U	--	**4.66**	--	--	5 U	--	5 U	--	**0.55**	**0.57**	--	--	0.5 U	--	--	**0.55**	**1.01**	**1.01**	**1.11**	--
Silver	ug/l	1.5	5 U	5 U	0.5 U	--	0.5 U	5 U	5 U	5 U	5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Thallium	ug/l	2	1 U	1 U	0.1 U	--	0.1 U	1 U	1 U	1 U	1 U	**0.12**	**0.12**	0.1 U	--	0.1 U	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Uranium	ug/l	20	1 U	1 U	**0.82**	--	**0.76**	**3.5**	**1.7**	**1.8**	**1.6**	**4.7**	**4.76**	**5.79**	--	**1.83**	--	**1.53**	**1.27**	**0.6**	**0.63**	**0.63**	**0.67**
Vanadium	ug/l	6.2	50 U	50 U	5 U	--	5 U	50 U	50 U	50 U	50 U	5 U	5 U	5 U	--	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U
Zinc	ug/l	1100	100 U	100 U	10 U	--	10 U	100 U	100 U	100 U	100 U	10 U	10 U	10 U	--	10 U	--	10 U	**11**	**14**	**11**	**13**	**14**
Polyaromatic Hydrocarbons (PAHs)																							
1-Methylnaphthalene	ug/l	3.2	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	**0.022**	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U
2-(1-)Methylnaphthalene	ug/l	3.2	0.028 U	0.028 U	0.028 U	--	0.028 U	0.028 U	0.028 U	0.028 U	0.028 U	0.028 U	0.028 U	0.028 U	--	0.028 U	--	0.028 U	0.028 U	0.028 U	0.028 U	--	0.028 U
2-Methylnaphthalene	ug/l	3.2	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U
Acenaphthene	ug/l	4.1	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U
Acenaphthylene	ug/l	1	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U
Anthracene	ug/l	2.4	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U
Benzo(a)anthracene	ug/l	1	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U
Benzo(a)pyrene	ug/l	0.01	0.01 U	0.01 U	0.01 U	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	--	0.01 U	--	0.01 U	0.01 U	0.01 U	0.01 U	--	0.01 U
Benzo(b)fluoranthene	ug/l	0.1	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U
Benzo(g,h,i)perylene	ug/l	0.2	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U
Benzo(k)fluoranthene	ug/l	0.1	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U
Chrysene	ug/l	0.1	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U
Dibenzo(a,h)anthracene	ug/l	0.2	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U
Fluoranthene	ug/l	0.41	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U
Fluorene	ug/l	120	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U
Indeno(1,2,3-Cd)Pyrene	ug/l	0.2	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U
Naphthalene	ug/l	11	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
Phenanthrene	ug/l	1	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U
Pyrene	ug/l	4.1	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	--	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U
Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)																							
Benzene	ug/l	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	ug/l	2.4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	ug/l	24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Xylene, o	ug/l	NV	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	--	0.3 U	--	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Xylenes, m & p	ug/l	NV	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	--	0.4 U	--	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Xylenes, Total	ug/l	300	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 6-8. Summary of Analytical Results in Groundwater

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane,
Guelph, Ontario

		Location	MW100		MW101			MW102A		MW102B		MW103			MW104				MW105	MW107			
		Sample ID	MW100	MW100	MW101	MW101	MW101	MW102A	MW102A	MW102B	MW102B	DUP1	MW103	MW103	DUP2	MW104	DUP3	MW104	MW105	DUP3	MW107	MW107	MW107
		Sample Date	9/6/2019	12/19/2019	9/5/2019	9/24/2019	12/20/2019	9/6/2019	12/19/2019	9/6/2019	12/19/2019	9/5/2019	9/5/2019	12/18/2019	9/5/2019	9/5/2019	12/20/2019	12/20/2019	9/6/2019	9/6/2019	9/6/2019	9/24/2019	12/18/2019
		Sample Type	N	N	N	N	N	N	N	N	N	FD	N	N	FD	N	FD	N	N	FD	N	N	N
		Start Depth	5.49	5.49	5.71	5.71	5.71	2.13	2.13	8.84	8.84	2.13	2.13	2.13	5.94	5.94	5.94	5.94	5.64	5.33	5.33	5.33	5.33
		End Depth	8.53	8.53	8.76	8.76	8.76	5.18	5.18	10.36	10.36	5.18	5.18	5.18	8.99	8.99	8.99	8.99	8.69	8.38	8.38	8.38	8.38
Analyte	**Units**	**Table 2 SCS [a]**																					
Petroleum Hydrocarbons (PHCs)																							
Chrom. to baseline at nC50	None	NV	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	ug/l	NV	25 U	25 U	25 U	--	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	--	25 U	--	25 U	25 U	25 U	25 U	--	25 U
Petroleum Hydrocarbons F1 (C6-C10)	ug/l	750	25 U	25 U	25 U	--	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	--	25 U	--	25 U	25 U	25 U	25 U	--	25 U
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	ug/l	NV	100 U	100 U	100 U	--	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	--	100 U	--	100 U	100 U	100 U	100 U	--	100 U
Petroleum Hydrocarbons F2 (C10-C16)	ug/l	150	100 U	100 U	100 U	--	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	--	100 U	--	100 U	100 U	100 U	100 U	--	100 U
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	ug/l	NV	250 U	250 U	250 U	--	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	--	250 U	--	250 U	250 U	250 U	250 U	--	250 U
Petroleum Hydrocarbons F3 (C16-C34)	ug/l	500	250 U	250 U	250 U	--	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	--	250 U	--	250 U	250 U	250 U	250 U	--	250 U
Petroleum Hydrocarbons F4 (C34-C50)	ug/l	500	250 U	250 U	250 U	--	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	--	250 U	--	250 U	250 U	250 U	250 U	--	250 U
Total Petroleum Hydrocarbons (C6 to C50)	ug/l	NV	370 U	370 U	370 U	--	370 U	370 U	370 U	370 U	370 U	370 U	370 U	370 U	--	370 U	--	370 U	370 U	370 U	370 U	--	370 U
Volatile Organic Carbons (VOCs)																							
1,1,1,2-Tetrachloroethane	ug/l	1.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane	ug/l	200	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	ug/l	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	ug/l	4.7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	ug/l	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	ug/l	1.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	ug/l	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichlorobenzene	ug/l	3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	ug/l	1.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	ug/l	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	ug/l	59	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropene	ug/l	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dichlorobenzene	ug/l	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone	ug/l	1800	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	--	20 U	--	20 U	20 U	20 U	20 U	20 U	20 U
4-Methyl-2-Pentanone	ug/l	640	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	--	20 U	--	20 U	20 U	20 U	20 U	20 U	20 U
Acetone	ug/l	2700	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	--	30 U	--	30 U	30 U	30 U	30 U	30 U	30 U
Bromodichloromethane	ug/l	16	2 U	2 U	**6.7**	**7.1**	**6.6**	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	**4.7**	--	2 U	**4.1**	2 U	2 U	2 U	2 U
Bromoform	ug/l	25	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U
Bromomethane	ug/l	0.89	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride	ug/l	0.79	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chlorobenzene	ug/l	30	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorodibromomethane	ug/l	25	2 U	2 U	**4.9**	**4.5**	**5.4**	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	**4.1**	--	2 U	**4.1**	2 U	2 U	2 U	2 U
Chloroform	ug/l	2.4	1 U	1 U	**12**	**11.9**	**8.5**	1 U	1 U	**1.5**	1 U	1 U	1 U	1 U	--	**4.9**	--	1 U	**3.5**	**11.6**	**11.3**	**10.9**	**7.8**
cis-1,2-Dichloroethene	ug/l	1.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,3-Dichloropropene	ug/l	NV	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	--	0.3 U	--	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Dichlorodifluoromethane	ug/l	590	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	--	2 U	2 U	2 U	2 U	2 U	2 U
Dichloromethane	ug/l	50	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U
Methyl tert-butyl ether (MTBE)	ug/l	15	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	--	2 U	2 U	2 U	2 U	2 U	2 U
n-Hexane	ug/l	51	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	ug/l	5.4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	ug/l	1.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	ug/l	1.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	ug/l	NV	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	--	0.3 U	--	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Trichloroethylene	ug/l	1.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichlorofluoromethane	ug/l	150	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U
Vinyl Chloride	ug/l	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

[a] MECP (2011) Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

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

Notes:
Bold denote positive detection at or above reportable detection limit
Shading denotes detected results that exceeds the applicable standard
U = Analyte not detected
ug/L = microgram(s) per litre
ug/g = microgram per gram
mg/L = milligram(s) per litre
mS/cm = millisiemen per centimeter
SAR = Sodiuim Absorption Ratio
ID = identification
NV = no value available in applicable standards
-- = Analyte not analyzed

Table 6-8. Summary of Analytical Results in Groundwater

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane,
Guelph, Ontario

		Location	MW107B		MW108		MW109			MW110A		MW110B			MW111		MW113			
		Sample ID	MW107B	MW107B	MW108	MW108	MW109	DUP1	MW109	MW110A	MW110A	DUP	MW110B	MW110B	MW111	MW111	DUP1	MW113	MW113	MW113
		Sample Date	11/26/2019	12/18/2019	9/5/2019	12/19/2019	9/5/2019	12/19/2019	12/19/2019	11/26/2019	12/20/2019	11/26/2019	11/26/2019	12/20/2019	11/26/2019	12/19/2019	4/15/2020	4/15/2020	4/22/2020	4/29/2020
		Sample Type	N	N	N	N	N	FD	N	N	N	FD	N	N	N	N	N	FD	N	N
		Start Depth	13.56	13.56	6.71	6.71	7.32	7.32	7.32	5.33	5.33	13.56	13.56	13.56	13.56	13.56	5.33	5.33	5.33	5.33
		End Depth	15.39	15.39	9.75	9.75	10.36	10.36	10.36	8.38	8.38	15.39	15.39	15.39	15.39	15.39	8.38	8.38	8.38	8.38
Analyte	Units	Table 2 SCS [a]																		
Acids, Bases, Neutrals (ABNs)																				
1,1'-Biphenyl	ug/l	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	ug/l	70	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4 & 2,6-Dinitrotoluene	ug/l	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	ug/l	59	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	ug/l	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	ug/l	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	ug/l	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	ug/l	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	ug/l	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-chloroethyl) ether	ug/l	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
bis (2-Chloroisopropyl) ether	ug/l	120	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis (2-ethylhexyl) phthalate	ug/l	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	ug/l	38	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	ug/l	38	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	ug/l	890	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Inorganics																				
Chloride (Cl)	mg/l	790	--	--	**2640**	**272**	**448**	**469**	**459**	--	--	--	--	--	--	--	**8330**	**4470**	**3010**	--
Conductivity	mS/cm	NV	--	--	**1.85**	**1.88**	**1.89**	**1.82**	**1.81**	--	--	--	--	--	--	--	**13.9**	**14.2**	**7.79**	--
Cyanide, Weak Acid Dissociable	ug/l	66	--	--	2 U	2 U	2 U	2 U	2 U	--	--	--	--	--	--	--	2 U	2 U	2 U	--
pH	pH UNITS	NV	--	--	**7.93**	**7.73**	**8.11**	**8.23**	**8.22**	--	--	--	--	--	--	--	**7.69**	**7.7**	**7.83**	--
Sodium	ug/l	490000	**347000**	--	**131000**	--	**304000**	--	--	**4750000**	--	**2360000**	**2310000**	--	**2490000**	--	**2390000**	**2440000**	**1470000**	**3170000**
Sodium Absorption Ratio	SAR	NV	--	--	10 UJ	--	0.1 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals																				
Antimony	ug/l	6	1 U	--	**0.43**	--	1 U	--	--	6 U	--	1 U	1 U	--	1 U	--	1 U	1 U	1 U	1 U
Arsenic	ug/l	25	1 U	--	**0.51**	--	1 U	--	--	10 U	--	1 U	1 U	--	1 U	--	1 U	1 U	1 U	1 U
Barium	ug/l	1000	**106**	**109**	**99.5**	**93.3**	**43.3**	**39.9**	**38.9**	**708**	**744**	**147**	**150**	**147**	**105**	**102**	**274**	**278**	**146**	**319**
Beryllium	ug/l	4	1 U	1 U	0.1 U	0.1 U	1 U	1 U	1 U	4 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Boron	ug/l	5000	100 U	100 U	**64**	**60**	100 U	100 U	100 U	1000 U	1000 U	**110**	**110**	**120**	**200**	**240**	100 U	100 U	100 U	100 U
Cadmium	ug/l	2.7	**0.075**	0.05 U	0.01 U	**0.017**	0.05 U	0.05 U	0.05 U	**1.26**	**1.5**	**0.105**	**0.08**	**0.109**	0.05 U	0.05 U	**3.93**	**3.92**	**1.82**	**6.16**
Chromium	ug/l	50	**5.9**	**5.5**	**1.24**	0.5 U	5 U	5 U	5 U	50 U	50 U	5 U	5 U	5 U	**8.1**	**9.3**	5 U	5 U	**5.9**	**6.4**
Chromium, Hexavalent (Cr6+)	ug/l	25	--	--	0.5 U	0.5 U	**2**	**2.04**	**2.05**	--	--	--	--	--	--	--	**4.89**	**4.95**	**5.74**	--
Cobalt	ug/l	3.8	1 U	1 U	**0.33**	**0.37**	1 U	1 U	1 U	3.8 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Copper	ug/l	87	2 U	**4.7**	**4.01**	**2.02**	**2.1**	2 U	**2.5**	20 U	20 U	**2.9**	**2.4**	**4.9**	**4**	**5.3**	**2.6**	**2.7**	**2.2**	**3.1**
Lead	ug/l	10	0.5 U	0.5 U	**0.061**	**0.066**	**0.72**	0.5 U	0.5 U	5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Mercury	ug/l	0.29	--	--	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	--	--	--	--	--	--	--	0.005 U	**0.0052**	0.005 U	--
Molybdenum	ug/l	70	0.5 U	**0.68**	**14.2**	**2.7**	**5.65**	**4.53**	**4.47**	5 U	5 U	**0.98**	**1.06**	**1.14**	**1**	**1.17**	**1.5**	**1.52**	**1.61**	**1.53**
Nickel	ug/l	100	5 U	5 U	**3.44**	**3.36**	5 U	5 U	5 U	50 U	50 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Selenium	ug/l	10	**0.97**	--	**0.253**	--	**0.57**	--	--	5 U	--	**0.8**	**0.68**	--	**0.86**	--	**1.24**	**1.2**	**1.38**	**1.25**
Silver	ug/l	1.5	0.5 U	0.5 U	0.05 U	0.05 U	0.5 U	0.5 U	0.5 U	1.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Thallium	ug/l	2	0.1 U	0.1 U	**0.055**	**0.042**	0.1 U	0.1 U	0.1 U	1 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Uranium	ug/l	20	**1.44**	**1.3**	**2.33**	**3.25**	**0.34**	**0.38**	**0.37**	**2.2**	**1.8**	**1.43**	**1.47**	**1.4**	**1.59**	**1.84**	**0.9**	**0.91**	**0.77**	**1.06**
Vanadium	ug/l	6.2	5 U	5 U	**0.76**	0.5 U	5 U	5 U	5 U	50 U	50 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Zinc	ug/l	1100	**14**	**12**	**1.7**	**2.9**	**14**	10 U	10 U	100 U	100 U	**19**	**18**	**16**	10 U	10 U	**11**	**11**	10 U	**15**
Polyaromatic Hydrocarbons (PAHs)																				
1-Methylnaphthalene	ug/l	3.2	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	--	--	--	--	--	--	0.02 U	0.02 U	0.02 U	--
2-(1-)Methylnaphthalene	ug/l	3.2	--	--	0.028 U	0.028 U	0.028 U	0.028 U	0.028 U	--	--	--	--	--	--	--	0.028 U	0.028 U	0.028 U	--
2-Methylnaphthalene	ug/l	3.2	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	--	--	--	--	--	--	0.02 U	0.02 U	0.02 U	--
Acenaphthene	ug/l	4.1	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	--	--	--	--	--	--	0.02 U	0.02 U	0.02 U	--
Acenaphthylene	ug/l	1	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	--	--	--	--	--	--	0.02 U	0.02 U	0.02 U	--
Anthracene	ug/l	2.4	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	--	--	--	--	--	--	0.02 U	0.02 U	0.02 U	--
Benzo(a)anthracene	ug/l	1	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	--	--	--	--	--	--	0.02 U	0.02 U	0.02 U	--
Benzo(a)pyrene	ug/l	0.01	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	--	--	--	--	--	--	--	0.01 U	0.01 U	0.01 U	--
Benzo(b)fluoranthene	ug/l	0.1	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	--	--	--	--	--	--	0.02 U	0.02 U	0.02 U	--
Benzo(g,h,i)perylene	ug/l	0.2	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	--	--	--	--	--	--	0.02 U	0.02 U	0.02 U	--
Benzo(k)fluoranthene	ug/l	0.1	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	--	--	--	--	--	--	0.02 U	0.02 U	0.02 U	--
Chrysene	ug/l	0.1	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	--	--	--	--	--	--	0.02 U	0.02 U	0.02 U	--
Dibenzo(a,h)anthracene	ug/l	0.2	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	--	--	--	--	--	--	0.02 U	0.02 U	0.02 U	--
Fluoranthene	ug/l	0.41	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	--	--	--	--	--	--	0.02 U	0.02 U	0.02 U	--
Fluorene	ug/l	120	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	--	--	--	--	--	--	0.02 U	0.02 U	0.02 U	--
Indeno(1,2,3-Cd)Pyrene	ug/l	0.2	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	--	--	--	--	--	--	0.02 U	0.02 U	0.02 U	--
Naphthalene	ug/l	11	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	--	--	--	--	--	--	0.05 U	0.05 U	0.05 U	--
Phenanthrene	ug/l	1	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	--	--	--	--	--	--	0.02 U	0.02 U	0.02 U	--
Pyrene	ug/l	4.1	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	--	--	--	--	--	--	0.02 U	0.02 U	0.02 U	--
Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)																				
Benzene	ug/l	5	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	--
Ethylbenzene	ug/l	2.4	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	--
Toluene	ug/l	24	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	--
Xylene, o	ug/l	NV	--	--	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	--	--	--	--	--	--	--	0.3 U	0.3 U	0.3 U	--
Xylenes, m & p	ug/l	NV	--	--	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	--	--	--	--	--	--	--	0.4 U	0.4 U	0.4 U	--
Xylenes, Total	ug/l	300	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	--

Table 6-8. Summary of Analytical Results in Groundwater

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane,
Guelph, Ontario

		Location	MW107B		MW108		MW109			MW110A		MW110B			MW111		MW113			
		Sample ID	MW107B	MW107B	MW108	MW108	MW109	DUP1	MW109	MW110A	MW110A	DUP	MW110B	MW110B	MW111	MW111	DUP1	MW113	MW113	MW113
		Sample Date	11/26/2019	12/18/2019	9/5/2019	12/19/2019	9/5/2019	12/19/2019	12/19/2019	11/26/2019	12/20/2019	11/26/2019	11/26/2019	12/20/2019	11/26/2019	12/19/2019	4/15/2020	4/15/2020	4/22/2020	4/29/2020
		Sample Type	N	N	N	N	N	FD	N	N	N	FD	N	N	N	N	N	FD	N	N
		Start Depth	13.56	13.56	6.71	6.71	7.32	7.32	7.32	5.33	5.33	13.56	13.56	13.56	13.56	13.56	5.33	5.33	5.33	5.33
		End Depth	15.39	15.39	9.75	9.75	10.36	10.36	10.36	8.38	8.38	15.39	15.39	15.39	15.39	15.39	8.38	8.38	8.38	8.38
Analyte	Units	Table 2 SCS [a]																		
Petroleum Hydrocarbons (PHCs)																				
Chrom. to baseline at nC50	None	NV	--	--	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	1 U	1 U	1 U	--
Petroleum Hydrocarbons F1 (C6-C10 less BTEX)	ug/l	NV	--	--	25 U	25 U	25 U	25 U	25 U	--	--	--	--	--	--	--	25 U	25 U	25 U	--
Petroleum Hydrocarbons F1 (C6-C10)	ug/l	750	--	--	25 U	25 U	25 U	25 U	25 U	--	--	--	--	--	--	--	25 U	25 U	25 U	--
Petroleum Hydrocarbons F2 (C10-C16 less Naphthalene)	ug/l	NV	--	--	100 U	100 U	100 U	100 U	100 U	--	--	--	--	--	--	--	100 U	100 U	100 U	--
Petroleum Hydrocarbons F2 (C10-C16)	ug/l	150	--	--	100 U	100 U	100 U	100 U	100 U	--	--	--	--	--	--	--	100 U	100 U	100 U	--
Petroleum Hydrocarbons F3 (C16-C34 less PAHs)	ug/l	NV	--	--	250 U	250 U	250 U	250 U	250 U	--	--	--	--	--	--	--	250 U	250 U	250 U	--
Petroleum Hydrocarbons F3 (C16-C34)	ug/l	500	--	--	250 U	250 U	250 U	250 U	250 U	--	--	--	--	--	--	--	250 U	250 U	250 U	--
Petroleum Hydrocarbons F4 (C34-C50)	ug/l	500	--	--	250 U	250 U	250 U	250 U	250 U	--	--	--	--	--	--	--	250 U	250 U	250 U	--
Total Petroleum Hydrocarbons (C6 to C50)	ug/l	NV	--	--	370 U	370 U	370 U	370 U	370 U	--	--	--	--	--	--	--	370 U	370 U	370 U	--
Volatile Organic Carbons (VOCs)																				
1,1,1,2-Tetrachloroethane	ug/l	1.1	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	--
1,1,1-Trichloroethane	ug/l	200	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	--
1,1,2,2-Tetrachloroethane	ug/l	1	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	--
1,1,2-Trichloroethane	ug/l	4.7	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	--
1,1-Dichloroethane	ug/l	5	--	--	0.5 U	**0.56**	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	--
1,1-Dichloroethene	ug/l	1.6	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	--
1,2-Dibromoethane	ug/l	0.2	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--	--	0.2 U	0.2 U	0.2 U	--
1,2-Dichlorobenzene	ug/l	3	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	--
1,2-Dichloroethane	ug/l	1.6	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	--
1,2-Dichloropropane	ug/l	5	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	--
1,3-Dichlorobenzene	ug/l	59	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	--
1,3-Dichloropropene	ug/l	0.5	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	--
1,4-Dichlorobenzene	ug/l	1	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	--
2-Butanone	ug/l	1800	--	--	20 U	20 U	20 U	20 U	20 U	--	--	--	--	--	--	--	20 U	20 U	20 U	--
4-Methyl-2-Pentanone	ug/l	640	--	--	20 U	20 U	20 U	20 U	20 U	--	--	--	--	--	--	--	20 U	20 U	20 U	--
Acetone	ug/l	2700	--	--	30 U	30 U	30 U	30 U	30 U	--	--	--	--	--	--	--	30 U	30 U	30 U	--
Bromodichloromethane	ug/l	16	--	--	2 U	2 U	2 U	2 U	2 U	--	--	--	--	--	--	--	2 U	2 U	2 U	--
Bromoform	ug/l	25	--	--	5 U	5 U	5 U	5 U	5 U	--	--	--	--	--	--	--	5 U	5 U	5 U	--
Bromomethane	ug/l	0.89	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	--
Carbon tetrachloride	ug/l	0.79	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--	--	0.2 U	0.2 U	0.2 U	--
Chlorobenzene	ug/l	30	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	--
Chlorodibromomethane	ug/l	25	--	--	2 U	2 U	2 U	2 U	2 U	--	--	--	--	--	--	--	2 U	2 U	2 U	--
Chloroform	ug/l	2.4	--	--	**2.3**	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	**3.2**	**3.2**	**4.4**	--
cis-1,2-Dichloroethene	ug/l	1.6	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	--
cis-1,3-Dichloropropene	ug/l	NV	--	--	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	--	--	--	--	--	--	--	0.3 U	0.3 U	0.3 U	--
Dichlorodifluoromethane	ug/l	590	--	--	2 U	2 U	2 U	2 U	2 U	--	--	--	--	--	--	--	2 U	2 U	2 U	--
Dichloromethane	ug/l	50	--	--	5 U	5 U	5 U	5 U	5 U	--	--	--	--	--	--	--	5 U	5 U	5 U	--
Methyl tert-butyl ether (MTBE)	ug/l	15	--	--	2 U	2 U	2 U	2 U	2 U	--	--	--	--	--	--	--	2 U	2 U	2 U	--
n-Hexane	ug/l	51	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	--
Styrene	ug/l	5.4	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	--
Tetrachloroethene	ug/l	1.6	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	--
trans-1,2-Dichloroethene	ug/l	1.6	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	--
trans-1,3-Dichloropropene	ug/l	NV	--	--	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	--	--	--	--	--	--	--	0.3 U	0.3 U	0.3 U	--
Trichloroethylene	ug/l	1.6	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	--
Trichlorofluoromethane	ug/l	150	--	--	5 U	5 U	5 U	5 U	5 U	--	--	--	--	--	--	--	5 U	5 U	5 U	--
Vinyl Chloride	ug/l	0.5	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	--	0.5 U	0.5 U	0.5 U	--

[a] MECP (2011) Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition, residential/parkland/institutional land use, coarse soil texture.

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

Notes:
Bold denote positive detection at or above reportable detection limit
Shading denotes detected results that exceeds the applicable standard
U = Analyte not detected
ug/L = microgram(s) per litre
ug/g = microgram per gram
mg/L = milligram(s) per litre
mS/cm = millisiemen per centimeter
SAR = Sodiuim Absorption Ratio
ID = identification
NV = no value available in applicable standards
-- = Analyte not analyzed

Table 6-10c. Rationale for the Exclusion of Groundwater COCs
55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

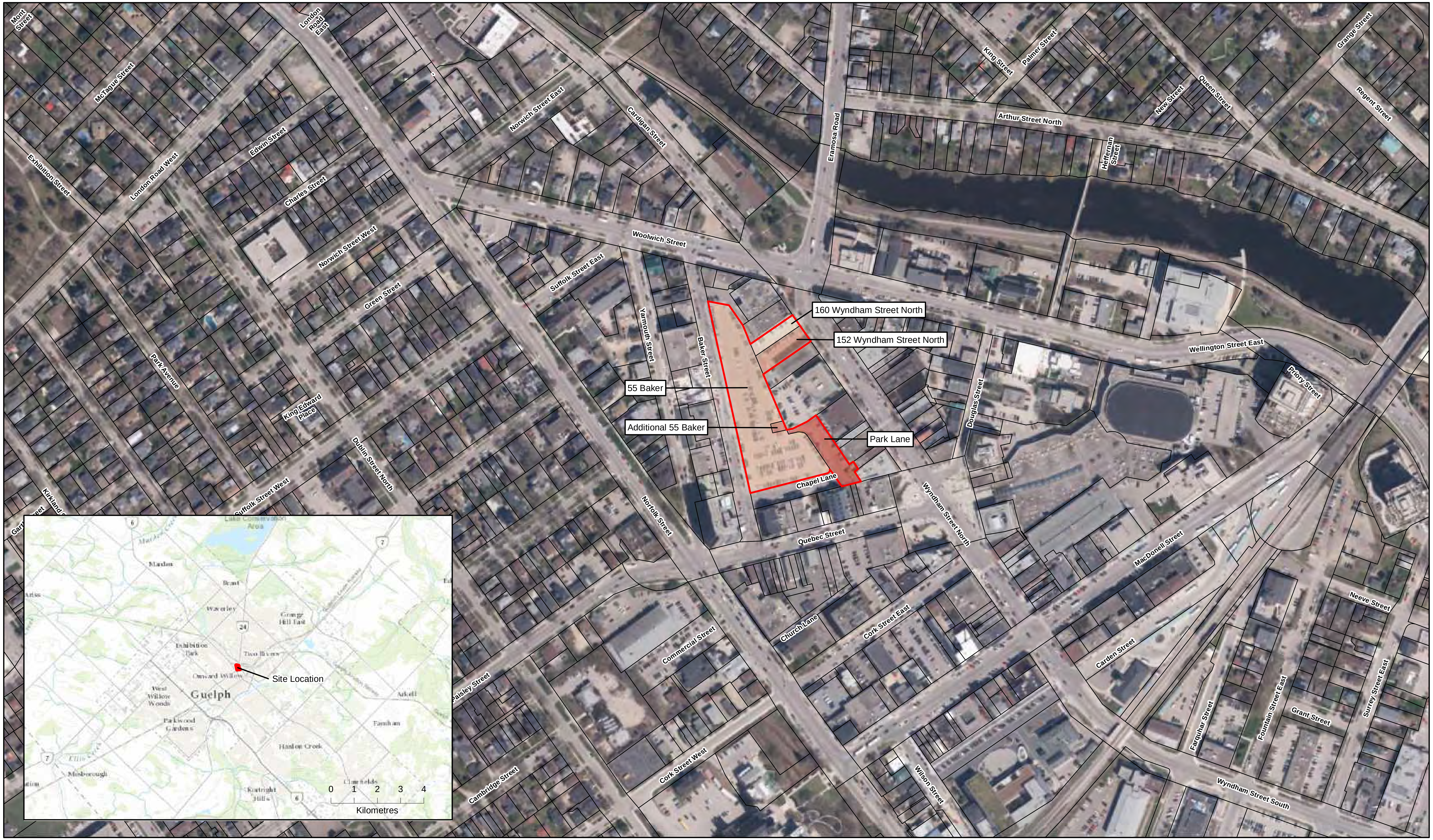
Parameter Group	Parameter	Category	Sample(s)	Comment/Rationale
INORGANICS	Chloride Sodium	Parameter associated with salt that has been applied to surfaces for the safety of vehicular or pedestrian traffic.	Nineteen chloride samples and eighteen sodium samples from across the Site.	The presence of sodium and chloride in groundwater at the Site are related to the application of salt on the parking lot surface during winter conditions. The application of salt has been used for the safety of vehicular and pedestrian traffic. Under Section 49.1 of the revised O. Reg. 153/04, the SCS is deemed to not be exceeded for the purpose of Part XV.1 of the Act should a substance be applied to surfaces for hte safety of vehicularor pedestrian traffic under conditions of snow or ice or both. Therefore, at the discretion of the QPESA, sodium and chloride were not considered to be COCs for the Phase Two Property.
VOC	Chloroform	Parameter with "introduced" exceedance; exemptions in Section 49.1 of O. Reg. 153/04	Twelve samples (MW101 x 3, MW104, MW105, MW107 x 4, MW113 x 3) had a detected exceedance of the SCS from September and/or December 2019, or April 2020.	The initial groundwater samples collected in early September 2019 from each location listed (or April 2020 for MW113) after drilling/bedrock coring, purging, and well development had concentrations of chloroform ranging from 3.2 µg/L to 12 µg/L, greater than the SCS of 2.4 µg/L. The source of the chloroform exceedance was believed to be related to the municipal water that was used during the bedrock coring process. Jacobs has encountered a similar issue during a previous drilling program in the City of Guelph in 2018. For that project, two samples, one from the water truck and one from the water truck hose that was used during the coring activities, were analyzed for VOCs. All VOCs were non detect in the municipal water water samples apart from bromodichloromethane (12.5 to 12.9 µg/L), dibromochloromethane (11.5 to 11.8 µg/L), and chloroform (9.8 to 10.1 µg/L). These analytes are trihalomethanes that are typically present in municipally-treated water substantiating that municipal water introduced during drilling activities as the likely source of trihalomethanes in groundwater. For the current project, all VOCs were nondetect in groundwater apart from these same three analytes, and from one sample for 1,1-dichloroethane. Additional groundwater samples were collected in late September 2019 and December 2019 from the two locations with the highest reported chloroform concentrations (MW101 and MW107). Slightly lower concentrations of chloroform were detected in the second set of samples and in the third set of samples. MW113 was installed in April 2020, and three samples have been collected (two normal and one field duplicate) with concentrations of chloroform ranging from 3.2 to 4.4 µg/L. Based on the available information, the QPESA determined there was a discharge of drinking water (within the meaning of the Safe Drinking Water Act, 2002), resulting in chloroform exceeding the SCS. Under Section 49.1 of the revised O. Reg. 153/04, the SCS is deemed to not be exceeded for the purpose of Part XV.1 of the Act. Therefore, at the discretion of the QPESA, chloroform was not considered to be a COC for the Phase Two Property.

Notes:

The rationale for exclusion of COCs listed in this table is based on the data collected as part of the ESA and only applies to this ESA.

µg/L = micrograms per gram
COC = contaminant of concern
O. Reg. = Ontario Regulation
RL = laboratory reporting limit
PCA = potentially contaminating activity
QPESA = MECP Qualified Person for Environmental Site Assessment
SCS = Site Condition Standards
VOC = volatile organic compound

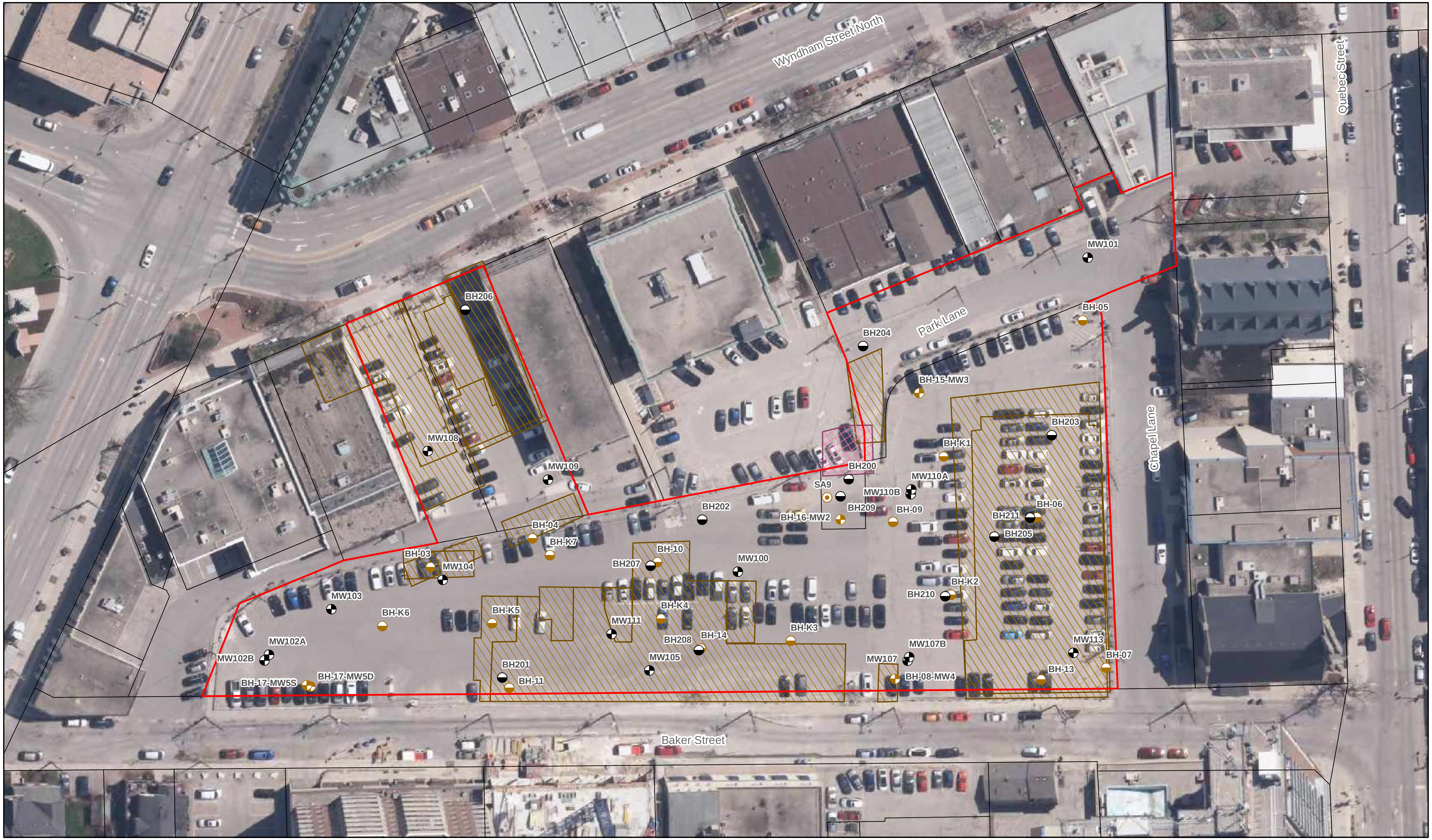
~~Appendix C~~
Figures



🟥 Site Boundary
☐ Property Boundary

Notes:
1. Aerial Imagery: ESRI World Imagery 2019. Imagery Date May 6, 2019.
2. Inset Basemap: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
3. Property Boundaries: City of Guelph.

Figure 2-1
Site Location
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street North and Park Lane, Guelph, Ontario
Date Exported: 5/13/2020



N

0 5 10 15 20

Metres

Sample Location (Current)
- ◒ Borehole
- ⊕ Monitoring Well

Sample Location (Historical)
- ◒ Borehole
- ⊕ Monitoring Well
- ⊙ Soil Sample

- 🟥 Site Boundary
- ☐ Property Boundary
- ▨ Historical Building
- ☒ Historical Transformer

Notes:
1. Historical sample locations and site boundaries are approximate. Current sample locations have been surveyed.

BH - Borehole
MW - Monitoring Well

Figure 2-2a
Site Plan and Historical Buildings
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street North and Park Lane, Guelph, Ontario
Date Exported: 7/21/2020

Jacobs

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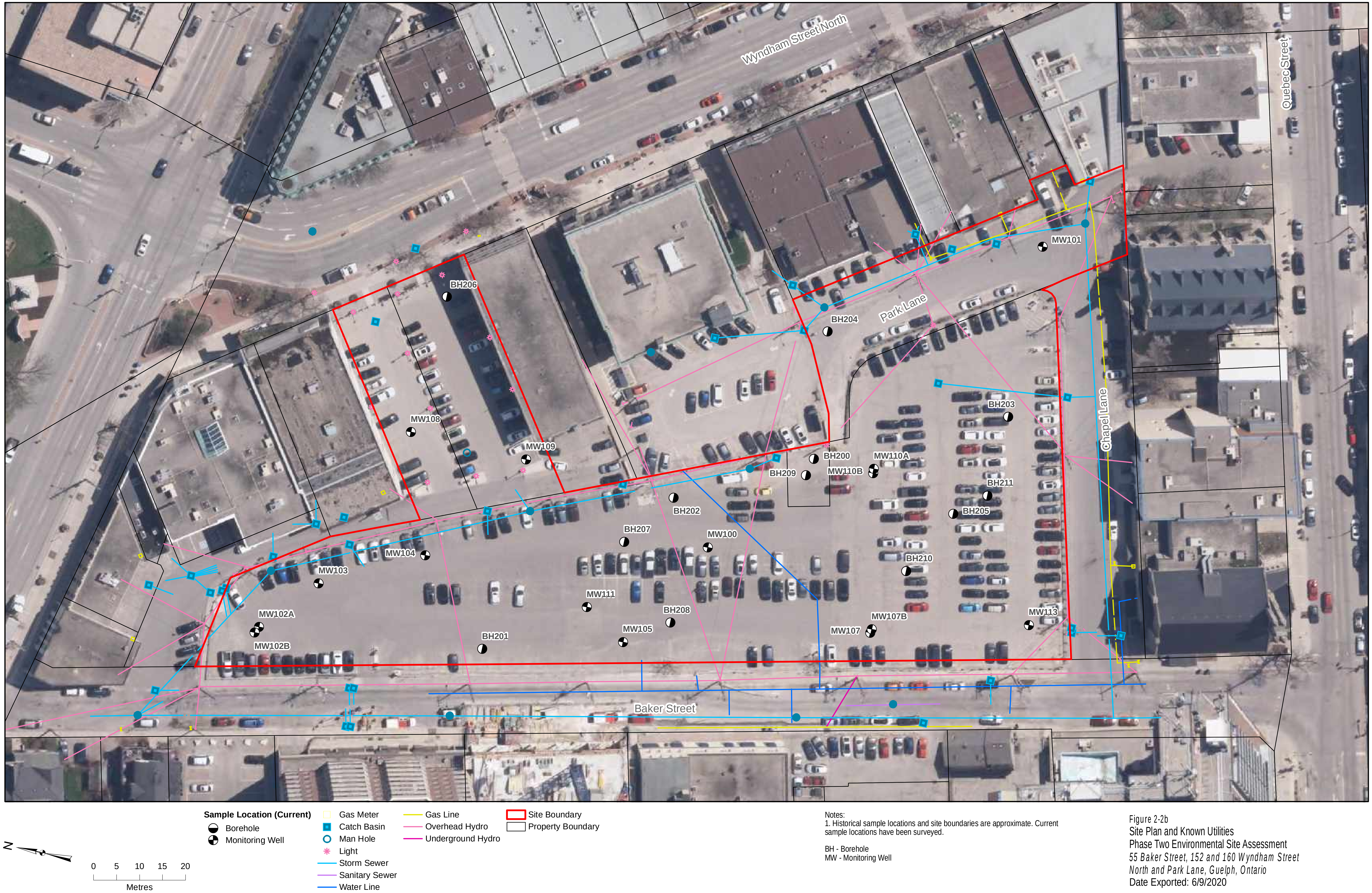

Notes:
1. Historical sample locations and site boundaries are approximate. Current sample locations have been surveyed.

BH - Borehole
MW - Monitoring Well

Figure 2-2b
Site Plan and Known Utilities
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 6/9/2020

Jacobs

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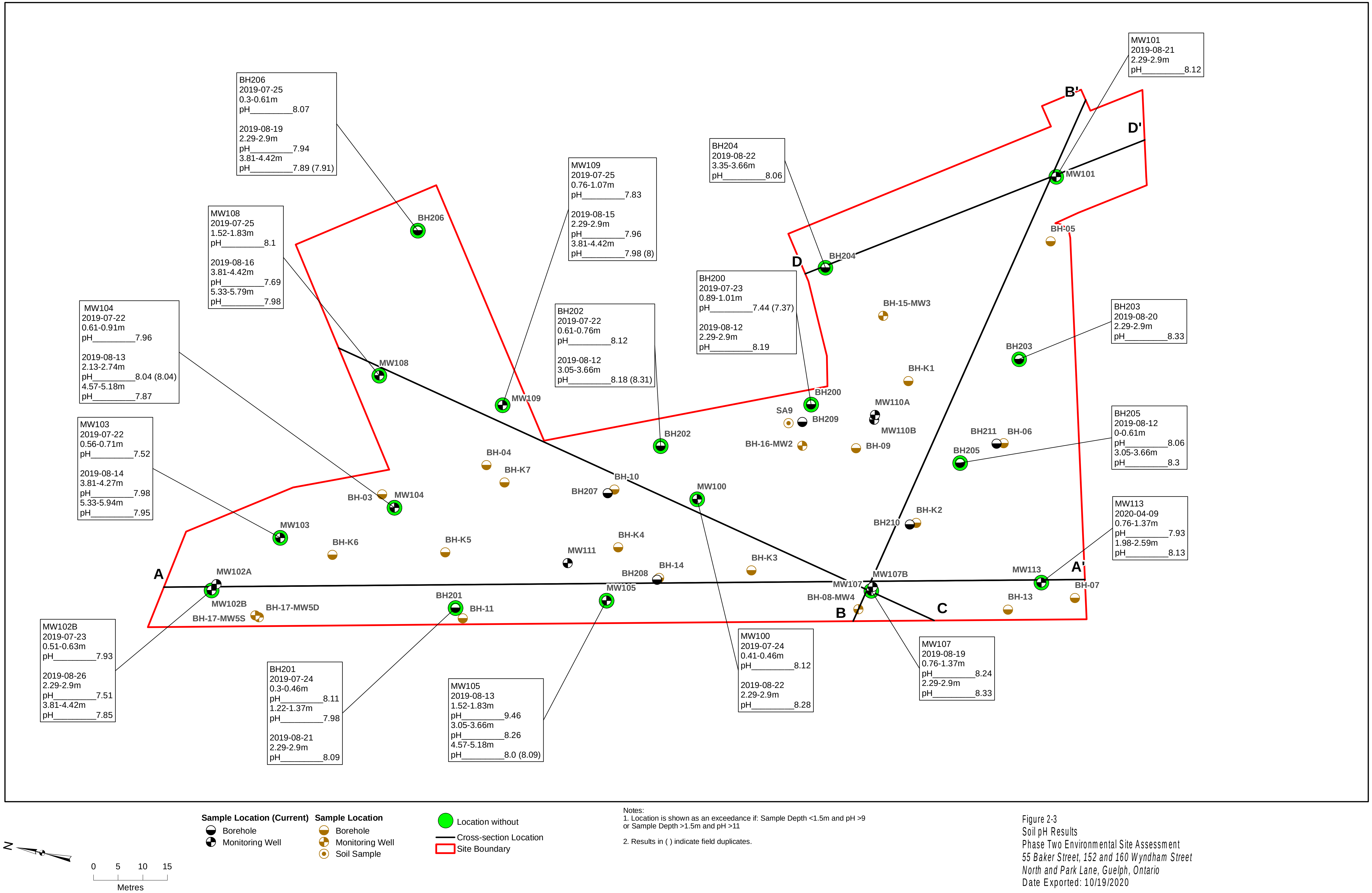

Notes:
1. Location is shown as an exceedance if: Sample Depth <1.5m and pH >9
or Sample Depth >1.5m and pH >11

2. Results in ( ) indicate field duplicates.

Figure 2-3
Soil pH Results
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 10/19/2020

Jacobs

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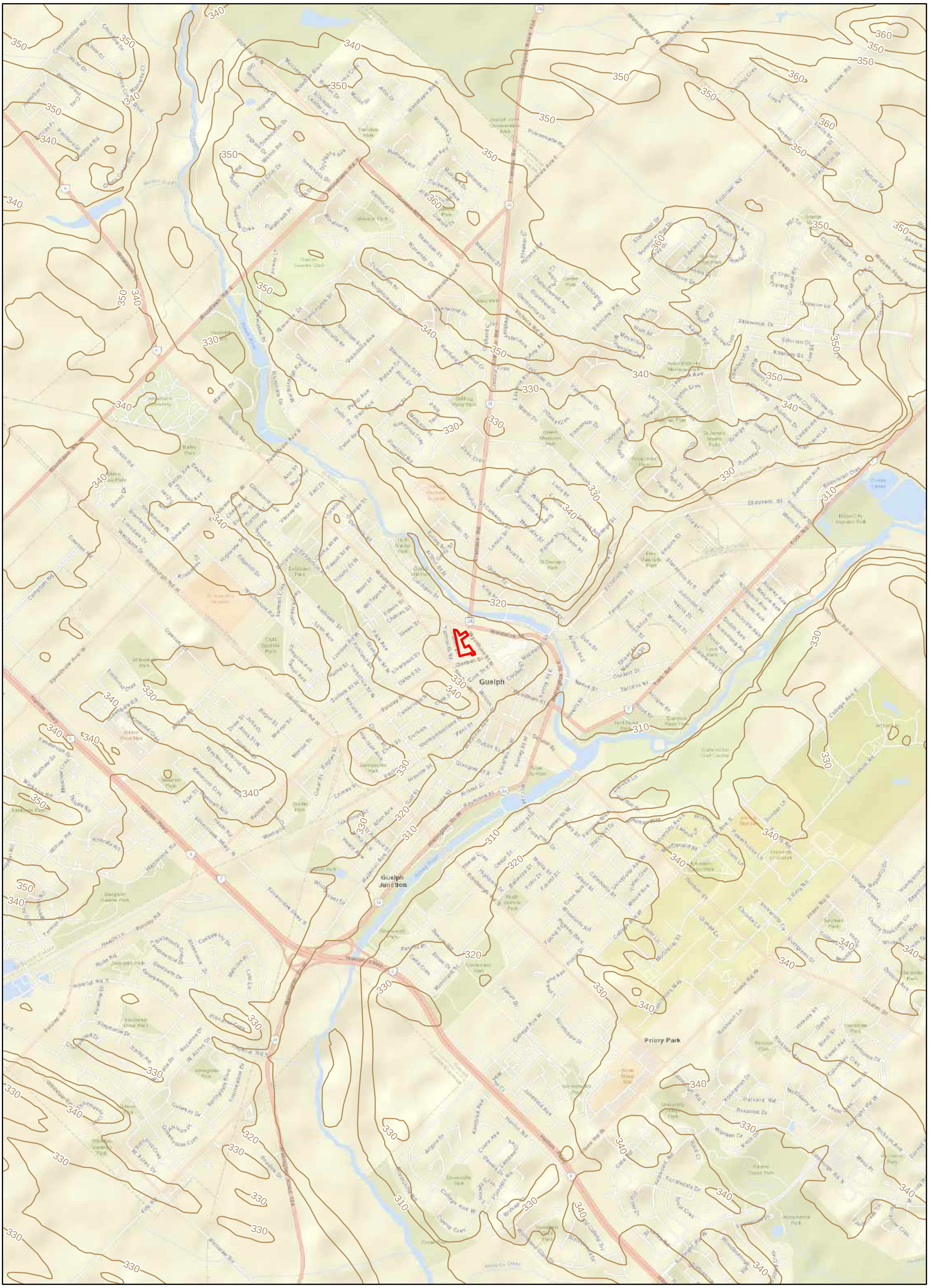

Site Boundary
Elevation Contour (10 m)

Notes:
1. Topography Contours obtained from Canvec.
2. Basemap Sources: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Figure 3-1
Regional Topography
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 6/9/2020

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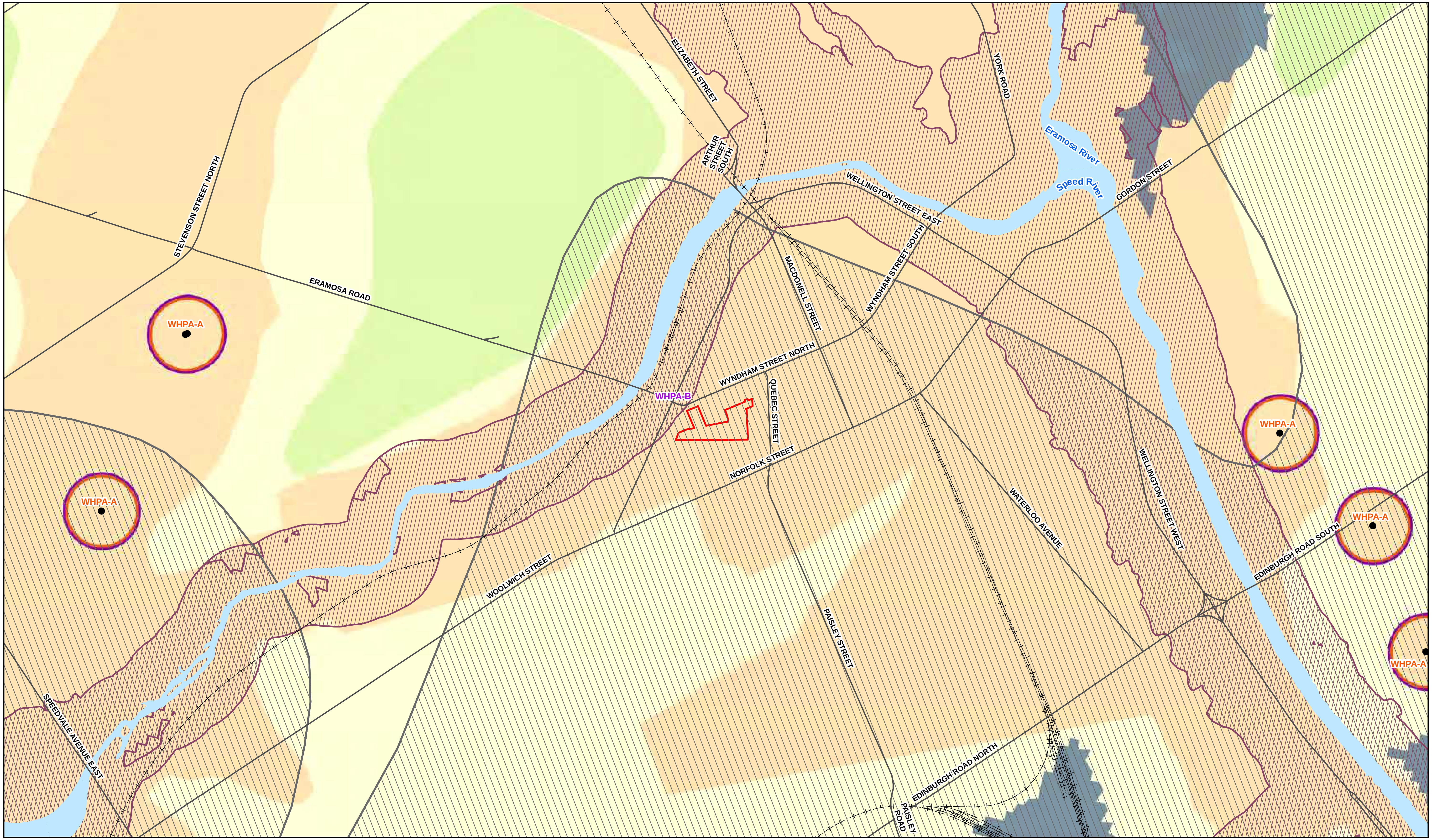

🟥 Site Boundary
● Municipal Well
▨ SWP Surface Water Intake Protection Zone
▨ SWP Issue Contributing Area
■ SWP Significant Groundwater Recharge Area

■ Watercourse
— Road
-+- Railway

Well Head Protection Area

□ WHPA-A (100 m Buffer)
□ WHPA-B (2 Year Time of Travel)

SWP Wellhead Protection Area Vulnerability Score

■ 6
■ 8
■ 10

Notes:
1. Contains Information made available under Grand River Conservation Authority's Open Data Licence v2.0."
https://data.grandriver.ca/downloads-geospatial.html

Figure 3-2
Source Water Protection Areas
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario
Date Exported: 7/6/2020

Jacobs

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Notes:
1. 1. Aerial Imagery: ESRI World Imagery 2019. Imagery Date May 6, 2019.
2. Property Boundaries: City of Guelph.
3. Site boundaries are approximate.
4. PCA Unique IDs are as assigned in the Phase One ESA (Pinchin 2018) and those added by Jacobs (above 56).

Figure 4-1a
Potentially Contaminating Activities (PCAs) - Onsite
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 10/19/2020

Jacobs

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N

0 10 20 30 40

Metres

○ Underground Storage Tank

▭ Property Boundary

▭ Site Boundary

Area of Potential Concern

▭ APEC-5 (Off-site Historical Dry Cleaning) and APEC-6 (Off-site Historical RFO)

▭ APEC-7 (Off-site Historical Dry Cleaning) and APEC-9 (Off-site Historical Fuel Oil UST)

▭ APEC-8 (Off-site Historical Dry Cleaning)

▭ APEC-10 (Off-site Historical Automotive Repair Garage)

▭ APEC-11 (Off-site Industrial Operations)

▭ APEC-12 (Off-site Historical Automotive Repair)

▭ APEC-13 (Off-site Historical Automotive Repair Garage)

▭ APEC-14/16 (Historical Gasoline Spill/Off-Site Historical Below Grade AST)

▭ APEC-15 (Off-site Historical Dry Cleaning)

▭ APEC-17 (Off-site Dry Cleaning, Historical RFO, and Automotive Repair)

Notes:
1. 1. Aerial Imagery: ESRI World Imagery 2019. Imagery Date May 6, 2019.
2. Property Boundaries: City of Guelph.
3. Site boundaries are approximate.
4. PCA Unique IDs are as assigned in the Phase One ESA (Pinchin 2018) and those added by Jacobs (above 56).
5. PCAs contributing to an APEC are bolded.

Figure 4-1b
Potentially Contaminating Activities (PCAs) - Offsite
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 10/20/2020

Jacobs

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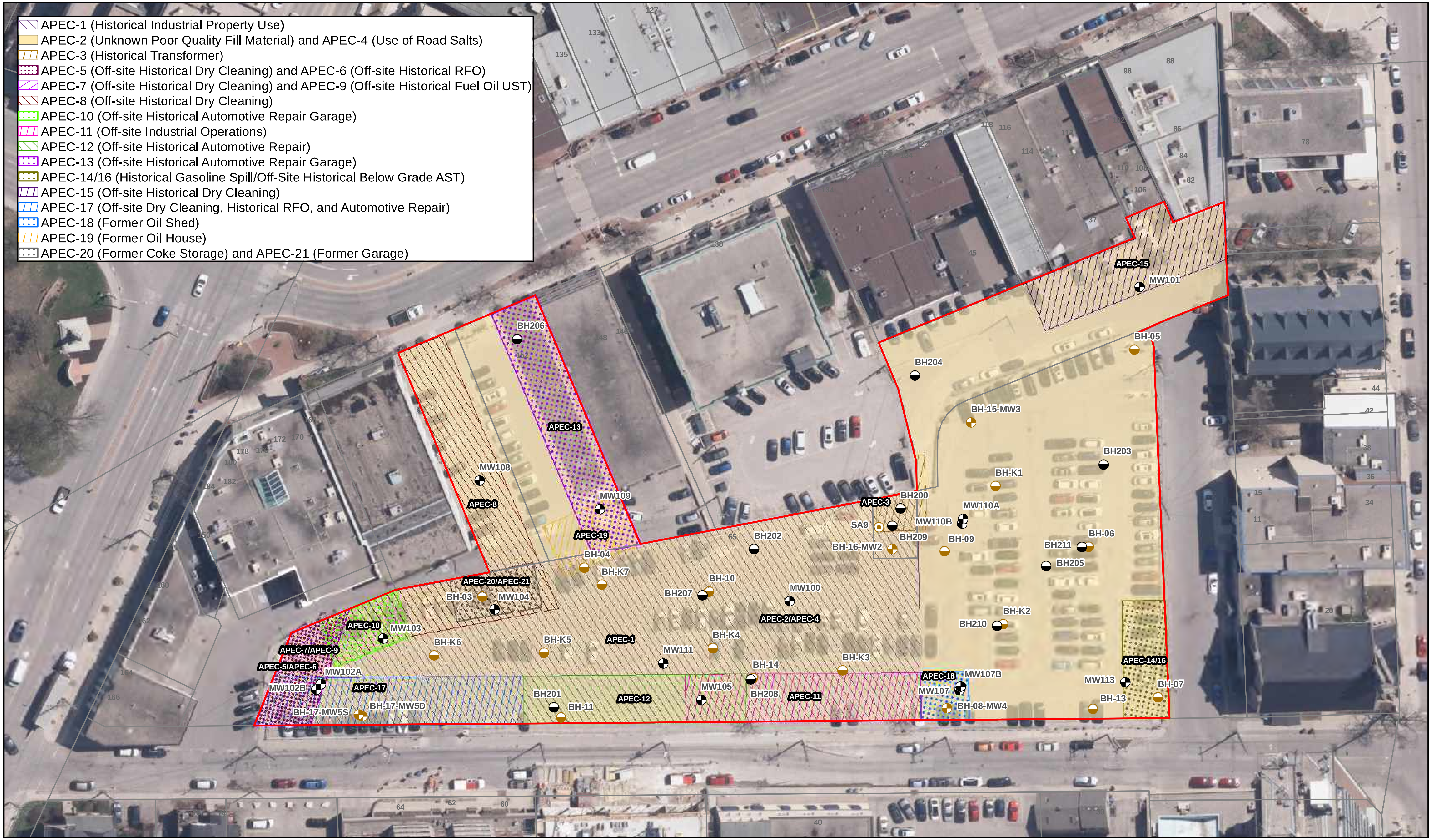

Sample Location (Current)
- Borehole
- Monitoring Well

Sample Location (Historical)
- Borehole
- Monitoring Well
- Soil Sample

🟥 Site Boundary
☐ Property Boundary

Notes:
1. 1. Aerial Imagery: ESRI World Imagery 2019. Imagery Date May 6, 2019.
2. Property Boundaries: City of Guelph.
3. Historical sample locations and site boundaries are approximate. Current sample locations have been surveyed.

BH - Borehole
MW - Monitoring Well

Figure 4-2
Areas of Potential Environmental Concern and Sampling Locations
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 10/19/2020

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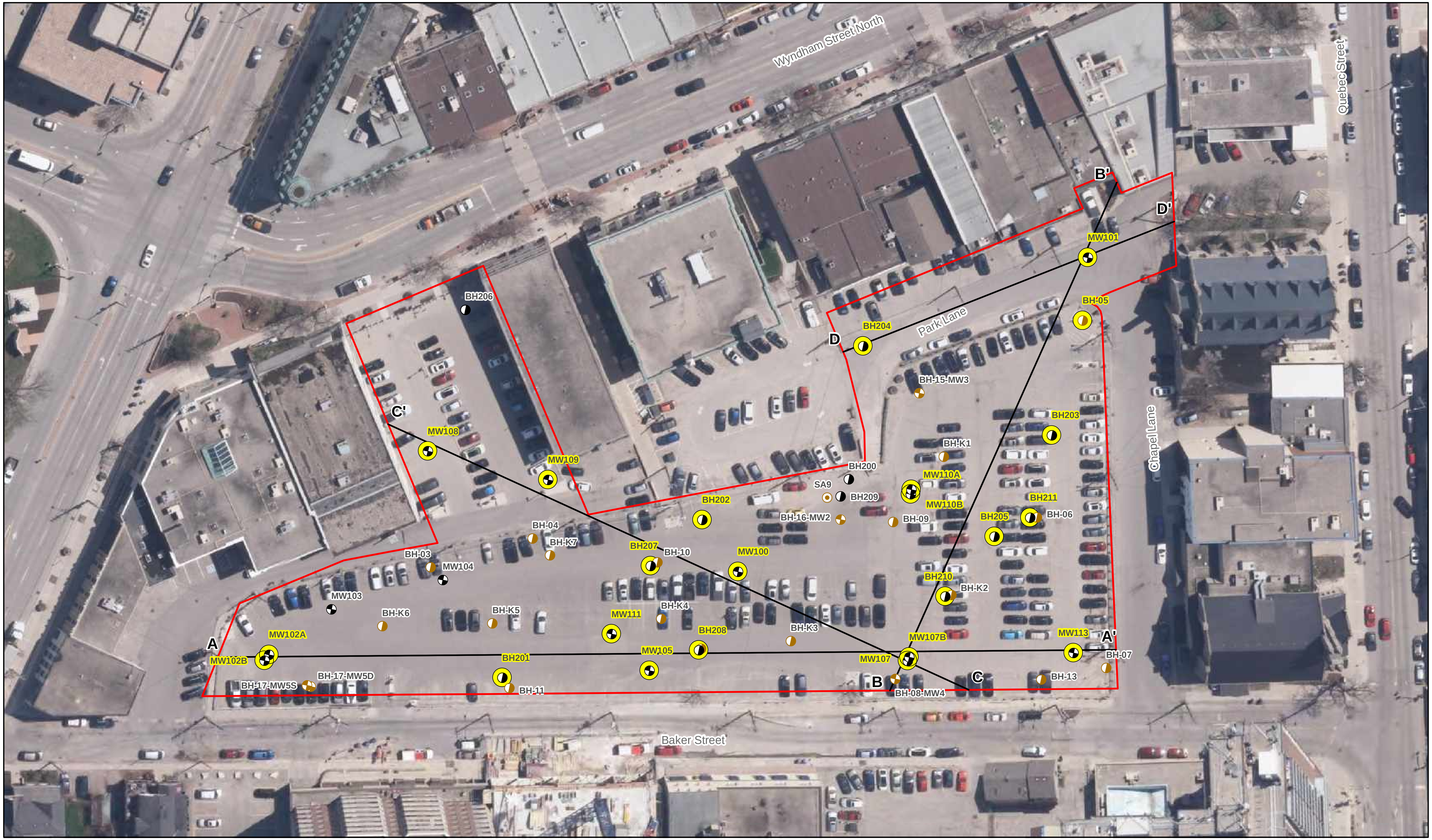


Notes:
1. Aerial Imagery: ESRI World Imagery 2019. Imagery Date May 6, 2019.
2. Historical sample locations and site boundaries are approximate. Current sample locations have been surveyed.

BH - Borehole
MW - Monitoring Well

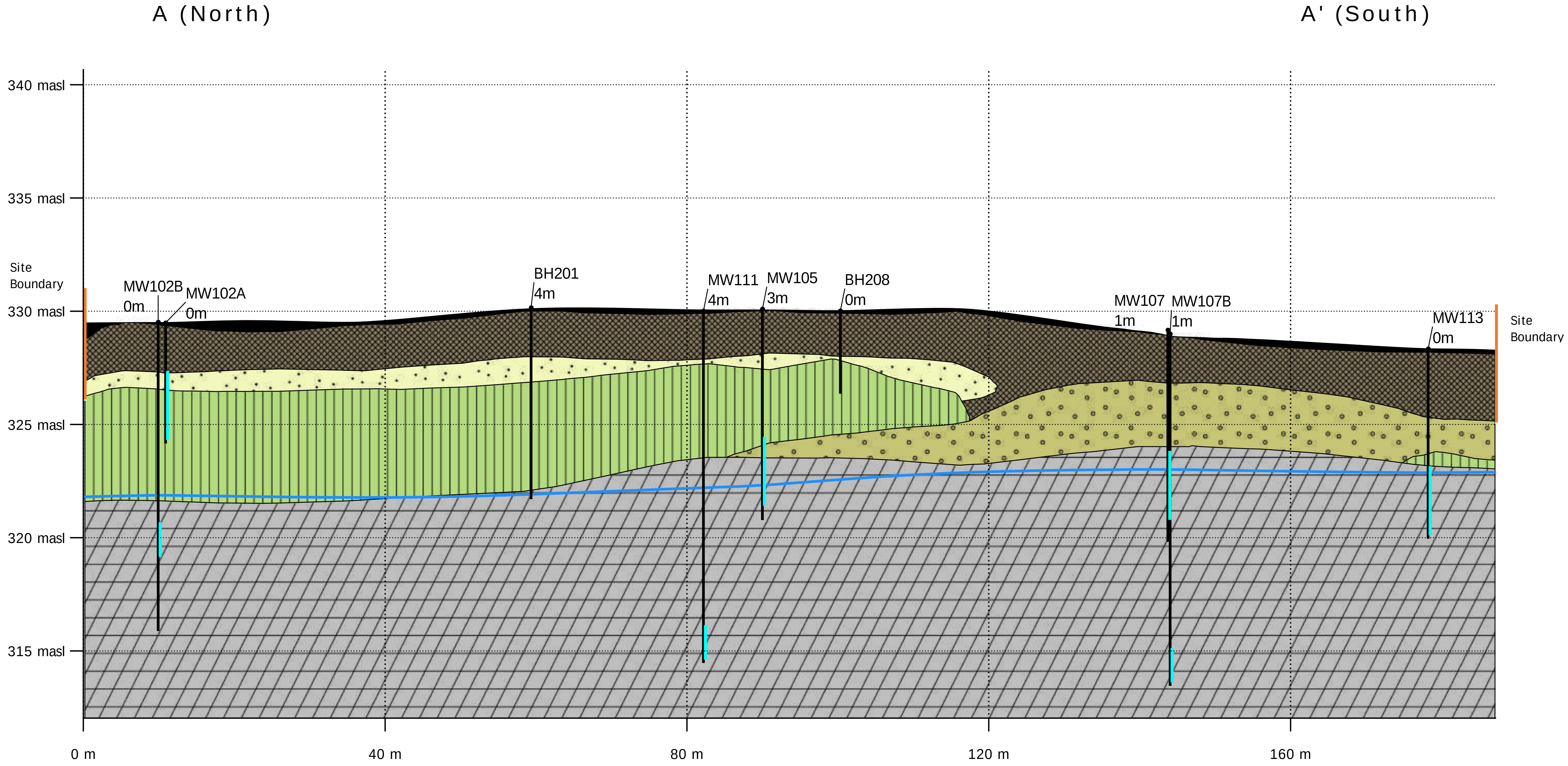
Figure 6-1
Cross-section Locations
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 6/9/2020

Jacobs

\\DC1VS01\GISPROJ\G\GUELPHCITYOF\55BAKERSTREET\MAPFILES\PHASEII\MAY2020_UPDATE\CROSSSECTION_LOCATIONS.MXD MJOZWIAK 6/9/2020 12:40:04 PM

Cross-Section A-A'

Export Date: June 11, 2020



Vertical exaggeration: 3x

Legend

■ Asphalt

▨ Fill

▨ Sand and Gravel

▨ Guelph formation dolostone

▨ Sand

▨ Silt

Water Table Elevation Elevation (April 15, 2020)

Boring Interval

Monitoring Well Screen Interval

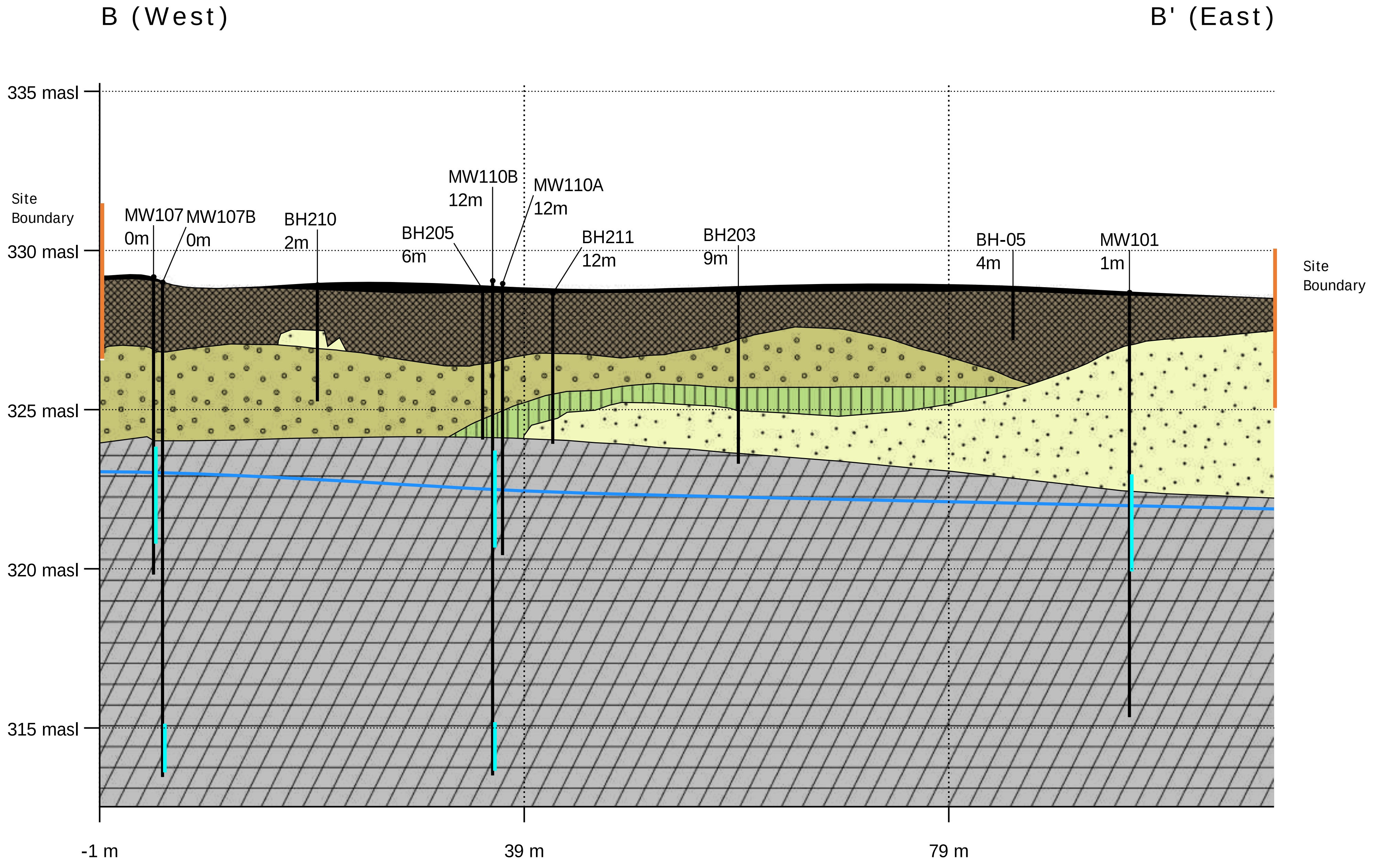
Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations. Distance of projection is presented below each location name on the section.
2. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
3. masl = metres above sea level

Figure 6-1a

Geologic Conceptual Cross-Section A-A'
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario

Cross-Section B-B'

Export Date: June 11, 2020



Vertical exaggeration: 3x

Legend

■ Asphalt

▨ Fill

▨ Sand and Gravel

▨ Guelph formation dolostone

▨ Sand

▨ Silt

— Water Table Elevation (April 15, 2020)

| Boring Interval

| Monitoring Well Screen Interval

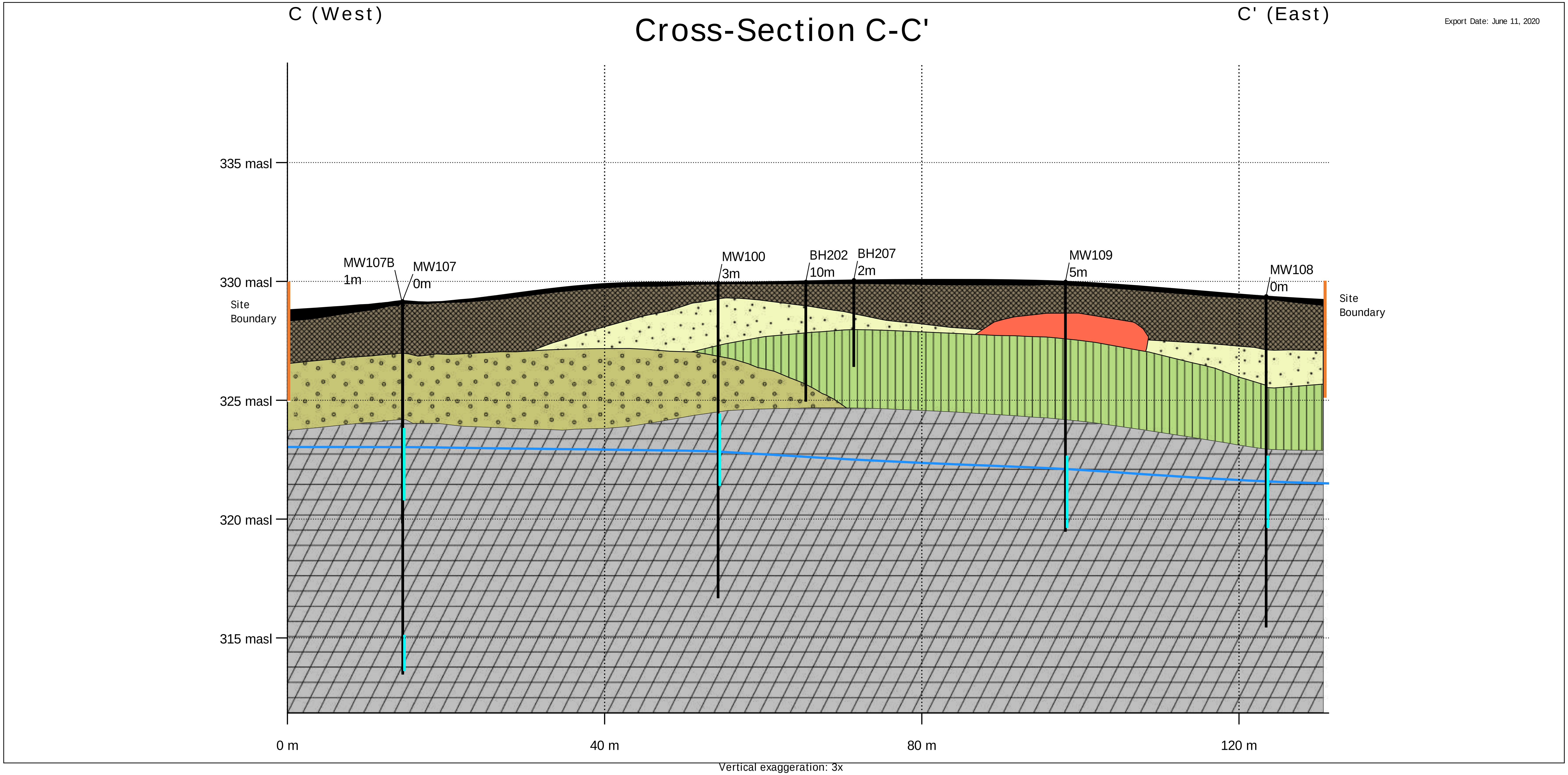
Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations. Distance of projection is presented below each location name on the section.
2. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
3. masl = metres above sea level

Figure 6-1b

Geologic Conceptual Cross-Section B-B'
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario

Cross-Section C-C'

Export Date: June 11, 2020



Vertical exaggeration: 3x

Legend

- ■ Asphalt
- ▩ Fill
- ▨ Sand and Gravel
- ▤ Sand
- ▥ Silt
- ▧ Guelph formation dolostone
- 🟥 Clay
- ─ Water Table Elevation (April 15, 2020)
- │ Boring Interval
- │ Monitoring Well Screen Interval

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations. Distance of projection is presented below each location name on the section.
2. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
3. masl = metres above sea level

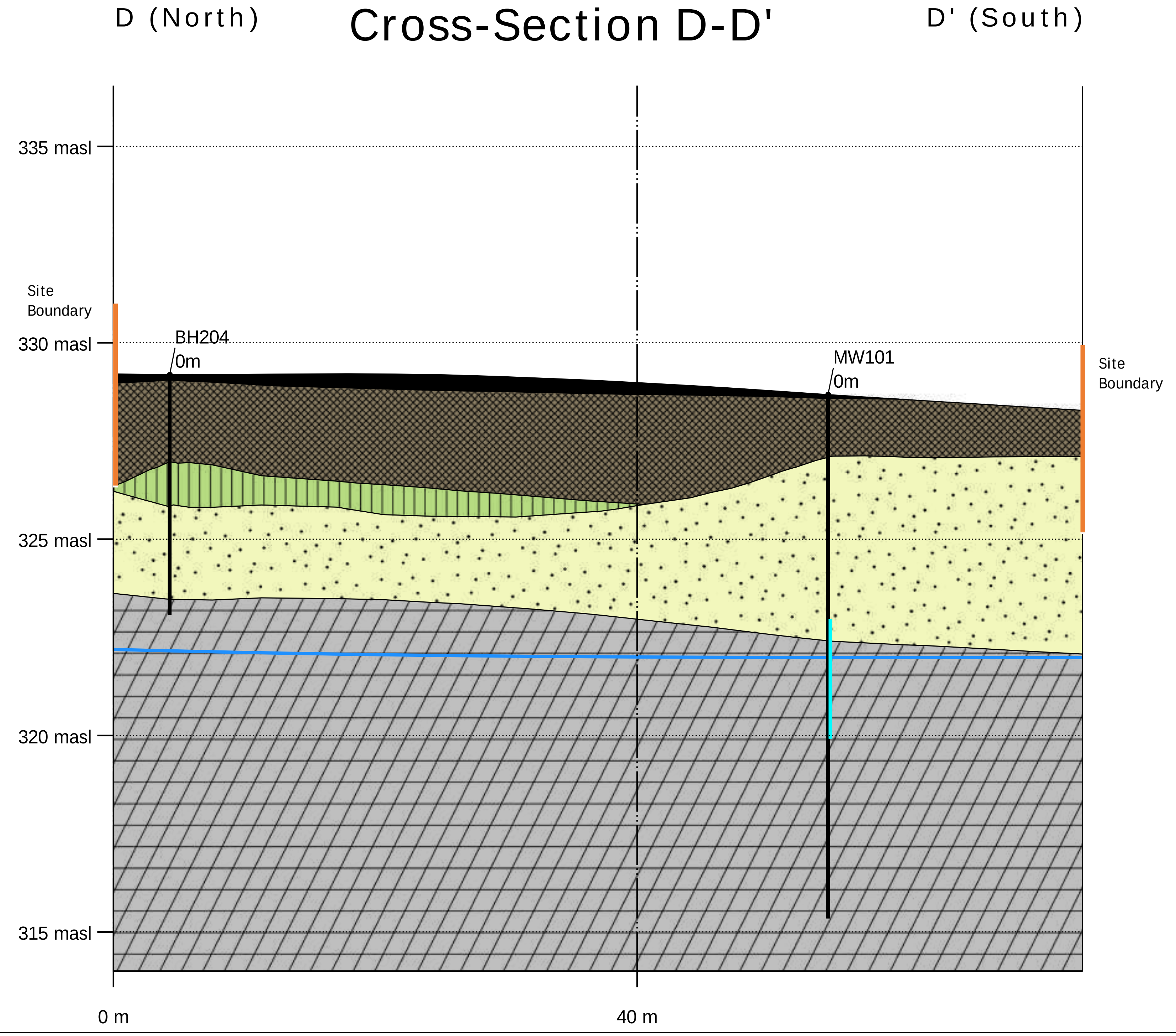
Figure 6-1c

Conceptual Geologic Cross-Section C-C'
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario

Jacobs

Export Date: June 11, 2020

Cross-Section D-D'



Vertical exaggeration: 3x

Legend

■ Asphalt

▩ Fill

▨ Guelph formation dolostone

▢ Sand

▥ Silt

Water Table Elevation Elevation (April 15, 2020)

Boring Interval

Monitoring Well Screen Interval

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
3. masl = metres above sea level

Figure 6-1d

Conceptual Geologic Cross-Section D-D'
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario

Jacobs

N

0 5 10 15 20

Metres

September 18, 2019 Groundwater Elevations (mASL)

- ● Monitoring Well - Water Table Elevation
- ● Shallow Monitoring Well - Perched Water Table Elevation

- — Groundwater Contour (September 18, 2019)
- → Flow Direction
- ▭ Site Boundary

Notes:
1. Historical sample locations and site boundaries are approximate. Current sample locations have been surveyed.

BH - Borehole
MW - Monitoring Well
GW - Groundwater

Figure 6-2a
Groundwater Contours - September 2019
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 6/9/2020

Jacobs

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December 18, 2019 Groundwater Elevations (mASL)

- ● Shallow Monitoring Well - Perched Water Table Elevation
- ● Monitoring Well - Water Table Elevation
- ● Monitoring Well - Deep

- — Water Table Elevation Contour (masl) - December 18, 2019
- ➡ Flow Direction
- ▭ Site Boundary

N

0 5 10 15 20

Metres

Notes:
1. Historical sample locations and site boundaries are approximate. Current sample locations have been surveyed.

BH - Borehole
MW - Monitoring Well
GW - Groundwater

Figure 6-2b
Groundwater Contours - December 2019
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 6/9/2020

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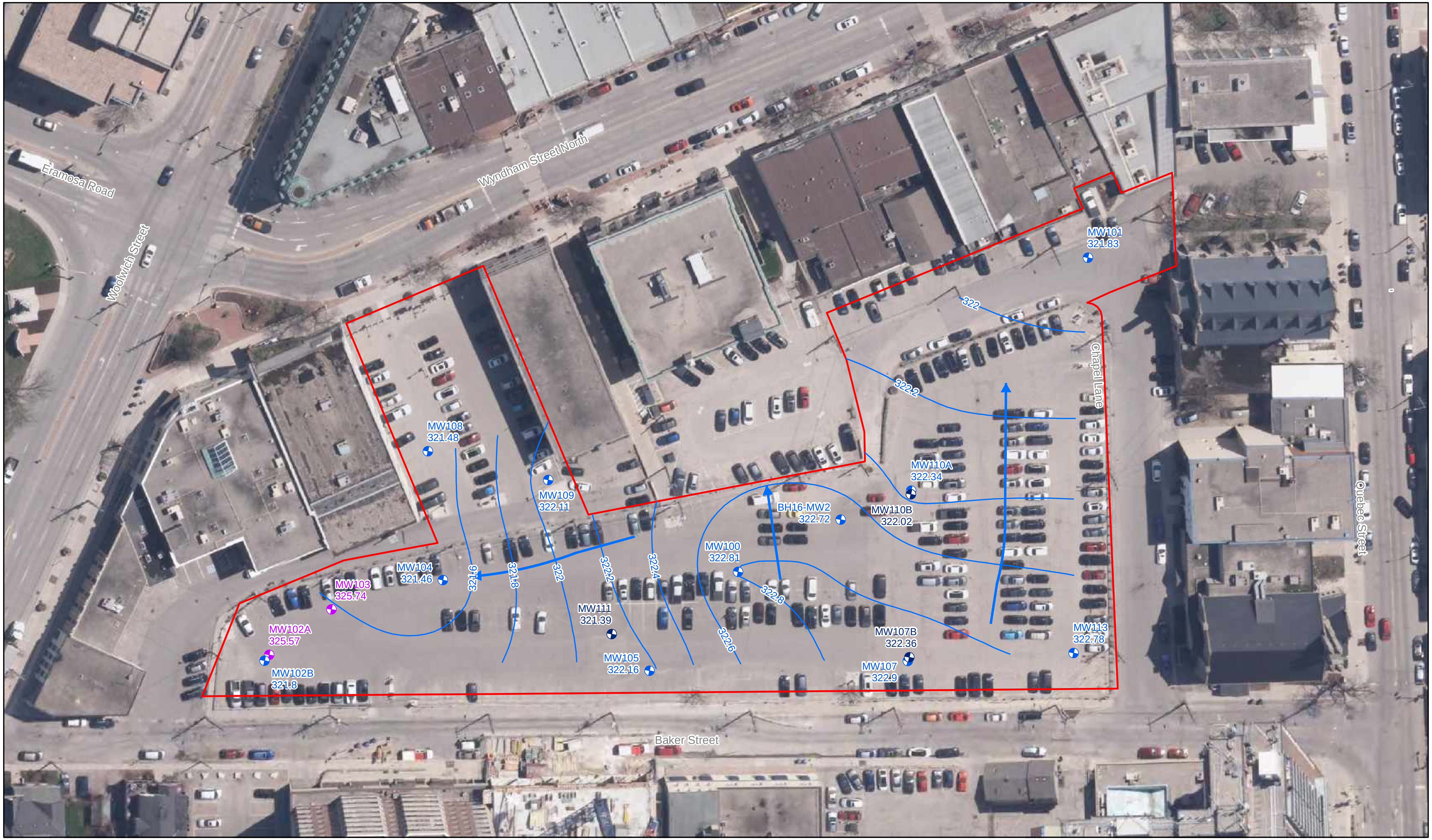
Jacobs



N

0 5 10 15 20
Metres

April 15, 2020 Groundwater Elevations (mASL)
- Shallow Monitoring Well - Perched Water Table Elevation
- Monitoring Well - Water Table Elevation
- Monitoring Well - Deep

- Water Table Elevation Contour (masl) - April 15, 2020
- Flow Direction
- Site Boundary

Notes:
1. Historical sample locations and site boundaries are approximate. Current sample locations have been surveyed.

BH - Borehole
MW - Monitoring Well
GW - Groundwater

Figure 6-2c
Groundwater Contours - April 2020
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 6/9/2020

Jacobs

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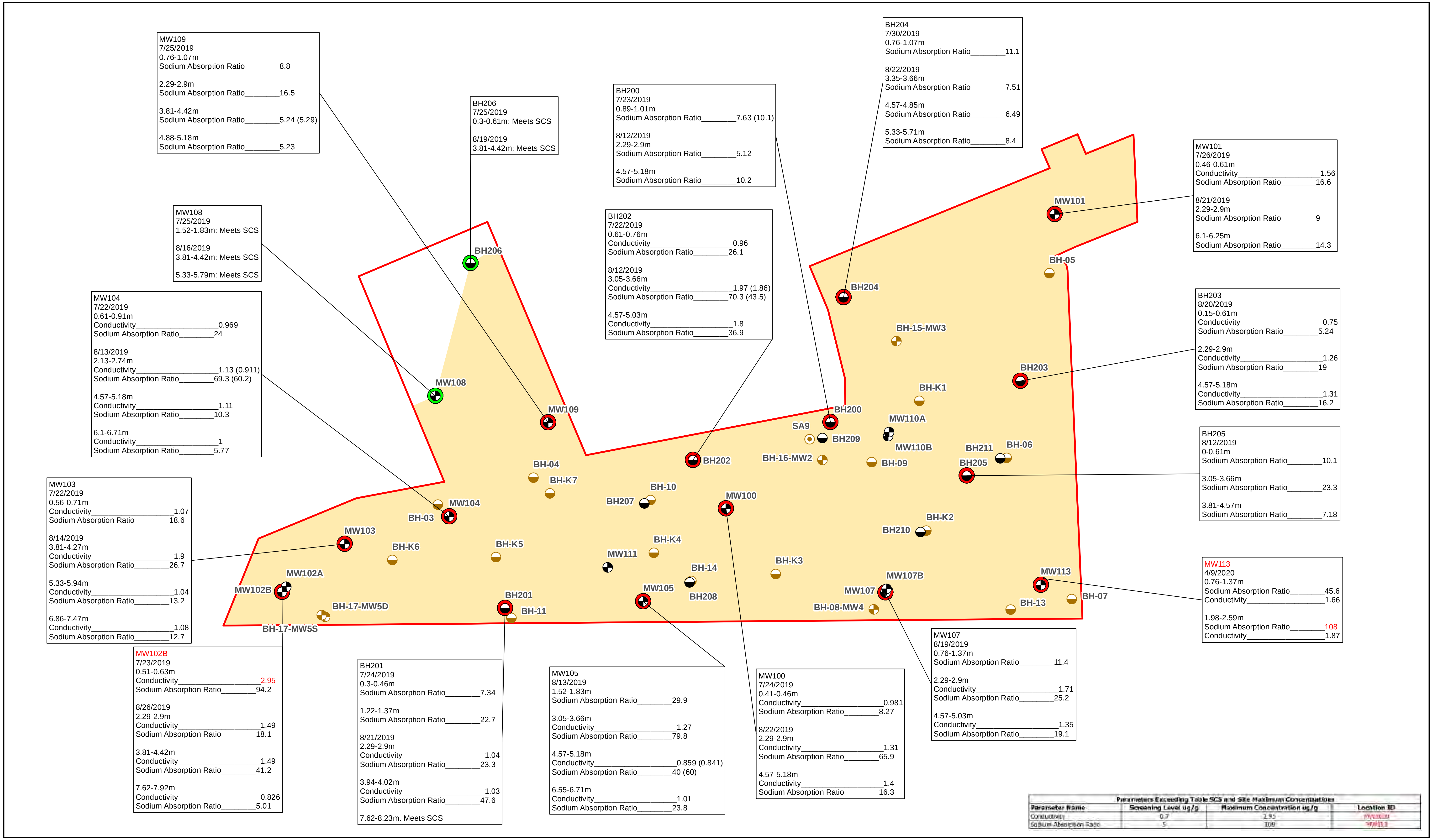


MW109
7/25/2019
0.76-1.07m
Sodium Absorption Ratio________8.8

2.29-2.9m
Sodium Absorption Ratio________16.5

3.81-4.42m
Sodium Absorption Ratio________5.24 (5.29)

4.88-5.18m
Sodium Absorption Ratio________5.23

BH206
7/25/2019
0.3-0.61m: Meets SCS

8/19/2019
3.81-4.42m: Meets SCS

BH200
7/23/2019
0.89-1.01m
Sodium Absorption Ratio________7.63 (10.1)

8/12/2019
2.29-2.9m
Sodium Absorption Ratio________5.12

4.57-5.18m
Sodium Absorption Ratio________10.2

BH204
7/30/2019
0.76-1.07m
Sodium Absorption Ratio________11.1

8/22/2019
3.35-3.66m
Sodium Absorption Ratio________7.51

4.57-4.85m
Sodium Absorption Ratio________6.49

5.33-5.71m
Sodium Absorption Ratio________8.4

MW101
7/26/2019
0.46-0.61m
Conductivity__________________1.56
Sodium Absorption Ratio_______16.6

8/21/2019
2.29-2.9m
Sodium Absorption Ratio_______9

6.1-6.25m
Sodium Absorption Ratio_______14.3

MW108
7/25/2019
1.52-1.83m: Meets SCS

8/16/2019
3.81-4.42m: Meets SCS

5.33-5.79m: Meets SCS

BH202
7/22/2019
0.61-0.76m
Conductivity_________________0.96
Sodium Absorption Ratio_______26.1

8/12/2019
3.05-3.66m
Conductivity_________________1.97 (1.86)
Sodium Absorption Ratio_______70.3 (43.5)

4.57-5.03m
Conductivity_________________1.8
Sodium Absorption Ratio_______36.9

MW104
7/22/2019
0.61-0.91m
Conductivity_________________0.969
Sodium Absorption Ratio_______24

8/13/2019
2.13-2.74m
Conductivity_________________1.13 (0.911)
Sodium Absorption Ratio_______69.3 (60.2)

4.57-5.18m
Conductivity_________________1.11
Sodium Absorption Ratio_______10.3

6.1-6.71m
Conductivity_________________1
Sodium Absorption Ratio_______5.77

BH203
8/20/2019
0.15-0.61m
Conductivity_________________0.75
Sodium Absorption Ratio_______5.24

2.29-2.9m
Conductivity_________________1.26
Sodium Absorption Ratio_______19

4.57-5.18m
Conductivity_________________1.31
Sodium Absorption Ratio_______16.2

BH205
8/12/2019
0-0.61m
Sodium Absorption Ratio________10.1

3.05-3.66m
Sodium Absorption Ratio________23.3

3.81-4.57m
Sodium Absorption Ratio________7.18

MW103
7/22/2019
0.56-0.71m
Conductivity_________________1.07
Sodium Absorption Ratio_______18.6

8/14/2019
3.81-4.27m
Conductivity_________________1.9
Sodium Absorption Ratio_______26.7

5.33-5.94m
Conductivity_________________1.04
Sodium Absorption Ratio_______13.2

6.86-7.47m
Conductivity_________________1.08
Sodium Absorption Ratio_______12.7

MW113
4/9/2020
0.76-1.37m
Sodium Absorption Ratio_______45.6
Conductivity_________________1.66

1.98-2.59m
Sodium Absorption Ratio_______108
Conductivity_________________1.87

MW102B
7/23/2019
0.51-0.63m
Conductivity_________________2.95
Sodium Absorption Ratio_______94.2

8/26/2019
2.29-2.9m
Conductivity_________________1.49
Sodium Absorption Ratio_______18.1

3.81-4.42m
Conductivity_________________1.49
Sodium Absorption Ratio_______41.2

7.62-7.92m
Conductivity_________________0.826
Sodium Absorption Ratio_______5.01

BH201
7/24/2019
0.3-0.46m
Sodium Absorption Ratio________7.34

1.22-1.37m
Sodium Absorption Ratio________22.7

8/21/2019
2.29-2.9m
Conductivity_________________1.04
Sodium Absorption Ratio_______23.3

3.94-4.02m
Conductivity_________________1.03
Sodium Absorption Ratio_______47.6

7.62-8.23m: Meets SCS

MW105
8/13/2019
1.52-1.83m
Sodium Absorption Ratio_______29.9

3.05-3.66m
Conductivity_________________1.27
Sodium Absorption Ratio_______79.8

4.57-5.18m
Conductivity_________________0.859 (0.841)
Sodium Absorption Ratio_______40 (60)

6.55-6.71m
Conductivity_________________1.01
Sodium Absorption Ratio_______23.8

MW100
7/24/2019
0.41-0.46m
Conductivity_________________0.981
Sodium Absorption Ratio_______8.27

8/22/2019
2.29-2.9m
Conductivity_________________1.31
Sodium Absorption Ratio_______65.9

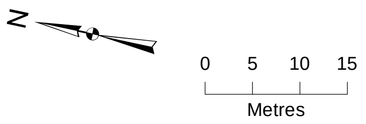
4.57-5.18m
Conductivity_________________1.4
Sodium Absorption Ratio_______16.3

MW107
8/19/2019
0.76-1.37m
Sodium Absorption Ratio_______11.4

2.29-2.9m
Conductivity_________________1.71
Sodium Absorption Ratio_______25.2

4.57-5.03m
Conductivity_________________1.35
Sodium Absorption Ratio_______19.1

Parameters Exceeding Table SCS and Site Maximum Concentrations			
Parameter Name	Screening Level ug/g	Maximum Concentration ug/g	Location ID
Conductivity	0.7	2.95	MW102B
Sodium Absorption Ratio	5	108	MW113



Sample Location (Current)
- ◐ Borehole
- ◑ Monitoring Well

Sample Location (Historical)
- ◐ Borehole
- ◑ Monitoring Well
- ⊙ Soil Sample

- 🟢 Location without Table 2 Exceedance
- 🔴 Location with Table 2 Exceedance
- 🟨 Inferred Lateral Extent of Concentration Greater than the Table 2 SCS
- 🟥 Site Boundary

Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of soil impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.

Figure 6-4
Soil Results - ORPs: EC, SAR, and Cyanide
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 7/21/2020

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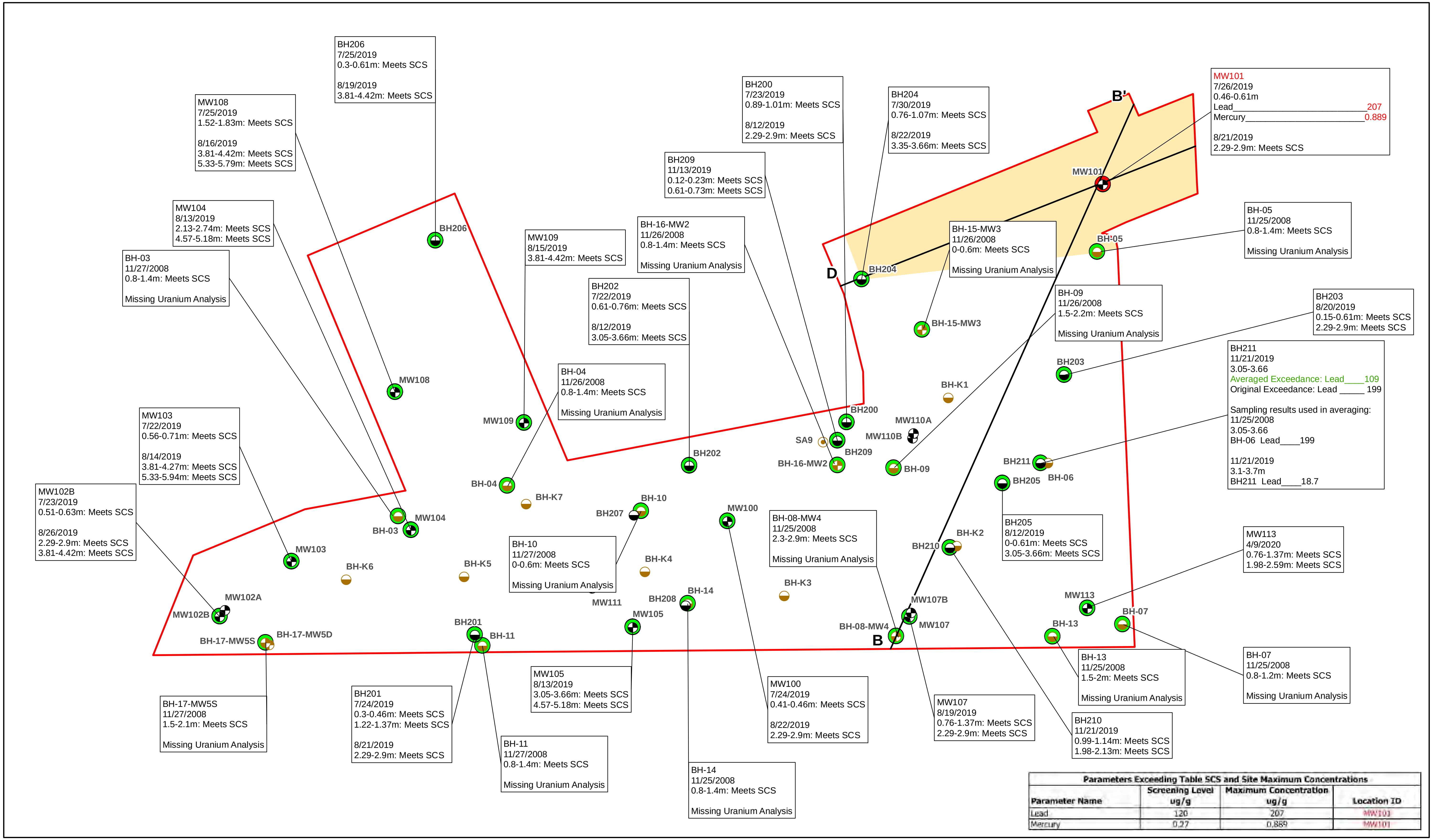
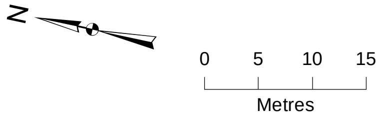


Parameters Exceeding Table SCS and Site Maximum Concentrations			
Parameter Name	Screening Level ug/g	Maximum Concentration ug/g	Location ID
Lead	120	207	MW101
Mercury	0.27	0.889	MW101



Sample Location (Current)	Sample Location (Historical)	
◒ Borehole	◒ Borehole	🟢 Location without Table 2 Exceedance
◐ Monitoring Well	◐ Monitoring Well	🔴 Location with Table 2 Exceedance
	◉ Soil Sample	— Cross-section Location
		🟨 Inferred Lateral Extent of Concentration Greater than the Table 2 SCS
		🟥 Site Boundary

Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of soil impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.
5. Samples from 2008 were collected in accordance with O. Reg. 153/04, but are missing analysis of uranium, which was not regulated under the Regulation at the time of investigation. This data is considered valid for RSC purposes.

Figure 6-5
Soil Results - Metals and Select ORPs: Metals, Hydride-Forming Metals, Hg, MeHg, and CrVI
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 7/21/2020

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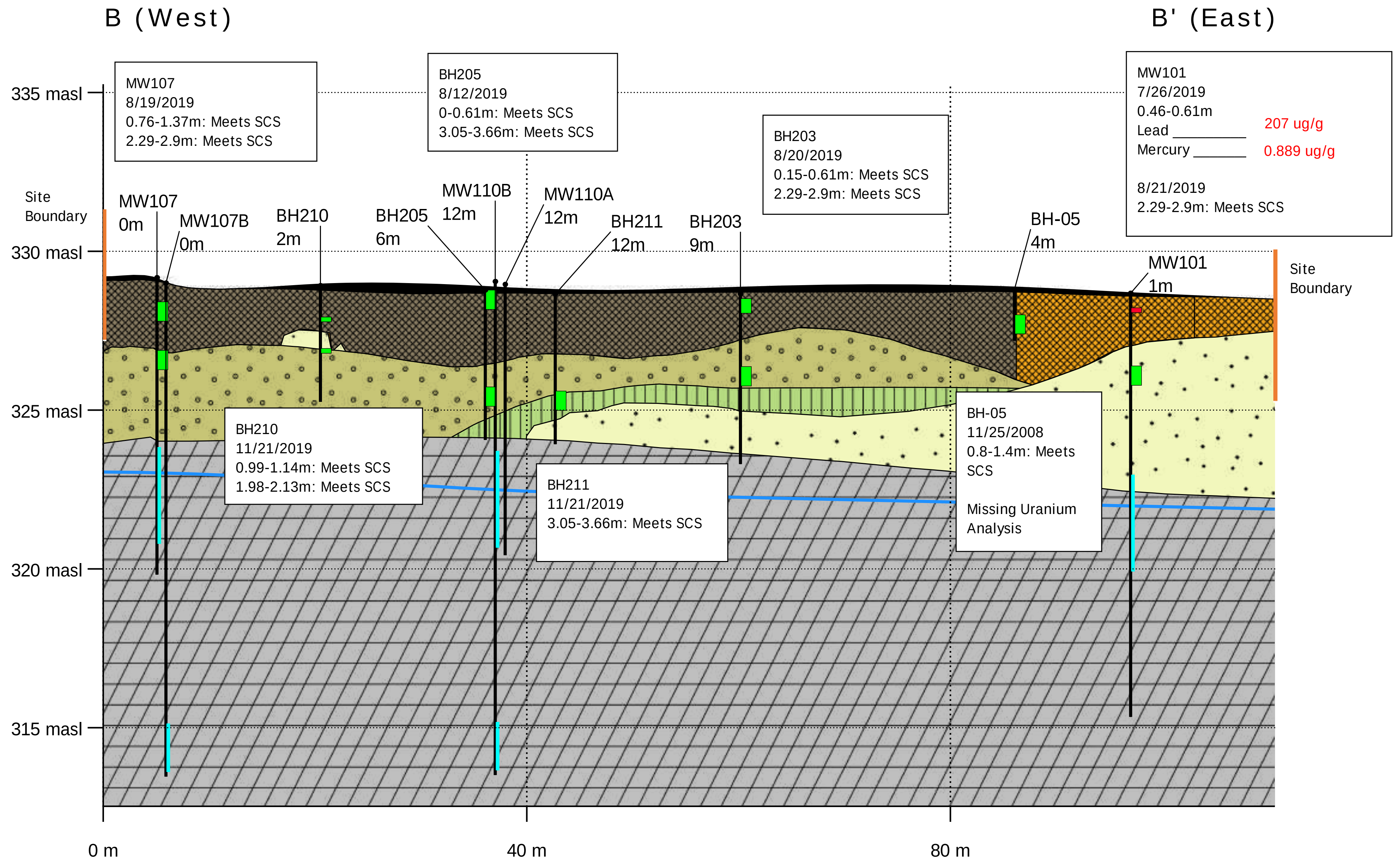
Cross-Section B-B'

Export Date: June 17, 2020



MW107
8/19/2019
0.76-1.37m: Meets SCS
2.29-2.9m: Meets SCS

BH205
8/12/2019
0-0.61m: Meets SCS
3.05-3.66m: Meets SCS

BH203
8/20/2019
0.15-0.61m: Meets SCS
2.29-2.9m: Meets SCS

MW101
7/26/2019
0.46-0.61m
Lead ________ 207 ug/g
Mercury ______ 0.889 ug/g

8/21/2019
2.29-2.9m: Meets SCS

BH210
11/21/2019
0.99-1.14m: Meets SCS
1.98-2.13m: Meets SCS

BH211
11/21/2019
3.05-3.66m: Meets SCS

BH-05
11/25/2008
0.8-1.4m: Meets SCS

Missing Uranium Analysis

Vertical exaggeration: 3x

Legend

- ⬛ Asphalt
- ▨ Fill
- ▨ Sand and Gravel
- ▨ Guelph formation dolostone
- ▨ Sand
- ▨ Silt
- 🟥 Soil Sample Exceeds SCS
- 🟩 Soil Sample Meets SCS
- ▨ Inferred Maximum Extent of Soil > SCS
- | Boring Interval
- | Monitoring Well Screen Interval
- — Water Table Elevation Elevation (April 15, 2020)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations. Distance of projection is presented below each location name on the section.
2. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
3. masl = metres above sea level
4. Results in ( ) indicate field duplicates.
5. Red text indicates the locaiton of the site maximum concentration of the analyte.
6. Samples from 2008 were collected in accordance with O.Reg. 153/04, but are missing analysis of uranium, which was not regulated under the Regulation at the time of investigation. This data is considered valid for RSC purposes.

Figure 6-5a

Soil Results - Metals and Select ORPs: Metals, Hydride-Forming Metals, Hg, MeHG, and CrVI
Cross-Section B-B'
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario

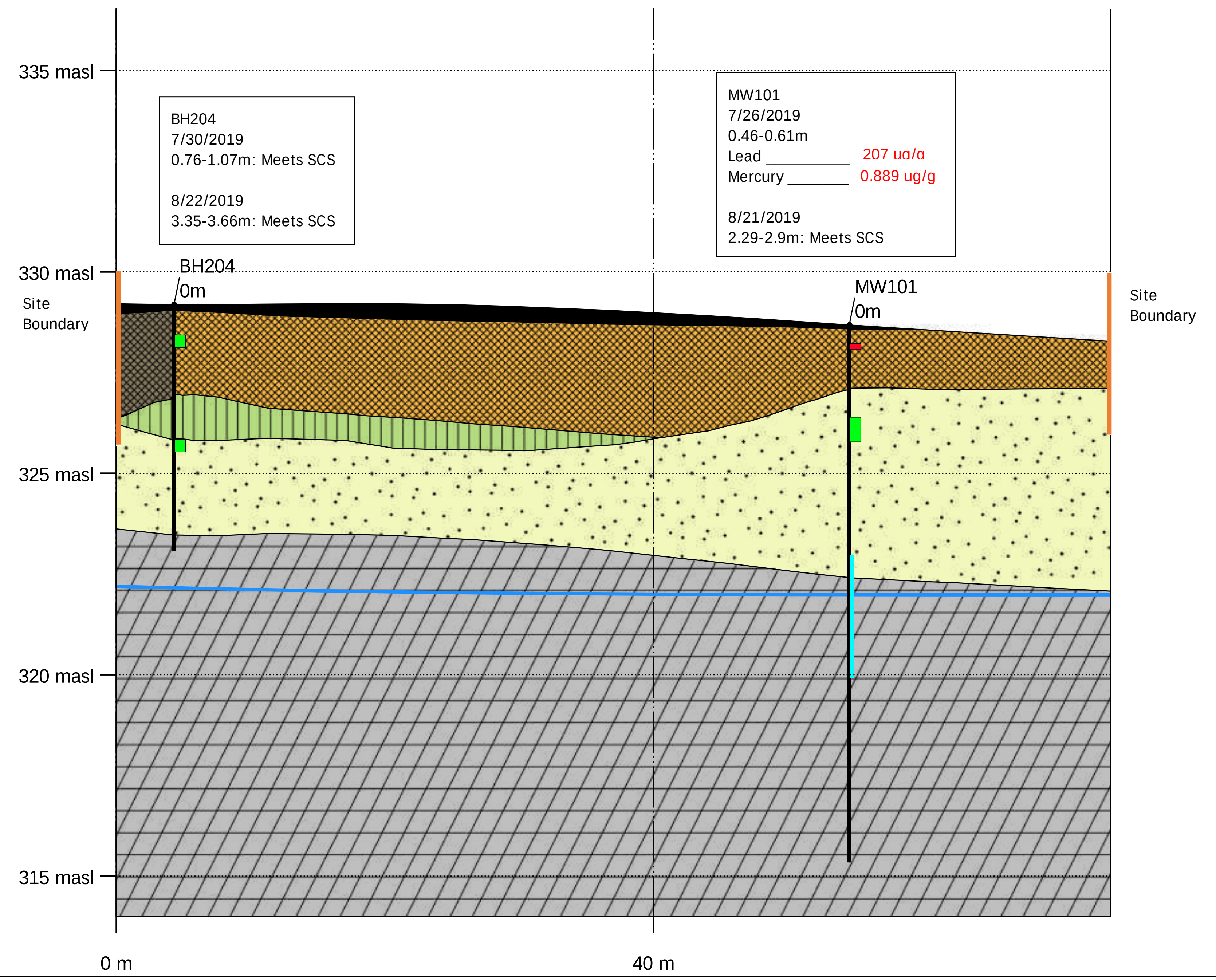
Jacobs

Export Date: June 11, 2020

D (North)

Cross-Section D-D'

D' (South)



Vertical exaggeration: 3x

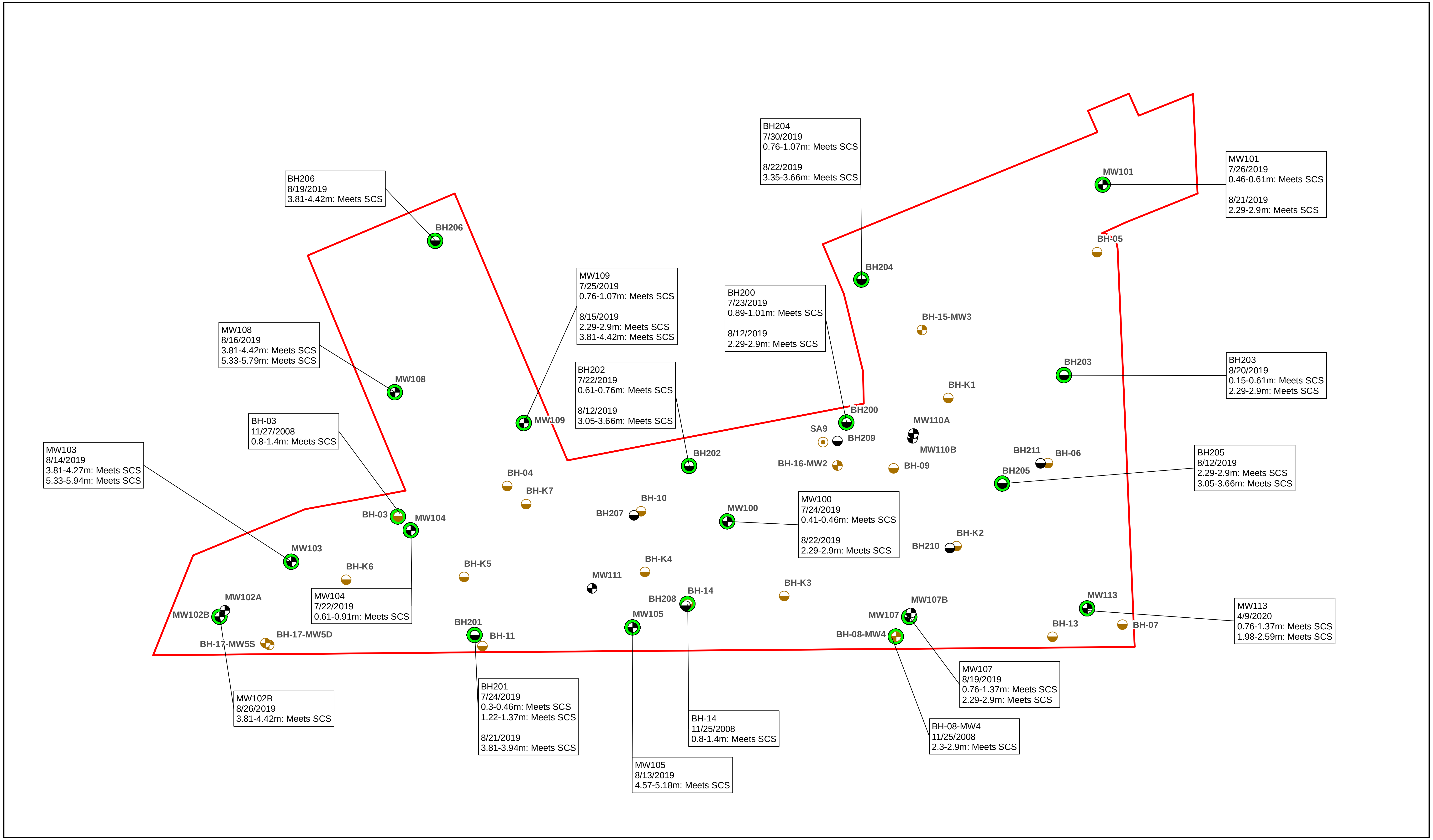
Legend

- ■ Asphalt
- ▨ Fill
- ▨ Guelph formation dolostone
- ▨ Sand
- ▨ Silt
- 🟥 Soil Sample Exceeds SCS
- 🟩 Soil Sample Meets SCS
- ▨ Inferred Maximum Extent of Soil > SCS
- | Boring Interval
- | Monitoring Well Screen Interval
- — Water Table Elevation Elevation (April 15, 2020)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
3. masl = metres above sea level
4. Results in ( ) indicate field duplicates.
5. Red text indicates the locaiton of the site maximum concentration of the analyte.
6. Samples from 2008 were collected in accordance with O.Reg. 153/04, but are missing analysis of uranium, which was not regulated under the Regulation at the time of investigation. This data is considered valid for RSC purposes.

Figure 6-5b
Soil Results - Metals and Select ORPs: Metals, Hydride-Forming Metals, Hg, MeHG, and CrVI
Cross-Section D-D'
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street North and Park Lane, Guelph, Ontario

Jacobs



Sample Location (Current)
◒ Borehole
◕ Monitoring Well

Sample Location (Historical)
◒ Borehole
◕ Monitoring Well
◉ Soil Sample

🟢 Location without Table 2 Exceedance
🟥 Site Boundary

N

0 5 10 15
Metres

Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of soil impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.

Figure 6-6
Soil Results - BTEX
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 7/21/2020

Jacobs

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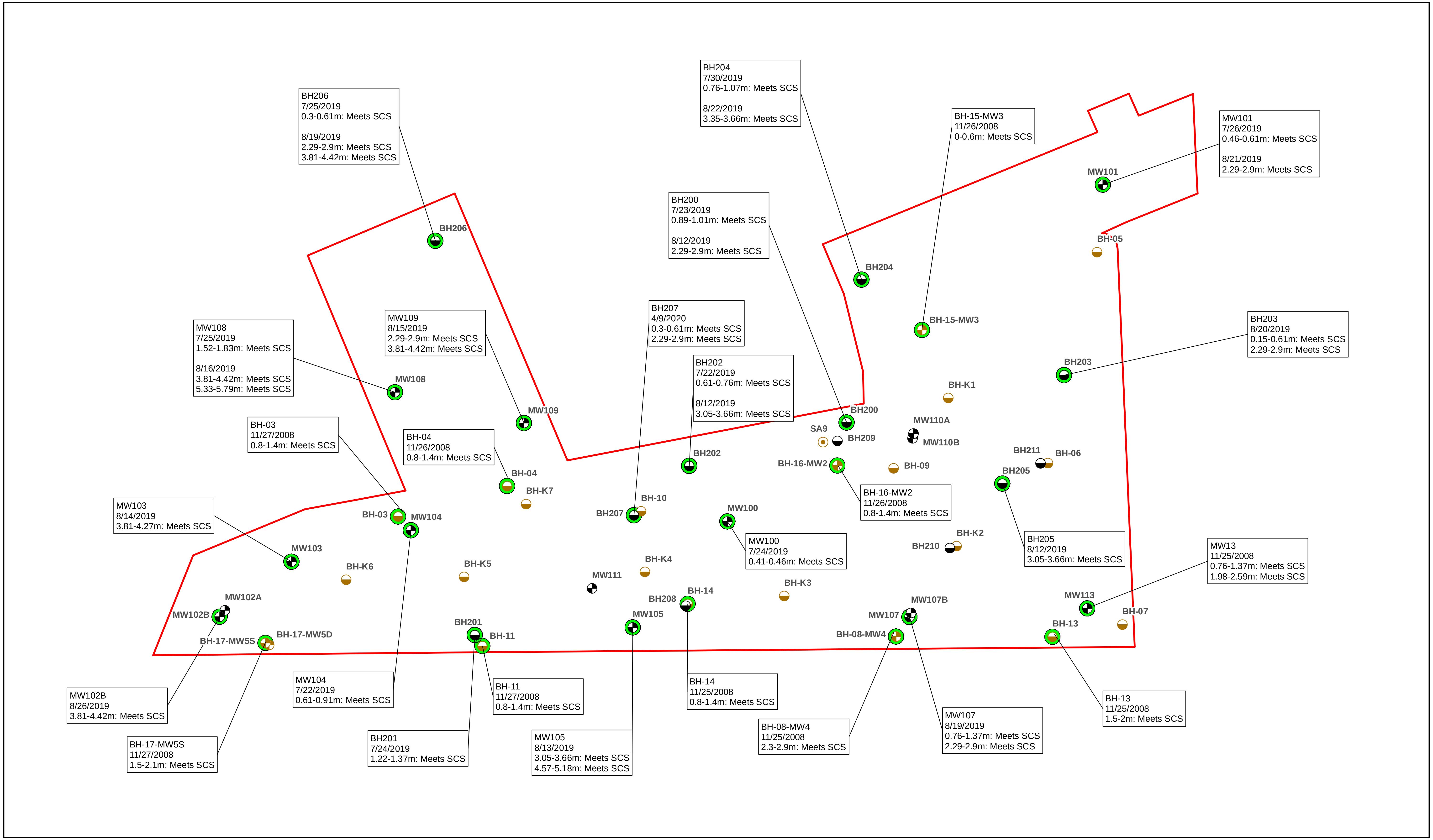

Sample Location (Current)
◐ Borehole
◕ Monitoring Well

Sample Location (Historical)
◐ Borehole
◕ Monitoring Well
⊙ Soil Sample

🟢 Location without Table 2 Exceedance
🟥 Site Boundary

N
0 5 10 15
Metres

Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of soil impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.

Figure 6-7
Soil Results - Petroleum Hydrocarbons
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 7/21/2020

Jacobs

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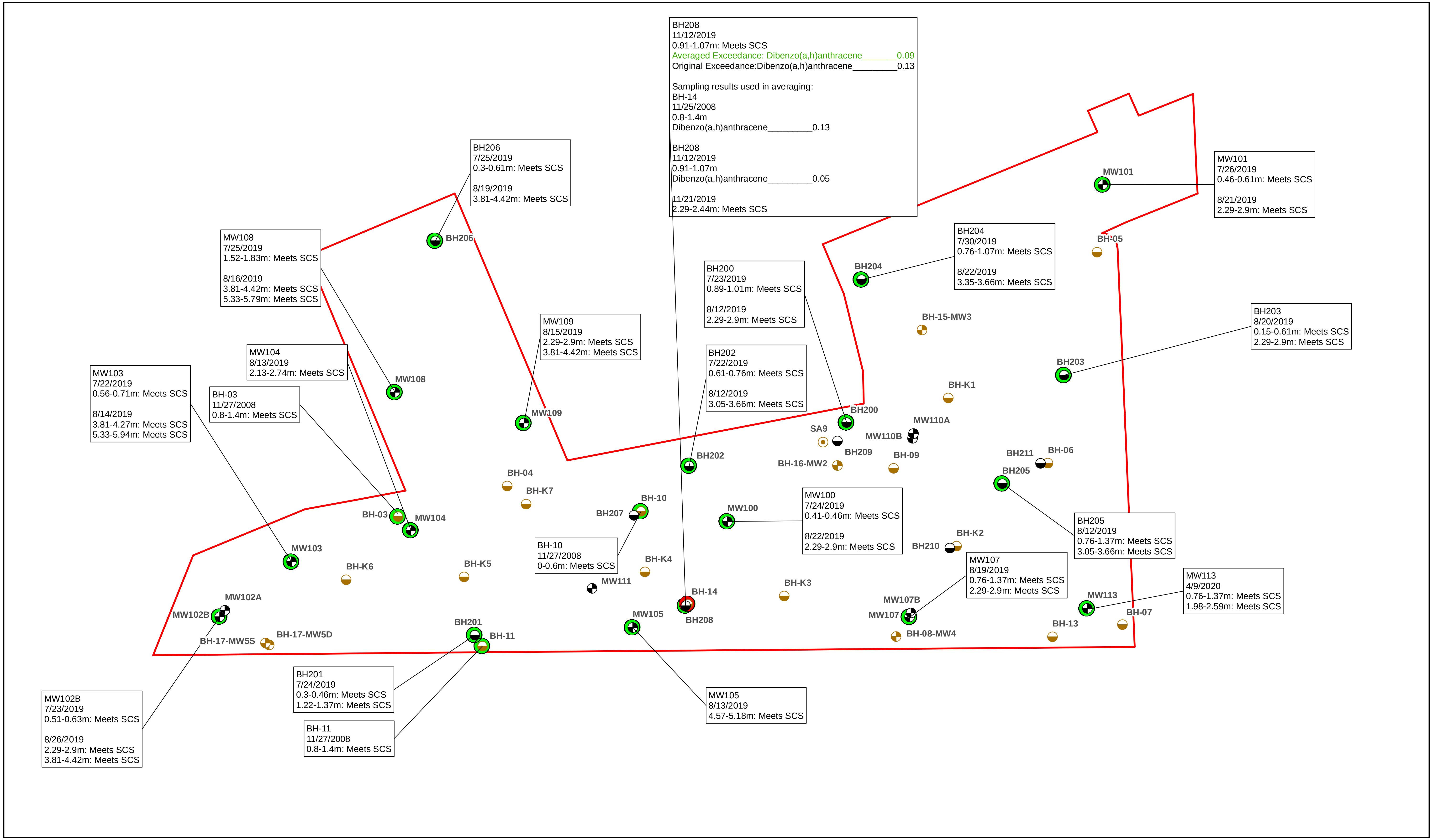

N

0 5 10 15

Metres

Sample Location (Current)
- ◒ Borehole
- ◕ Monitoring Well

Sample Location (Historical)
- ◒ Borehole
- ◕ Monitoring Well
- ◉ Soil Sample

- 🟢 Location without Table 2 Exceedance
- 🔴 Location with Table 2 Exceedance
- 🟥 Site Boundary

Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of soil impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.

Figure 6-8
Soil Results - Polycyclic Aromatic Hydrocarbons
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 7/21/2020

Jacobs

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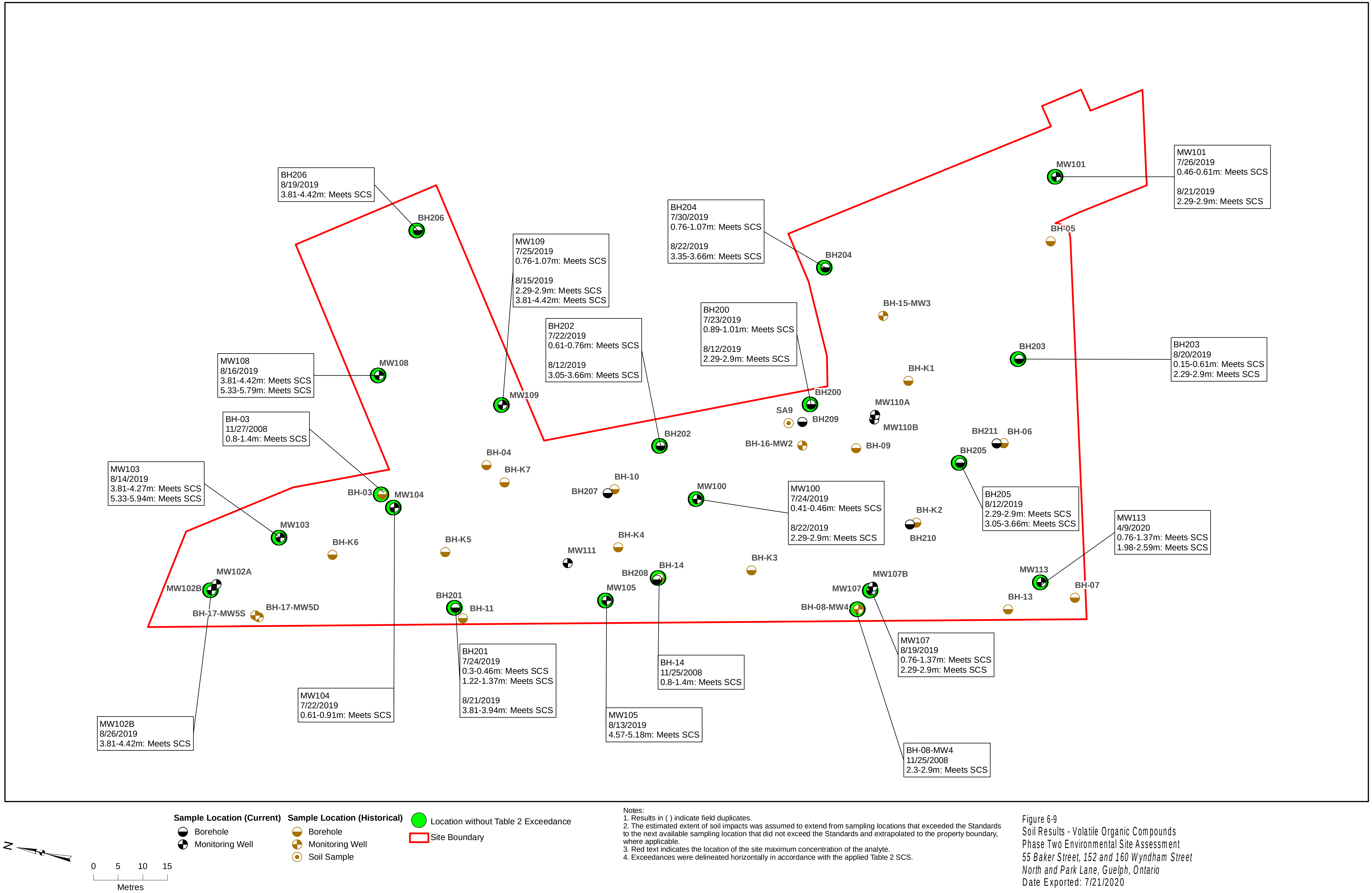
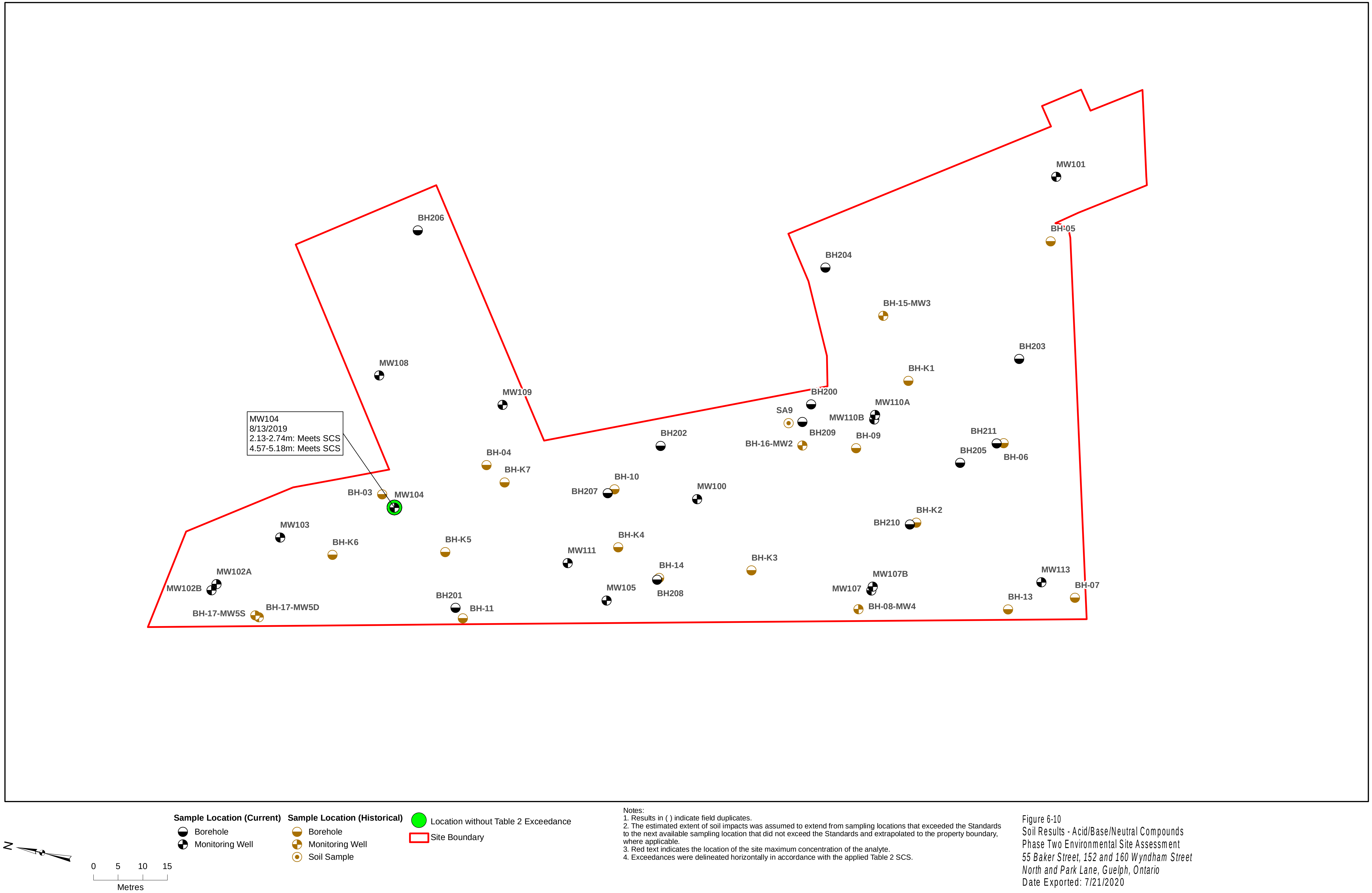


Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of soil impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.

Figure 6-9
Soil Results - Volatile Organic Compounds
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 7/21/2020



MW104
8/13/2019
2.13-2.74m: Meets SCS
4.57-5.18m: Meets SCS

Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of soil impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.

Figure 6-10
Soil Results - Acid/Base/Neutral Compounds
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 7/21/2020

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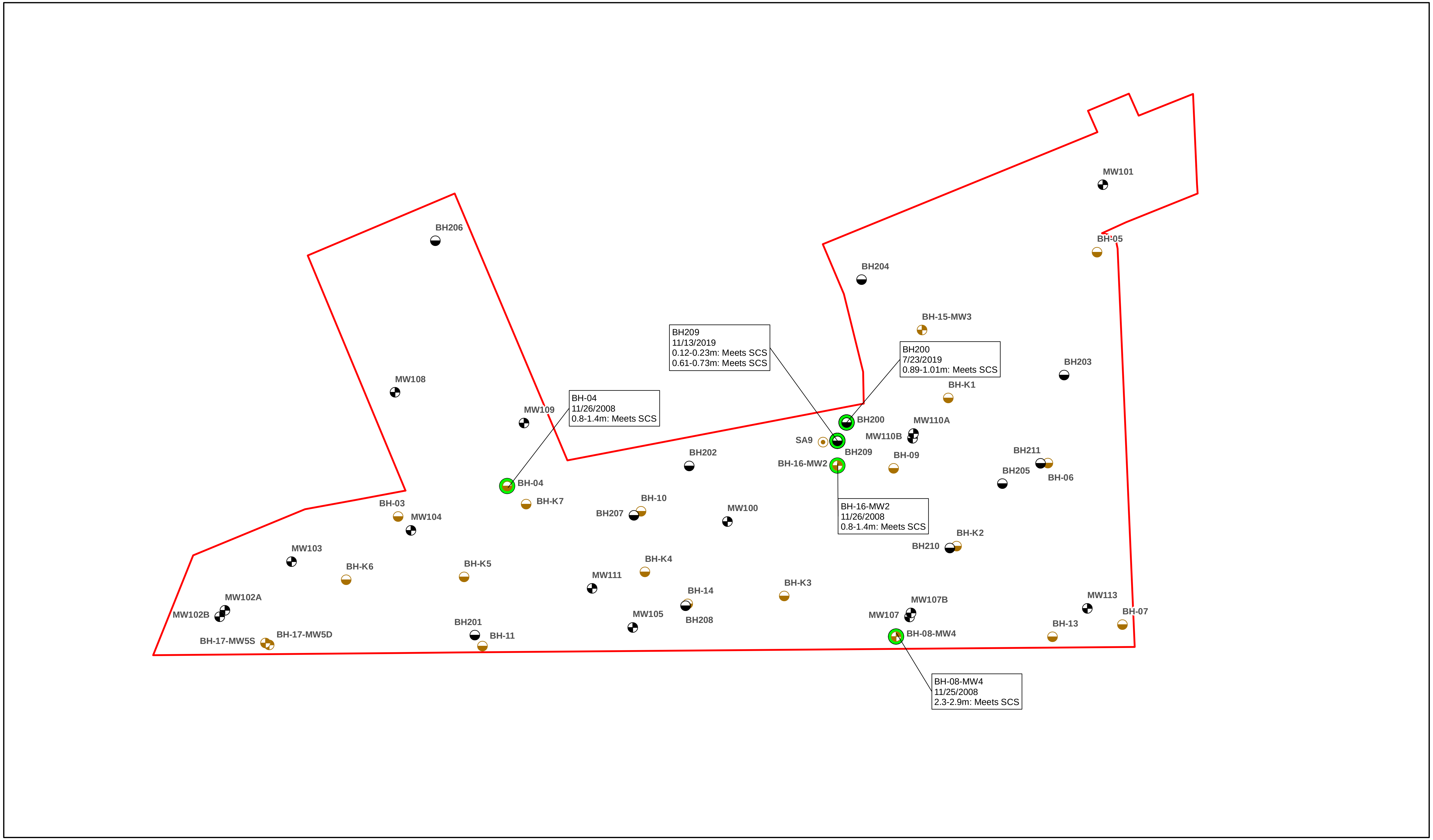

BH209
11/13/2019
0.12-0.23m: Meets SCS
0.61-0.73m: Meets SCS

BH200
7/23/2019
0.89-1.01m: Meets SCS

BH-04
11/26/2008
0.8-1.4m: Meets SCS

BH-16-MW2
11/26/2008
0.8-1.4m: Meets SCS

BH-08-MW4
11/25/2008
2.3-2.9m: Meets SCS

N

0 5 10 15
Metres

Sample Location (Current)
- ◒ Borehole
- ◕ Monitoring Well

Sample Location (Historical)
- ◒ Borehole
- ◕ Monitoring Well
- ⊙ Soil Sample

- 🟢 Location without Table 2 Exceedance
- 🟥 Site Boundary

Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of soil impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.

Figure 6-11
Soil Results - Polychlorinated Biphenyls
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 7/21/2020

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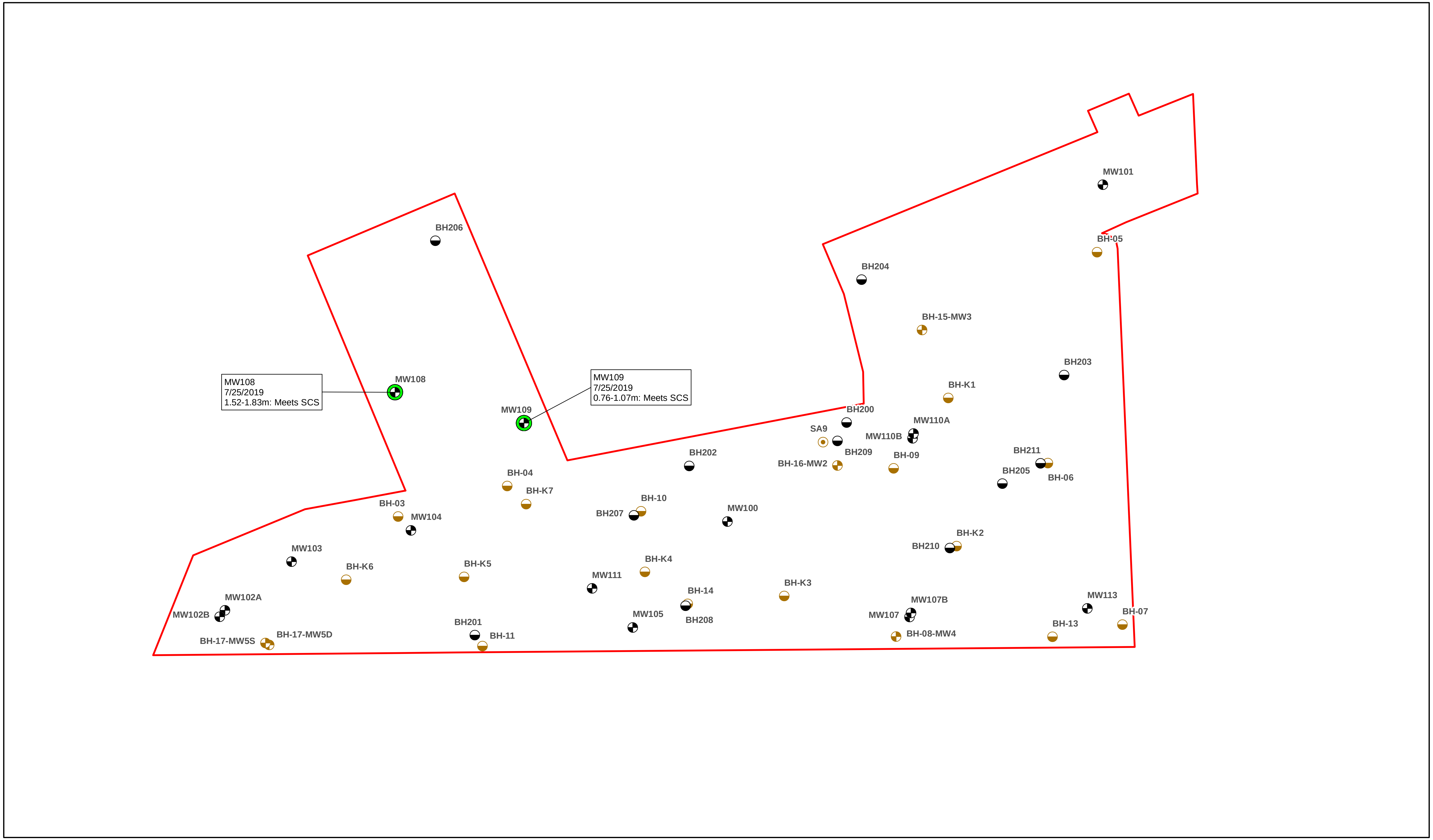

N

0 5 10 15
Metres

Sample Location (Current)
- ● Borehole
- ● Monitoring Well

Sample Location (Historical)
- ● Borehole
- ● Monitoring Well
- ○ Soil Sample

- 🟩 Location without Table 2 Exceedance
- 🟥 Site Boundary

Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of soil impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.

Figure 6-12
Soil Results - Dioxins/Furans
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 7/21/2020

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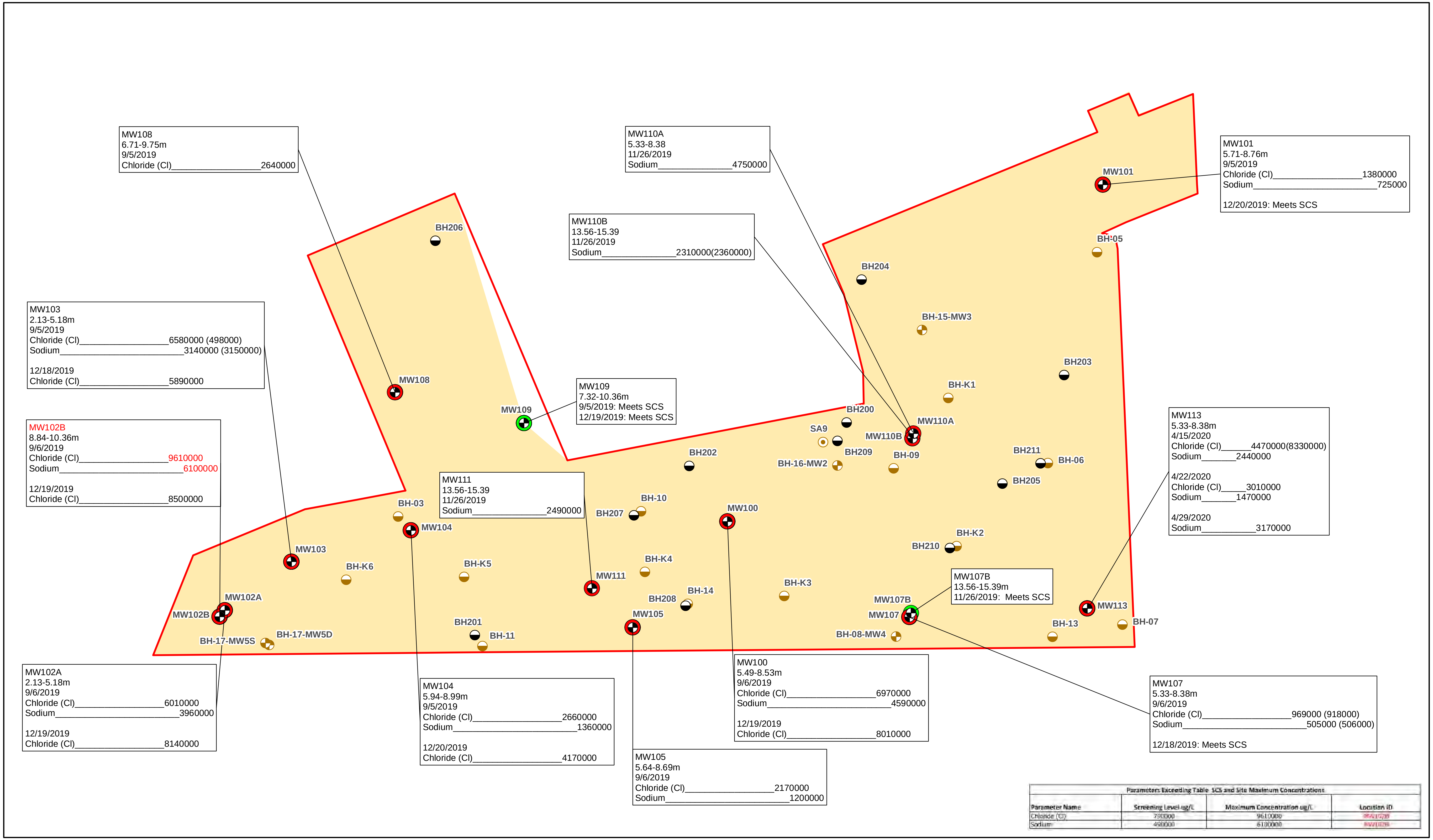

Parameters Exceeding Table SCS and Site Maximum Concentrations			
Parameter Name	Screening Level ug/L	Maximum Concentration ug/L	Location ID
Chloride (Cl)	790000	9610000	MW102B
Sodium	490000	6100000	MW102B

Sample Location (Current)
- ◐ Borehole
- ◑ Monitoring Well

Sample Location (Historical)
- ◐ Borehole
- ◑ Monitoring Well
- ⊙ Soil Sample

- 🟢 Location without Table 2 Exceedance
- 🔴 Location with Table 2 Exceedance
- 🟨 Inferred Lateral Extent of Concentration Greater than the Table 2 SCS
- 🟥 Site Boundary

N

0 5 10 15
Metres

Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of groundwater impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.

Figure 6-13
Groundwater Results - Sodium and Select ORPs: Chloride and Cyanide
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 7/21/2020

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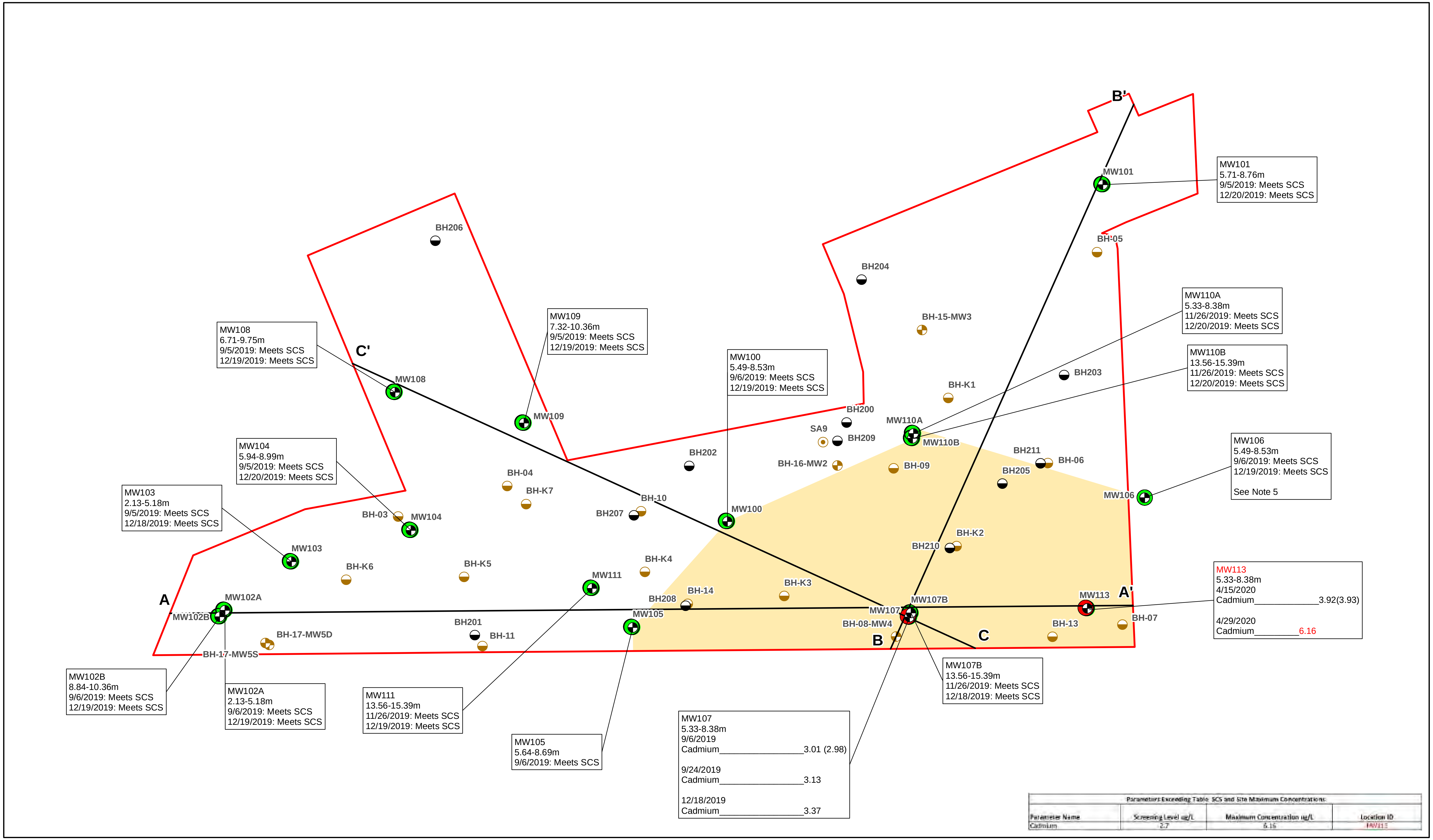

Parameters Exceeding Table: SCS and Site Maximum Concentrations

Parameter Name	Screening Level ug/L	Maximum Concentration ug/L	Location ID
Cadmium	2.7	6.16	MW113

Sample Location (Current)
- ◓ Borehole
- ⊕ Monitoring Well

Sample Location (Historical)
- ◓ Borehole
- ⊕ Monitoring Well
- ⊙ Soil Sample

🟢 Location without Table 2 Exceedance

🔴 Location with Table 2 Exceedance

— Cross-section Location

▨ Inferred Lateral Extent of Concentration Greater than the Table 2 SCS

🟥 Site Boundary

Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of groundwater impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.
5. Offsite location with the same property owner, was installed as part of the same sampling program and has been shown for horizontal delineation purposes only.

Figure 6-14
Groundwater Results - Metals and Select ORPs: Metals, Hydride-Forming Metals, Hg, and CrVI
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 7/21/2020

Jacobs

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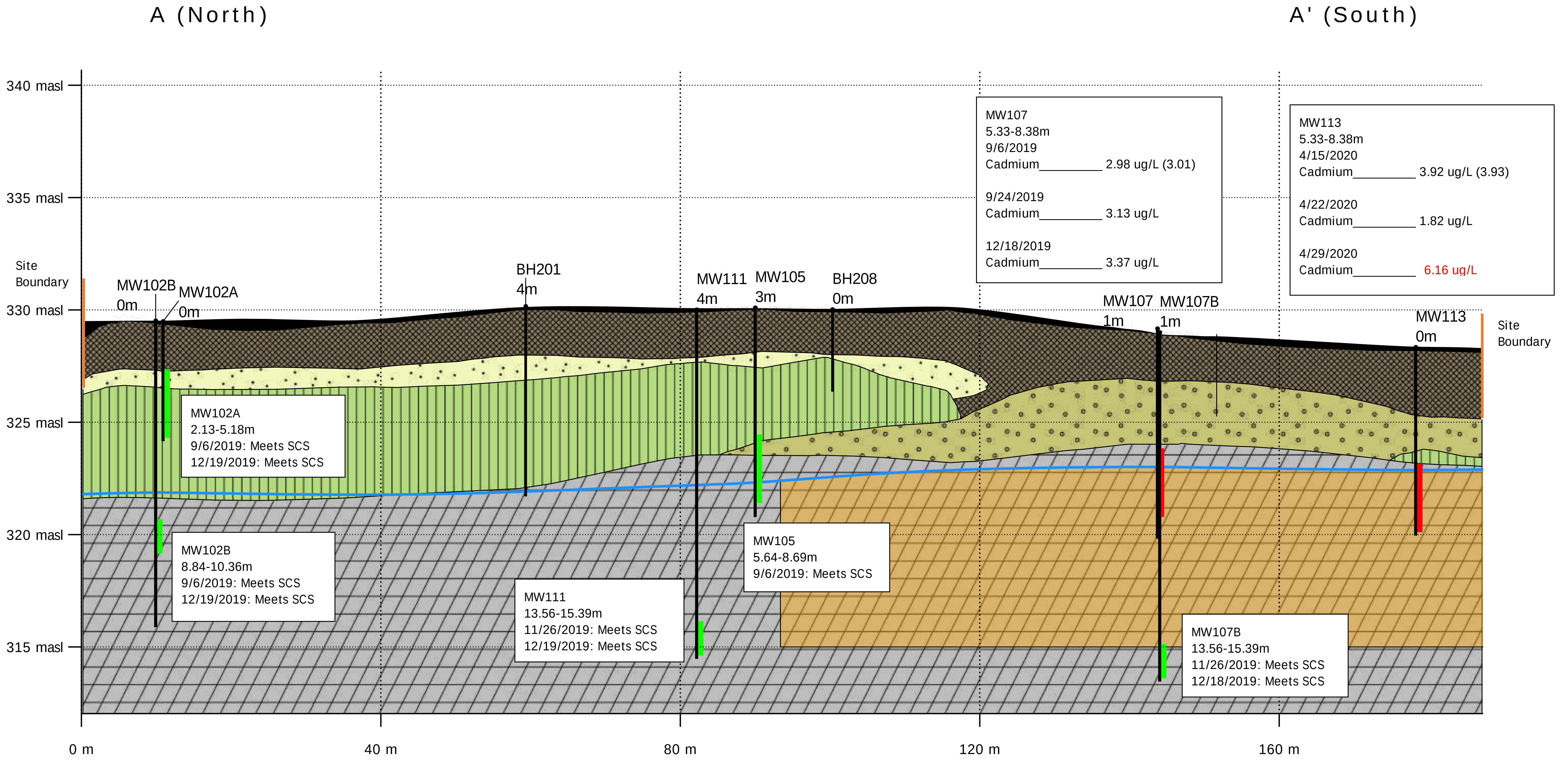
Export Date: June 11, 2020

Cross-Section A-A'



MW107
5.33-8.38m
9/6/2019
Cadmium________ 2.98 ug/L (3.01)

9/24/2019
Cadmium________ 3.13 ug/L

12/18/2019
Cadmium________ 3.37 ug/L

MW113
5.33-8.38m
4/15/2020
Cadmium________ 3.92 ug/L (3.93)

4/22/2020
Cadmium________ 1.82 ug/L

4/29/2020
Cadmium________ 6.16 ug/L

MW102A
2.13-5.18m
9/6/2019: Meets SCS
12/19/2019: Meets SCS

MW102B
8.84-10.36m
9/6/2019: Meets SCS
12/19/2019: Meets SCS

MW111
13.56-15.39m
11/26/2019: Meets SCS
12/19/2019: Meets SCS

MW105
5.64-8.69m
9/6/2019: Meets SCS

MW107B
13.56-15.39m
11/26/2019: Meets SCS
12/18/2019: Meets SCS

Vertical exaggeration: 3x

Legend

■ Asphalt
▨ Fill
▨ Sand and Gravel
▨ Guelph formation doloston
▨ Sand
▨ Silt

| Boring Interval

| Groundwater Sample Meets SCS

| Groundwater Sample Exceeds SCS

— Water Table Elevation Elevation (April 15, 2020)

■ Inferred Maximum Extent of Groundwater > SCS

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations. Distance of projection is presented below each location name on the section.
2. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
3. masl = metres above sea level
4. Results in ( ) indicate field duplicates.
5. Red text indicates the locaiton of the site maximum concentration of the analyte.
6. Samples from 2008 were collected in accordance with O.Reg. 153/04, but are missing analysis of uranium, which was not regulated under the Regulation at the time of investigation. This data is considered valid for RSC purposes.

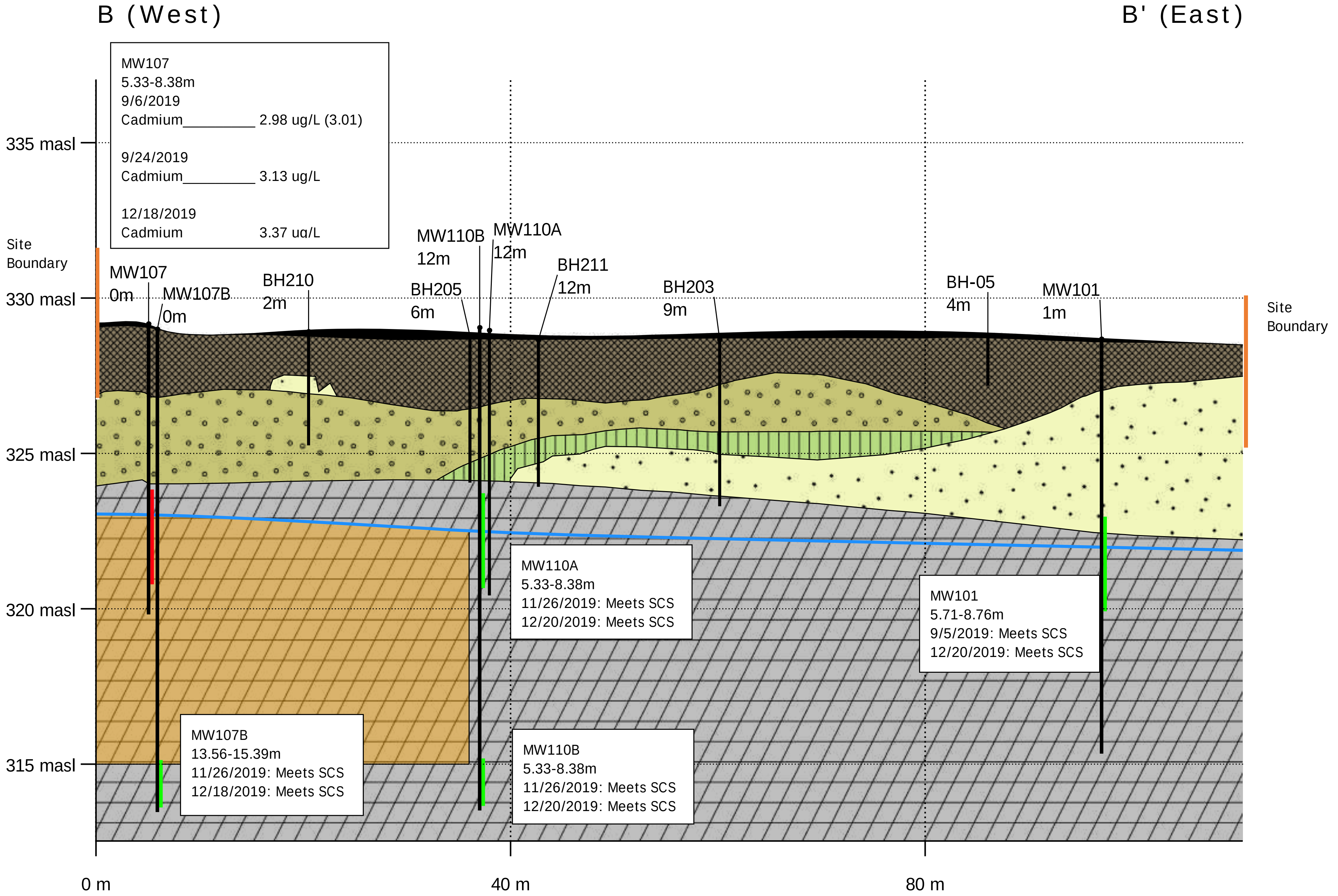
Figure 6-14a

Groundwater Results - Metals and Select ORPs:
Metals, Hydride-Forming Metals, Hg, MeHG, and CrVI
Cross-Section A-A'
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street North
and Park Lane, Guelph, Ontario

JACOBS

Export Date: June 11, 2020

Cross-Section B-B'



MW107
5.33-8.38m
9/6/2019
Cadmium________ 2.98 ug/L (3.01)

9/24/2019
Cadmium________ 3.13 ug/L

12/18/2019
Cadmium 3.37 ug/L

MW110A
5.33-8.38m
11/26/2019: Meets SCS
12/20/2019: Meets SCS

MW101
5.71-8.76m
9/5/2019: Meets SCS
12/20/2019: Meets SCS

MW107B
13.56-15.39m
11/26/2019: Meets SCS
12/18/2019: Meets SCS

MW110B
5.33-8.38m
11/26/2019: Meets SCS
12/20/2019: Meets SCS

Vertical exaggeration: 3x

Legend

■ Asphalt
▨ Fill
▨ Sand and Gravel
▨ Guelph formation dolostone
▨ Sand
▥ Silt

▨ Inferred Maximum Extent of Groundwater > SCS

— Water Table Elevation (April 15, 2020)
| Boring Interval
| Groundwater Sample Meets SCS
| Groundwater Sample Exceeds SCS

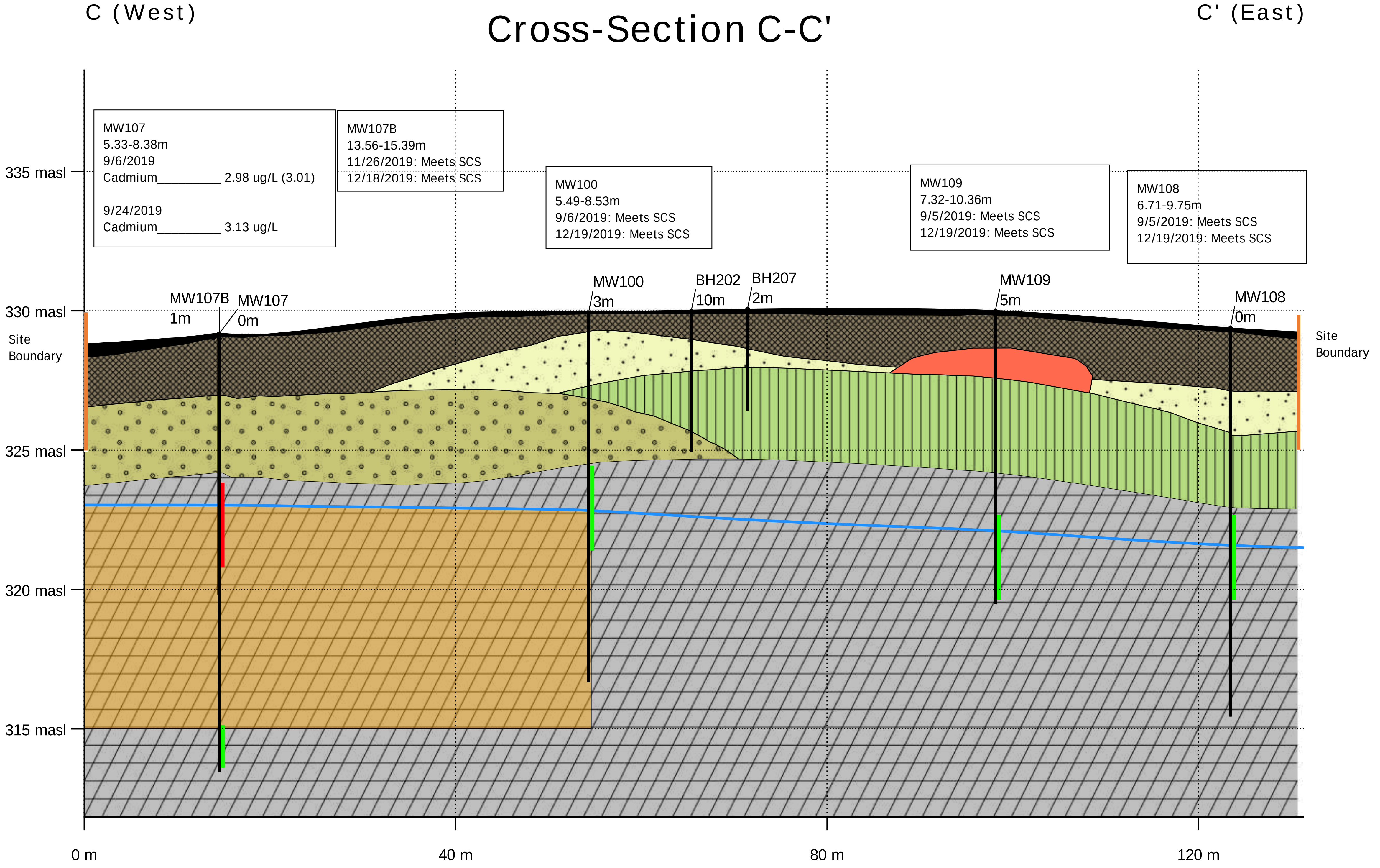
Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations. Distance of projection is presented below each location name on the section.
2. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
3. masl = metres above sea level
4. Results in ( ) indicate field duplicates.
5. Red text indicates the locaiton of the site maximum concentration of the analyte.
6. Samples from 2008 were collected in accordance with O.Reg. 153/04, but are missing analysis of uranium, which was not regulated under the Regulation at the time of investigation. This data is considered valid for RSC purposes.

Figure 6-14b

Groundwater Results - Metals and Select ORPs:
Metals, Hydride-Forming Metals, Hg, MeHG, and CrVI
Cross-Section B-B'
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street North
and Park Lane, Guelph, Ontario

Cross-Section C-C'

Export Date: June 11, 2020



Vertical exaggeration: 3x

Legend

■ Asphalt
▨ Fill
▨ Sand and Gravel
▨ Sand
▥ Silt
▨ Guelph formation dolostone
🟥 Clay
🟧 Inferred Maximum Extent of Groundwater > SCS

— Groundwater Elevation (April 15, 2020)

| Boring Interval

| Groundwater Sample Meets SCS

| Groundwater Sample Exceeds SCS

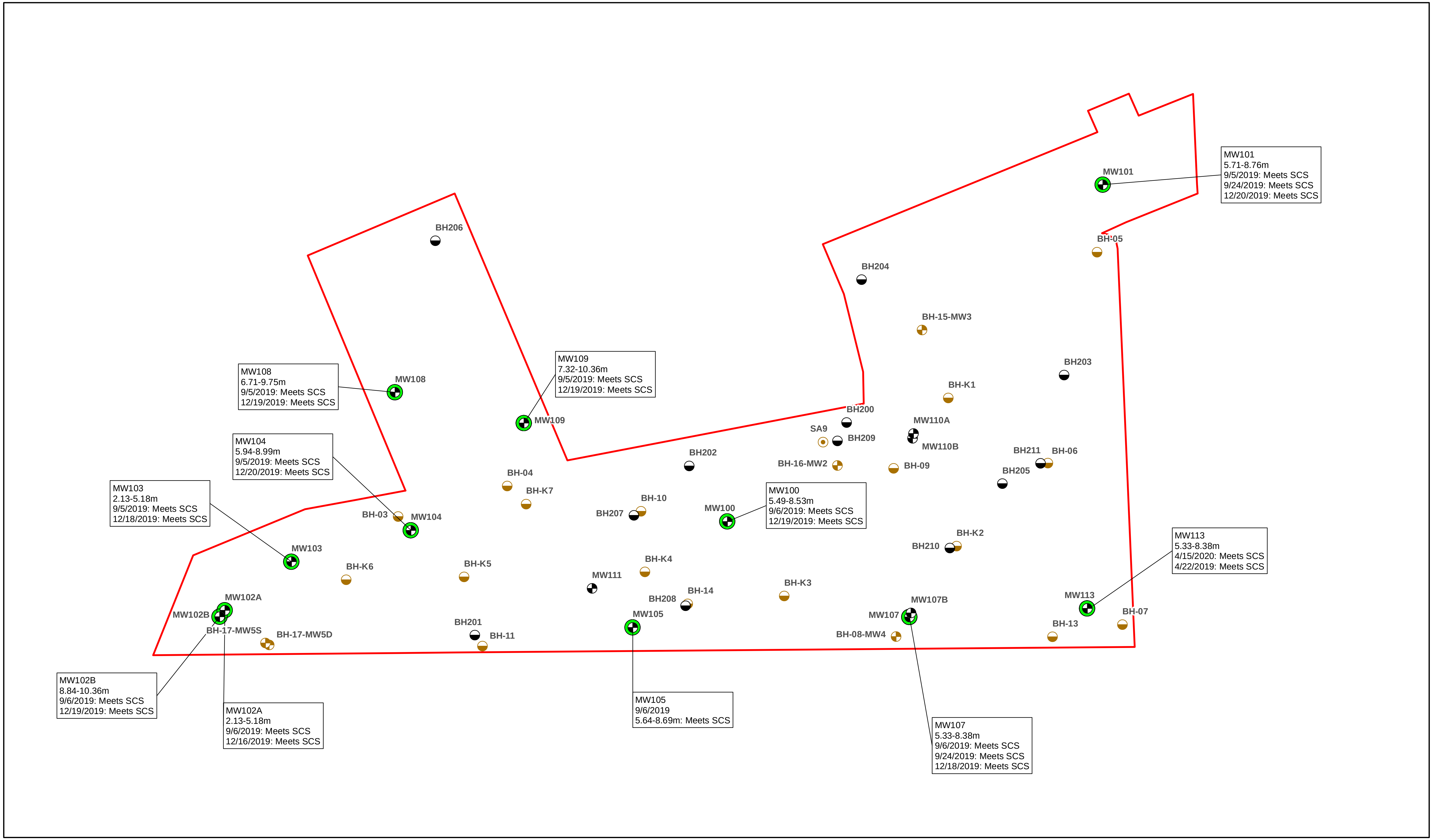
Notes:

1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations. Distance of projection is presented below each location name on the section.
2. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
3. masl = metres above sea level
4. Results in ( ) indicate field duplicates.
5. Red text indicates the locaiton of the site maximum concentration of the analyte.
6. Samples from 2008 were collected in accordance with O.Reg. 153/04, but are missing analysis of uranium, which was not regulated under the Regulation at the time of investigation. This data is considered valid for RSC purposes.

Figure 6-14c

Groundwater Results - Metals and Select ORPs:
Metals, Hydride-Forming Metals, Hg, MeHG, and CrVI
Cross-Section C-C'
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street North
and Park Lane, Guelph, Ontario

Jacobs



N

0 5 10 15

Metres

Sample Location (Current)

◒ Borehole

◕ Monitoring Well

Sample Location (Historical)

◒ Borehole

◕ Monitoring Well

⊙ Soil Sample

● Location without Table 2 Exceedance

🟥 Site Boundary

Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of groundwater impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.

Figure 6-15
Groundwater Results - BTEX
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
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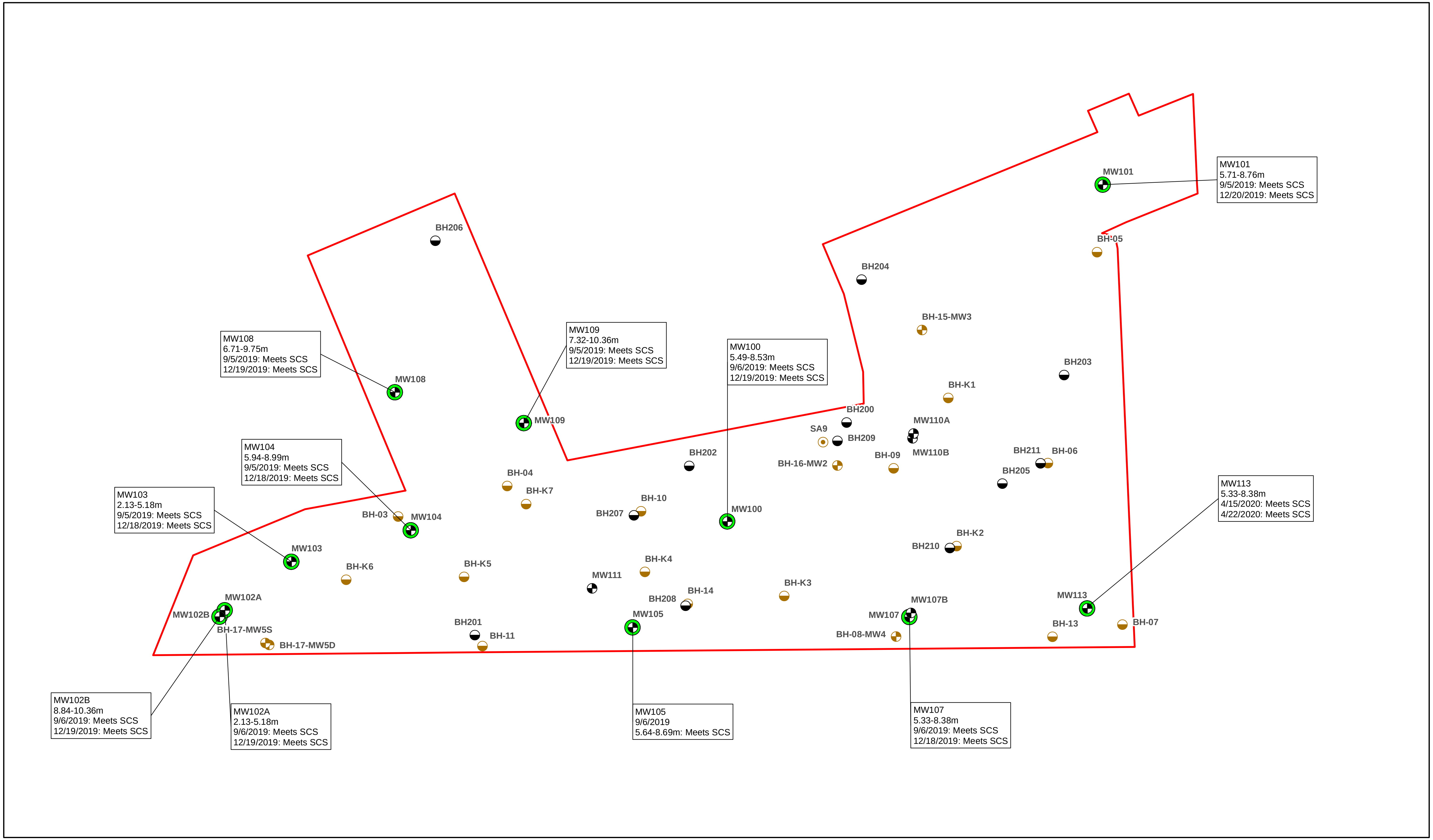

MW101
5.71-8.76m
9/5/2019: Meets SCS
12/20/2019: Meets SCS

MW108
6.71-9.75m
9/5/2019: Meets SCS
12/19/2019: Meets SCS

MW109
7.32-10.36m
9/5/2019: Meets SCS
12/19/2019: Meets SCS

MW100
5.49-8.53m
9/6/2019: Meets SCS
12/19/2019: Meets SCS

MW104
5.94-8.99m
9/5/2019: Meets SCS
12/18/2019: Meets SCS

MW103
2.13-5.18m
9/5/2019: Meets SCS
12/18/2019: Meets SCS

MW113
5.33-8.38m
4/15/2020: Meets SCS
4/22/2020: Meets SCS

MW102B
8.84-10.36m
9/6/2019: Meets SCS
12/19/2019: Meets SCS

MW102A
2.13-5.18m
9/6/2019: Meets SCS
12/19/2019: Meets SCS

MW105
9/6/2019
5.64-8.69m: Meets SCS

MW107
5.33-8.38m
9/6/2019: Meets SCS
12/18/2019: Meets SCS

N

0 5 10 15
Metres

Sample Location (Current)
- ◓ Borehole
- ◕ Monitoring Well

Sample Location (Historical)
- ◓ Borehole
- ◕ Monitoring Well
- ◉ Soil Sample

🟢 Location without Table 2 Exceedance

🟥 Site Boundary

Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of groundwater impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.

Figure 6-16
Groundwater Results - Petroleum Hydrocarbons
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 7/21/2020

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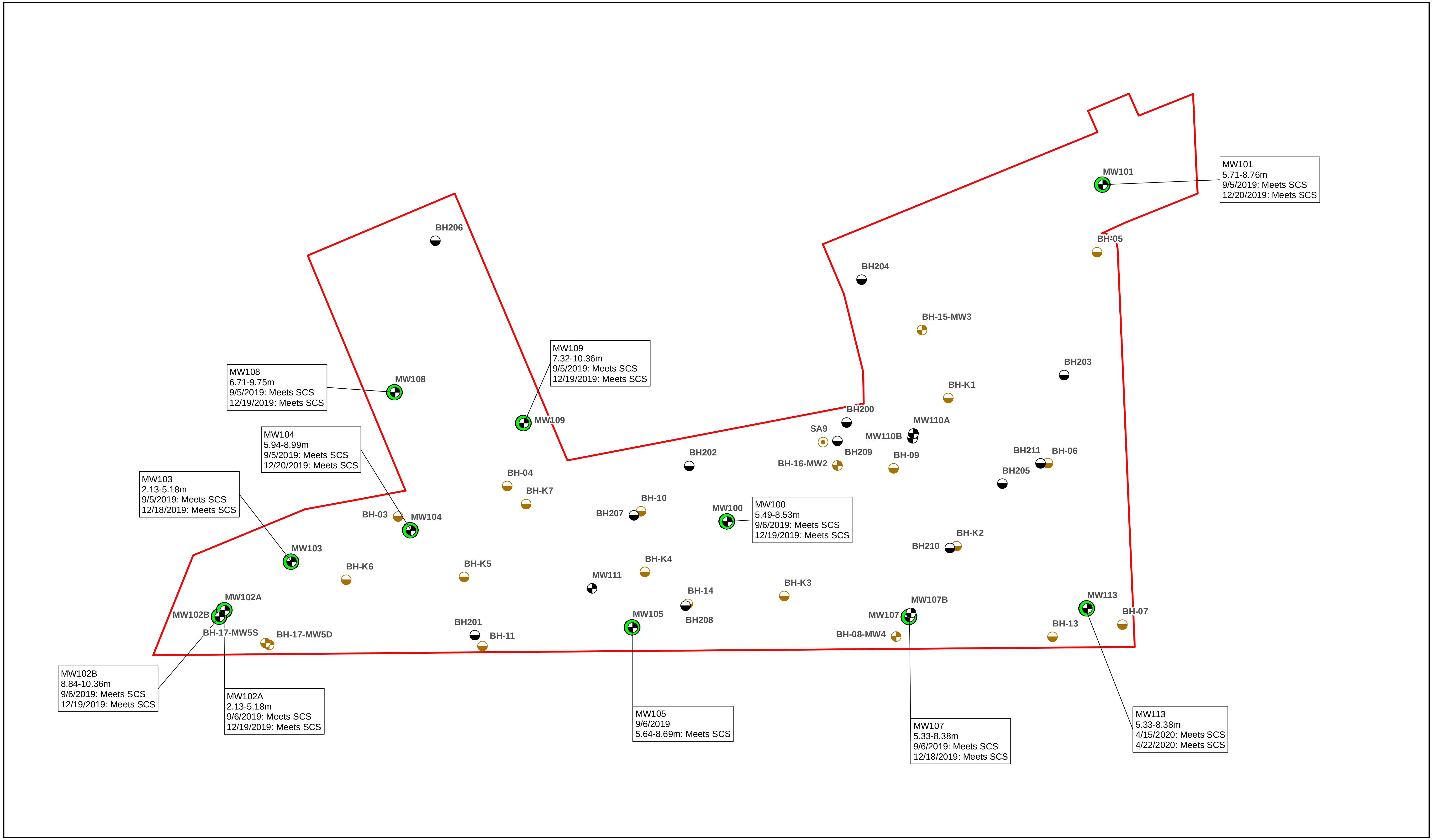
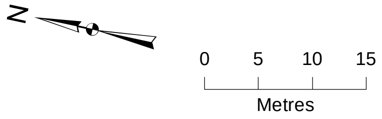


Sample Location (Current)
- ◒ Borehole
- ◕ Monitoring Well

Sample Location (Historical)
- ◒ Borehole
- ◕ Monitoring Well
- ⊙ Soil Sample

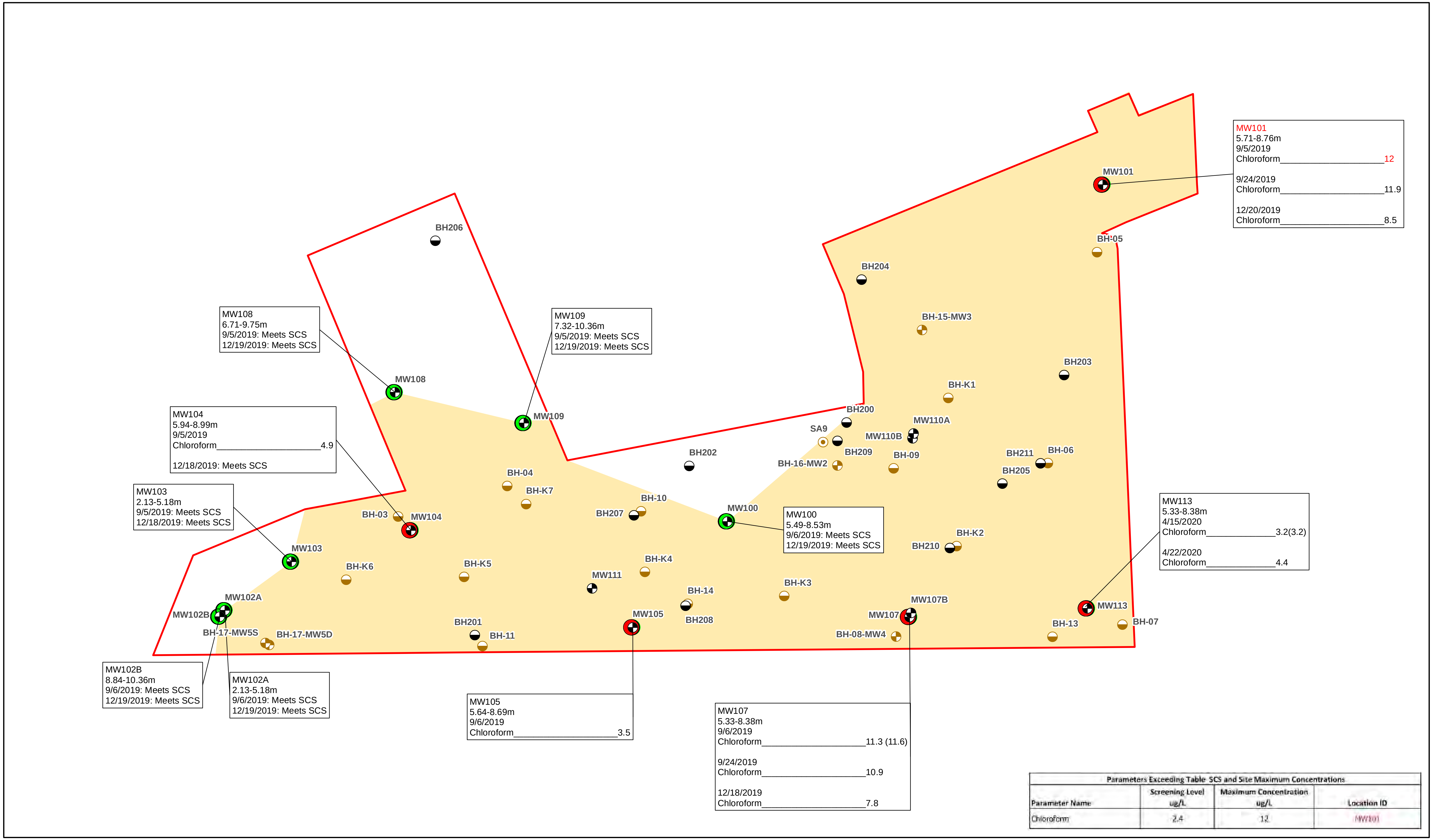
- 🟢 Location without Table 2 Exceedance
- 🟥 Site Boundary



Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of groundwater impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.

Figure 6-17
Groundwater Results - Polycyclic Aromatic Hydrocarbons
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 7/21/2020

Jacobs



MW101
5.71-8.76m
9/5/2019
Chloroform_______________12

9/24/2019
Chloroform_______________11.9

12/20/2019
Chloroform_______________8.5

MW108
6.71-9.75m
9/5/2019: Meets SCS
12/19/2019: Meets SCS

MW109
7.32-10.36m
9/5/2019: Meets SCS
12/19/2019: Meets SCS

MW104
5.94-8.99m
9/5/2019
Chloroform_______________4.9

12/18/2019: Meets SCS

MW103
2.13-5.18m
9/5/2019: Meets SCS
12/18/2019: Meets SCS

MW100
5.49-8.53m
9/6/2019: Meets SCS
12/19/2019: Meets SCS

MW113
5.33-8.38m
4/15/2020
Chloroform_______________3.2(3.2)

4/22/2020
Chloroform_______________4.4

MW102B
8.84-10.36m
9/6/2019: Meets SCS
12/19/2019: Meets SCS

MW102A
2.13-5.18m
9/6/2019: Meets SCS
12/19/2019: Meets SCS

MW105
5.64-8.69m
9/6/2019
Chloroform_______________3.5

MW107
5.33-8.38m
9/6/2019
Chloroform_______________11.3 (11.6)

9/24/2019
Chloroform_______________10.9

12/18/2019
Chloroform_______________7.8

Parameters Exceeding Table SCS and Site Maximum Concentrations			
Parameter Name	Screening Level ug/L	Maximum Concentration ug/L	Location ID
Chloroform	2.4	12	MW101

Sample Location (Current)
- ● Borehole
- ● Monitoring Well

Sample Location (Historical)
- ● Borehole
- ● Monitoring Well
- ⊙ Soil Sample

- 🟢 Location without Table 2 Exceedance
- 🔴 Location with Table 2 Exceedance
- 🟨 Inferred Lateral Extent of Concentration Greater than the Table 2 SCS
- 🟥 Site Boundary

N

0 5 10 15
Metres

Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of groundwater impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.
5. These chloroform exceedances are believed to be due to the introduction of municipal water during the monitoring well installation activities. Chloroform is, therefore, not considered a COC for the Site.

Figure 6-18
Groundwater Results - Volatile Organic Compounds
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 7/21/2020

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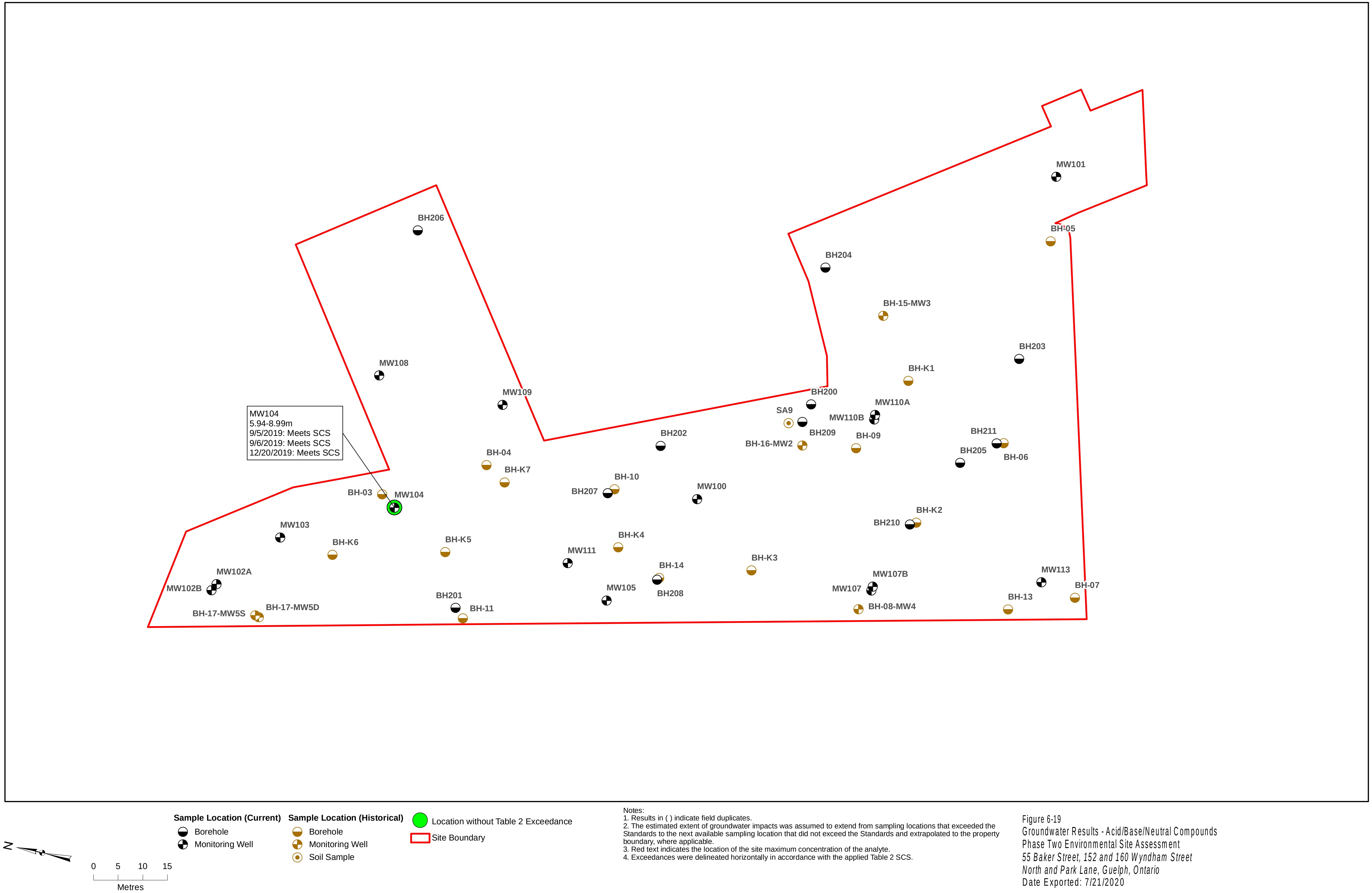


MW104
5.94-8.99m
9/5/2019: Meets SCS
9/6/2019: Meets SCS
12/20/2019: Meets SCS

Sample Location (Current)
- ◒ Borehole
- ◕ Monitoring Well

Sample Location (Historical)
- ◒ Borehole
- ◕ Monitoring Well
- ◉ Soil Sample

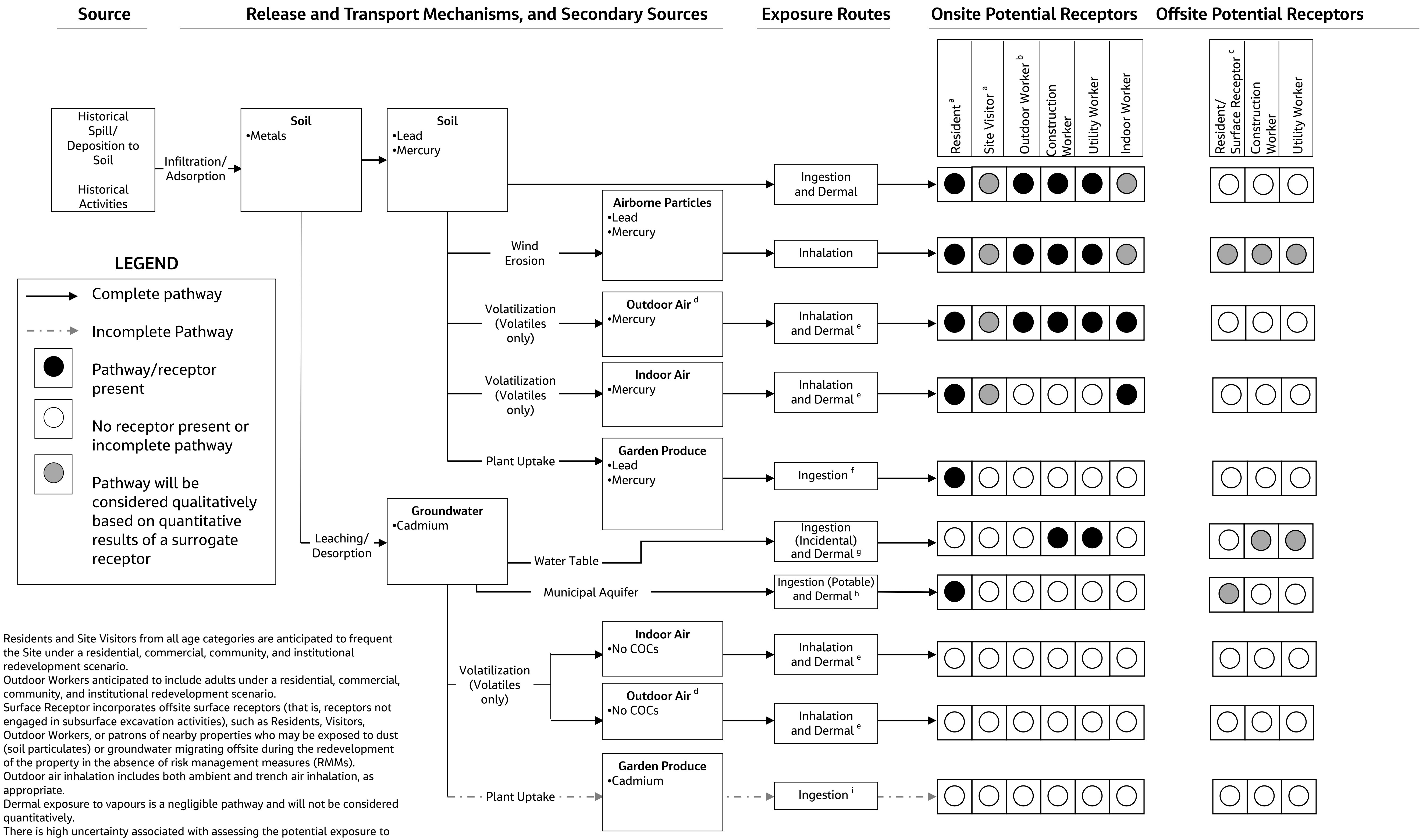
- 🟢 Location without Table 2 Exceedance
- 🟥 Site Boundary

Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of groundwater impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.

Figure 6-19
Groundwater Results - Acid/Base/Neutral Compounds
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 7/21/2020

Jacobs

\\DC1VS01\GISPROJ\G\GUELPHCITYOF\55BAKERSTREET\MAPFILES\PHASEII\MAY2020_UPDATE\EXCEEDANCEFIGURES_DDP.MXD MJOZWIAK 7/21/2020 11:20:15 AM



	●	Pathway/receptor present
	○	No receptor present or incomplete pathway
	◐	Pathway will be considered qualitatively based on quantitative results of a surrogate receptor

Secondary Source	Exposure Route	Resident[a]	Site Visitor[a]	Outdoor Worker[b]	Construction Worker	Utility Worker	Indoor Worker	Resident/ Surface Receptor[c]	Construction Worker	Utility Worker
Soil •Lead •Mercury	Ingestion and Dermal	●	◐	●	●	●	◐	○	○	○
Airborne Particles •Lead •Mercury	Inhalation	●	◐	●	●	●	◐	◐	◐	◐
Outdoor Air[d] •Mercury	Inhalation and Dermal[e]	●	◐	●	●	●	●	○	○	○
Indoor Air •Mercury	Inhalation and Dermal[e]	●	◐	○	○	○	●	○	○	○
Garden Produce •Lead •Mercury	Ingestion[f]	●	○	○	○	○	○	○	○	○
Groundwater •Cadmium – Water Table	Ingestion (Incidental) and Dermal[g]	○	○	○	●	●	○	○	◐	◐
Groundwater •Cadmium – Municipal Aquifer	Ingestion (Potable) and Dermal[h]	●	○	○	○	○	○	◐	○	○
Indoor Air •No COCs	Inhalation and Dermal[e]	○	○	○	○	○	○	○	○	○
Outdoor Air[d] •No COCs	Inhalation and Dermal[e]	○	○	○	○	○	○	○	○	○
Garden Produce •Cadmium	Ingestion[i]	○	○	○	○	○	○	○	○	○

a. Residents and Site Visitors from all age categories are anticipated to frequent the Site under a residential, commercial, community, and institutional redevelopment scenario.

b. Outdoor Workers anticipated to include adults under a residential, commercial, community, and institutional redevelopment scenario.

c. Surface Receptor incorporates offsite surface receptors (that is, receptors not engaged in subsurface excavation activities), such as Residents, Visitors, Outdoor Workers, or patrons of nearby properties who may be exposed to dust (soil particulates) or groundwater migrating offsite during the redevelopment of the property in the absence of risk management measures (RMMs).

d. Outdoor air inhalation includes both ambient and trench air inhalation, as appropriate.

e. Dermal exposure to vapours is a negligible pathway and will not be considered quantitatively.

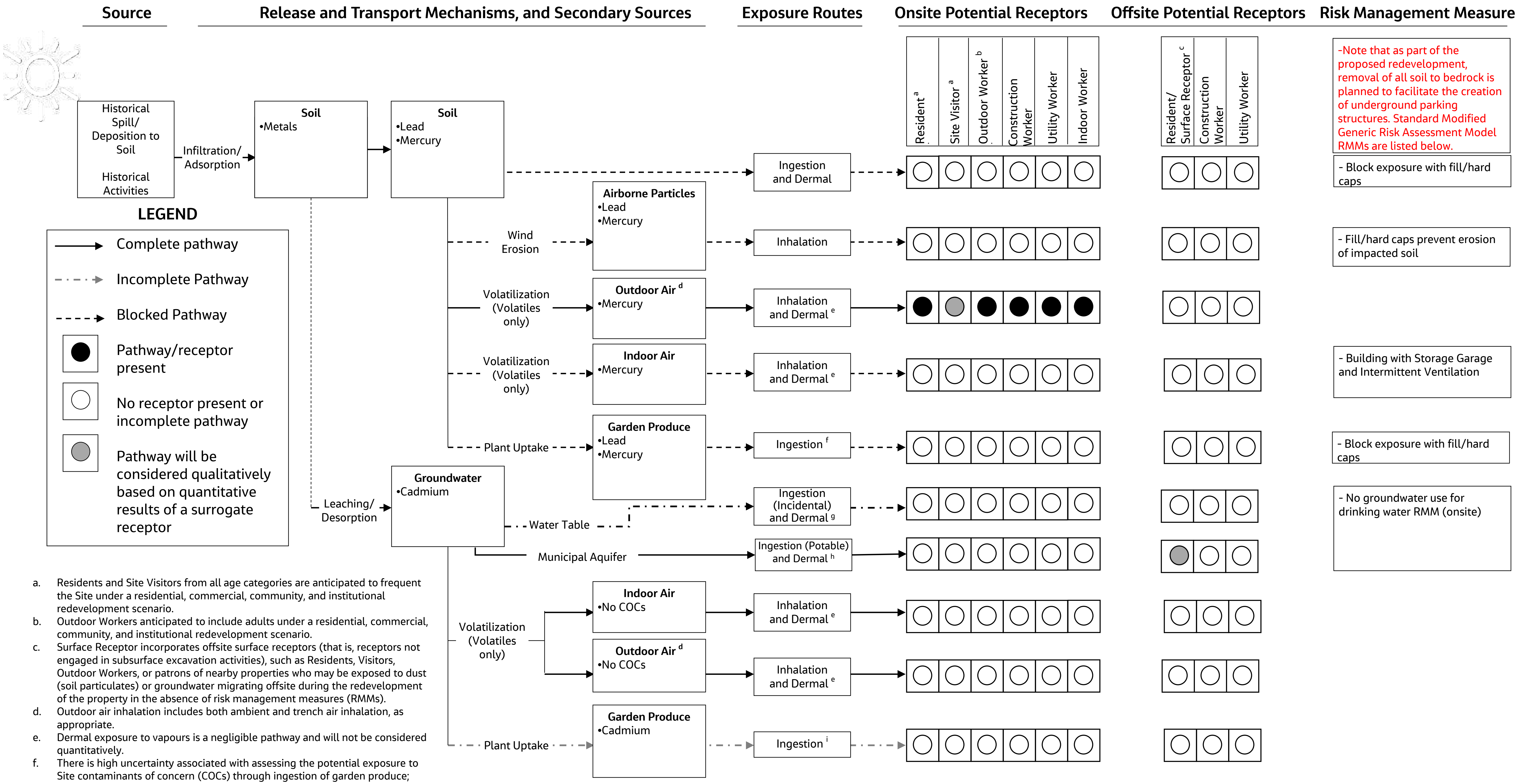
f. There is high uncertainty associated with assessing the potential exposure to Site contaminants of concern (COCs) through ingestion of garden produce; therefore, this pathway will not be considered quantitatively.

g. The depth to groundwater ranges from 3.78 to 4.43 metres below ground surface (mbgs) (perched) or 5.82 to 8.66 mbgs (water table).

h. The extent of cadmium impacts in groundwater have been delineated both horizontally and vertically. Based on this information, concentrations greater than the generic potable standards are not anticipated to extend downgradient or to adversely affect the municipal aquifer.

i. Potential exposure to Site COCs in groundwater through ingestion of garden produce pathway is incomplete, as the water table is below the rooting depths of plants.

Figure 6-20a. Human Health Conceptual Site Model
55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario



Exposure Routes	Resident [a]	Site Visitor [a]	Outdoor Worker [b]	Construction Worker	Utility Worker	Indoor Worker	Resident/ Surface Receptor [c]	Construction Worker	Utility Worker	Risk Management Measure
Ingestion and Dermal	○	○	○	○	○	○	○	○	○	- Block exposure with fill/hard caps
Inhalation	○	○	○	○	○	○	○	○	○	- Fill/hard caps prevent erosion of impacted soil
Inhalation and Dermal [e]	●	◍	●	●	●	●	○	○	○	
Inhalation and Dermal [e]	○	○	○	○	○	○	○	○	○	- Building with Storage Garage and Intermittent Ventilation
Ingestion [f]	○	○	○	○	○	○	○	○	○	- Block exposure with fill/hard caps
Ingestion (Incidental) and Dermal [g]	○	○	○	○	○	○	○	○	○	- No groundwater use for drinking water RMM (onsite)
Ingestion (Potable) and Dermal [h]	○	○	○	○	○	○	◍	○	○	
Inhalation and Dermal [e]	○	○	○	○	○	○	○	○	○	
Inhalation and Dermal [e]	○	○	○	○	○	○	○	○	○	
Ingestion [i]	○	○	○	○	○	○	○	○	○	

-Note that as part of the proposed redevelopment, removal of all soil to bedrock is planned to facilitate the creation of underground parking structures. Standard Modified Generic Risk Assessment Model RMMs are listed below.

a. Residents and Site Visitors from all age categories are anticipated to frequent the Site under a residential, commercial, community, and institutional redevelopment scenario.
b. Outdoor Workers anticipated to include adults under a residential, commercial, community, and institutional redevelopment scenario.
c. Surface Receptor incorporates offsite surface receptors (that is, receptors not engaged in subsurface excavation activities), such as Residents, Visitors, Outdoor Workers, or patrons of nearby properties who may be exposed to dust (soil particulates) or groundwater migrating offsite during the redevelopment of the property in the absence of risk management measures (RMMs).
d. Outdoor air inhalation includes both ambient and trench air inhalation, as appropriate.
e. Dermal exposure to vapours is a negligible pathway and will not be considered quantitatively.
f. There is high uncertainty associated with assessing the potential exposure to Site contaminants of concern (COCs) through ingestion of garden produce; therefore, this pathway will not be considered quantitatively.
g. The depth to groundwater ranges from 3.78 to 4.43 metres below ground surface (mbgs) (perched) or 5.82 to 8.66 mbgs (water table).
h. The extent of cadmium impacts in groundwater have been delineated both horizontally and vertically. Based on this information, concentrations greater than the generic potable standards are not anticipated to extend downgradient or to adversely affect the municipal aquifer.
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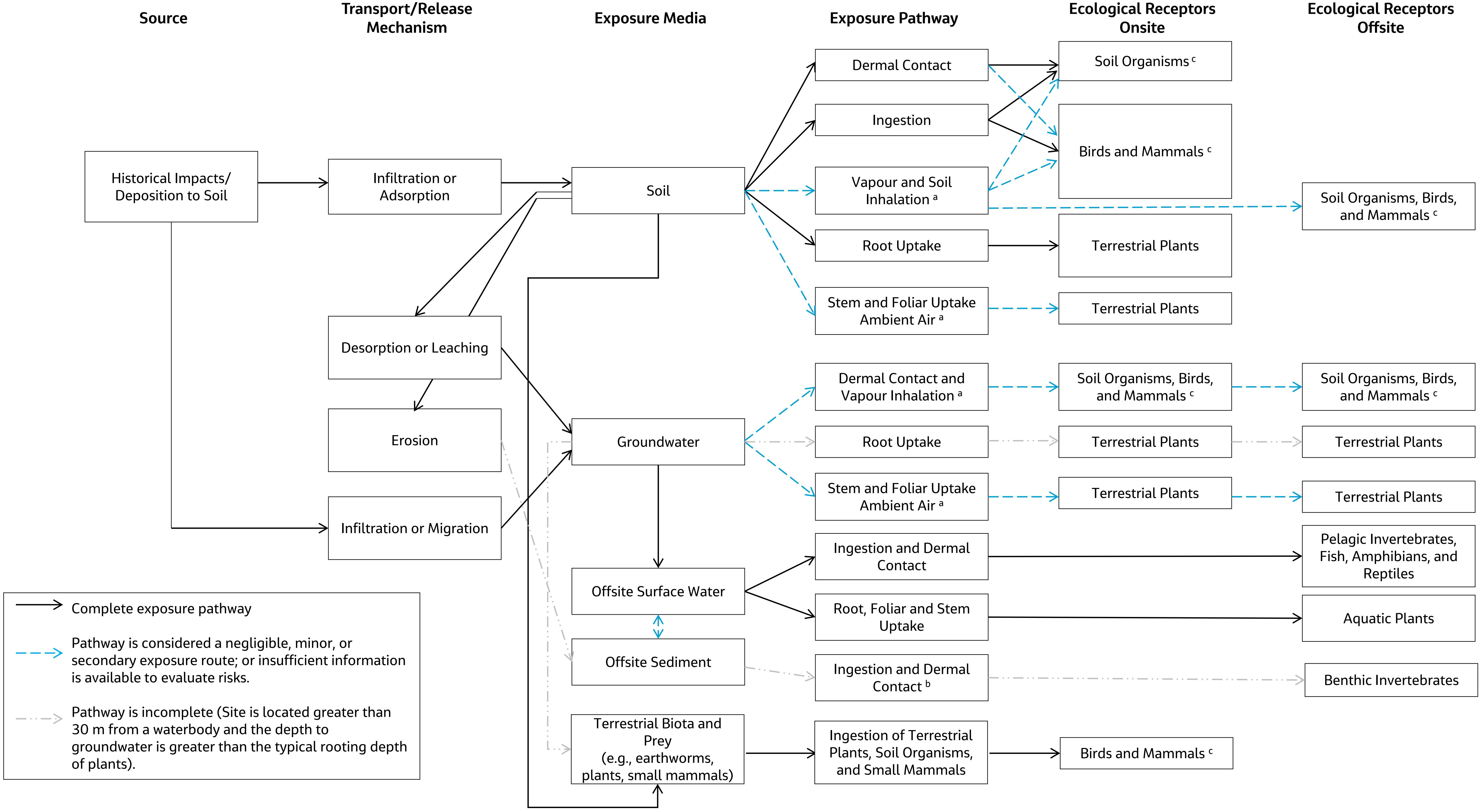
Figure 6-20b. Human Health Conceptual Site Model with Risk Management Measures

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario



Notes:

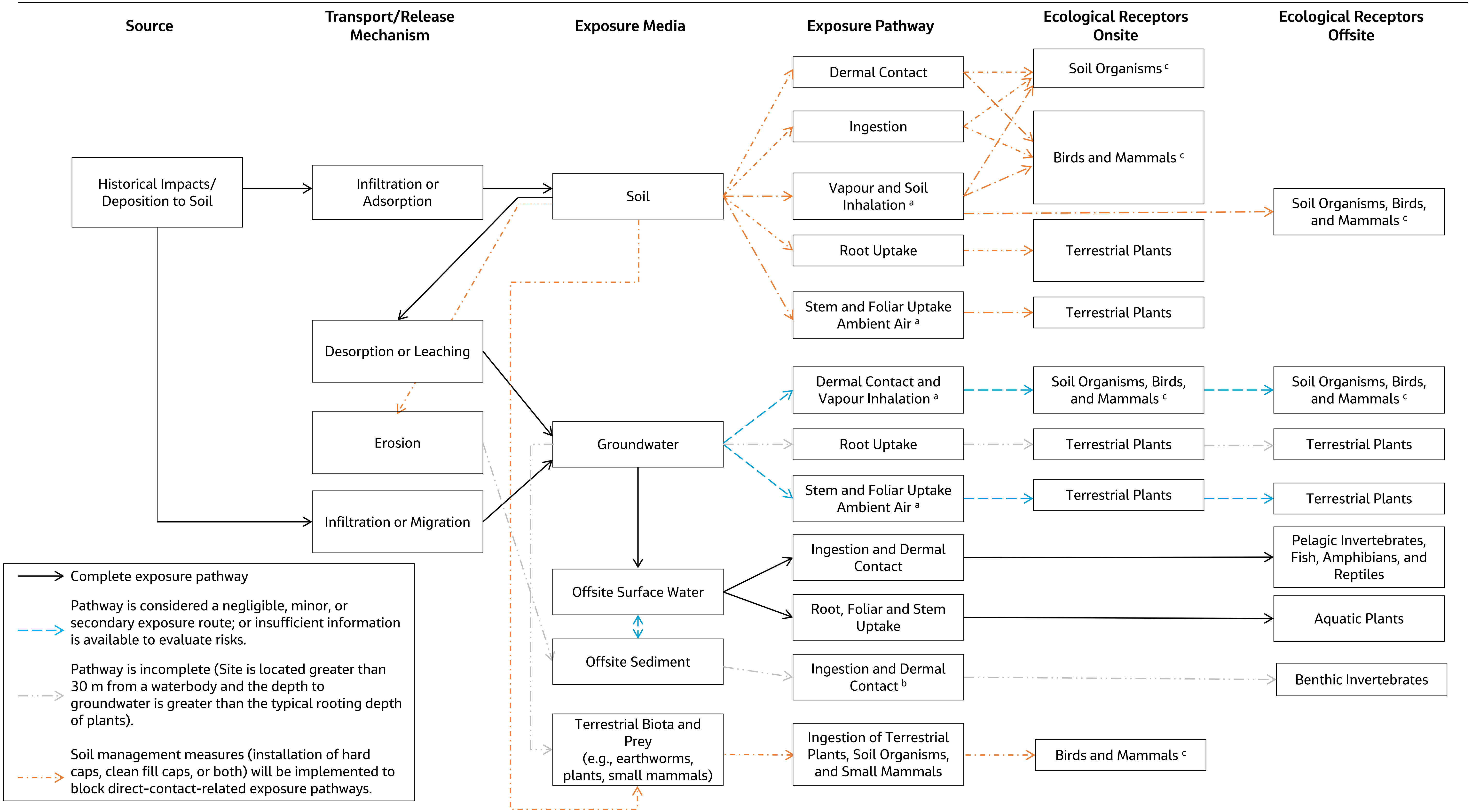
a. Vapour and soil inhalation, and uptake of ambient air are secondary routes of exposure; limited toxicological information is available to evaluate these pathways.

b. Pathway considered incomplete under current conditions and will also be considered incomplete under future redevelopment conditions.

c. The VECs are consistent with those in the MECP Modified Generic Risk Assessment Model: Earthworms for soil organisms; American Woodcock, Red-winged Blackbird, and Red-tailed Hawk for birds; Meadow Vole, Red Fox, and Short-tailed Shrew for mammals.

Figure 6-21a. Ecological Conceptual Site Model without Risk Management Measures

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario



Notes:

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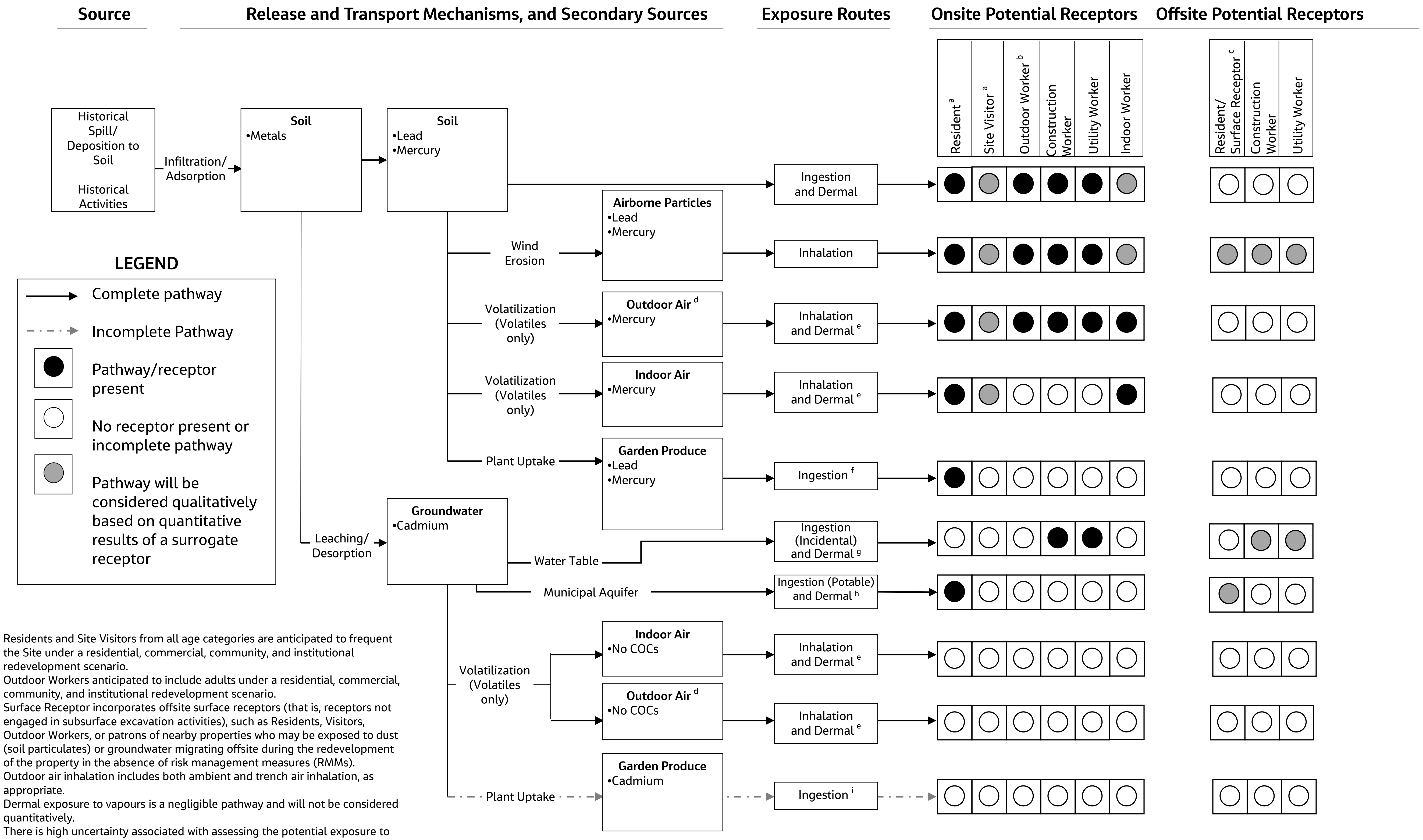
Figure 6-21b. Ecological Conceptual Site Model with Risk Management Measures

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

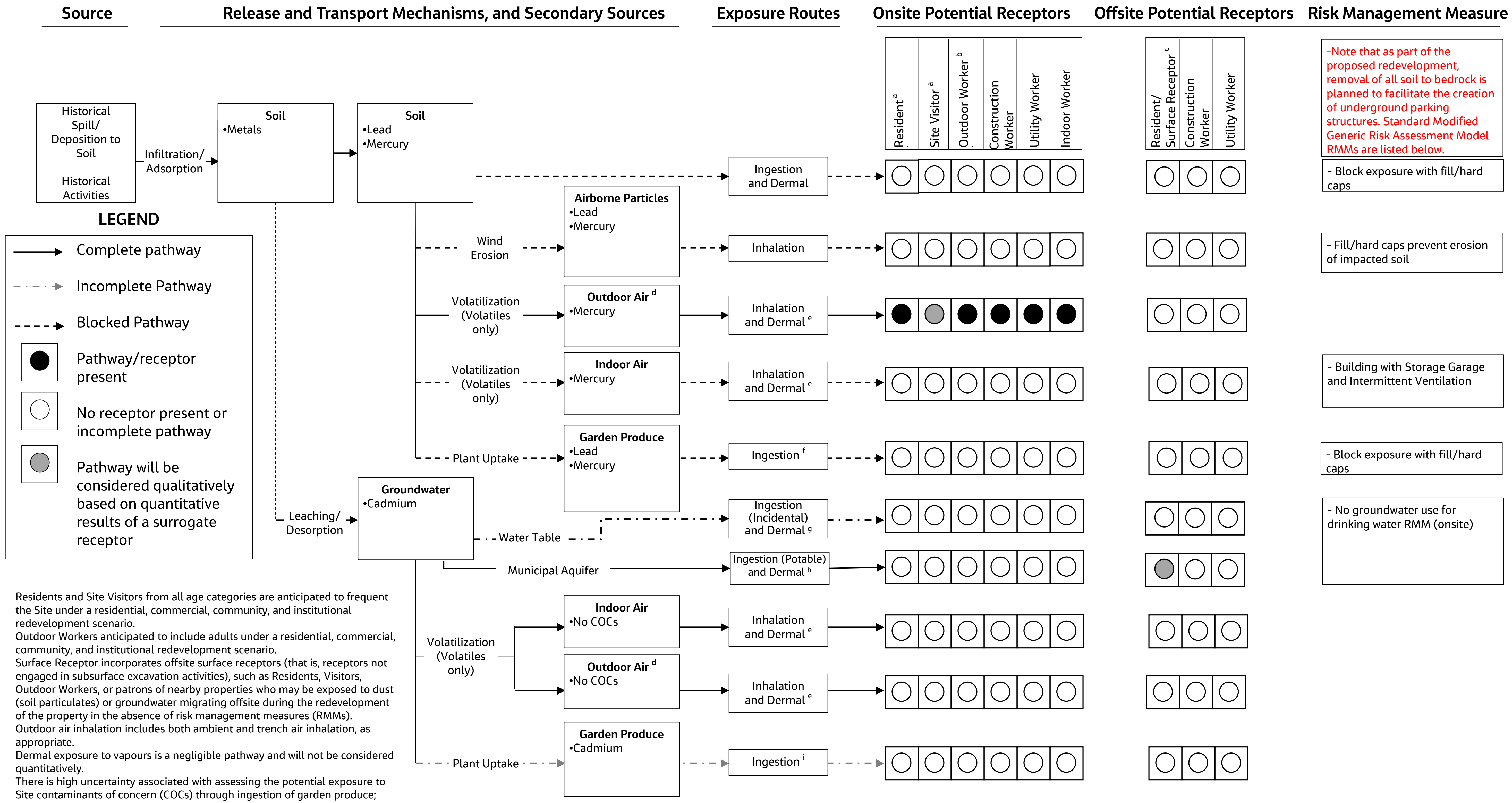
Attachment E
Human Health and Ecological Conceptual Site Models



Exposure Routes	Resident[a]	Site Visitor[a]	Outdoor Worker[b]	Construction Worker	Utility Worker	Indoor Worker	Resident/ Surface Receptor[c]	Construction Worker	Utility Worker
Ingestion and Dermal	●	◍	●	●	●	◍	○	○	○
Inhalation	●	◍	●	●	●	◍	◍	◍	◍
Inhalation and Dermal[e]	●	◍	●	●	●	●	○	○	○
Inhalation and Dermal[e]	●	◍	○	○	○	●	○	○	○
Ingestion[f]	●	○	○	○	○	○	○	○	○
Ingestion (Incidental) and Dermal[g]	○	○	○	●	●	○	○	◍	◍
Ingestion (Potable) and Dermal[h]	●	○	○	○	○	○	◍	○	○
Inhalation and Dermal[e]	○	○	○	○	○	○	○	○	○
Inhalation and Dermal[e]	○	○	○	○	○	○	○	○	○
Ingestion[i]	○	○	○	○	○	○	○	○	○

a. Residents and Site Visitors from all age categories are anticipated to frequent the Site under a residential, commercial, community, and institutional redevelopment scenario.
b. Outdoor Workers anticipated to include adults under a residential, commercial, community, and institutional redevelopment scenario.
c. Surface Receptor incorporates offsite surface receptors (that is, receptors not engaged in subsurface excavation activities), such as Residents, Visitors, Outdoor Workers, or patrons of nearby properties who may be exposed to dust (soil particulates) or groundwater migrating offsite during the redevelopment of the property in the absence of risk management measures (RMMs).
d. Outdoor air inhalation includes both ambient and trench air inhalation, as appropriate.
e. Dermal exposure to vapours is a negligible pathway and will not be considered quantitatively.
f. There is high uncertainty associated with assessing the potential exposure to Site contaminants of concern (COCs) through ingestion of garden produce; therefore, this pathway will not be considered quantitatively.
g. The depth to groundwater ranges from 3.78 to 4.43 metres below ground surface (mbgs) (perched) or 5.82 to 8.66 mbgs (water table).
h. The extent of cadmium impacts in groundwater have been delineated both horizontally and vertically. Based on this information, concentrations greater than the generic potable standards are not anticipated to extend downgradient or to adversely affect the municipal aquifer.
i. Potential exposure to Site COCs in groundwater through ingestion of garden produce pathway is incomplete, as the water table is below the rooting depths of plants.

Figure E-1. Human Health Conceptual Site Model
55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario



Exposure Routes	Resident[a]	Site Visitor[a]	Outdoor Worker[b]	Construction Worker	Utility Worker	Indoor Worker	Resident/ Surface Receptor[c]	Construction Worker	Utility Worker	Risk Management Measure
										-Note that as part of the proposed redevelopment, removal of all soil to bedrock is planned to facilitate the creation of underground parking structures. Standard Modified Generic Risk Assessment Model RMMs are listed below.
Ingestion and Dermal	○	○	○	○	○	○	○	○	○	- Block exposure with fill/hard caps
Inhalation	○	○	○	○	○	○	○	○	○	- Fill/hard caps prevent erosion of impacted soil
Inhalation and Dermal[e]	●	◐	●	●	●	●	○	○	○	
Inhalation and Dermal[e]	○	○	○	○	○	○	○	○	○	- Building with Storage Garage and Intermittent Ventilation
Ingestion[f]	○	○	○	○	○	○	○	○	○	- Block exposure with fill/hard caps
Ingestion (Incidental) and Dermal[g]	○	○	○	○	○	○	○	○	○	- No groundwater use for drinking water RMM (onsite)
Ingestion (Potable) and Dermal[h]	○	○	○	○	○	○	◐	○	○	
Inhalation and Dermal[e]	○	○	○	○	○	○	○	○	○	
Inhalation and Dermal[e]	○	○	○	○	○	○	○	○	○	
Ingestion[i]	○	○	○	○	○	○	○	○	○	

a. Residents and Site Visitors from all age categories are anticipated to frequent the Site under a residential, commercial, community, and institutional redevelopment scenario.
b. Outdoor Workers anticipated to include adults under a residential, commercial, community, and institutional redevelopment scenario.
c. Surface Receptor incorporates offsite surface receptors (that is, receptors not engaged in subsurface excavation activities), such as Residents, Visitors, Outdoor Workers, or patrons of nearby properties who may be exposed to dust (soil particulates) or groundwater migrating offsite during the redevelopment of the property in the absence of risk management measures (RMMs).
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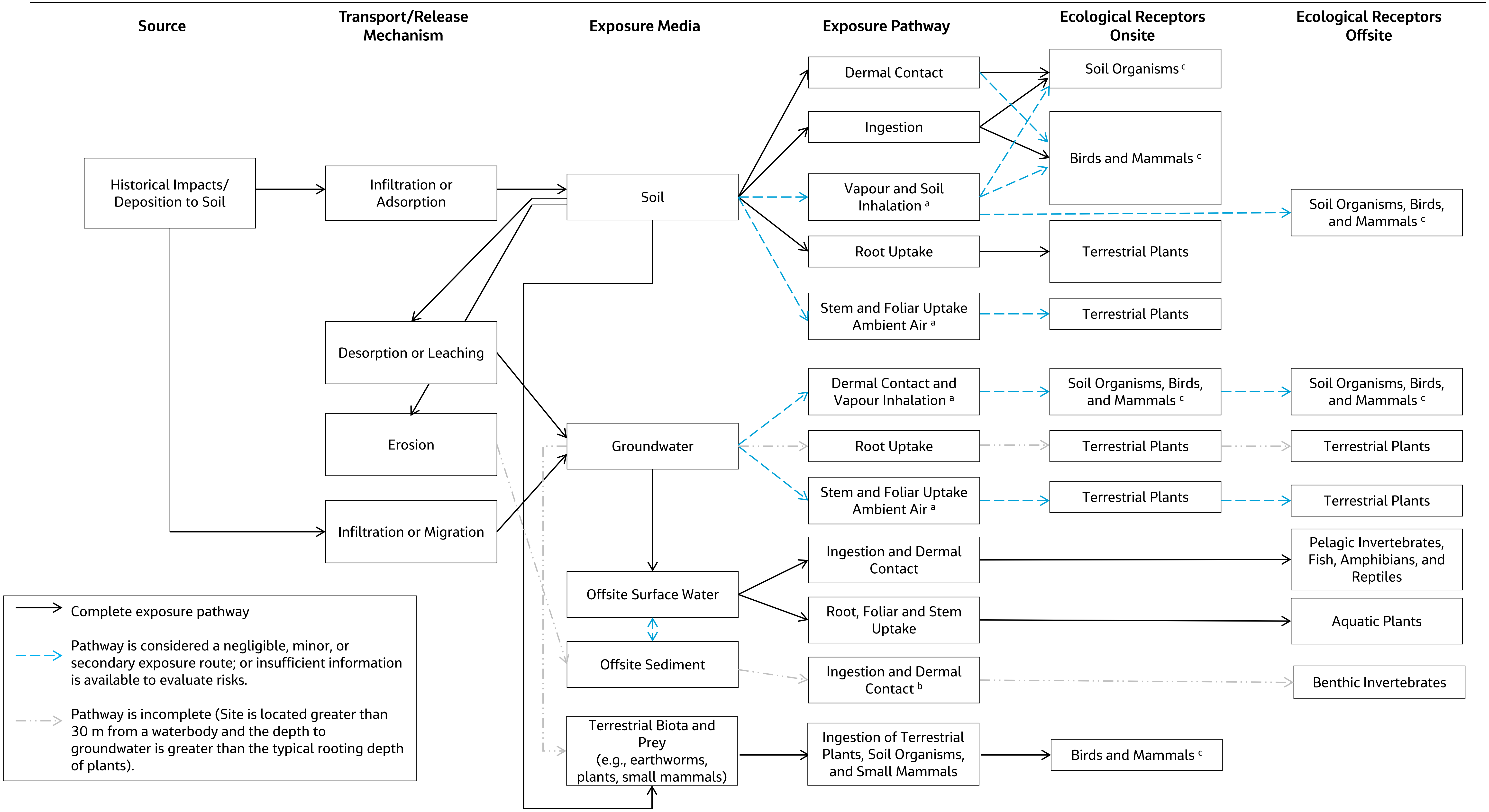
Figure E-2. Human Health Conceptual Site Model with Risk Management Measures

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario



Notes:

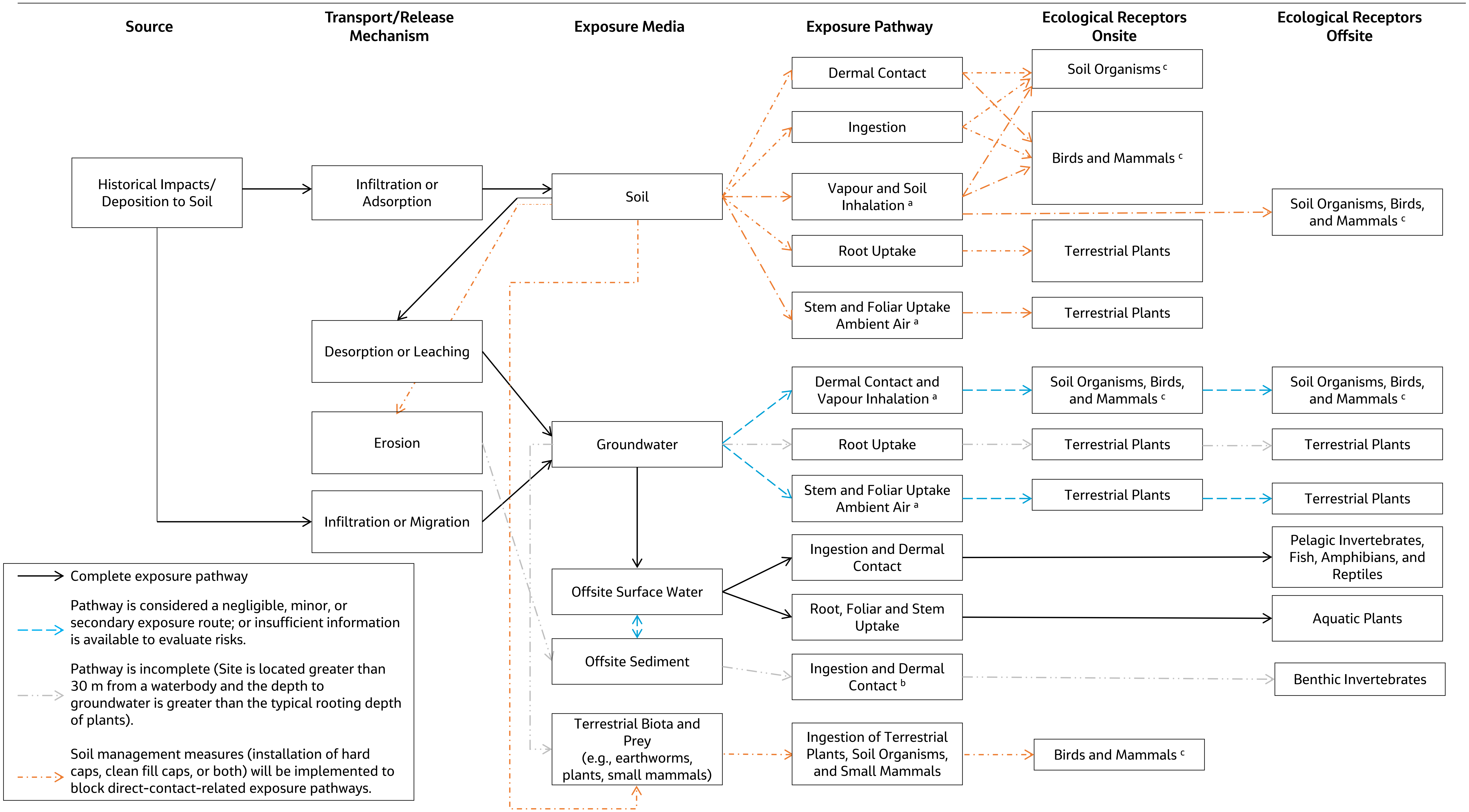
a. Vapour and soil inhalation, and uptake of ambient air are secondary routes of exposure; limited toxicological information is available to evaluate these pathways.

b. Pathway considered incomplete under current conditions and will also be considered incomplete under future redevelopment conditions.

c. The VECs are consistent with those in the MECP Modified Generic Risk Assessment Model: Earthworms for soil organisms; American Woodcock, Red-winged Blackbird, and Red-tailed Hawk for birds; Meadow Vole, Red Fox, and Short-tailed Shrew for mammals.

Figure E-3. Ecological Conceptual Site Model without Risk Management Measures

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario



Notes:

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Figure E-4. Ecological Conceptual Site Model with Risk Management Measures

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Attachment F
No Groundwater Use RMM Supporting Information

Jacobs

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www.jacobs.com

July 22, 2020

Attention: Mr. Prasoon Adhikari
Engineering and Transportation Services
Infrastructure, Development and Environmental Engineering
City of Guelph
1 Carden Street
Guelph, Ontario N1H 3A1

Project Name: Baker Street
Project Number: CE751900.A.CS.EV.A2
Filing: KWO\CE751900\400\20\10_2020Jun

Subject: Preparation of a Modified Risk Assessment for the Baker Street Project with the Application of No Groundwater Use Risk Management Measures, Revision 01

Dear Mr. Prasoon Adhikari,

This purpose of this letter is to notify the City of Guelph (City) that a Modified Generic Risk Assessment (MGRA) is being prepared with a "No Groundwater Use" Risk Management Measure (RMM) for the properties located at 55 Baker Street, 152 Wyndham Street North, 160 Wyndham Street North and the right of way known as Park Lane, in Guelph, Ontario (Site or Property). The MGRA is being prepared for the purposes of filing a Record of Site Condition (RSC) to support the redevelopment of the property for a mix of residential, commercial, community, and institutional use.

1. Background

The Site is located in downtown Guelph, southwest of the Speed River, as shown on Figure 1, and is approximately 1.14 hectares in size. Currently the Site is used as a fully paved commercial parking lot and laneway providing access to the parking lot and surrounding businesses. The Site is currently surrounded by a mix of commercial, institutional, and residential land uses.

No buildings are currently located onsite; however, buildings were historically present and associated with the use of portions of the Site for parkland, community, commercial, and industrial purposes (Figure 2). The 55 Baker Street parcel was used as a public burial ground (community land use) from 1827 to 1879. Between the late 1890s and early 1900s a curling club and an industrial building (sewing machine and accessory manufacturer) was constructed on the parcel. These buildings were demolished in the 1960s and the properties redeveloped into an asphalt parking lot. The 152 and 160 Wyndham Street North parcels were originally developed with commercial buildings between

1862 and 1916 and remained until between 2009 and 2013 when the buildings were demolished and replaced with an asphalt parking lot.

Jacobs conducted Phase Two environmental site assessment (ESA) field activities between July 2019 and April 2020 to evaluate the subsurface environmental conditions at the Property, and to investigate the areas of potential environmental concern (APECs) identified in the Phase One ESA (Pinchin, 2018).

2. Physical Setting

The topography over the Property is moderately flat with ground surface elevations ranging from 328.34 metres above sea level (masl) (southwest corner) to 330.16 masl (in the west). There is a slight sloping of the Property from the western border towards the south, north and east. Surface runoff at the Property is expected to flow radially from the west in these directions but is directed towards onsite catch basins. Figure 3 shows the regional topography and surface water drainage features. The Site is located approximately 130 to 150 m south-southwest of the Speed River, and ground surface tends to slope north towards the river. Groundwater from the region is likely to eventually discharge to the Speed River.

2.1 Site Stratigraphy

The Site is interpreted to consist of a predominantly sandy overburden overlying Guelph Formation dolostone bedrock. Within the northern portion of the Site, there is a thick silt deposit. The geological units encountered beneath the Site during the Phase Two ESA (report currently being prepared by Jacobs), are summarized in Exhibit 1. Geological cross-sections were prepared as part of the Phase Two ESA; Figure 4 presents the cross-section locations, and geological cross-sections are shown on Figures 4a through 4d.

Exhibit 1: Site Stratigraphy

Geological Unit	Approximate Depth (mbgs)	Average Thickness (m)	Lithology
Asphalt	Up to 0.15		Thin layer of asphalt
Fill	0.15 to 3.91	1.87	Sand, sand and gravel, or silty sand. Silty clay and clayey silt were also observed. Anthropogenic materials such as brick, glass, metal products, and wood were commonly reported, as was iron oxide staining on the soil.
Native Overburden	0.81 to bedrock	See below	Sand matrix with interbedded layers of gravel and silt (described below), extending to bedrock. The sand is generally brown, dense, and moist.
Silt Layer	2.13 to bedrock	3.58	A silt layer was encountered in the northern portion of the Site. The silt was generally described as brown or grey, fine to coarse sand, low to high plasticity, with traces of gravel.
Silt Lens	2.21 to 3.72	1.37	A smaller silt lens was observed in the southern portion of the Site and is disconnected from the larger silt layer in the north of the Site. The silt in this lens was described as brown, hard and moist, with dolostone bedrock fragments observed.

Geological Unit	Approximate Depth (mbgs)	Average Thickness (m)	Lithology
Gravel and Sand	1.52 to 5.94	2.16	A layer of gravel and sand was encountered in the southern portion of the Site. The material was generally described as brown, dense, with fine to medium sand, trace clay, and occasional cobbles and dolostone fragments.
Clay Lens	1.14 to 2.44	1.30	A clay lens was encountered at a single location in the middle of the Site. As some other fill materials were described as being clayey, it is possible this is layer is also anthropogenic.
Guelph Formation dolostone	4.57 to 8.46 (top of bedrock range)		Generally highly weathered and fractured within the first 0.3 to 0.6 m of bedrock contact. It was also noted to be vuggy with calcite mineralization. Average depth to bedrock is 5.99 mbgs for the Site.

Note:

> = greater than

mbgs – metres below ground surface

2.2 Hydrogeological Characteristics

Monitoring wells at the Site are instrumented in the overburden and Guelph Formation to characterize groundwater flow in these units. The deepest well onsite (MW107B) extends approximately 15.62 mbgs into the Guelph Formation.

The water table at the Site was observed to be unconfined, and within the Guelph Formation dolostone bedrock unit. In the northern portion of the Site a localized perched groundwater condition was also observed, and existed above the low-permeability silt layer. The full extent of the perched condition is currently not fully understood, but may have a similar extent to the silt layer. The Site has been paved as a parking lot and is likely to receive low groundwater recharge from precipitation.

The measured depth to the unconfined groundwater table in the bedrock on Site varied from 5.82 to 9.11 mbgs. The perched groundwater condition has been measured at depths ranging from 3.78 to 4.45 (325.74 to 325.04 masl).

Interpreted groundwater elevation contours and flow directions within the bedrock (water table) at the Site are presented on Figures 5a and 5b for December 2019 and April 2020. The water table elevation was observed to vary 1.77 m in elevation across the Site. Groundwater flow was interpreted to be radial, from a high elevation on the west boundary of the Site towards the north, and east to southeast. The higher groundwater elevations at the western portion of the Site appear to be correlated with higher bedrock elevation.

Jacobs estimated the hydraulic conductivity of the silt and bedrock unit based on slug testing conducted as part of the Phase Two ESA activities. The silt unit ranged from 3.6×10^{-8} to 7.4×10^{-7} metres per second (m/s), with a geometric mean of 1.6×10^{-7} m/s. The bedrock unit ranged from 4.6×10^{-7} to 2.0×10^{-4} m/s, with a geometric mean of 9.0×10^{-6} m/s. The horizontal hydraulic gradient in the bedrock based on monitoring events at the Site, ranged from 0.009 to 0.025 metres per metre (m/m). Based on these values and an estimated porosity of 0.1 representing bedrock, the horizontal linear groundwater flow velocity was calculated at approximately 24 to 47 metres per year (m/y).

Vertical gradients have been measured in three well nest locations, varying from 0.042 to 0.634 m/m downward. The stronger gradients were observed at the north end of the Site, likely due to the influence of the perched condition above the silt layer observed at this well nest.

2.3 Source Water Protection and Municipal Aquifer Information

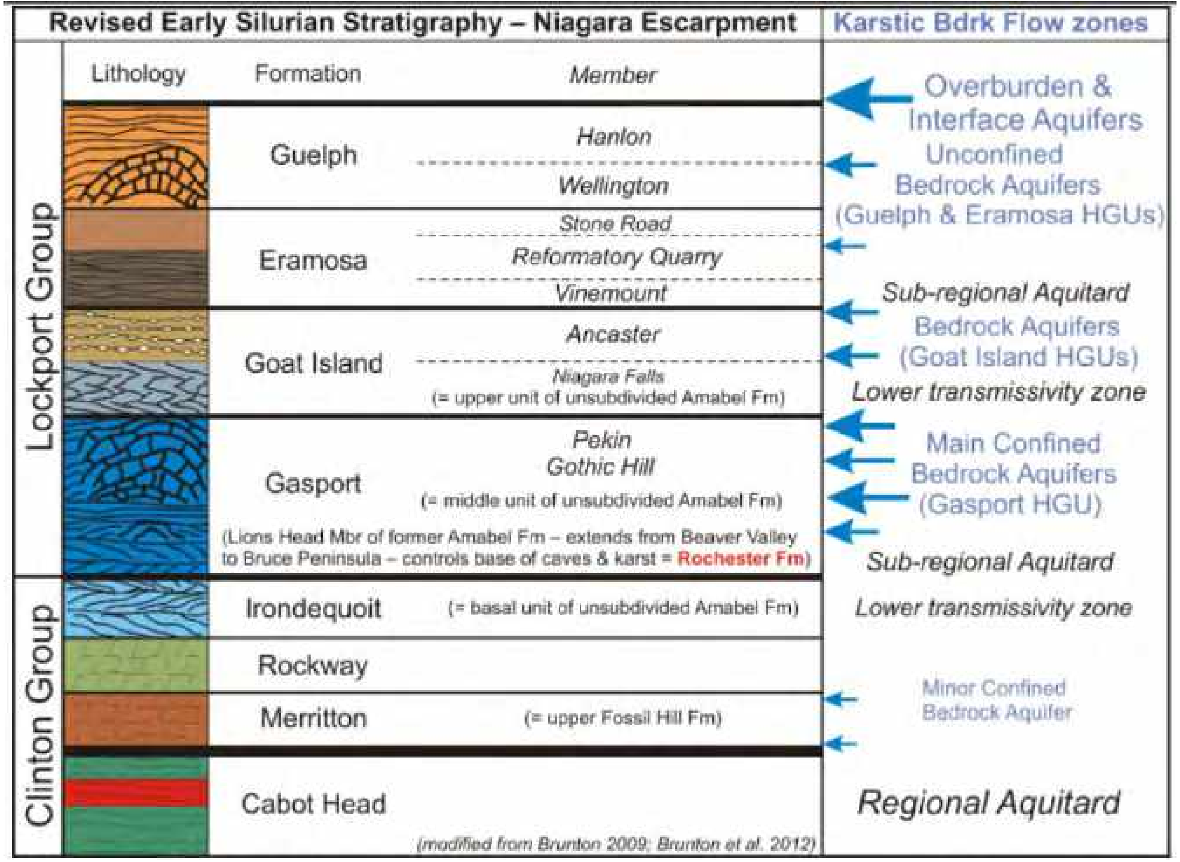
The City categorizes regions of the city within Wellhead Protection Areas (City of Guelph, 2012). The Site is within Wellhead Protection Area B (two-year travel time) for several of the City's municipal water supply wells. The nearest municipal groundwater supply wells to the Site include the Water Street, Edinburgh, Membro and Dean Wells (approximately 1.4 to 2.0 km south of the Site past the Eramosa River), and the Park and Emma Wells (approximately 1.3 to 1.5 km north of the Site past the Speed River).

The City of Guelph is part of the Grand River Source Protection Plan (Lake Erie Region Source Protection Committee, 2019) which assigns Drinking Water Threat Vulnerability Scores across the region based on various risk factors. The Site is assigned a Vulnerability Score of 10, the highest possible. The Site is also in a highly vulnerable aquifer (HVA) and issues contributing area (ICA), but is not in a significant groundwater recharge area (SGRA) or in a source water intake protection zone (IPZ).

Figure 6 presents the location of the Site in relation to the Source Water Protection Plan mapping areas described above.

The bedrock lithology and source of the municipal aquifer in the vicinity of the Site has been investigated through various studies by others and is well understood; the unconfined groundwater in the Guelph Formation is separated from the deeper municipal aquifer by an aquitard typified by the Eramosa formation, specifically the Vinemount Member. The encountered surface of dolostone of the Guelph Formation at the Site was found from 4.57 to 8.46 mbgs. The Stone Road Member of the Eramosa Formation, underlying the Guelph Formation, was not encountered to the depth of investigation at 15.62 mbgs. The lower permeability Reformatory Member and Vinemount Member of the Eramosa Formation are generally understood to serve as a regional aquitard (Brunton, 2009). Beneath the Eramosa are limestone formations of the Goat Island Formation, underlain by the Gasport Formation. The municipal groundwater resource is primarily drawn from the Gasport Formation, estimated to occur at least 45 mbgs. The source of some of the water in the Gasport Formation is through slow recharge across the aquitard from the shallow bedrock groundwater. A depiction of the formation and members as published by Frank R. Brunton (Brunton et al., 2012) is provided as Exhibit 2.

Exhibit 2: Lower Stratigraphy for City of Guelph Region



Source: Brunton and Banks, 2017

3. Modified Generic Risk Assessment Approach

3.1 Applicable Site Condition Standards

Ontario Regulation (O. Reg.) 153/04 (MECP, 2011a), under Part XV.1 of the Environmental Protection Act, addresses the assessment, cleanup, and filing of an RSC for brownfield sites in Ontario, and applies to the Site.

Jacobs evaluated the Site based on a number of criteria to determine which of the which of the generic site condition standards provided in the *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act* (MECP, 2011b), applied for a comparison of soil and groundwater results from the Phase Two ESA investigation:

- The Site is not considered an area of natural significance or to be within the proximity of an area of natural significance, based on the information reviewed as part of the Phase One ESA (Pinchin, 2018).

- Soil pH was within the MECP's acceptable range for samples collected in both surface soil (from between surface to 1.5 mbgs, with a pH value in surface soil less than 5 or greater than 9) and subsurface soil (more than 1.5 mbgs with a pH value in subsurface soil less than 5 or greater than 11).

- The Site and adjacent properties within 250 m are serviced by a municipal water source by the City of Guelph. The City of Guelph relies on groundwater for its water supply (City of Guelph, 2018).
- No waterbodies are located on the Site or within 30 meters of the Site. The Speed River is the nearest downgradient waterbody located approximately 130 to 150 m north-northwest of the Site.
- The Site is not considered a shallow soil Site (less than 2 m of overburden above bedrock), nor do conditions on the Site exist (shallow depth to groundwater) that may warrant the application of the shallow soil standards.
- Extensive presence of heterogeneous fill materials exists across the Site, classifying as coarse-grained soils.

Based on this information, and the future intended use of the Site, the *Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition* for coarse grained soil and residential/parkland/institutional land use (Table 2 SCS) were considered the applicable site condition standards.

3.2 Soil and Groundwater Quality

Jacobs conducted the Phase Two ESA investigations at the Site between July 2019 and April 2020, and these results along with results from a previous 2008 investigation (XCG, 2008) were used to characterize the soil and groundwater at the Property. The findings from this compilation of results indicated that impacts in soil and groundwater on the Site were limited to metals in localized areas.

Soil impacts were limited to lead and mercury at one location in the southeast portion of the Site, extending to a maximum depth of 3.5 mbgs. These impacts are likely due to infill from historical activities or urban fill, present only in the existing laneway based on results and observations during the Phase Two ESA activities.

Limited impacts (cadmium) were identified in groundwater, localized to the southwestern portion of the property, and found only in the monitoring wells screened in the shallow portion of the bedrock. Based on the local groundwater flow and concentrations from downgradient wells, the cadmium impacts do not extend past the property boundary to the east and south, therefore meeting the MECP drinking water component value (GW1) at the nearest offsite human receptors. Additionally, from the interpreted groundwater flow, the lead and mercury impacts in soil appear to be unrelated to the cadmium in groundwater and are unlikely to be acting as a source of contaminant mass contributing to the groundwater quality at the Site. As the cadmium impacts are found in the most upgradient locations onsite, they may be related to offsite sources from the west, or other urban fill (offsite), however there is currently no direct evidence to confirm.

Figures 7, 7a, 7b, 8, 8a, 8b and 8c are provided to show the vertical and lateral distribution of metal concentrations in soil and groundwater at the Site.

Other parameter groups identified as contaminants of potential concern at the Site including benzene, toluene, ethylbenzene, and xylenes (BTEX), volatile organic compounds (VOCs), petroleum hydrocarbons (PHCs) acid, base, neutral compounds (ABNs), polychlorinated biphenyls (PCBs) and dioxins and furans (D&Fs) were not identified in either soil or groundwater at concentrations greater than the Table 2 SCS.

3.3 Use of the Modified Generic Risk Assessment

The MGRA, also referred to as 'Tier 2' risk assessment, is a streamlined approach which uses an 'Approved Model' for developing property specific standards (PSS) based on the model used by the MECP to develop the generic site condition standards in the Soil, Ground Water and Sediment Standards document (MECP, 2011b). The MGRA relies on the use of prescribed RMMs or pathway modifiers which are developed by the MECP, and therefore its use is limited to low risk properties with minimal contamination. The MECP review time for an MGRA is also reduced from a full Risk Assessment which can be beneficial for owner's redevelopment schedules.

Based on the contaminant distribution on the Site, the human health and ecological conceptual site models were prepared and are presented as Figures 9 and 10. These diagrams show the pathways and receptors present based on the conditions at the Site.

When considered in the MGRA, the risk drivers for soil at the Site are direct contact (for both human health and ecological) from lead and mercury and the soil-to-indoor air pathway (inhalation) for mercury. The only risk driver for groundwater is potable water use, as the ecological risk is considered acceptable when the site-specific distance to surface water is included in the MGRA model.

RMMs selected to address the risks from soil are a hard cap or fill cap barrier (direct contact) and a storage/parking garage (inhalation). The hard/fill cap barrier requires a prescribed depth of unimpacted materials to prevent exposure to receptors. The storage/parking garage provides mechanical ventilation and a supply of outdoor air per the Ontario Building Code to mitigate inhalation risks. The No Groundwater Use RMM is selected to address the risk from groundwater to potable users. The MGRA will assume that groundwater under the Property is not being used as a source of water, all wells (as defined by Section 35.1 of the O. Reg 153/04) will be properly abandoned, and no new wells (as defined by Section 35.1 of the O. Reg 153/04) will be installed on the Property.

4. Current Understanding of Future Design

The future use of the Site, based on Jacobs' current understanding, is the City's Baker District Redevelopment which includes a new central Guelph Public Library and outdoor urban square, featuring residential (condo) units, commercial and institutional space, and public parking. The current construction design that has been shared with Jacobs includes an underground parking lot beneath the Site, spanning the entire property, including the area where soil impacts are present. A maximum depth of excavation to reach the foundation elevation of the underside of the foundations has been assumed at 10 mbgs (Jacobs, 2020). It is therefore anticipated that all overburden material will be removed from the Site.

Any soil being brought into the Site (ie. fill cap) will be required to meet the Table 2 SCS or if required, the excess soil standards determined appropriate for the Site.

5. Site Contaminants in Relation to Groundwater Aquifers used for Guelph's Drinking Water

Jacobs is of the opinion, based on the data presented in this letter, that the contaminants on the Site do not pose a threat to the City's municipal drinking water source. These conclusions are summarized as follows:

- No ongoing industrial activities are occurring on the Site which would be contributing to Site contamination.
- Despite the MGRA including all current soil data from Site and assessing the associated risks, the Baker Street Redevelopment construction plan currently includes removal of all existing soil to bedrock; therefore, there will be no ongoing soil source from the Site.
- There is a clear reduction in groundwater concentrations (cadmium) vertically within the unconfined overburden/interface to the shallow unconfined bedrock aquifer, where the Table 2 SCS (potable water criteria) is met at 13.5 mbgs. There is an estimated 30 m between the depth that the concentrations meet the SCS (and the GW1 drinking water component value) and the municipal groundwater source in the Gasport formation (estimated to occur at least 45 mbgs). Additionally, the Reformatory Member and Vinemount Member of the Eramosa Formation (lower permeability sub-regional aquitard) falls between the depth of the contaminants and the primary municipal aquifer.
- Groundwater concentrations of cadmium meet the GW1 (drinking water) component value levels at the nearest downgradient receptors based on results from onsite monitoring wells (screened at similar depths) located downgradient of the cadmium impacts.
- The Site and adjacent properties are supplied by municipal drinking water system. No municipal groundwater supply wells are located on Site or the adjacent properties; the nearest groundwater supply well is present approximately 1.3 km from the Site.

Jacobs therefore believes the RMMs selected in the MGRA being prepared, including the "No Ground Water Use" RMM, is appropriate for the Site.

We trust the information provided is complete and sufficient for your current review, and request that the City provide a response for record, as part of the MGRA process. Should you have any questions or require any additional information, please do not hesitate to contact us.

Regards

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tania.mccarthy@jacobs.com

Copies to:
Ed Taves/Jacobs
Katherine Appleby/Jacobs

Attachments:
Figures 1 to 10 (20 figures)

References

Brunton, F. R. 2009. "Update of revisions to the Early Silurian stratigraphy of the Niagara Escarpment: integration of sequence stratigraphy, sedimentology and hydrogeology to delineate hydrogeologic units." Summary of Field Work and Other Activities 2009. Ontario Geologic Survey. Open File Report 6240. pp. 25–1 to 25–20.

Brunton, F. R., C. Brintnell, J. Jin, and A.M. Bancroft. 2012. Stratigraphic architecture of the Lockport Group in Ontario and Michigan – A new interpretation of early Silurian 'basin geometries' and 'Guelph pinnacle reefs'. In 51st Annual Conference – Ontario-New York Oil and Gas Conference (Vol. 23, p. 25).

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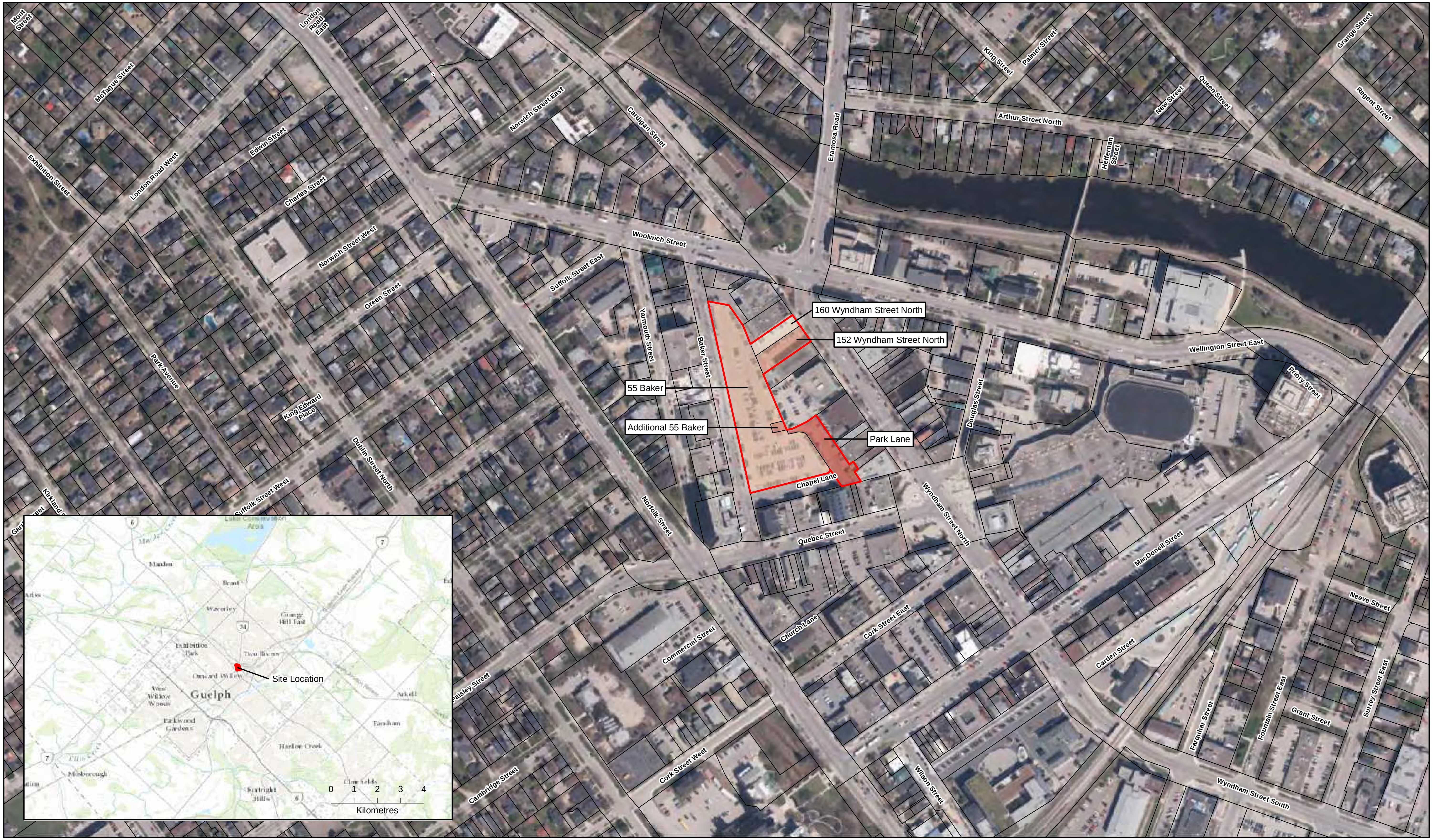
XCG Consultants Limited. 2008. *Phase II Environmental Site Assessment, Baker Street Redevelopment Site, Guelph, Ontario*. Prepared for The City of Guelph. December 19.



N

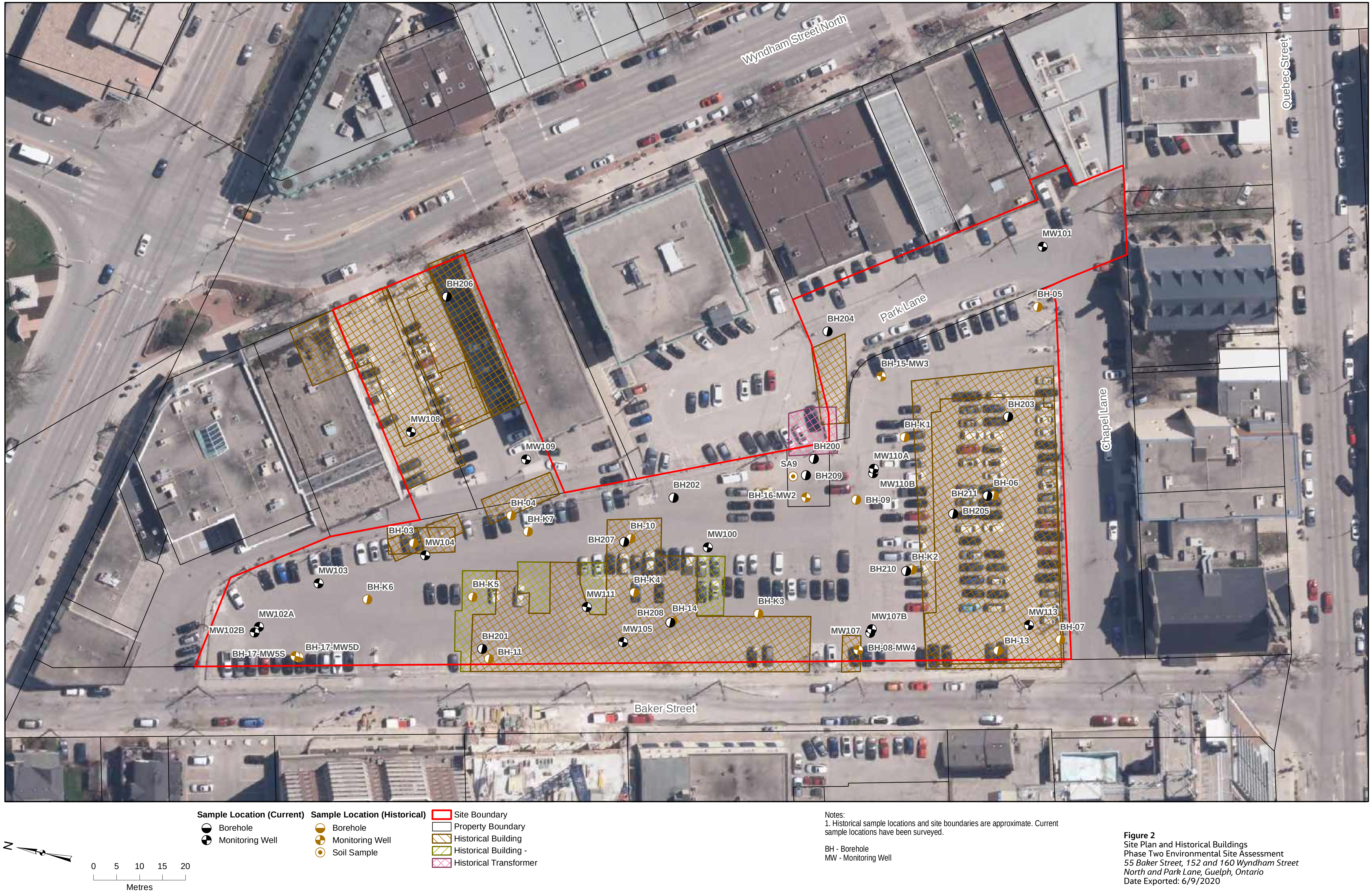
0 1 2 3 4
Kilometers

🟥 Site Boundary
☐ Property Boundary

Notes:
1. Aerial Imagery: ESRI World Imagery 2019. Imagery Date May 6, 2019.
2. Inset Basemap: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
3. Property Boundaries: City of Guelph.

Figure 1
Site Location
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street North and Park Lane, Guelph, Ontario
Date Exported: 5/13/2020

\\DC1VS01\GISPROJ\G\GUELPHCITYOF\55BAKERSTREET\MAPFILES\PHASEII\MAY2020_UPDATE\SITELOCATION.MXD MJOZWIAK 5/13/2020 11:20:19 PM



Notes:
1. Historical sample locations and site boundaries are approximate. Current sample locations have been surveyed.

BH - Borehole
MW - Monitoring Well

Figure 2
Site Plan and Historical Buildings
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 6/9/2020

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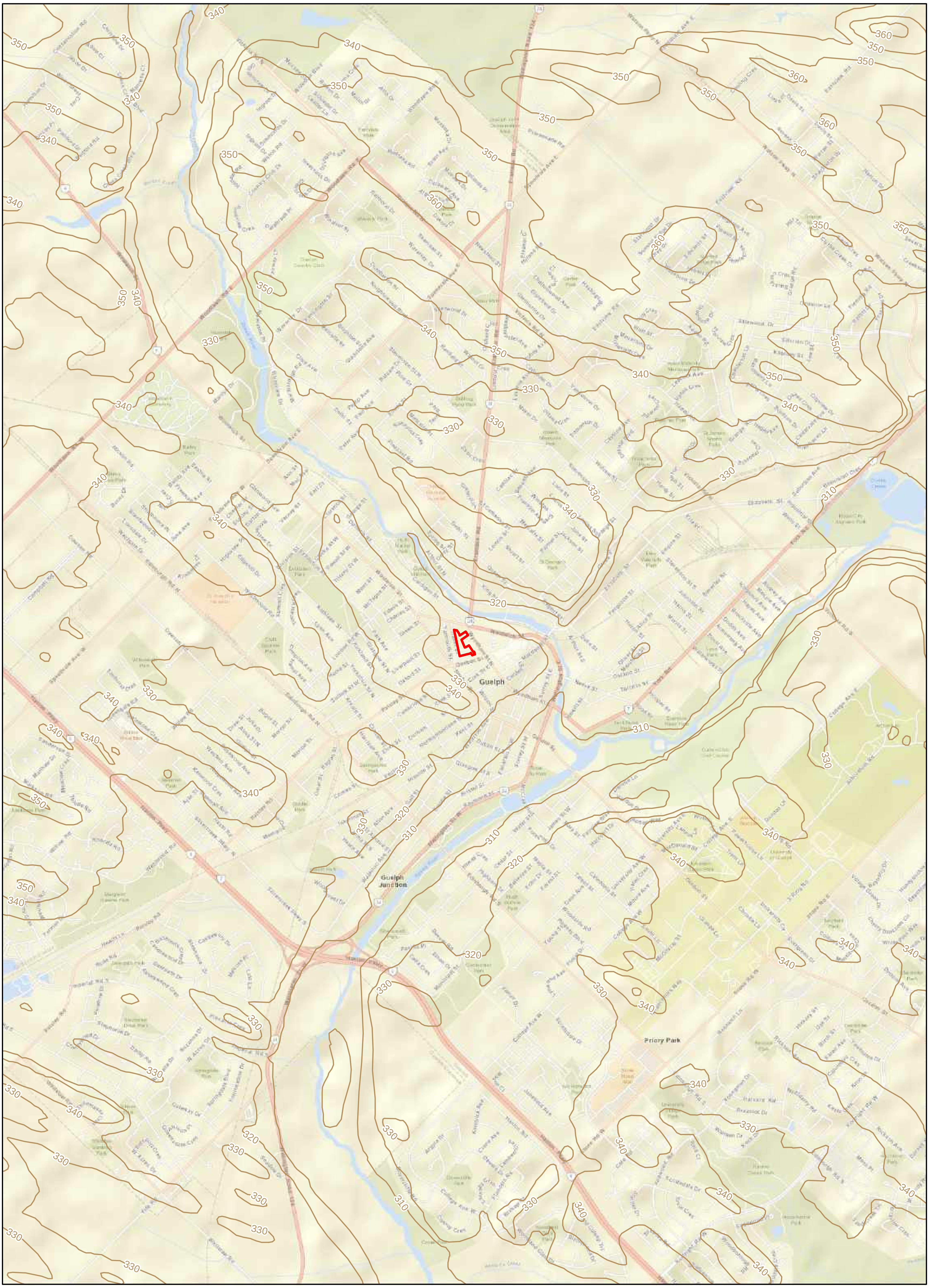
Jacobs



N

0 400 800

Meters

🟥 Site Boundary

Elevation Contour (10 m)

Notes:
1. Topography Contours obtained from Canvec.
2. Basemap Sources: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Figure 3
Regional Topography
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street North and Park Lane, Guelph, Ontario
Date Exported: 6/9/2020

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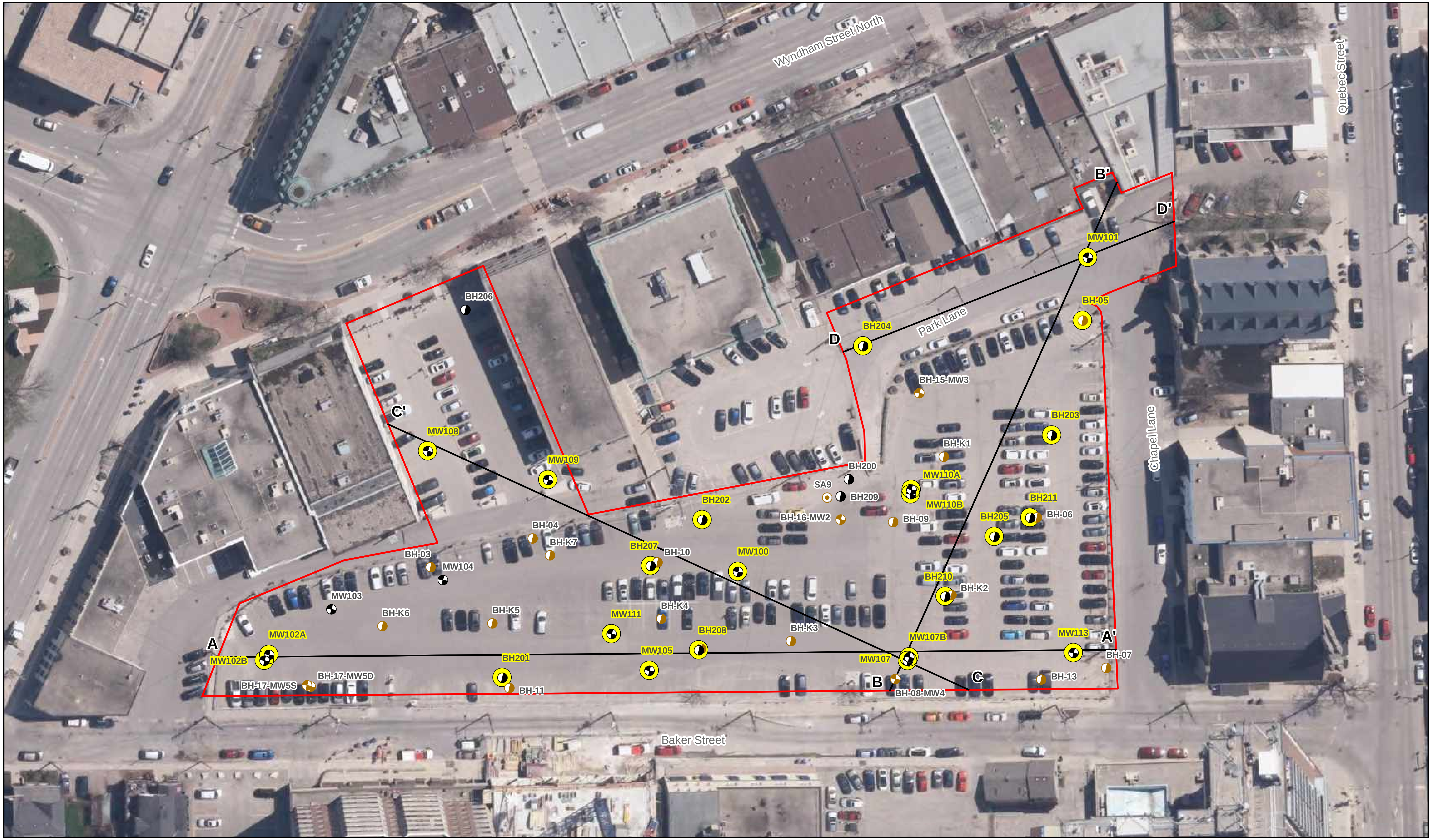
Jacobs



Sample Location (Current)	Sample Location (Historical)	
◒ Borehole	◒ Borehole	🟡 Location used in Cross-Section
◕ Monitoring Well	◕ Monitoring Well	— Cross-section Location
	⊙ Soil Sample	🟥 Site Boundary

N

0 5 10 15 20
Metres

Notes:
1. Aerial Imagery: ESRI World Imagery 2019. Imagery Date May 6, 2019.
2. Historical sample locations and site boundaries are approximate. Current sample locations have been surveyed.

BH - Borehole
MW - Monitoring Well

Figure 4
Cross-section Locations
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street North and Park Lane, Guelph, Ontario
Date Exported: 6/9/2020

Jacobs

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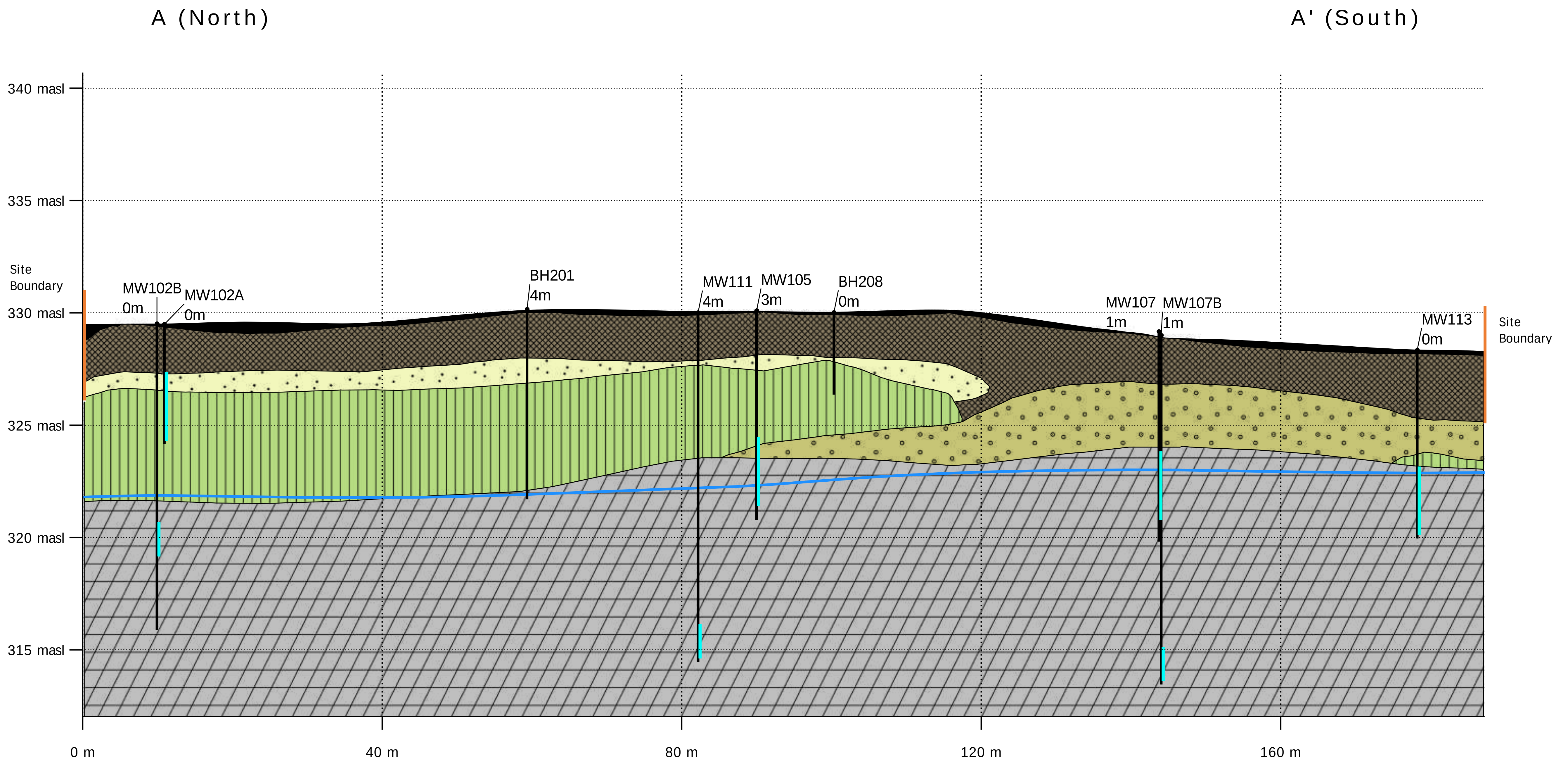
Cross-Section A-A'



Vertical exaggeration: 3x

Legend

■ Asphalt

▨ Fill

▨ Sand and Gravel

▨ Guelph formation dolostone

▨ Sand

▨ Silt

— Water Table Elevation Elevation (April 15, 2020)

| Boring Interval

| Monitoring Well Screen Interval

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations. Distance of projection is presented below each location name on the section.
2. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
3. masl = metres above sea level

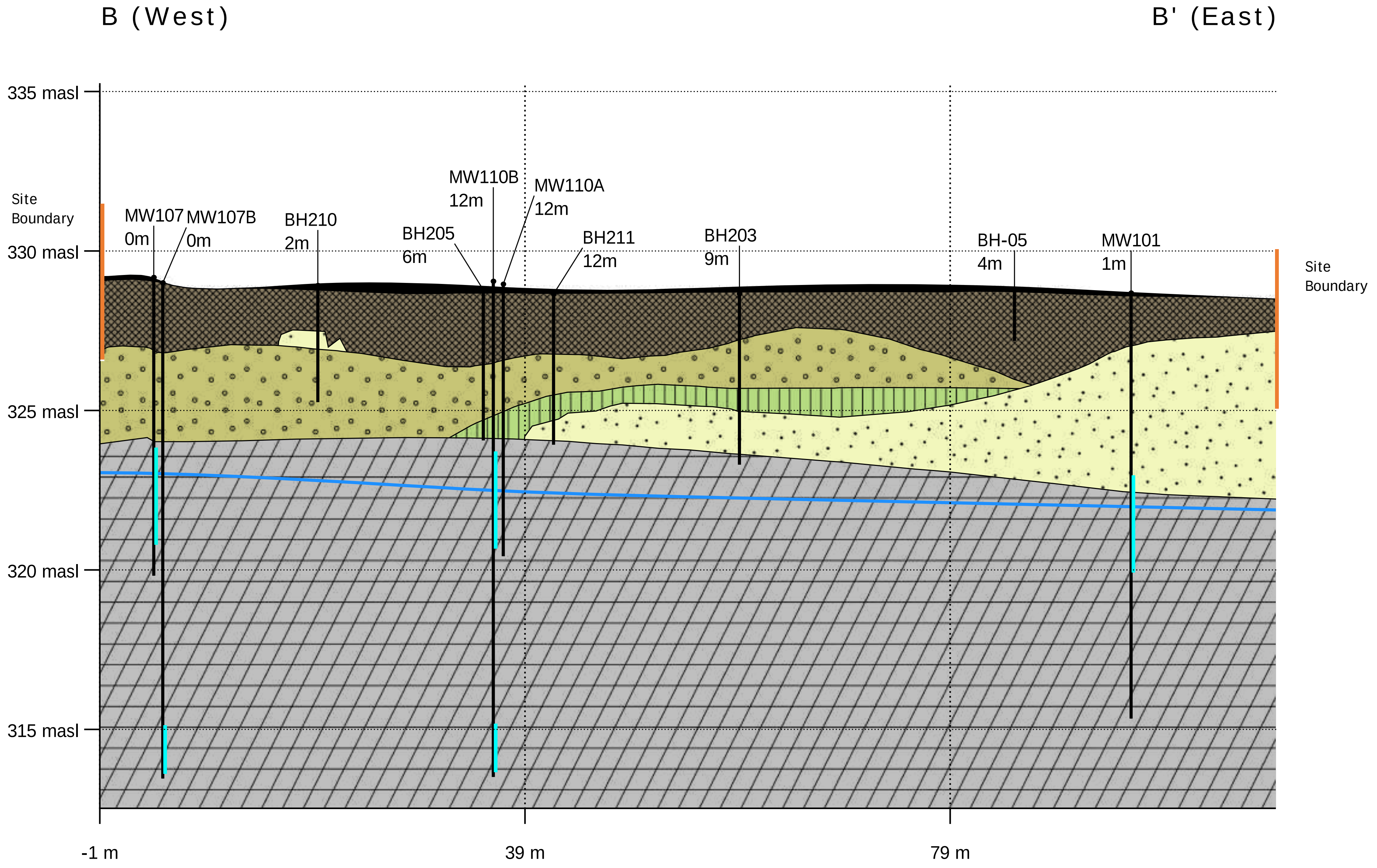
Figure **4**a

Geologic Conceptual Cross-Section A-A'
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario

Export Date: June 11, 2020

Jacobs

Cross-Section B-B'



Vertical exaggeration: 3x

Legend

- ■ Asphalt
- ▨ Fill
- ▨ Sand and Gravel
- ▨ Guelph formation dolostone
- ▨ Sand
- ▥ Silt
- — Water Table Elevation (April 15, 2020)
- | Boring Interval
- | Monitoring Well Screen Interval

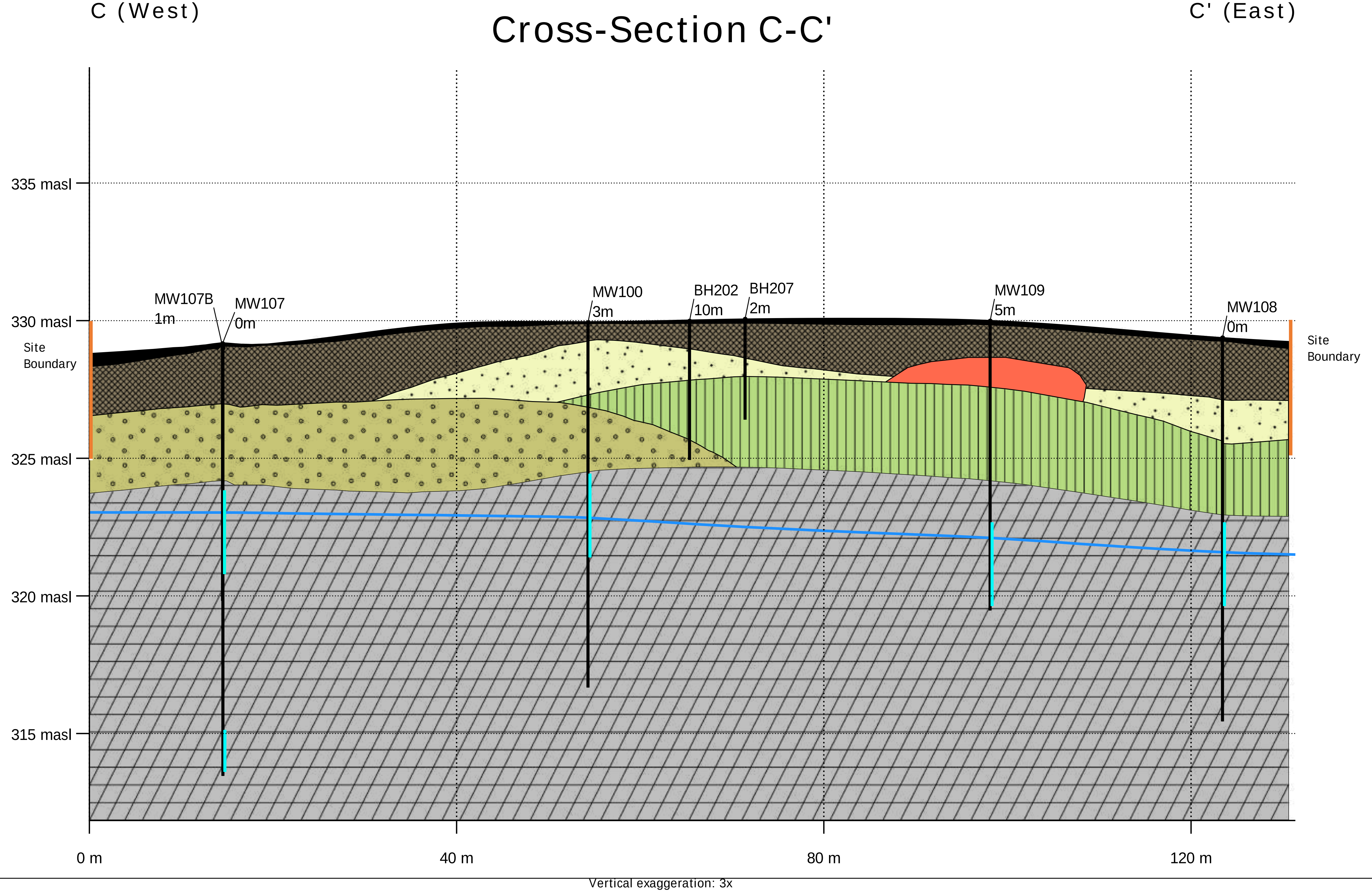
Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations. Distance of projection is presented below each location name on the section.
2. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
3. masl = metres above sea level

Figure **4**b

Geologic Conceptual Cross-Section B-B'
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario

Export Date: June 11, 2020

Cross-Section C-C'



Legend

- ■ Asphalt
- ▨ Fill
- ▨ Sand and Gravel
- ▨ Sand
- ▥ Silt
- ▨ Guelph formation dolostone
- 🟥 Clay
- Water Table Elevation (April 15, 2020)
- Boring Interval
- Monitoring Well Screen Interval

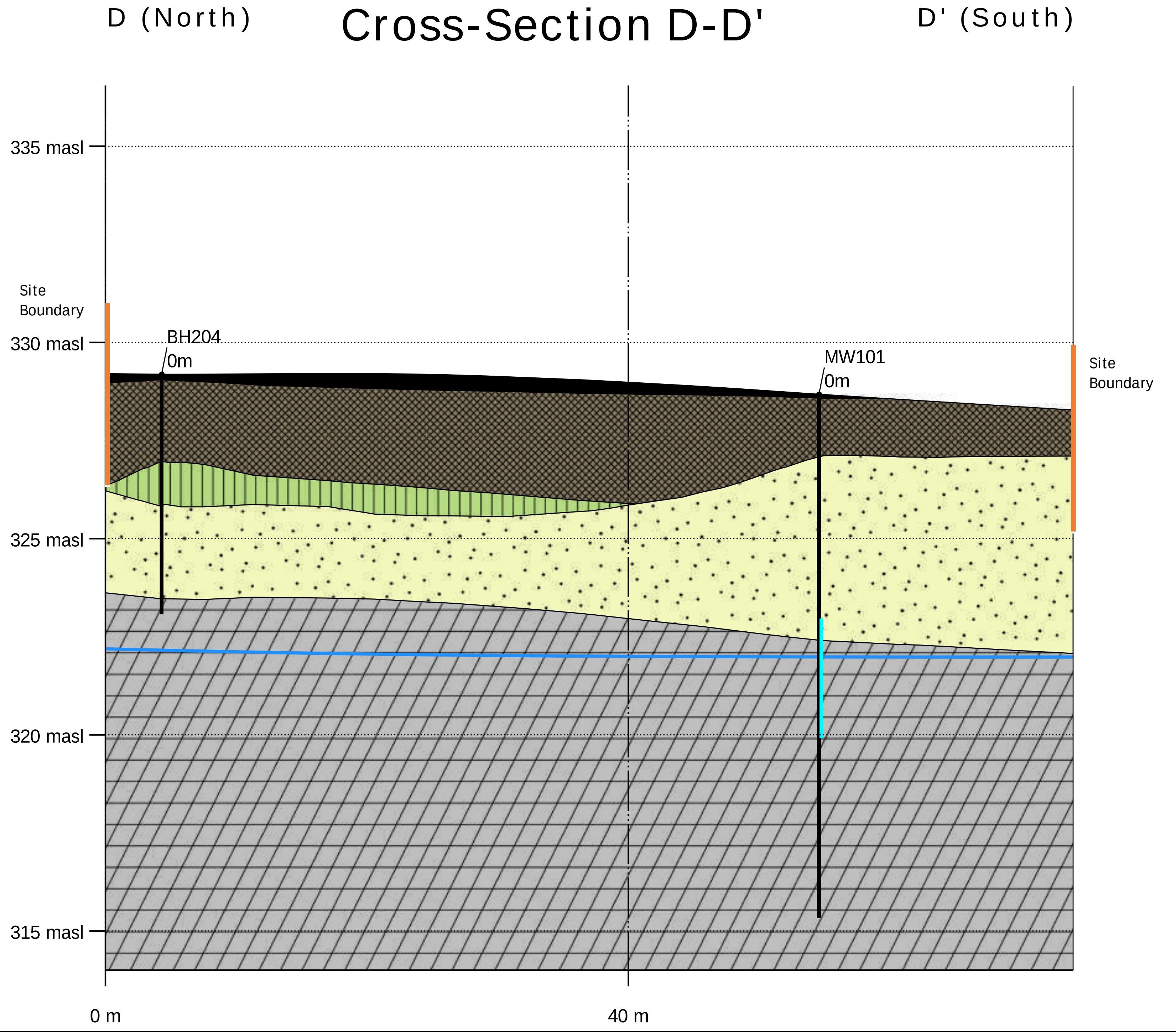
Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations. Distance of projection is presented below each location name on the section.
2. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
3. masl = metres above sea level

Figure **4**c

Conceptual Geologic Cross-Section C-C'
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario

Export Date: June 11, 2020

Cross-Section D-D'



Vertical exaggeration: 3x

Legend

- ■ Asphalt
- ▨ Fill
- ▨ Guelph formation dolostone
- ▨ Sand
- ▥ Silt
- — Water Table Elevation Elevation (April 15, 2020)
- | Boring Interval
- | Monitoring Well Screen Interval

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
3. masl = metres above sea level

Figure **4**d

Conceptual Geologic Cross-Section D-D'
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario

Export Date: June 11, 2020

Jacobs

N

0 5 10 15 20
Metres

December 18, 2019 Groundwater Elevations (mASL)
- ● Shallow Monitoring Well - Perched Water Table Elevation
- ● Monitoring Well - Water Table Elevation
- ● Monitoring Well - Deep

- — Water Table Elevation Contour (masl) - December 18, 2019
- → Flow Direction
- ☐ Site Boundary

Notes:
1. Historical sample locations and site boundaries are approximate. Current sample locations have been surveyed.

BH - Borehole
MW - Monitoring Well
GW - Groundwater

Figure 5a
Groundwater Contours - December 2019
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 6/9/2020

Jacobs

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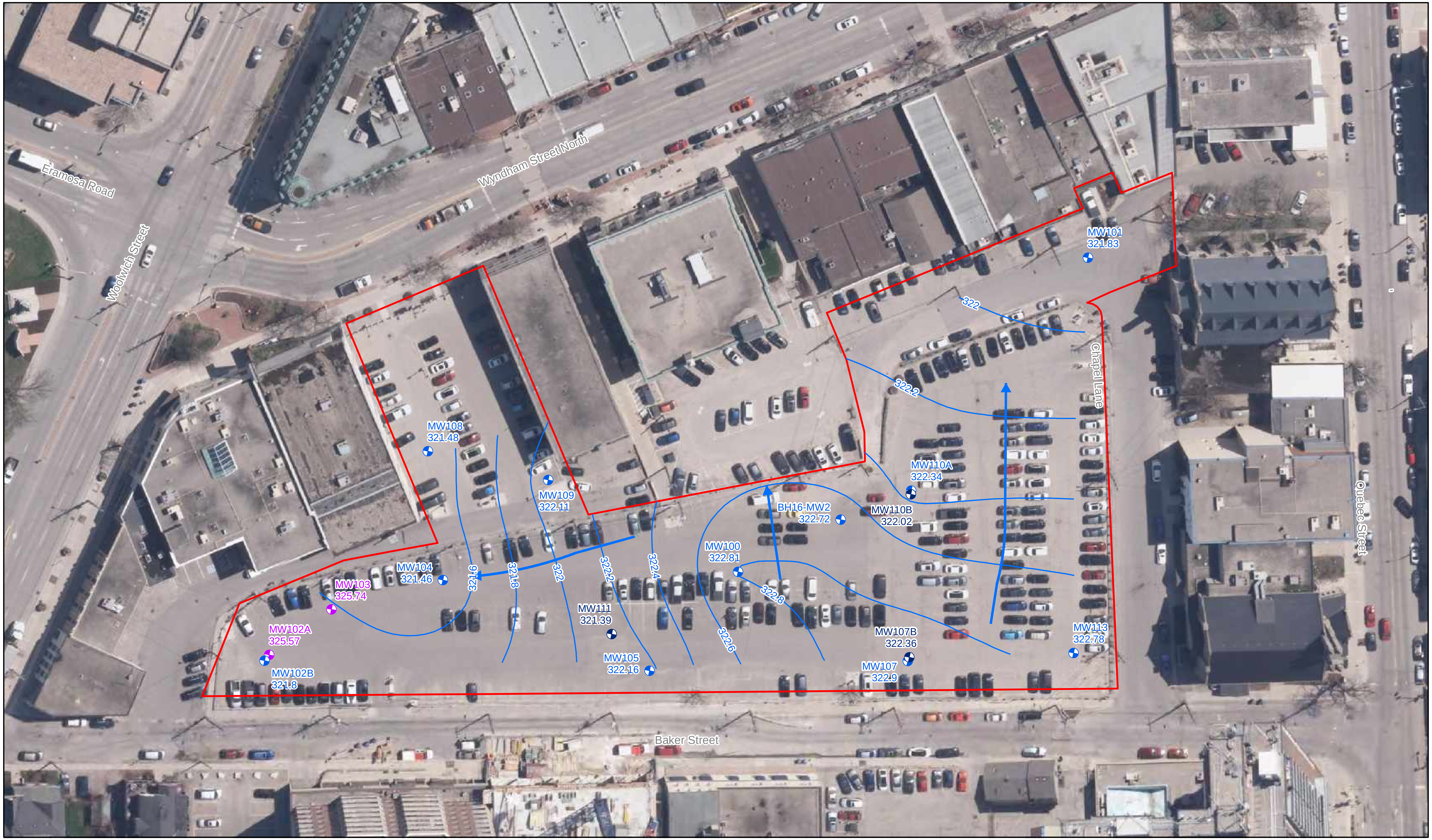

April 15, 2020 Groundwater Elevations (mASL)

● Shallow Monitoring Well - Perched Water Table Elevation

● Monitoring Well - Water Table Elevation

● Monitoring Well - Deep

— Water Table Elevation Contour (masl) - April 15, 2020

→ Flow Direction

▭ Site Boundary

N

0 5 10 15 20

Metres

Notes:
1. Historical sample locations and site boundaries are approximate. Current sample locations have been surveyed.

BH - Borehole
MW - Monitoring Well
GW - Groundwater

Figure 5b
Groundwater Contours - April 2020
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 6/9/2020

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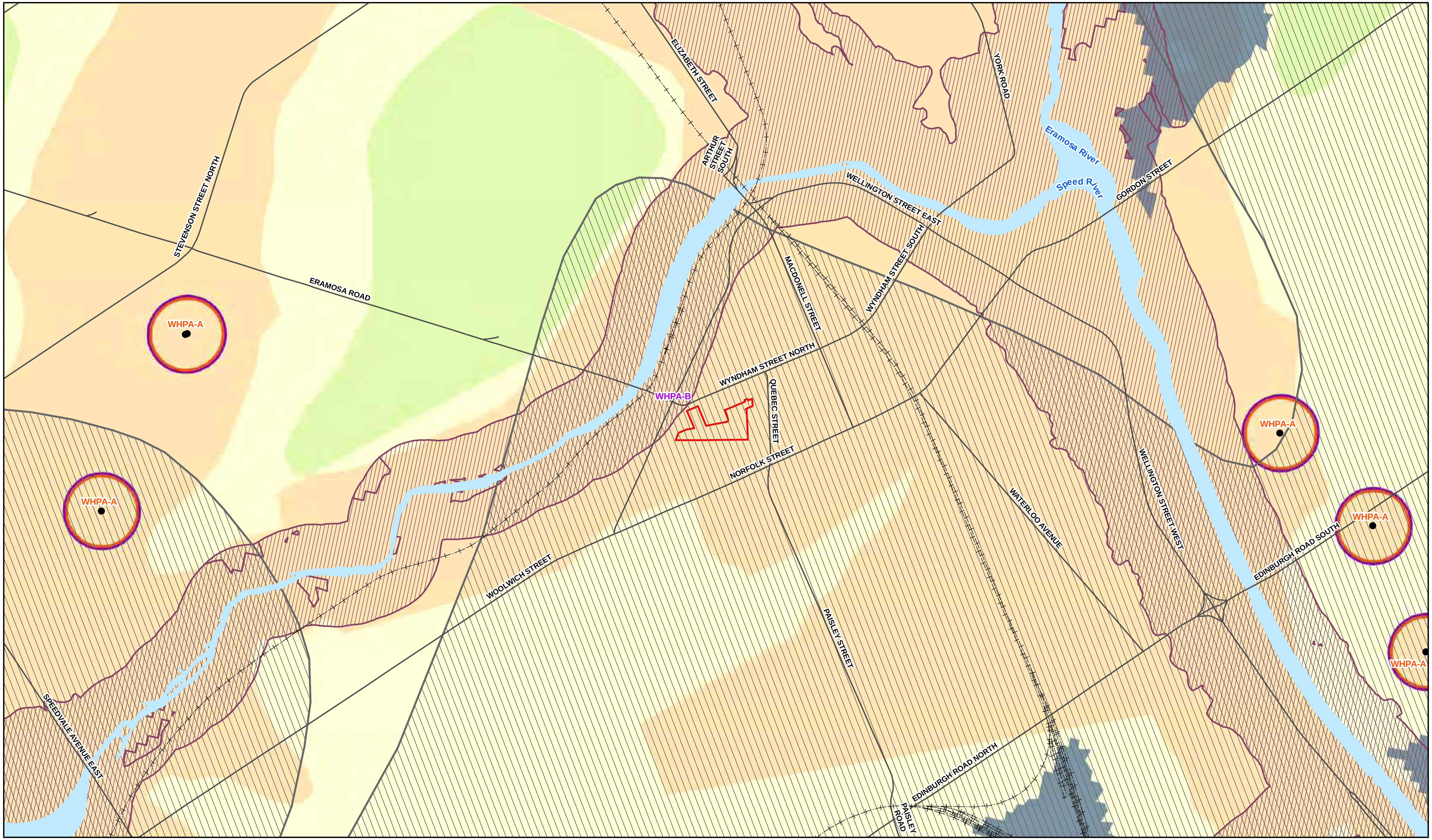
Jacobs



N

0 50 100 150 200

Metres

🟥 Site Boundary

▨ SWP Surface Water Intake Protection Zone

▨ SWP Issue Contributing Area

■ SWP Significant Groundwater Recharge Area

● Municipal Well

■ Watercourse

— Road

-+- Railway

Well Head Protection Area

🟧 WHPA-A (100 m Buffer)

🟪 WHPA-B (2 Year Time of Travel)

SWP Wellhead Protection Area Vulnerability Score

🟩 6

■ 8

🟧 10

Notes:
1. Contains Information made available under Grand River Conservation Authority's Open Data Licence v2.0."
https://data.grandriver.ca/downloads-geospatial.html

Figure 3-2
Source Water Protection Areas
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario
Date Exported: 7/6/2020

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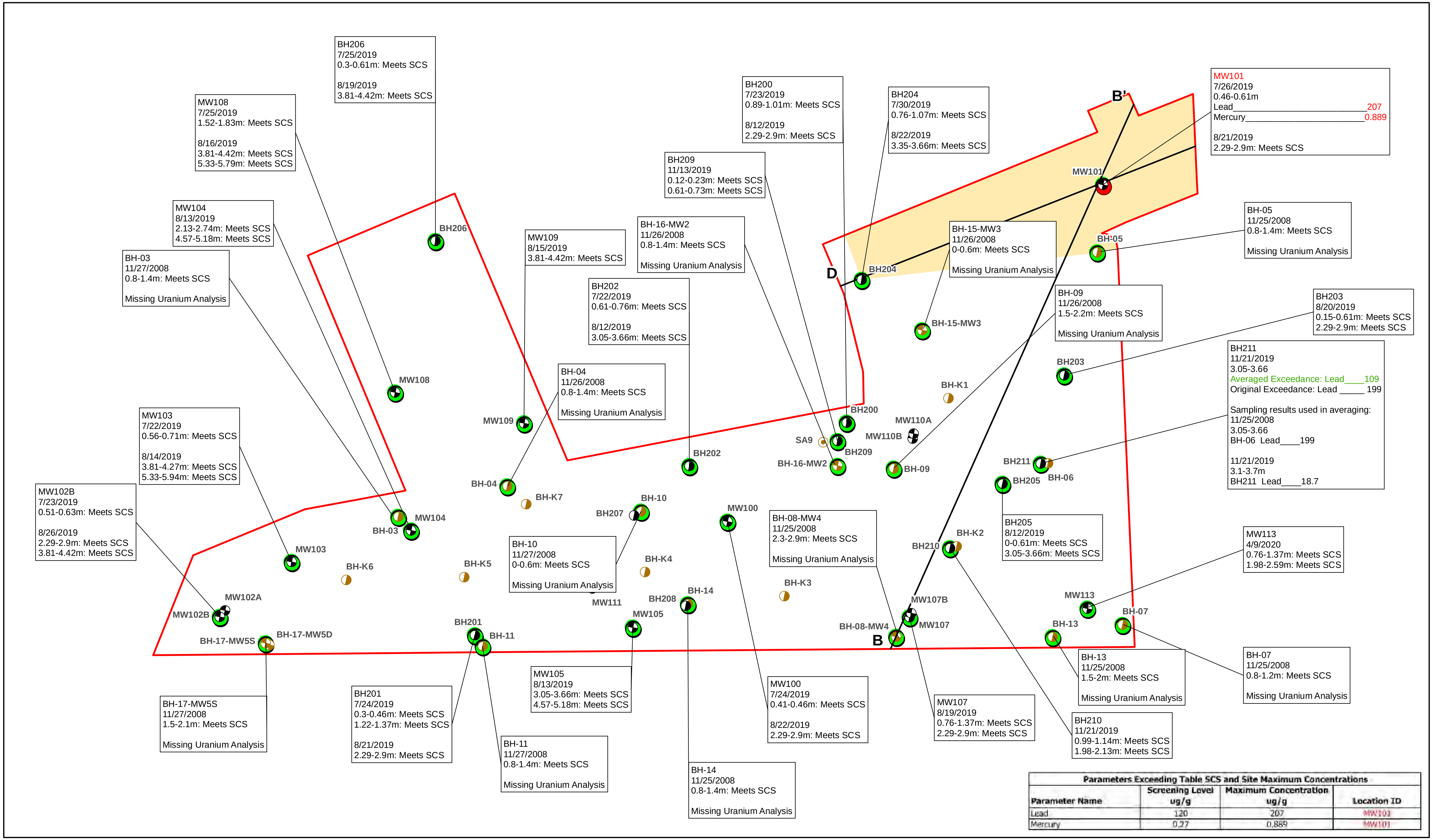
Jacobs



Parameters Exceeding Table SCS and Site Maximum Concentrations			
Parameter Name	Screening Level ug/g	Maximum Concentration ug/g	Location ID
Lead	120	207	MW101
Mercury	0.27	0.889	MW101

N

0 5 10 15

Metres

Sample Location (Current)
- ◒ Borehole
- ◕ Monitoring Well

Sample Location (Historical)
- ◒ Borehole
- ◕ Monitoring Well
- ◉ Soil Sample

- 🔴 Location without Table 2 Exceedance
- 🟢 Location with Table 2 Exceedance
- — Cross-section Location
- 🟨 Inferred Lateral Extent of Concentration Greater than the Table 2 SCS
- 🟥 Site Boundary

Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of soil impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.
5. Samples from 2008 were collected in accordance with O. Reg. 153/04, but are missing analysis of uranium, which was not regulated under the Regulation at the time of investigation. This data is considered valid for RSC purposes.

Figure 7
Soil Results - Metals and Select ORPs: Metals, Hydride-Forming Metals, Hg, MeHg, and CrVI
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 6/9/2020

Jacobs

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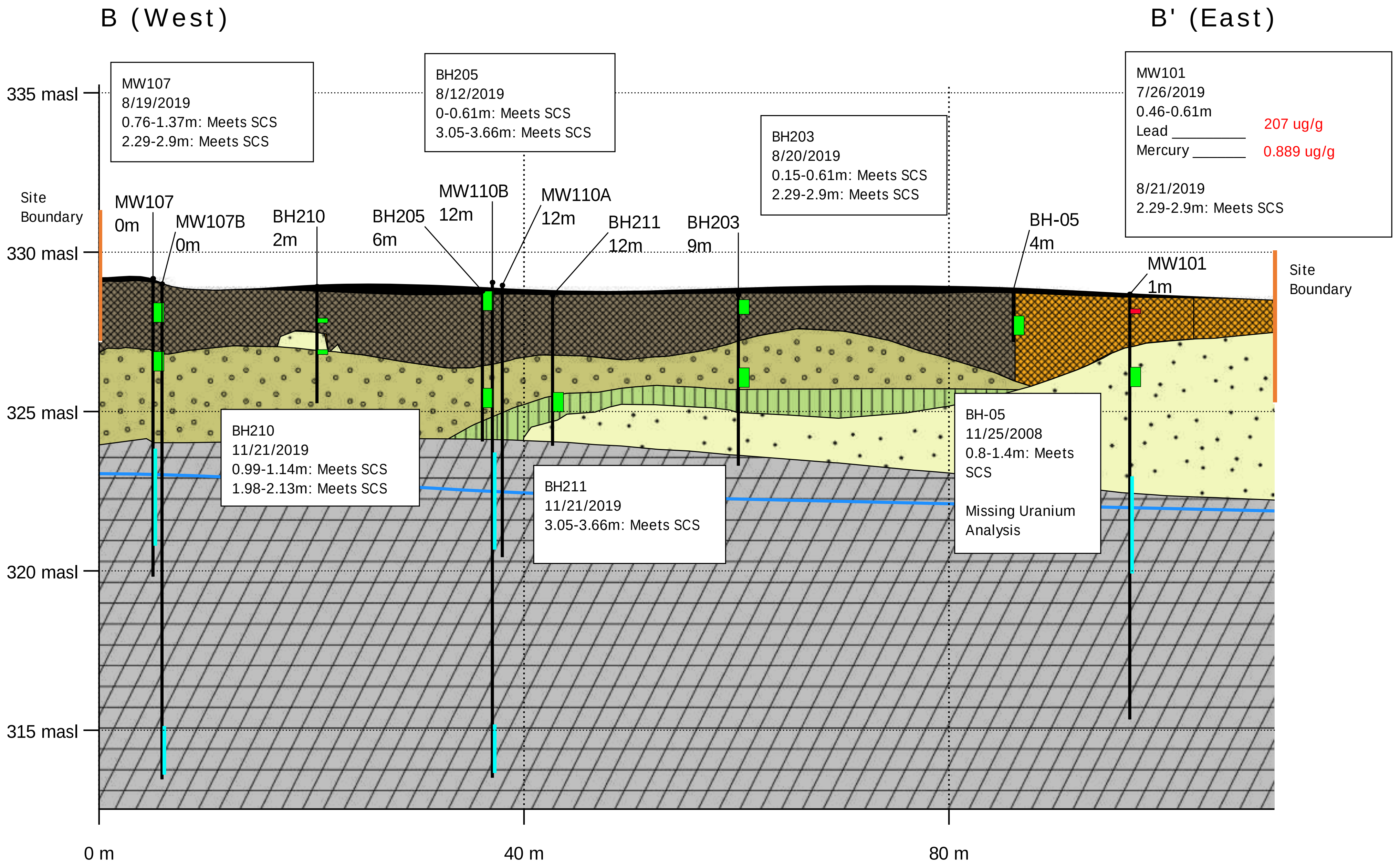
Cross-Section B-B'



MW107
8/19/2019
0.76-1.37m: Meets SCS
2.29-2.9m: Meets SCS

BH205
8/12/2019
0-0.61m: Meets SCS
3.05-3.66m: Meets SCS

BH203
8/20/2019
0.15-0.61m: Meets SCS
2.29-2.9m: Meets SCS

MW101
7/26/2019
0.46-0.61m
Lead _________ 207 ug/g
Mercury _______ 0.889 ug/g

8/21/2019
2.29-2.9m: Meets SCS

BH210
11/21/2019
0.99-1.14m: Meets SCS
1.98-2.13m: Meets SCS

BH211
11/21/2019
3.05-3.66m: Meets SCS

BH-05
11/25/2008
0.8-1.4m: Meets SCS

Missing Uranium Analysis

Vertical exaggeration: 3x

Legend

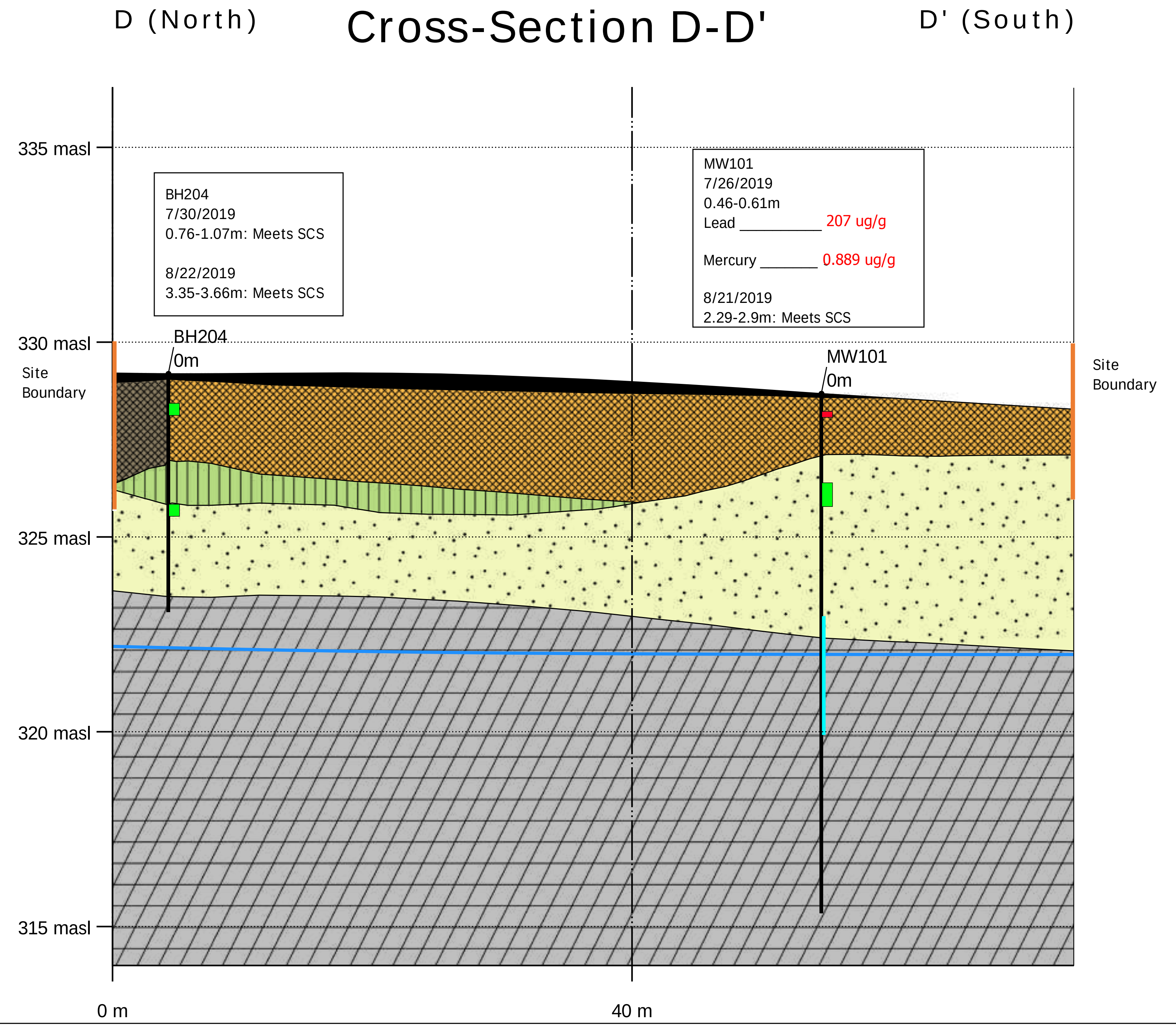
■ Asphalt
▨ Guelph formation dolostone
▨ Fill
▨ Sand
▨ Sand and Gravel
▨ Silt
🟥 Soil Sample Exceeds SCS
▨ Inferred Maximum Extent of Soil > SCS
🟩 Soil Sample Meets SCS
| Boring Interval
| Monitoring Well Screen Interval
— Water Table Elevation Elevation (April 15, 2020)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations. Distance of projection is presented below each location name on the section.
2. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
3. masl = metres above sea level
4. Results in ( ) indicate field duplicates.
5. Red text indicates the locaiton of the site maximum concentration of the analyte.
6. Samples from 2008 were collected in accordance with O.Reg. 153/04, but are missing analysis of uranium, which was not regulated under the Regulation at the time of investigation. This data is considered valid for RSC purposes.

Figure **7**a
Soil Results - Metals and Select ORPs: Metals, Hydride-Forming Metals, Hg, MeHg, and CrVI
Cross-Section B-B'
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street North and Park Lane, Guelph, Ontario
Export Date: June 17, 2020

Jacobs

Cross-Section D-D'



BH204
7/30/2019
0.76-1.07m: Meets SCS

8/22/2019
3.35-3.66m: Meets SCS

MW101
7/26/2019
0.46-0.61m
Lead __________ 207 ug/g

Mercury _______ 0.889 ug/g

8/21/2019
2.29-2.9m: Meets SCS

Vertical exaggeration: 3x

Legend

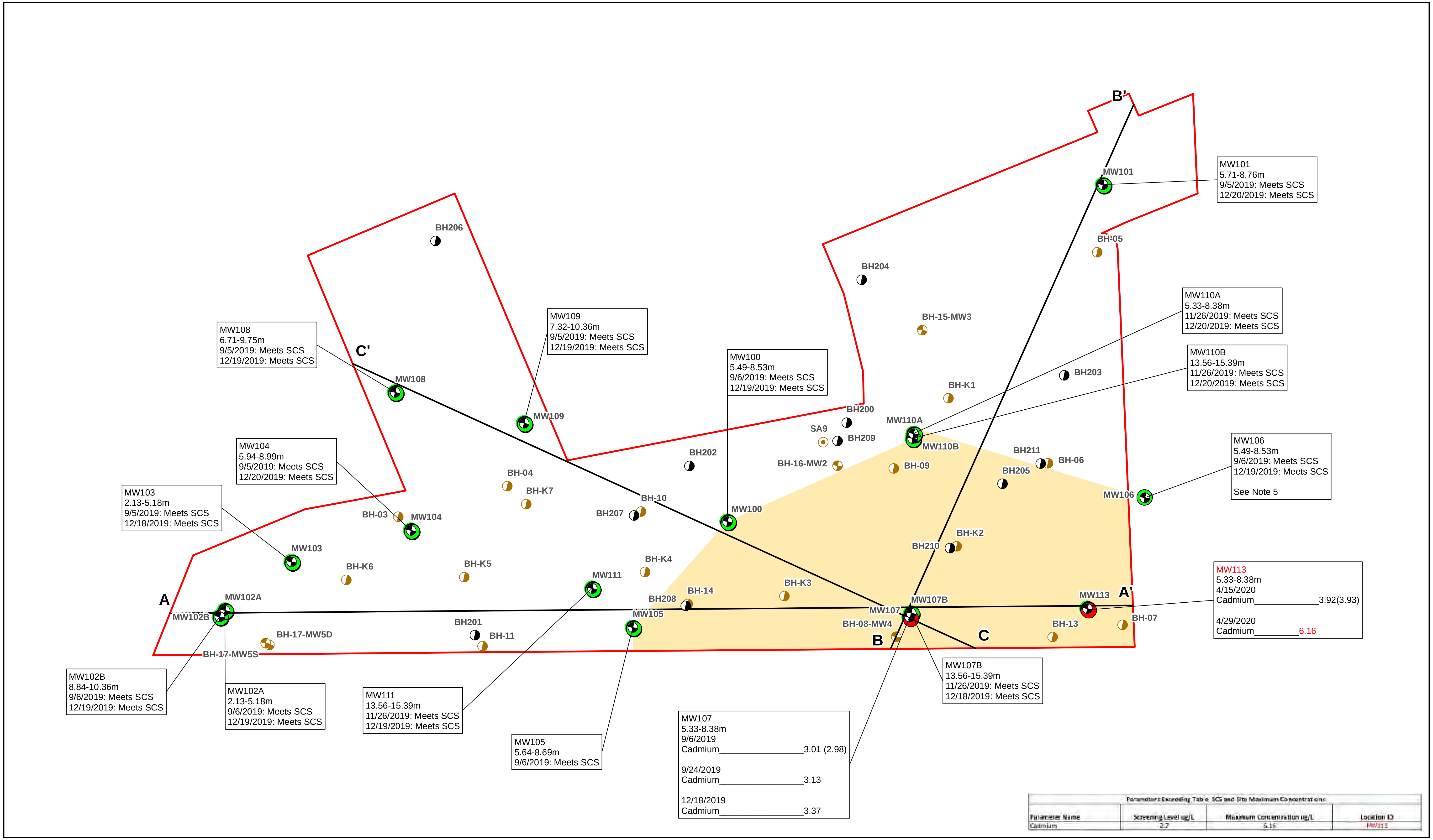
- ■ Asphalt
- ▩ Fill
- ▨ Guelph formation dolostone
- 🟥 Soil Sample Exceeds SCS
- 🟩 Soil Sample Meets SCS
- ░ Sand
- ▥ Silt
- ▩ Inferred Maximum Extent of Soil > SCS
- │ Boring Interval
- │ Monitoring Well Screen Interval
- ― Water Table Elevation Elevation (April 15, 2020)

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations.
2. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
3. masl = metres above sea level
4. Results in ( ) indicate field duplicates.
5. Red text indicates the locaiton of the site maximum concentration of the analyte.
6. Samples from 2008 were collected in accordance with O.Reg. 153/04, but are missing analysis of uranium, which was not regulated under the Regulation at the time of investigation. This data is considered valid for RSC purposes.

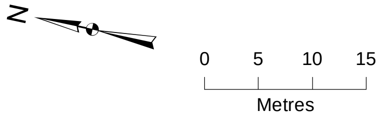
Figure 7b
Soil Results - Metals and Select ORPs: Metals, Hydride-Forming Metals, Hg, MeHg, and CrVI
Cross-Section D-D'
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario

Export Date: June 11, 2020

Jacobs



Parameters Exceeding Table SCS and Site Maximum Concentrations			
Parameter Name	Screening Level ug/L	Maximum Concentration ug/L	Location ID
Cadmium	2.7	6.16	MW113



Sample Location (Current)
- ◒ Borehole
- ◐ Monitoring Well

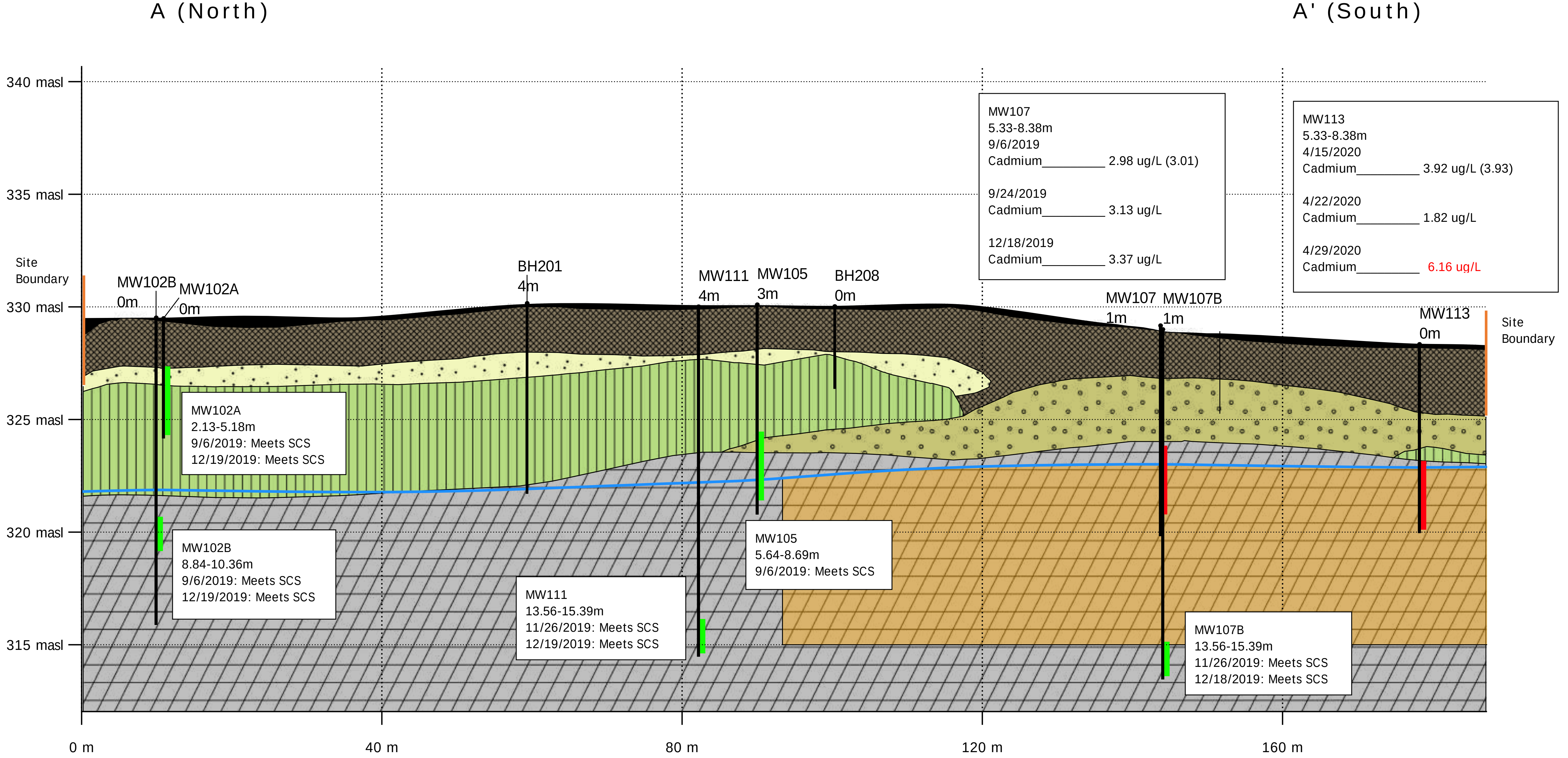
Sample Location (Historical)
- ◒ Borehole
- ◐ Monitoring Well
- ◉ Soil Sample

- 🔴 Location without Table 2 Exceedance
- 🟢 Location with Table 2 Exceedance
- — Cross-section Location
- 🟨 Inferred Lateral Extent of Concentration Greater than the Table 2 SCS
- 🟥 Site Boundary

Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of groundwater impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.
5. Offsite location with the same property owner, was installed as part of the same sampling program and has been shown for horizontal delineation purposes only.

Figure 8
Groundwater Results - Metals and Select ORPs: Metals, Hydride-Forming Metals, Hg, and CrVI
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 6/8/2020

Cross-Section A-A'



Vertical exaggeration: 3x

Legend

■ Asphalt
▨ Fill
▨ Sand and Gravel
▨ Guelph formation doloston
▨ Sand
▨ Silt

│ Boring Interval
🟩 Groundwater Sample Meets SCS
🟥 Groundwater Sample Exceeds SCS

— Water Table Elevation Elevation (April 15, 2020)

🟧 Inferred Maximum Extent of Groundwater > SCS

Notes:

1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations. Distance of projection is presented below each location name on the section.
2. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
3. masl = metres above sea level
4. Results in ( ) indicate field duplicates.
5. Red text indicates the locaiton of the site maximum concentration of the analyte.
6. Samples from 2008 were collected in accordance with O.Reg. 153/04, but are missing analysis of uranium, which was not regulated under the Regulation at the time of investigation. This data is considered valid for RSC purposes.

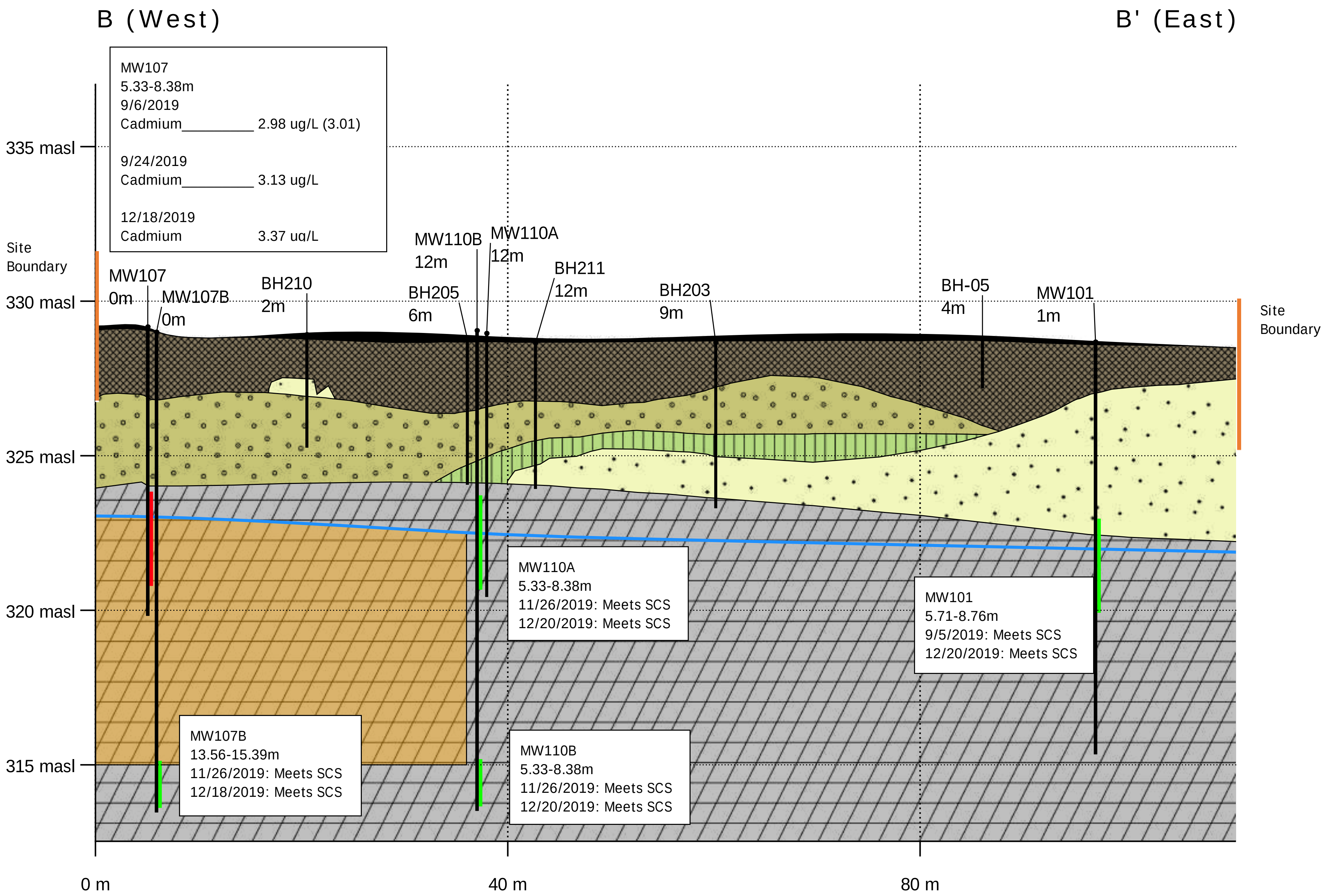
Figure **8**a

Groundwater Results - Metals and Select ORPs:
Metals, Hydride-Forming Metals, Hg, MeHG, and CrVI
Cross-Section A-A'
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street North
and Park Lane, Guelph, Ontario

Export Date: June 11, 2020

JACOBS

Cross-Section B-B'



MW107
5.33-8.38m
9/6/2019
Cadmium________ 2.98 ug/L (3.01)

9/24/2019
Cadmium________ 3.13 ug/L

12/18/2019
Cadmium 3.37 ug/L

MW110A
5.33-8.38m
11/26/2019: Meets SCS
12/20/2019: Meets SCS

MW101
5.71-8.76m
9/5/2019: Meets SCS
12/20/2019: Meets SCS

MW107B
13.56-15.39m
11/26/2019: Meets SCS
12/18/2019: Meets SCS

MW110B
5.33-8.38m
11/26/2019: Meets SCS
12/20/2019: Meets SCS

Vertical exaggeration: 3x

Legend

- ■ Asphalt
- ▩ Fill
- ▨ Sand and Gravel
- ▧ Guelph formation dolostone
- ▢ Sand
- ▥ Silt
- 🟧 Inferred Maximum Extent of Groundwater > SCS
- — Water Table Elevation (April 15, 2020)
- | Boring Interval
- | Groundwater Sample Meets SCS
- | Groundwater Sample Exceeds SCS

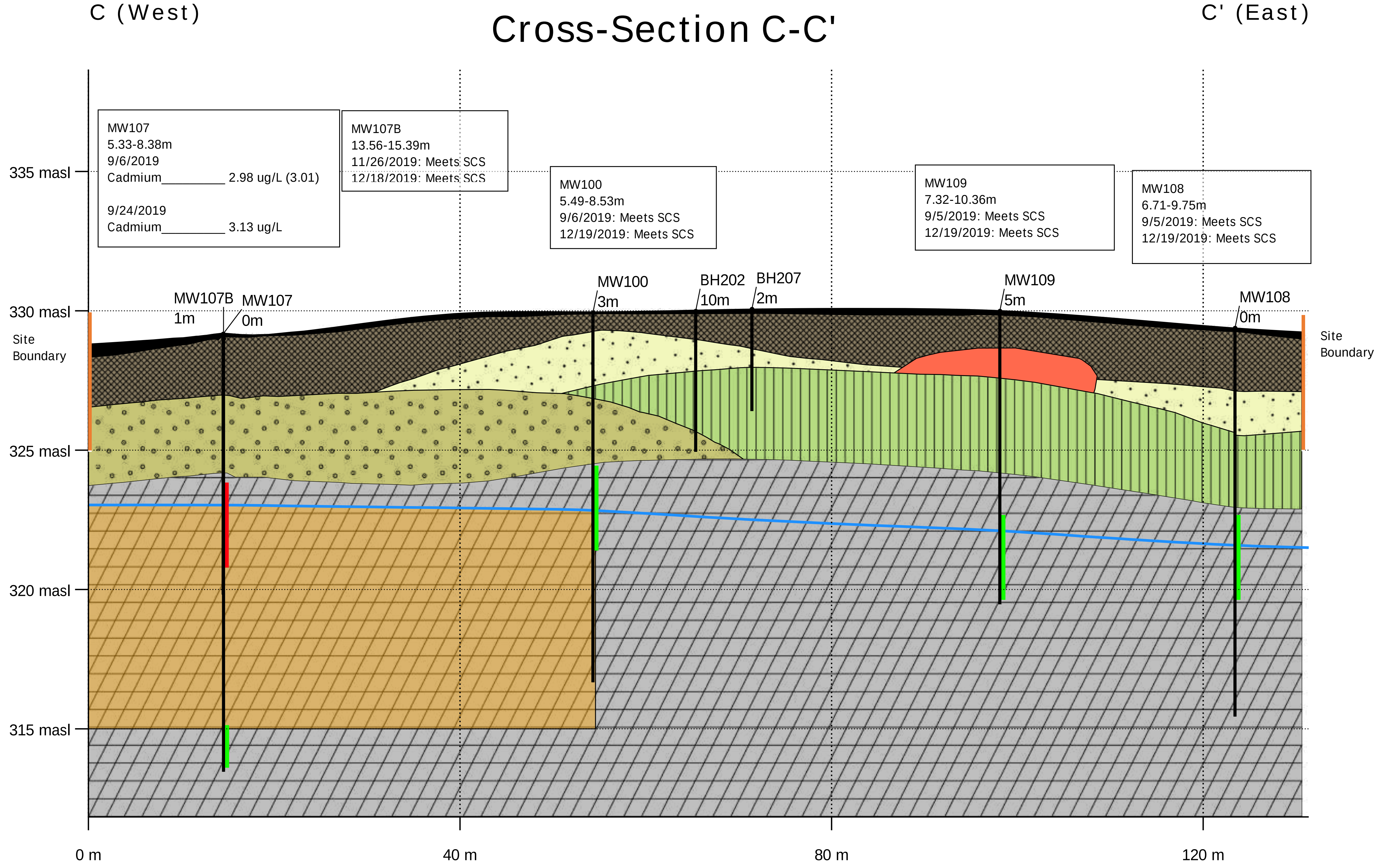
Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations. Distance of projection is presented below each location name on the section.
2. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
3. masl = metres above sea level
4. Results in ( ) indicate field duplicates.
5. Red text indicates the locaiton of the site maximum concentration of the analyte.
6. Samples from 2008 were collected in accordance with O.Reg. 153/04, but are missing analysis of uranium, which was not regulated under the Regulation at the time of investigation. This data is considered valid for RSC purposes.

Figure **8**b
Groundwater Results - Metals and Select ORPs:
Metals, Hydride-Forming Metals, Hg, and CrVI
Cross-Section B-B'
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street North
and Park Lane, Guelph, Ontario

Export Date: June 11, 2020

Jacobs

Cross-Section C-C'



Vertical exaggeration: 3x

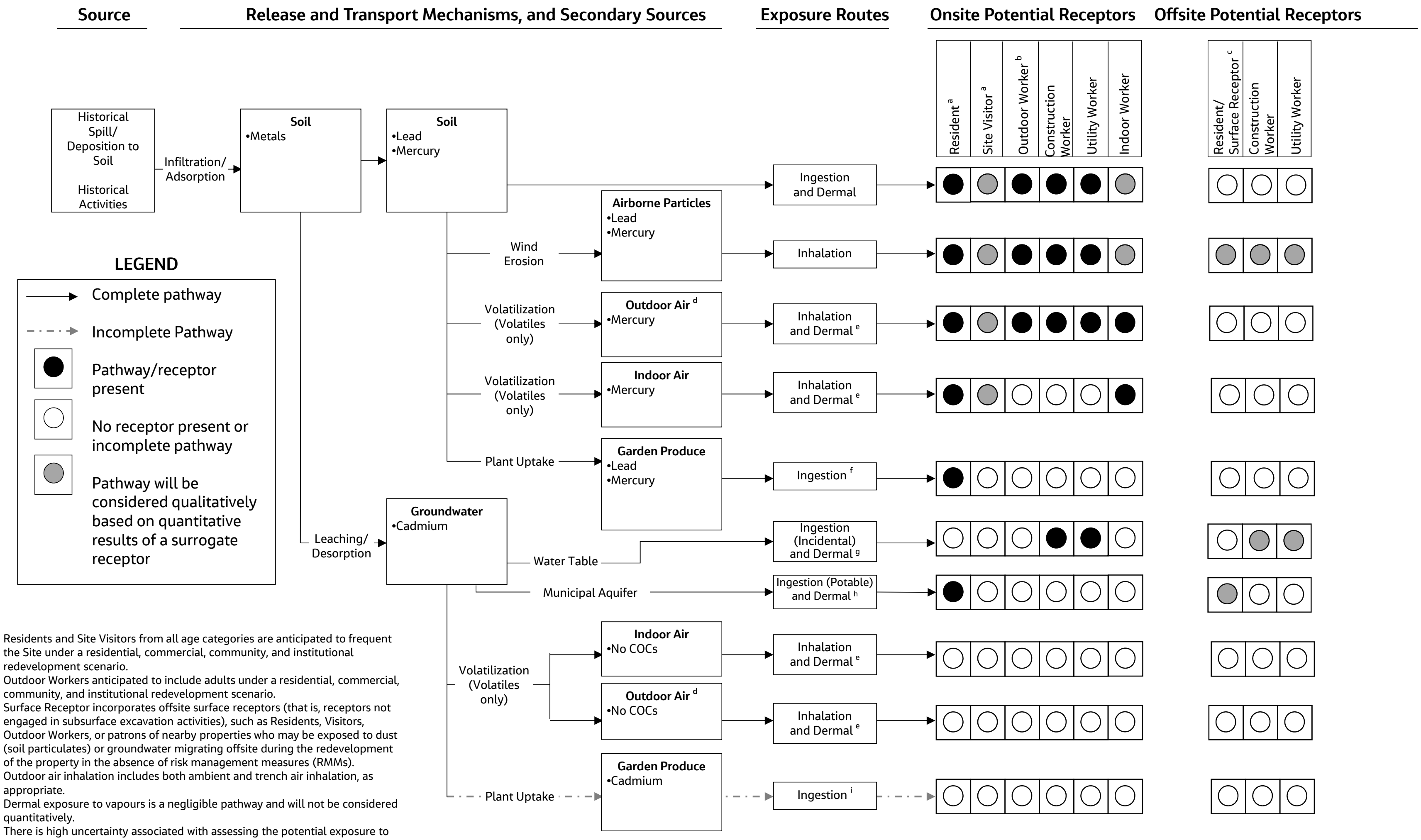
Legend

- ■ Asphalt
- ▨ Fill
- ▨ Sand and Gravel
- ▨ Sand
- ▥ Silt
- ▨ Guelph formation dolostone
- 🟥 Clay
- 🟧 Inferred Maximum Extent of Groundwater > SCS
- ― Groundwater Elevation (April 15, 2020)
- | Boring Interval
- | Groundwater Sample Meets SCS
- | Groundwater Sample Exceeds SCS

Notes:
1. Ground surface elevations at borehole locations may be different than current grade as some locations are projected onto the cross-section line and ground surface elevations may have changed since the time of drilling for historical locations. Distance of projection is presented below each location name on the section.
2. Stratigraphic units presented on the cross-sections are based on Jacobs' interpretation of the Site's geology and may differ from those noted on logs from investigations by others.
3. masl = metres above sea level
4. Results in ( ) indicate field duplicates.
5. Red text indicates the locaiton of the site maximum concentration of the analyte.
6. Samples from 2008 were collected in accordance with O.Reg. 153/04, but are missing analysis of uranium, which was not regulated under the Regulation at the time of investigation. This data is considered valid for RSC purposes.

Figure **8**c
Groundwater Results - Metals and Select ORPs:
Metals, Hydride-Forming Metals, Hg, and CrVI Cross-Section C-C'
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street North
and Park Lane, Guelph, Ontario

Export Date: June 11, 2020



Release and Transport Mechanisms, and Secondary Sources	Exposure Routes	Resident[a]	Site Visitor[a]	Outdoor Worker[b]	Construction Worker	Utility Worker	Indoor Worker	Resident/ Surface Receptor[c]	Construction Worker	Utility Worker
Soil •Lead •Mercury	Ingestion and Dermal	●	◍	●	●	●	◍	○	○	○
Airborne Particles •Lead •Mercury	Inhalation	●	◍	●	●	●	◍	◍	◍	◍
Outdoor Air[d] •Mercury	Inhalation and Dermal[e]	●	◍	●	●	●	●	○	○	○
Indoor Air •Mercury	Inhalation and Dermal[e]	●	◍	○	○	○	●	○	○	○
Garden Produce •Lead •Mercury	Ingestion[f]	●	○	○	○	○	○	○	○	○
Groundwater •Cadmium (Water Table)	Ingestion (Incidental) and Dermal[g]	○	○	○	●	●	○	○	◍	◍
Groundwater •Cadmium (Municipal Aquifer)	Ingestion (Potable) and Dermal[h]	●	○	○	○	○	○	◍	○	○
Indoor Air •No COCs	Inhalation and Dermal[e]	○	○	○	○	○	○	○	○	○
Outdoor Air[d] •No COCs	Inhalation and Dermal[e]	○	○	○	○	○	○	○	○	○
Garden Produce •Cadmium	Ingestion[i]	○	○	○	○	○	○	○	○	○

a. Residents and Site Visitors from all age categories are anticipated to frequent the Site under a residential, commercial, community, and institutional redevelopment scenario.

b. Outdoor Workers anticipated to include adults under a residential, commercial, community, and institutional redevelopment scenario.

c. Surface Receptor incorporates offsite surface receptors (that is, receptors not engaged in subsurface excavation activities), such as Residents, Visitors, Outdoor Workers, or patrons of nearby properties who may be exposed to dust (soil particulates) or groundwater migrating offsite during the redevelopment of the property in the absence of risk management measures (RMMs).

d. Outdoor air inhalation includes both ambient and trench air inhalation, as appropriate.

e. Dermal exposure to vapours is a negligible pathway and will not be considered quantitatively.

f. There is high uncertainty associated with assessing the potential exposure to Site contaminants of concern (COCs) through ingestion of garden produce; therefore, this pathway will not be considered quantitatively.

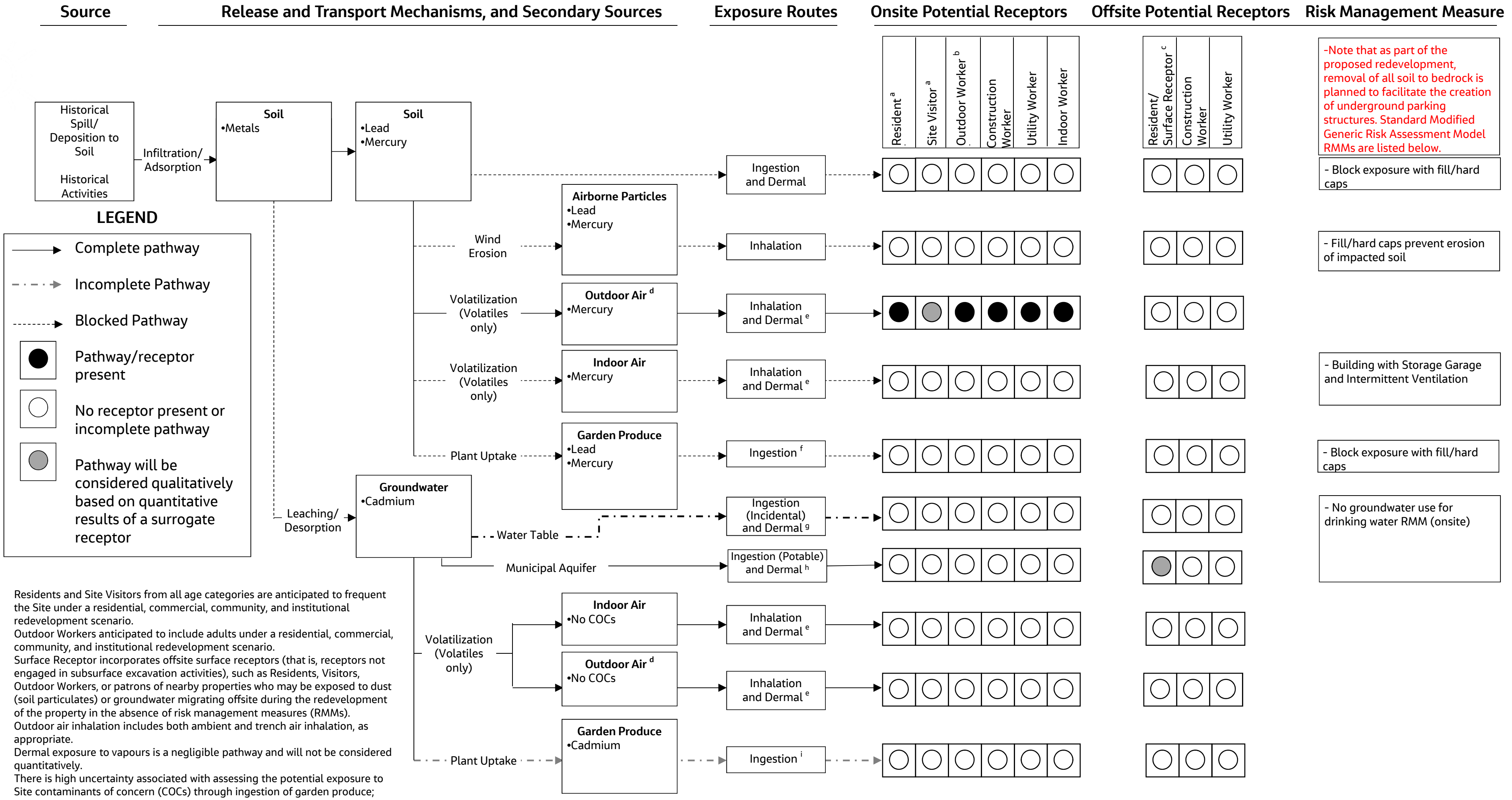
g. The depth to groundwater ranges from 3.78 to 4.43 metres below ground surface (mbgs) (perched) or 5.82 to 8.66 mbgs (water table).

h. The extent of cadmium impacts in groundwater have been delineated both horizontally and vertically. Based on this information, concentrations greater than the generic potable standards are not anticipated to extend downgradient or to adversely affect the municipal aquifer.

i. Potential exposure to Site COCs in groundwater through ingestion of garden produce pathway is incomplete, as the water table is below the rooting depths of plants.

Figure 9a. Human Health Conceptual Site Model

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario



-Note that as part of the proposed redevelopment, removal of all soil to bedrock is planned to facilitate the creation of underground parking structures. Standard Modified Generic Risk Assessment Model RMMs are listed below.

- Block exposure with fill/hard caps

- Fill/hard caps prevent erosion of impacted soil

- Building with Storage Garage and Intermittent Ventilation

- Block exposure with fill/hard caps

- No groundwater use for drinking water RMM (onsite)

a. Residents and Site Visitors from all age categories are anticipated to frequent the Site under a residential, commercial, community, and institutional redevelopment scenario.

b. Outdoor Workers anticipated to include adults under a residential, commercial, community, and institutional redevelopment scenario.

c. Surface Receptor incorporates offsite surface receptors (that is, receptors not engaged in subsurface excavation activities), such as Residents, Visitors, Outdoor Workers, or patrons of nearby properties who may be exposed to dust (soil particulates) or groundwater migrating offsite during the redevelopment of the property in the absence of risk management measures (RMMs).

d. Outdoor air inhalation includes both ambient and trench air inhalation, as appropriate.

e. Dermal exposure to vapours is a negligible pathway and will not be considered quantitatively.

f. There is high uncertainty associated with assessing the potential exposure to Site contaminants of concern (COCs) through ingestion of garden produce; therefore, this pathway will not be considered quantitatively.

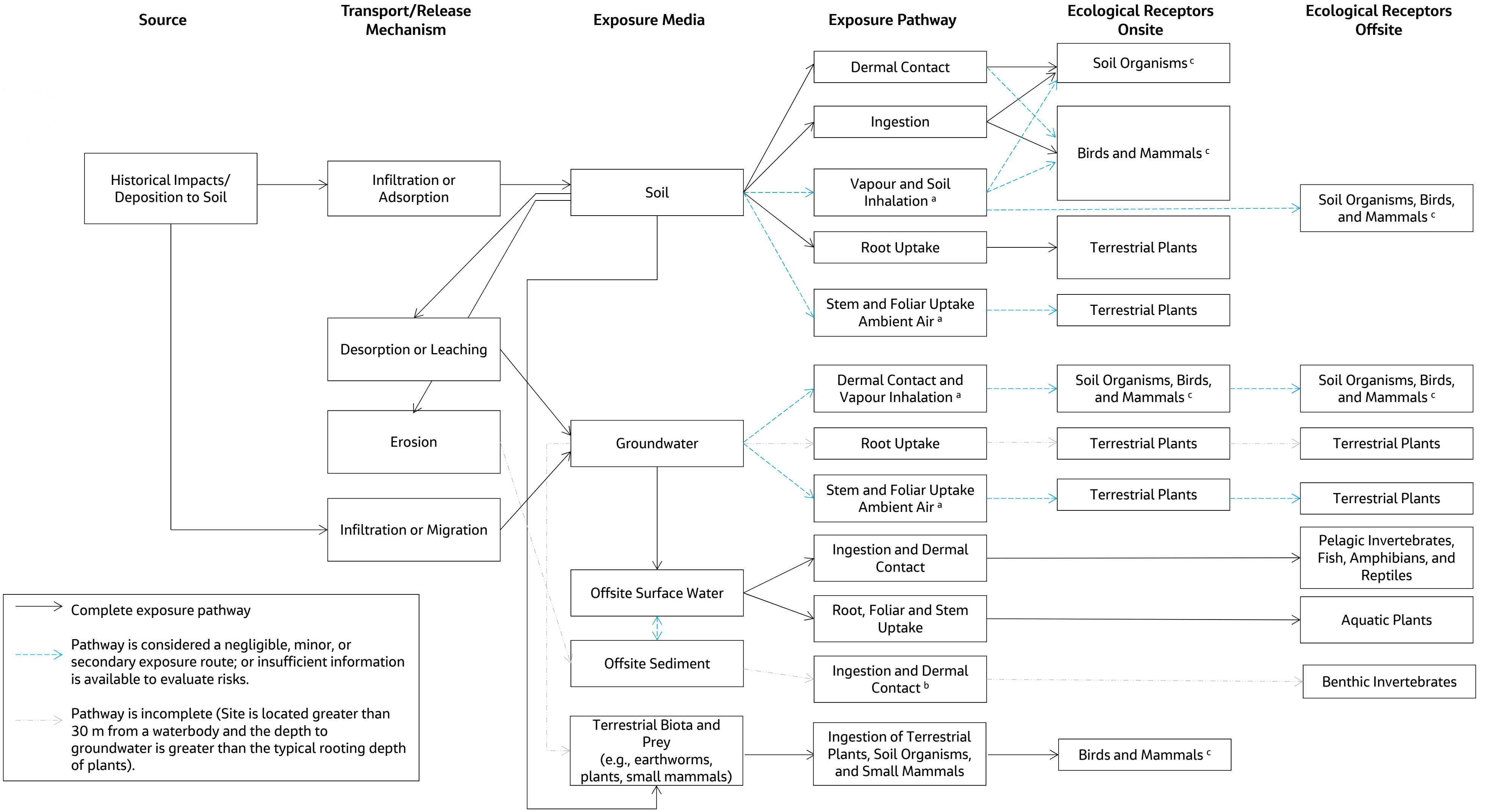
g. The depth to groundwater ranges from 3.78 to 4.43 metres below ground surface (mbgs) (perched) or 5.82 to 8.66 mbgs (water table).

h. The extent of cadmium impacts in groundwater have been delineated both horizontally and vertically. Based on this information, concentrations greater than the generic potable standards are not anticipated to extend downgradient or to adversely affect the municipal aquifer.

i. Potential exposure to Site COCs in groundwater through ingestion of garden produce pathway is incomplete, as the water table is below the rooting depths of plants.

Figure 9b. Human Health Conceptual Site Model with Risk Management Measures

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario



Notes:

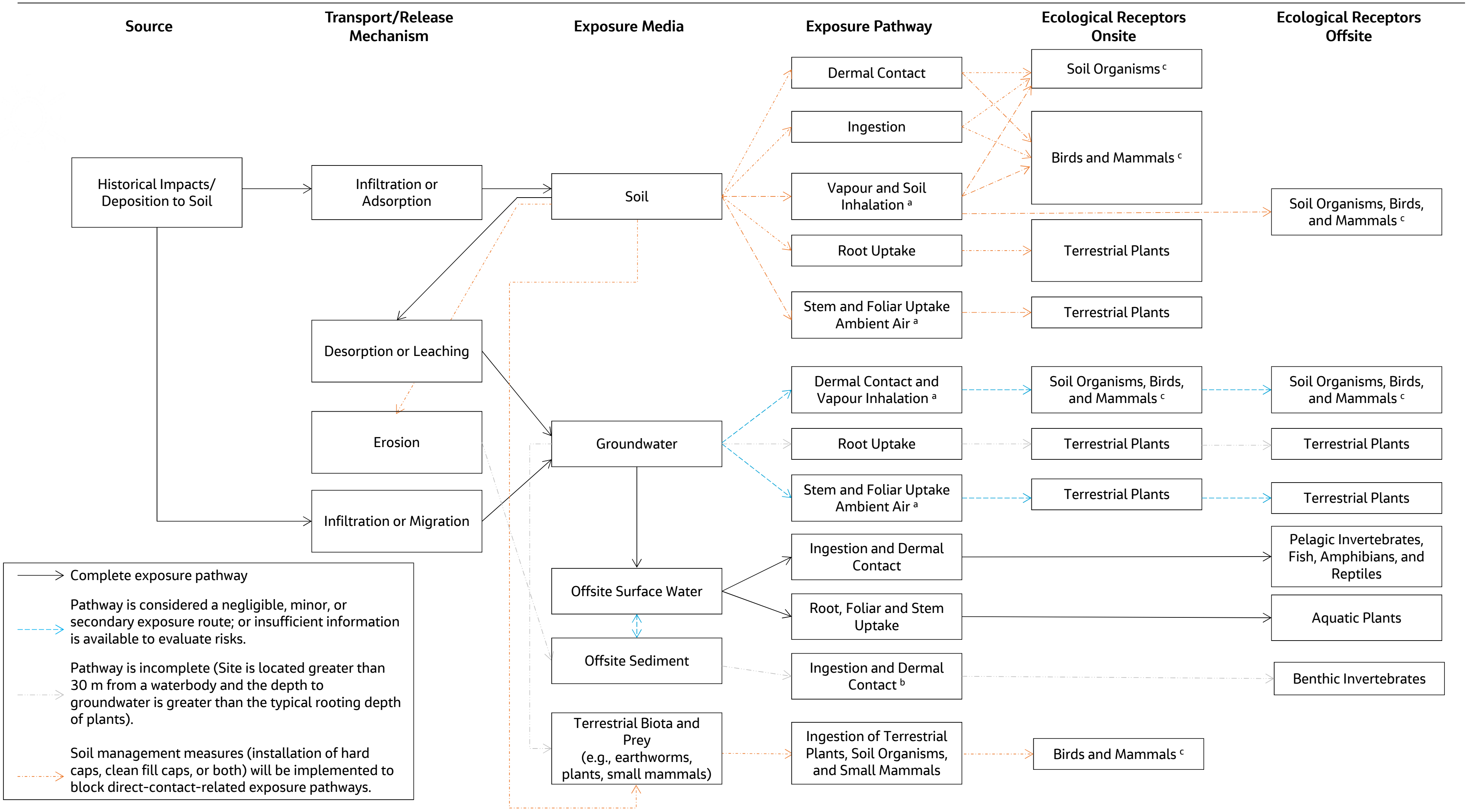
a. Vapour and soil inhalation, and uptake of ambient air are secondary routes of exposure; limited toxicological information is available to evaluate these pathways.

b. Pathway considered incomplete under current conditions and will also be considered incomplete under future redevelopment conditions.

c. The VECs are consistent with those in the MECP Modified Generic Risk Assessment Model: Earthworms for soil organisms; American Woodcock, Red-winged Blackbird, and Red-tailed Hawk for birds; Meadow Vole, Red Fox, and Short-tailed Shrew for mammals.

Figure 10a. Ecological Conceptual Site Model without Risk Management Measures

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario



Notes:

a. Vapour and soil inhalation, and uptake of ambient air are secondary routes of exposure; limited toxicological information is available to evaluate these pathways.

b. Pathway considered incomplete under current conditions and will also be considered incomplete under future redevelopment conditions.

c. The VECs are consistent with those in the MECP Modified Generic Risk Assessment Model: Earthworms for soil organisms; American Woodcock, Red-winged Blackbird, and Red-tailed Hawk for birds; Meadow Vole, Red Fox, and Short-tailed Shrew for mammals.

Figure 10b. Ecological Conceptual Site Model with Risk Management Measures

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

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From: Prasoon Adhikari <Prasoon.Adhikari@guelph.ca>
Sent: Thursday, July 23, 2020 2:47 PM
To: McCarthy, Tania/KWO
Cc: Appleby, Katherine/KWO; Taves, Ed/KWO
Subject: [EXTERNAL] RE: Baker Street - No Groundwater Use RMM Letter

Hi Tania,

Thanks for the notification. Based on our review of the notification we have no concern with the "No Groundwater Use" Risk Management Measures at the Site.

Thanks,

Prasoon

Prasoon Adhikari, M.Sc., P.Eng., PMP, Environmental Engineer
Engineering and Transportation Services, **Infrastructure, Development and Environmental Engineering**
City of Guelph

519-822 -1260 extension 2946
Mobile 519-222-4308
prasoon.adhikari@guelph.ca

From: McCarthy, Tania/KWO <Tania.McCarthy@jacobs.com>
Sent: July-23-20 9:44 AM
To: Prasoon Adhikari <Prasoon.Adhikari@guelph.ca>
Cc: Appleby, Katherine/KWO <Katherine.Appleby@jacobs.com>; Taves, Ed/KWO <Ed.Taves@jacobs.com>
Subject: Baker Street - No Groundwater Use RMM Letter

Prasoon,

Please find the finalized letter (revision 1) for the notification to the City of Guelph of the preparation of a Modified Generic Risk Assessment (MGRA) for Baker Street using the "No Groundwater Use" Risk Management Measure.

Please provide a response from the City for inclusion in the submission of the MGRA.

Any questions let us know.
Thanks,

Tania McCarthy, P.Eng | Jacobs | Environmental Engineer
O: +1.519.514.1607 | tania.mccarthy@jacobs.com
72 Victoria St. S, Suite 300 | Kitchener, Ontario N4G 4Y9 | Canada

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Attachment G
Modified Generic Risk Assessment

Attachment G. Modified Generic Risk Assessment Model

Refer to the included electronic MGRA Excel file for the MGRA Report. The signed Certifications tab and the following tables are included herein:

*Refer to Attachment G.4 for Table 7-1a: Risk Management Measures - Supplemental

APPENDIX A - MANDATORY CERTIFICATIONS – Part A

1. I have conducted or supervised a risk assessment report in accordance with the regulation.
2. I am a qualified person, as defined in section 168.1 of the Act, and have the qualifications required by section 6 of the regulation.
3. I have in place an insurance policy that satisfies the requirements of section 7 of the regulation.
4. The risk assessment team included members with expertise in all of the disciplines required to complete the risk assessment in accordance with the regulation.
5. The opinions expressed in the risk assessment are engineering or scientific opinions made in accordance with generally accepted principles and practices as recognized by members of the environmental engineering or science profession or discipline practising at the same time and in the same or similar location.
6. To the best of my knowledge, the certifications and statements in this risk assessment are true as of:

10/20/2020 *Date of completion of risk assessment report*

7. By making these certifications in this risk assessment report, I make no express or implied warranties or guarantees.

QP$_{RA}$ signature: Katherine Appleby **Date:** 10/20/2020

MANDATORY CERTIFICATIONS – Part B

As of the **date of completion of risk assessment report (see below)**, it is my opinion that based on the phase one environmental site assessment and the phase two environmental site assessment and other relevant property information, the approach taken in the conduct of the risk assessment,
is appropriate to evaluate human health and ecological risks from the contaminants of concern at the concentrations proposed as the standards specified in the risk assessment and assuming no measures have been taken at the RA property which have the effect of reducing the risk from the contaminants, and
is consistent with the approach set out in the pre-submission form with the exception of those deviations listed in section 1 of the report under the heading “Deviations from Pre-Submission Form”.

10/20/2020 ***Date of completion of risk assessment report***

As of the **date of completion of risk assessment report (see above)**, it is my opinion that, taking into consideration the assumptions specified in the risk assessment report, including the use of the property specified in report section 3 (Property Information, Site Plan and Geological Interpretation) of the risk assessment, and any risk management measures recommended in the report, as long as the RA property satisfies those assumptions and meets the standards specified in the risk assessment report, the contaminants of concern are unlikely to pose a human health or ecological risk greater than the level of risk that was intended in the development of the applicable full-depth site condition standards for those contaminants.
As of the **date of completion of risk assessment report (see above),** it is my opinion that, (**pick the applicable statement below**),

☐ i. **no risk management plan is necessary** for a contaminant of concern addressed in the risk assessment report to prevent, eliminate or ameliorate any adverse effect from that contaminant to the human or ecological receptors addressed in the report and located on the RA property, or

☑ ii. the implementation of the **risk management plan described in Report Section 7** (Risk Management Plan) of the risk assessment report is necessary for a contaminant of concern addressed in the risk assessment report to prevent, eliminate or ameliorate any adverse effect from that contaminant to the human or ecological receptors addressed in the report and located on the RA property and is sufficient to address the current and potential future transport and exposure pathways

As of the **date of completion of risk assessment report (see above),** the risk assessment report completely and accurately reflects the risk assessment assumptions and conclusions and all pertinent information has been included in the report and the appendices to the report.

If Clause 5(3) of Schedule C applies,

☑ As of the submission date, it is my opinion that, taking into consideration the assumptions specified in the risk assessment report including any risk management measures recommended in the report, as long as the RA property satisfies those assumptions and meets the standards specified in the report, the applicable full depth site condition standards will likely be met at the nearest off-site ecological and human receptors identified in the report.

QP$_{RA}$ signature: Katherine Appleby **Date:** 10/20/2020

ADDITIONAL QP$_{RA}$ STATEMENT(S)

It is my opinion, based on the phase one environmental site assessment and the phase two environmental site assessment of the property and other relevant information respecting the property, that the assumptions I used in applying the approved model, to the extent that those assumptions differed from the assumptions on which the Soil Ground water and Sediment Standards are based, are appropriate.

QP$_{RA}$ signature: Katherine Appleby **Date:** 10/20/2020

Table 1-1: Proposed Standards for the following Property Use

Residential/Parkland/Institutional

	Chemical Name	Maximum Measured Concentration	Applicable Generic SCS for Table 3	Proposed Property Specific Standards	Is PSS based on REM?	Dominant Exposure Pathway	Eco Driver	Eco Standard	HH Driver	HH Standard	Potential to Exceed Applicable SCS at Nearest Off-Site Receptors?	Pathway Modifiers*
Ground Water	Cadmium	6.16	2.7	7.4	NO	GW3	GW3	14	NA	NA	NO	No Ground Water Use for Drinking Water
Surface soil	Lead	207	120	250	NO	S1 Risk	& Birds	32000	S1 Risk	1000	NO	Fill Cap or Hard Cap
	Mercury	0.889	0.27	1.1	NO	0	S-GW3	6800	0	26	NO	Building with Storage Garage
						Outdoor Air*			Outdoor Air*			
Subsurface soil												

*See response to Comment 12 in Attachment I for explanation of "0" result in MGRA model.

Table 1-2: Risk Assessment Assumptions

Site Specific Characteristic Modified	Generic Value	Site Specific Value Used	Units (if applicable)
Distance from source centre to downgradient water body	36.5	***250***	m
Fraction of organic carbon (FOC) – water table to soil surface	0.005	0.005	g/g
Fraction of organic carbon (FOC) – in upper 0.5 m	0.01	0.01	g/g
Minimum depth below soil surface to the highest annual water table	300	***0.1***	m
Soil Type‡ – vadose zone	Generic Coarse	***Loamy Sand***	
Soil Type‡ – capillary fringe	Sand	Sand	
Number of frozen ground days per year	100	100	days
Aquifer horizontal hydraulic conductivity	3.00E-05	***0.0002***	m/sec
Aquifer hydraulic gradient	0.003	***0.016***	m/m
Aquifer dry bulk density	1.81	1.81	g/cm3
Aquifer fraction organic carbon	0.0003	0.0003	g/g
Absence of free product demonstrated and solubility CVs modified for PHC F1 and/or F2	N	N	

‡ Soil Type here refers to Property Soil Type (not the Area Soil Type required for soil vapour screening)

Table 2-1:Risk Assessment Team Membership

Team Member	Area of Expertise	Relevant Qualifications or Rationale for Omission
Katherine Appleby	QP_{RA}	Refer to Attachment B
Brandi Wilson	Human Health	Refer to Attachment B
Brandi Wilson	Ecology	Refer to Attachment B
Jinlong Zang	Geoscience/Hydrogeology	Refer to Attachment B
Jennifer Caron	Engineer	Refer to Attachment B
Tania McCarthy	QPESA	Refer to Attachment B
Katherine Appleby	Human Health	Refer to Attachment B
Katherine Appleby	Ecology	Refer to Attachment B
Ed Taves	Geoscience/QPESA	Refer to Attachment B
Maria Digaletos	Geoscience/Hydrogeology	Refer to Attachment B
Victoria Peters	Geoscience	Refer to Attachment B

Table 3-1: Property Location and Ownership

Property Location	55 Baker Street, 152 Wyndham Street North, 160 Wyndham Street North, and Park Lane
Property Ownership	City of Guelph
General Physical Characteristics of the Property (including size of property)	The Site is located in downtown Guelph, 130 metres (m) southwest of the Speed River. The Site is approximately 1.28 hectares (ha) in size, and is currently in use as a commercial parking lot and includes a laneway. No buildings are currently located onsite; however, buildings were historically present and associated with the use of portions of the Site for parkland, commercial, and industrial purposes. From approximately 1827 to 1879 the parcel associated with 55 Baker Street was used a public burial ground (community land use).

Table 3-1: Property Location and Ownership

Past Uses of the Property*	*Based on information obtained from the Pinchin Phase One ESA report (2018), 55 Baker Street was an active public burial ground with an unknown owner from 1827 to 1879, at which time it was converted to a park. In 1894, the southern portion of 55 Baker Street was used as a curling rink. In 1900 the northern portion was identified as Raymond Manufacturing Company of Guelph Limited, a sewing machine manufacturer, which remained as such until 1926. From 1926 to 1961, the northern portion of the property was listed as a manufacturer of coiled wire springs, being owned by various people and corporations. In 1961, the Corporation of the City of Guelph was listed as the property owner. The southern portion of 55 Baker Street remained a curling rink, changing ownership many times, before the title was transferred to the Corporation of the City of Guelph in 1968.* *152 and 160 Wyndham Street North was identified by Pinchin (2018) as commercial from 1862 until recently. Buildings were present on the property in 1862 and were listed as occupied by a hotel, undertaker, and movie theatre in 1911 and 1916. Pinchin (2018) indicates that the buildings were demolished in 2016 based on the Site representative interviews, however based on aerial imagery reviewed by Jacobs from Google Earth (2020), the buildings were demolished between 2009 and 2013.* *Pinchin (2018) indicates that Park Lane has been a laneway from 1827 to present.* *Based on the Phase One ESA, the following PCA types were identified onsite:* *• 30 - Importation of Fill Material of Unknown Quality - applies to the entire property as the Site has been developed several times since the identified first uses of each address.* *• 28 - Gasoline and Associated Products Storage in Fixed Tanks - applies to a former oil shed on the southeast portion of 55 Baker Street and to a former oil house in the western portion of Wyndham Street North.* *• 55 - Transformer Manufacturing, Processing, and Use - applies to historical transformers identified in the Phase One ESA in the east-central portion of 55 Baker Street.* *• 34 - Metal Fabrication - applies to 55 Baker Street and Park Lane, as the metal coil spring manufacturer was present in these areas of the property.* *• 27 - Garages - applies to a former garage in the northeastern portion of 55 Baker Street.* *• Other- applies to former coke storage in the northeastern portion of 55 Baker Street.*

Table 3-1: Property Location and Ownership

Current Uses of the Property*	*55 Baker Street and 152 and 160 Wyndham Street North are currently used as parking lots, while Park Lane remains a laneway. Based on the Phase One ESA, Park Lane has been a laneway since 1855; 55 Baker Street has been a parking lot since the mid-1960s; and 152 and 160 Wyndham Street North were developed into a parking lot, following building demolition, sometime between 2009 and 2013 based on aerial photographs. PCA Type 48 (Salt manufacturing, processing and bulk storage) was identified during the Phase One ESA and is applicable to the entire Site.*

Table 3-1: Property Location and Ownership

Past and Current Uses of the Adjacent Properties*	*Only PCAs resulting in an APEC are presented below due to space constraints. Refer to Attachment D1 of the PSF for the PCA figure.* *→North: According to FIPs, the area was undeveloped until between 1916 and 1946 when ICC operations were noted. Aerial photos indicated ICC and RPI properties as early as 1930 and appears to have remained a mix of ICC and RPI to present day. The following PCAs were identified to the north (~30 m) of the Site.* *• 37 (Operation of Dry Cleaning Equipment) - A total of four dry cleaners were identified two directly north, one to the northeast and one to the northwest of the Site (1910s to 1950s).* *• 27 (Garages) and 28 (Gasoline and Associated Products) - Two historical retail fuel oulet and automotive repair garages were identified to the north and northeast (1940s to 1950s)* *• 27 (Garages) - an additional automotive repair shop was identified to the northeast* *→ South: According to FIPS and aerial photos, properties in this area were RPI and ICC as early as 1897 and appears to have remained a mix of ICC and RPI to present day. The following PCAs were identified to the south (~50 m) of the Site.* *• Other - a historical gasoline spill was identified to the southwest at the intersection of Baker Street and Chapel Lane (2003)* *• 28 (Gasoline and Associated Products) - A historical UST was identified to the southwest (unknown, vent pipe observed)* *→West: According to FIPs and aerial photos, properties in this area were RPI and ICC as early as 1911. In 1946, RPI properties were identified beyond the ICC areas and appears to have remained a mix of RPI and ICC to present day. The following PCAs were identified to the west (~30 m) of the Site.* *• 34 (Metal Fabrication) - a historical industrial operation was identified to the central west (1940s to 1960s)* *• 27 (Garages) - A historical automotive garage was identified to the central west (1940s to 1960s)* *→ East: According to FIPs and aerial photos, properties in this area were RPI and ICC as early as 1911 and appear to have remained a mix of RPI and ICC to present day. The following PCAs were identified to the east (~30 m) of the Site.* *• 37 (Operation of Dry Cleaning Equipment) - A historical dry cleaners was identified to the southeast (1910s to 1920s)* *• 27 (Garages) - an automotive repair shop was identified to the south of 152 Wyndham (1930s to 1940s)*

Table 3-1: Property Location and Ownership

Off-Site Sources of Contaminants of Concern and Receptors	Offsite sources of contaminants of concern include historical and current commercial and industrial uses immediately adjacent and upgradient of the RA Property. Refer to Past and Present Uses of Adjacent Properties above. Onsite Receptors include: Residents (all ages), Sub-Surface Workers (adults), Outdoor Workers (adults), Indoor Workers (adults), Utility Workers (adults), and Property Visitors (all ages)
Proposed Uses of the Property	Jacobs understands that the City intends to redevelop the Site to a mix of residential, community, institutional, and commercial land use. Based on the preliminary redevelopment design up to three levels of underground parking may be constructed beneath the entire footprint of the RA Property.
Number of Stories Below Grade	3

**For past and current uses of the property and adjacent properties, please include a list of potentially contaminating activities (PCAs) identified, their proximity to the RA property, and their dates.*

Table 4-1: Approved Model Input Parameters affecting Human Health Component Values

Approved Model Input (Site Specific Characteristics or Pathway Modifiers) which affect Human Health Component Value Calculations
Change in depth to water table affects GW2.
Soil Type-vadose zone affects S-IA,S-Odour,S-GW1,S-OA,GW2
Fill Cap or Hard Cap results in removal of the S-Nose pathway and use of subsurface industrial (S3) numbers of direct contact human health.
Building with Storage Garage Intermittent Ventilation results in multiplying S-IA and GW2 components by a factor of 12x for TCE, 2x for other COC with developmental effects and, 200x for COC with non-developmental effec
No Ground Water Use for Drinking Water results in use of non-potable component values

Table 4-2: Human Receptors Included and Exposure Pathways Evaluated in the Risk Assessment

Property Use	Receptor**	Pathway*
Residential/Parkland/Institutional	Toddler (0.5 – 4 years) Composite receptor (exposed from infancy through to and including adulthood)	Soil Ingestion Dermal Contact Dermal adsorption following contact Inhalation of soil particles Inhalation of indoor and outdoor air contaminated by subsurface vapour intrusion** Ingestion of groundwater as drinking water source

* : Exposure pathways considered (Column 3) are in the adsence of risk management measures (RMMs)

**: The "Approved" Model uses the lowest of the R/P/I and I/C/C values for the "inhalation of indoor air contaminated by subsurface vapour intrusion from groundwater" pathway (GW2) for all land uses. The model only generates one number (using R/P/I receptors) for the "inhalation of outdoor air" pathways (S-OA), and uses it for all land uses

Table 4-3: Soil Vapour Screening Levels and Measured Soil Vapour Levels -Not Applicable to RA Property

Table 4-3: Soil Vapour Screening Levels and Measured Soil Vapour Levels

AREA 1

Source Area ID			**Source Type**	
Sampling Location ID			**Area Soil Type**	
Depth below soil surface to soil vapour measurement		**cm**		

Contaminant of Concern (Volatile COCs)	Soil Vapour Screening Level (µg/m3)	Maximum Measured Soil Vapour Concentration Probe 1	Maximum Measured Soil Vapour Concentration Probe 2	Units	Number of samples
				µg/m3	
				µg/m3	
				µg/m3	
				µg/m3	
				µg/m3	
				µg/m3	

AREA 2

Source Area ID			**Source Type**	
Sampling Location ID			**Area Soil Type**	
Depth below soil surface to soil vapour measurement		**cm**		

Contaminant of Concern (Volatile COCs)	Soil Vapour Screening Level (µg/m3)	Maximum Measured Soil Vapour Concentration Probe 1	Maximum Measured Soil Vapour Concentration Probe 2	Units	Number of samples
				µg/m3	
				µg/m3	
				µg/m3	
				µg/m3	
				µg/m3	
				µg/m3	

Table 4-3: Soil Vapour Screening Levels and Measured Soil Vapour Levels -Not Applicable to RA Property

AREA 3

Source Area ID			**Source Type**	
Sampling Location ID			**Area Soil Type**	
Depth below soil surface to soil vapour measurement		**cm**		

Contaminant of Concern (Volatile COCs)	Soil Vapour Screening Level (µg/m3)	Maximum Measured Soil Vapour Concentration Probe 1	Maximum Measured Soil Vapour Concentration Probe 2	Units	Number of samples
				µg/m3	
				µg/m3	
				µg/m3	
				µg/m3	
				µg/m3	
				µg/m3	

AREA 4

Source Area ID			**Source Type**	
Sampling Location ID			**Area Soil Type**	
Depth below soil surface to soil vapour measurement		**cm**		

Contaminant of Concern (Volatile COCs)	Soil Vapour Screening Level (µg/m3)	Maximum Measured Soil Vapour Concentration Probe 1	Maximum Measured Soil Vapour Concentration Probe 2	Units	Number of samples
				µg/m3	
				µg/m3	
				µg/m3	
				µg/m3	
				µg/m3	
				µg/m3	

Table 4-3: Soil Vapour Screening Levels and Measured Soil Vapour Levels -Not Applicable to RA Property

AREA 5

Source Area ID
Sampling Location ID
Depth below soil surface to soil vapour measurement **cm**

Source Type
Area Soil Type

Contaminant of Concern (Volatile COCs)	Soil Vapour Screening Level (µg/m3)	Maximum Measured Soil Vapour Concentration Probe 1	Maximum Measured Soil Vapour Concentration Probe 2	Units	Number of samples
				µg/m3	
				µg/m3	
				µg/m3	
				µg/m3	
				µg/m3	
				µg/m3	

AREA 6

Source Area ID
Sampling Location ID
Depth below soil surface to soil vapour measurement **cm**

Source Type
Area Soil Type

Contaminant of Concern (Volatile COCs)	Soil Vapour Screening Level (µg/m3)	Maximum Measured Soil Vapour Concentration Probe 1	Maximum Measured Soil Vapour Concentration Probe 2	Units	Number of samples
				µg/m3	
				µg/m3	
				µg/m3	
				µg/m3	
				µg/m3	
				µg/m3	

Table 4-4: Calculated Risk Levels in the Absence of Selected Risk Management Measures

Chemical Name	**Potential RMMs: "Shallow Soil Cap" or "Fill/hard Cap"**				**Potential RMMs: "Storage Garage", "Building Prohibition", "Passive/Active (SVIMS)", "No First Stor**							
					Coarse Soil				Medium and Fine Soil			
	R/P/I		I/C/C		R/P/I		I/C/C		R/P/I		I/C/C	
	non-cancer HQ (from soil contact)	cancer Risk (from soil contact)	non-cancer HQ (from soil contact)	cancer Risk (from soil contact)	non-cancer HQ (from soil -IA)	cancer RIsk (from soil -IA)	non-cancer HQ (from soil -IA)	cancer RIsk (from soil -IA)	non-cancer HQ (from soil -IA)	cancer RIsk (from soil -IA)	non-cancer HQ (from soil -IA)	cancer RIsk (from soil -IA)
Lead	2.070		0.248									
Mercury	0.022		0.003		0.854		0.054		0.121		0.010	
Cadmium	0.000		0.000									

Table 4-4: Calculated Risk Levels in the Absence of Selected Risk Managment Measures

Table 4-4: Calculated

Chemical Name	ey Residential Use", or "Minimum First Storey Ceiling Height"								Shallow Soils							
	Groundwater (for coarse soil texture)				Groundwater (for Medium and Fine Soil Texture)				Groundwater (for coarse soil texture)				Groundwater (for Medium and Fine Soil Texture)			
	R/P/I		I/C/C		R/P/I		I/C/C		R/P/I		I/C/C		R/P/I		I/C/C	
	non-cancer HQ (from GW -IA)	cancer RIsk (from GW-IA)	non-cancer HQ (from GW-IA)	cancer RIsk (from GW -IA)	non-cancer HQ (from GW -IA)	cancer RIsk (from GW-IA)	non-cancer HQ (from GW-IA)	cancer RIsk (from GW -IA)	non-cancer HQ (from GW -IA)	cancer RIsk (from GW-IA)	non-cancer HQ (from GW-IA)	cancer RIsk (from GW -IA)	non-cancer HQ (from GW -IA)	cancer RIsk (from GW-IA)	non-cancer HQ (from GW-IA)	cancer RIsk (from GW -IA)
Lead																
Mercury	0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000	
Cadmium		#VALUE!										#VALUE!				#VALUE!

Table 4-4: Calculated

Chemical Name	Potential RMM: No GW Use for Drinking	Potential RMM: Modified Subsurface Worker Protection	
	Groundwater	Soil	
	All	All	All
	max to the GW1 (drinking water), and may not be an actual HQ or cancer risk	non-cancer HQ (from S3)	cancer Risk (from S3)
Lead	0.00E+00	2.07E+00	
Mercury	0.00E+00	3.17E-04	
Cadmium	1.48E+00	0.00E+00	0.00E+00

Table 4-5: Off-site Human Receptors

****Note:** **QP** $_{RA}$, if you have used RMMs affecting the groundwater for protection of drinking water pathway (GW1 pathway), or the groundwater for protection of indoor air pathway (GW2 pathway) or soil vapour screening for a groundwater source, you should carefully consider the potential impact of groundwater travelling from the RA site to downgradient sites.*

In my opinion, the proposed human health standards

○ will likely (add details in table below)

● will likely NOT (*See Note, above)

result in an exceedance of the applicable full depth Site Condition Standard at the nearest off-site human receptor.

Environmental Medium (Soil, GW or sediment)	Contaminant of Concern	Applicable SCS at location of nearest off-site receptor	Location of nearest off-site Receptor	Description of Receptor*
Soil	Lead	Table 2	Properties adjacent to the RA Property	Residents, Visitors, Outdoor Workers, or Patrons of nearby properties and sub-surface Workers
Soil	Mercury	Table 2	Properties adjacent to the RA Property	Residents, Visitors, Outdoor Workers, or Patrons of nearby properties and sub-surface Workers
Groundwater	Cadmium	Table 2	Properties hydraulically downgradient of the RA Property	Residents, Visitors, Outdoor Workers, or Patrons of nearby properties and sub-surface Workers

Do not simply list the property use type - the **potential receptors should be listed*

The following actions are being taken on the RA property to address possible off-site exceedances of the applicable full depth Site Condition Standard

None. Per Attachment D3 (Phase Two CSM) of the Pre-Submission Form, limited cadmium impacts were identified in groundwater, localized in the southwestern portion of the property, and found only in the monitoring wells screened in the shallow portion of the bedrock. Based on the local groundwater flow and concentrations from downgradient wells, the cadmium impacts do not extend past the property boundary to the east and south, therefore meeting the MECP drinking water (GW1) component value at the nearest offsite human receptors. Additionally, cadium impacts were not identified in soil (all 69 soil samples had non-detect concentrations less than the Table 2 SCS); therefore, soil does not appear be acting as a source of contaminant mass contributing to the groundwater quality at the Site. As the cadmium impacts are found in the most upgradient locations onsite, they may be related to offsite sources from the west, or other urban fill (offsite), however there is currently no direct evidence to confirm the presence or absence of an offsite source.

Table 5.1: Approved Model Inputs Affecting VEC Component Values

Site Specific Characteristic Modified* (specific to Valued Ecosystem Component (VEC) exposure)
Change in distance to surface water affects S-GW3 and GW3
Change in aquifer horizontal hydraulic conductivity affects S-GW3 and GW3
Change in aquifer horizontal hydraulic gradient affects S-GW3 and GW3
Property Soil type- vadose zone affects S-GW3
Fill Cap or Hard Cap results in use of a 1000x multiple of the industrial number for plants and soil organisms, and of 1000x for mammals and birds.

Table 5-2: Ecological Receptors Included in the Risk Assessment

Property Use	Receptor
Residential/Parkland/Institutional	Plants and soil-dwelling organisms‡ Aquatic biota (contaminant specific) Mammals and birds: · American woodcock (Scolopax minor) · Meadow vole (Microtus Pennsylvanicus) – also called field mouse · Red-tailed hawk (Buteo jamaicensis) · Red-winged blackbird (Agelarius phoeniceus) · Red fox (Vulpes vulpes) · Short tailed shrew (Blarina brevicauda)

‡: Level of protection depends on property use

Table 5-3: Calculated Risk Levels in the Absence of Selected Risk Management Measures

	Potential RMMs: "Modified Ecological Protection", "Shallow Soil Cap" or "Fill/hard Cap"					
	Plants and Soil Invertebrates (Hazard Quotient)				Mammals and Birds (Hazard Quotient)	
	R/P/I		I/C/C		R/P/I	I/C/C
Chemical Name	Coarse	Medium and Fine	Coarse	Medium and Fine		
Lead	0.994	0.801	0.226	0.177	7.763	7.763
Mercury	0.107	0.071	0.021	0.017	0.053	0.053
Cadmium	0.000	0.000	0.000	0.000	0.000	0.000

Table 5-4: Off-site Ecological Receptors

In my opinion, the proposed ecological standards
○ will likely (add details into the table below)
● will likely NOT
result in an exceedance of the applicable full depth Site Condition Standard at the nearest off-site ecological receptor.

Environmental Medium (Soil, GW or sediment)	Contaminant of Concern	Applicable SCS at location of nearest off-site receptor	Location of nearest off-site Receptor	Description of Receptor
Soil	Lead	Table 2	Properties adjacent to the RA Property	American Woodcock, Meadow Vole, Red-winged Black Bird, Red Fox, Red-tailed Hawk, Short-tailed Shrew
Soil	Mercury	Table 2	Properties adjacent to the RA Property	American Woodcock, Meadow Vole, Red-winged Black Bird, Red Fox, Red-tailed Hawk, Short-tailed Shrew
Groundwater	Cadmium	Table 2	Properties hydraulically downgradient of the RA Property	Aquatic receptors in the Speed River (including pelagic invertebrates, fish, amphibians, aquatic reptiles, and aquatic vegetation)

Table 5-4: Off-site Ecological Receptors

			The following actions are being taken on the RA Property to address possible off-site exceedances of the applicable full depth Site Condition Standard (Note the cell in green below is "locked/protected"; therefore, the requested information has been provided at right instead.	None. Per Attachment D3 (Phase Two CSM) of the PSF, limited cadmium impacts were identified in groundwater, localized in the southwestern portion of the property, and found only in the monitoring wells screened in the shallow portion of the bedrock. Based on the local groundwater flow and concentrations from downgradient wells, the cadmium impacts do not extend past the property boundary to the east and south, therefore meeting the MECP groundwater-to-surface water discharge (GW3) component value at the nearest offsite ecological receptors. Additionally, cadium impacts were not identified in soil (all 69 soil samples had non-detect concentrations less than the Table 2 SCS); therefore, soil does not appear be acting as a source of contaminant mass contributing to the groundwater quality at the Site.
				As the cadmium impacts are found in the most upgradient locations onsite, they may be related to offsite sources from the west, or other urban fill (offsite), however there is currently no direct evidence to confirm the presence or absence of an offsite source.

The following actions are being taken on the RA property to address possible off-site exceedances of the applicable full depth Site Condition Standard

Table 7-1: Risk Management Measures

Risk Management Measure Selected	Medium	Pathway Controlled	Exposure Reduction
Fill Cap or Hard Cap, Asphalt or Concrete Cap, or soil cap >1m thick	Soil	S-Nose (Soil to Nose) Plants and Soil Organisms Mammals and Birds Direct Soil Ccontact	100% (Complete reduction) 1000 X industrial level 1000X 100% (except adult subsurface worker: 0%)
	<-----Add Depth of Fill Cap if > 1m		
"Shallow Soil Cap" Soil Cap (>50cm) , not selected	Not Applicable	Not Applicable	Not Applicable
Modified Suburface Worker Protection, not selected	Not Applicable	Not Applicable	Not Applicable
"Building Prohibition" , not selected	Not Applicable	Not Applicable	Not Applicable
Building with Storage Garage with Intermittent Ventilation	Soil; Groundwater	S-IA (Soil to Indoor Air); GW2 (Groundwater to Indoor Air)	12x for TCE, 2x for other COC with developmental effects and, 200x for COC with non-developmental effect
"Passive Soil Vapour Intrusion Mitigation System" , not selected	Not Applicable	Not Applicable	Not Applicable
"Active Soil Vapour Intrusion Mitigation System" , not selected	Not Applicable	Not Applicable	Not Applicable
Building with No First Storey Residential, not selected	Not Applicable	Not Applicable	Not Applicable
Building with minimum first storey ceiling height not selected	Not Applicable	Not Applicable	Not Applicable
No groundwater use for drinking water	Soil; Groundwater	S-GW1 (Soil to Ground water for drinking water); GW1 (Ground water for drinking water)	Potable component values are replaced with non-potable CVs

Table of Soil Vapour Screening Level for Subslab Measurements

CHEMICAL NAME	Residential (with basement) ug/m3	Industrial (slab on grade) ug/m3
Lead	NA	NA
Mercury	9.39E-01	1.61E+01
Cadmium	5.67E-03	9.12E-02

Attachment H
MGRA Supporting Information

Attachment H. Modified Generic Risk Assessment

In April 2011, the Ministry of Environment, Conservation and Parks (MECP), developed an approved model to prepare a risk assessment (RA) to develop property specific standards (PSS) more quickly than a Tier 3 RA. The model allows for the modification of physical characteristics and pathways, such as distance to a water body and hydraulic conductivity. In addition to modifying site characteristics and pathways, risk management measures (RMMs) can be applied to the Site to adjust the PSS values. In November 2016, the MECP released an update to the approved model.

This attachment presents the supporting information and documents required for the submission of a Modified Generic Risk Assessment (MGRA) for 55 Baker Street, 152 and 160 Wyndham Street North, and Chapel Lane, Guelph, Ontario (RA Property or Site). The 2016 MGRA has been employed.

Additional information to support the MGRA submission are included as follows:

- Attachment H1 – Supporting Document List
- Attachment H2 – Borehole Logs
- Attachment H3 – Grain-size Results
- Attachment H4 – Supplemental Risk Management Measures
- Attachment H5 – Engineer Risk Management Measure Statement

H.1 Property Information

The RA Property information is summarized in Exhibit H-1:

Exhibit H-1. RA Property Information

Property Information	Description	
Owner	City of Guelph	
Address	55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane	
Location	Downtown Guelph, southwest of the Speed River. The boundaries of the RA Property are shown on Figure 2-1 (in Attachment D3).	
Size	1.14 hectares (ha)	
Current Property Use	Commercial parking lot and includes one laneway	
Property Identification Number	55 Baker Street	71287-0038(LT)
		71287-0058 (LT)
	152 Wyndham Street North	71287-0045 (LT)
	160 Wyndham Street North	71287-0044 (LT)
	Park Lane	71287-0099 (LT)
Historical Property Use	Historical buildings were associated with the use of portions of the Site for parkland, commercial, and industrial purposes. From approximately 1827 to 1879 the parcel associated with 55 Baker Street was used a public burial ground (community land use).	
Future Property Use	Jacobs understands the City of Guelph is considering redeveloping the property for a mix of residential, commercial, community, and institutional use.	

H.2 Distance to Water Body

Figure H-1 shows the RA Property and the inferred lateral distribution where concentrations of soil and groundwater are greater than the generic *Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition* (Table 2 SCS) along with the distance from the centroid of these areas to the nearest waterbody (Speed River). Based on April 2020 groundwater contours (Figure H-3c), groundwater flow is radially outwards from the centre of the RA Property.

Based on Figure H-1, the distance to the nearest water body (Speed River) is approximately 250 metres (m).

H.3 Selection of Soil Type in the Vadose Zone

As part of the initial joint Phase Two Environmental Site Assessment (ESA) and geotechnical investigation, grain-size analysis was performed on 22 soil samples from 11 locations (10 locations onsite and one just offsite on a parcel owned by the City of Guelph which will also be part of the planned redevelopment). Of these, 13 samples were classified as coarse-grained and 9 samples were classified as fine- to medium-grained. Figure H-2 presents the sample locations where grain-size was analyzed by an accredited laboratory. Attachment H2 presents the borehole logs from the geotechnical investigation (10 locations) followed by the borehole logs from the Phase Two ESA. The samples associated with the grain-size analyses are highlighted in orange. Appendix H3 presents the laboratory grain-size distribution curves for the selected soil samples. For soil samples collected as part of the geotechnical investigation, the grain-size analysis was performed by Sirati and Partners Consultants Ltd.; for samples collected as part of the Phase Two ESA, the grain-size analysis was performed by ALS Environmental. The soil condition standards for coarse-grained soils were used at Site, to account for the extensive presence of heterogeneous fill materials across the surface.

Based on the results of the grain-size analysis, a soil texture triangle (MECP, 2016b) was utilized to classify the samples. Table H-1 presents a summary of the grain-size sampling results and soil types based on the texture triangle classification. The Johnson and Ettinger (J&E) Model guidance was then applied to select an overall grain size classification for the Site appropriate for the assessment of vapour intrusion. The EPA (2004) version of the J&E model contains default soils characteristic information for the 12 Soil Conservation Survey soil texture classifications. General soil texture for the RA Property was identified as coarse-textured soil (fill) at the ground surface varying in thickness up to depths of 3.91 mbgs (average thickness of 1.87 mbgs). The underlying native soils are a mix of coarse and fine- to medium-textured soils and would be classified as sandy loam, loamy sand, sandy clay loam, or loam based on the grain size analyses (Table H-1). Table 11 of the J&E guidance (EPA, 2004) indicates that if the predominant soil type from site borehole logs is:

- **Sand, gravel, or sand and gravel, with less than 12 percent fines, then “Sand” should be selected as the soil texture.** None of the grain-size samples collected had less than 12 percent fines. Two samples, described as “sand and gravel” or “sandy gravel” in the field, and classified as “loamy sand” with a fines content of 14 percent are considered representative of the Fill unit across the Site.
- **Sand or Silty Sand, with 12 to 25 percent fines, then “Loamy Sand” should be selected as the soil texture.** Five grain-size samples were described as “gravelly sand”, “sandy gravel”, or “sand and gravel” in the field and classified as “sandy loam” and “sandy clay loam”. These samples were collected from the Sand and Gravel unit between 1.52 and 5.59 mbgs and had between 20 and 31 percent fines.
- **Silty Sand, with about 20 % to 50 % fines, then “Sandy Loam” should be selected as the soil texture.** Six grain size samples were described as “silty sand” or “clayey silt till” in the field and classified primarily as “sandy clay loam” and “sandy loam”. These samples were collected between 0.61 and 4.93 mbgs in the Fill, Sand, and Silt units and had between 32 and 42 percent fines.

- **Silt and Sand or Silty Sand or Clayey, Silty Sand or Sandy Silt or Clayey, Sandy Silt, with about 45 to 75 % fines, then "Loam" should be selected as the soil texture.** Seven grain-size samples were described as "clayey silt till" and "silt and sand" in the field and classified primarily as "loam". These samples were collected in the Silt unit between 3.05 and 6.53 mbgs and has between 54 and 67 percent fines.
- **Sandy Silt or Silt, with about 50 to 85 % fines, then "Silt Loam" should be selected as the soil texture.** Two grain-size samples were described as "clayey silt till" in the field and classified as "silty clay loam" and "clay loam". Both of these samples were collected in the Silt unit and had more than 74 percent fines.

Based on this information, the SCS texture classification for Loamy Sand was conservatively selected to best describe the Site's vadose zone soil conditions. Samples from the coarsest soil units onsite (that is, the Fill, Sand, and Sand and Gravel units) had grain-size samples which exhibit a higher fines content (14 to 42 percent) than that of the most conservative J&E classification (Sand); therefore, the Sand soil texture may be overly conservative. The predominant texture triangle classifications associated with the Fill, Sand, and Sand and Gravel units were "Sandy Loam", "Sandy Clay Loam" and "Loamy Sand". Therefore, the selection of the coarsest J&E descriptor available (Loamy Sand) is likely conservative for the Site as a whole, given the presence of the Silt unit across portions of the Site. Metals concentrations (mercury and lead) were inferred to be greater than the Table 2 SCS in the fill in the vicinity of MW101. Based on the grain-size results, the Loamy Sand classification is appropriate to represent the Fill unit and the vadose zone in general and was selected for use in the MGRA Model. The capillary fringe soil type was not modified within the MGRA as no volatile contaminants of concern were identified in groundwater; therefore, modifications to adjust the GW2 (groundwater-to-indoor air) component values are not necessary.

H.4 Aquifer Horizontal Hydraulic Gradient

Figures H-3a through H-3c present the monitoring well locations, water level information, and water elevation contours. Gradient calculations are presented in Table H-2.

The horizontal hydraulic gradient within the bedrock layer of the Site were estimated for the September 18, 2019, December 18, 2019, and April 15, 2020 monitoring events. The horizontal hydraulic gradient within the bedrock layer was similar in September and December 2019, with estimated average gradients of 0.018 m/m and 0.017 m/m respectively. The range of hydraulic gradients for these two events were between 0.016 m/m and 0.025 m/m.

The horizontal hydraulic gradients for April 2020 were lower across the Site, estimated between 0.009 m/m and 0.015 m/m, and had an average gradient of 0.013 m/m. The maximum groundwater elevations within the unconfined bedrock unit were measured during this monitoring event, likely associated with snow melt and increased precipitation in the spring. Elevated groundwater levels may have "flattened" the gradient compared to fall and winter. Horizontal hydraulic gradient calculations are presented in Table H-2.

Based on the available information presented in the figures and tables, the horizontal gradient selected for use in the MGRA is 0.016 m/m, the average gradient between September 18, 2019 and April 15, 2020.

H.5 Aquifer Horizontal Hydraulic Conductivity

In situ single well response tests (slug tests) were completed on September 11, 2019. Tests consisted of both falling head and rising head tests. Hydraulic conductivity values for the materials at screened intervals were estimated using Bouwer and Rice (1976) method included in AquiferWin32, version 4.05, (Environmental Simulations, Inc.) under unconfined conditions. Groundwater recovery during rising head tests were considered to be more representative for the formation at the screened interval and were therefore used to estimate hydraulic conductivity.

The K for the bedrock was measured in three wells (MW101, MW107, and MW109) and had an observed range of 2.0 x 10^{-4} to 4.6 x 10^{-7}, with a geometric mean of 6.0 x 10^{-6} m/s. Hydraulic conductivity test results are tabulated in Table H-3.

The mid-screen depth of the three measured wells ranged from 0.97-3.25 m below bedrock. The bedrock K is variable across the Site, likely due to variations in fracture density and weathering. It is generally expected that K will be higher in the upper 1 m of bedrock due to higher fracture density and weathering; deeper bedrock generally becomes more competent and should have lower K values, with high-K zones associated with occasional deeper fractures.

Literature values for hydraulic conductivity of the Guelph formation ranged from 1.0 x 10^{-4} to 2.0 x 10^{-7} (Golder, 2011; Matrix, 2011; Priebe et al., 2017). The Site-specific K values have a similar range to literature values; therefore, a multiplier was not applied, and the maximum hydraulic conductivity of 2.0 x 10^{-4} m/s was selected as a conservative measure for use in the MGRA.

H.6 Depth to Groundwater

As described in Attachment D3, there are two main hydrogeological units encountered at the Site: (1) perched groundwater above a silt strata in the northern portion of the Site, and (2) a shallow unconfined aquifer generally in the upper bedrock, but extending in places up into the overburden soil. The perched groundwater unit was not considered in the determination of the depth to groundwater for the following reasons:

- The perched groundwater unit is not continuous at the Site (that is, it exists in the northern area only).
- The perched groundwater does not contain the contaminants of concern identified for groundwater at the Site.
- The perched groundwater currently exists because of the silt unit at the northern end of the Site which is considered “permanent” (that is, it is continually present throughout the year and various seasonal conditions; based on observations); however, based on the current proposed building designs, all soil at the Site will be excavated to bedrock to allow for an underground parking garage, and, therefore, the silt will no longer be present in this northern portion, and likewise the perched water will cease to exist.

Exhibit H-2 presents the available depth to groundwater information for the water table (unconfined aquifer). On a per well basis, the water level fluctuation (difference between observed maximum and minimum depth) across all manual water level events ranged from a minimum of 0.21 m (MW107) to a maximum of 0.69 m (MW101). For the wells which had water levels logged by transducers, the water level fluctuation ranged from a minimum of 0.36 m (MW107) to a maximum of 0.72 m (MW102B).

As the frequency of water levels collected to date do not meet the requirements to use the minimum measured groundwater depth value directly, the assumed minimum depth to groundwater value will be represented by the April 2020 measurement of 5.83 mbgs with one metre subtracted (per O. Reg. 153/04, Schedule E, Table 4 [MECP, 2011a). Therefore, the theoretical minimum depth to groundwater at the RA Property is 4.83 mbgs.

Exhibit H-2. Depth to Groundwater Summary

Water Level Event Year	Water Level Event Month	Number of Wells Included in Event [a]	Minimum Depth (mbgs)	Maximum Depth (mbgs)	Average Depth (mbgs)
2018	September	10	6.48	8.56	7.86
2019	December	10	6.46	8.66	7.81
2020	January - March [b]	2	6.16	8.37	7.18
2020	April	10	5.83	8.33	7.22
		Overall:	**5.83**	**8.66**	**7.60**

Notes:

[a] Only wells screened across the water table were included.

[b] Based on continuous (hourly) transducer data (MW102B and MW107).

Currently, there are no buildings on the RA Property; therefore, the proposed future built form has been considered in the MGRA. The design for the proposed redevelopment of the RA Property has not been finalized, but will include underground parking (up to three levels). Therefore, it has been assumed that the maximum depth of the foundation could be 10 mbgs. Thus, contact between the building foundation and the water table could occur at the RA Property. Under these conditions, there is no separation distance between the building foundation and the water table; therefore, the depth to groundwater has been set to 0.1 cm in the MGRA model per MECP guidance (MTE, 2018).

~~H.6~~H.7 Supporting Documents List

The documents relied upon for the completed of the RA are presented in Attachment H1.

~~H.7~~H.8 References

Bouwer, Herman and R.C. Rice. 1976. "A slug test for determining hydraulic conductivity of unconfined aquifers with completely or partially penetrating wells." *Water Resources Research.* Vol. 12. No. 3. June. pp. 423–428.

Golder Associates (Golder). 2011. City of Guelph Tier Three Water Budget and Local Area Risk Assessment. Appendix A: Characterization Final Report. Prepared for the City of Guelph. July.

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U.S. Environmental Protection Agency (EPA). 2004. *User's Guide for Evaluating Subsurface Vapor Intrusion into Buildings*. Office of Emergency and Remedial Response, Washington, D.C. February 22.

Tables

Table H-1. Summary of Grain-size Distribution Analysis Test Results

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Borehole ID	Depth (m)	Soil Description	Generalized Stratigraphy Description From Cross-Sections	Gravel (%)	Sand (%)	Sand + Gravel (%)	Silt (%)	Clay (%)	Fine or Coarse Classification	Approximate % Passing #200/75µm	Texture Triangle Classification
BH 201	0.31 - 0.46	Fill, Sand and Gravel	Fill	30	56	86	6	9	Coarse	11	Loamy Sand
	4.57 – 4.93	Silt and Sand, trace gravel, trace clay	Silt	3	43	46	46	8	Fine	56	Loam
	6.10 – 6.53	Clayey Silt Till, sandy, trace gravel	Silt	6	27	33	46	21	Coarse	21	Loam
BH 202	0.61 - 0.76	Silty Sand	FIll	20	43	63	25	12	Coarse	10	Sandy Loam
BH 203	1.52 – 2.13	Sandy Gravel, silty, trace clay	Sand and Gravel	41	34	75	22	3	Fine	68	Sandy Clay Loam
	3.81 – 4.39	Clayey Silt Till, sandy, trace gravel	Silt	8	33	41	52	7	Fine	60	Loam
BH 204	2.29 – 3.35	Clayey Silt, sandy, trace gravel	Silt	9	31	40	49	11	Fine	61	Loam
	3.81 – 4.42	Silty Sand, gravelly, trace clay	Sand	26	42	68	26	6	Coarse	32	Sandy Clay Loam
BH 206	3.05 – 3.66	Clayey Silt Till, sandy, some gravel	SIlt	19	22	41	47	12	Fine	60	Loam
	4.57 – 4.93	Clayey Silt Till, sandy, gravelly	Silt	24	34	58	33	9	Coarse	43	Sandy Clay Loam
MW 100	2.29 – 2.90	Silty Sand, some gravel, trace clay	Sand	10	55	65	29	6	Coarse	37	Sandy Clay Loam
	3.81 – 4.42	Sand and Gravel, some silt, trace clay	Sand and Gravel	41	39	80	16	4	Coarse	21	Sandy Loam
MW 101	3.05 – 3.35	Silty Sand, trace gravel, trace clay	Sand	6	52	58	34	8	Coarse	44	Sandy Clay Loam
	3.81 – 4.42	Silty Sand, gravelly, trace clay	Sand	21	40	61	31	8	Coarse	40	Sandy Loam
MW 102B	3.05 – 4.42	Clayey Silt Till, sandy, trace gravel	Silt	2	33	35	49	16	Fine	66	Loam
	6.10 – 6.71	Clayey Silt Till, some sand, trace gravel	Silt	3	16	19	50	31	Fine	82	Silty Clay Loam
MW 106	3.81 – 4.42	Gravelly Sand, silty, trace clay	Sand and Gravel	34	36	70	26	4	Coarse	26	Sandy Loam
	5.26 – 5.59	Gravelly Sand, silty, trace clay	Sand and Gravel	29	40	69	27	4	Coarse	21	Sandy Loam
MW 107	2.29 – 2.90	Sandy Gravel, some silt, trace clay	Sand and Gravel	47	33	80	17	3	Coarse	33	Loamy Sand
	3.81 – 4.27	Gravelly Sand, silty, trace clay	Sand and Gravel	27	48	75	22	3	Coarse	31	Sandy Clay Loam
MW 108	4.57 – 5.18	Clayey Silt Till, sandy, trace gravel	Silt	1	25	26	38	36	Fine	74	Clay Loam
	5.49 – 5.94	Clayey Silt Till, sandy, trace gravel	Silt	5	30	35	49	16	Fine	66	Loam

Notes:
% = percent
µm = micrometre(s)
m = metre(s)

Table H-2. Summary of Horizontal Hydraulic Gradient Calculations

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Groundwater Elevation Date	Calculation	Groundwater Elevation A (masl)	Groundwater Elevation B (masl)	Distance between Contours (m)	i (m/m)
September 18, 2019	Maximum	322.30	321.70	24	0.025
September 18, 2019	Minimum	321.90	321.30	37	0.016
September 18, 2019	Average	322.10	321.30	45	0.018
December 18, 2019	Maximum	322.60	321.90	30	0.024
December 18, 2019	Minimum	322.00	321.30	56	0.012
December 18, 2019	Average	321.80	321.20	36	0.017
April 15, 2020	Maximum	322.70	322.30	27	0.015
April 15, 2020	Minimum	322.40	321.90	55	0.009
April 15, 2020	Average	322.80	322.20	45	0.013

Notes:
Δ = delta (change in)
i = (ΔH/ΔD)
K = hydraulic conductivity
masl = metre(s) above sea level
m/m = metre(s) per metre

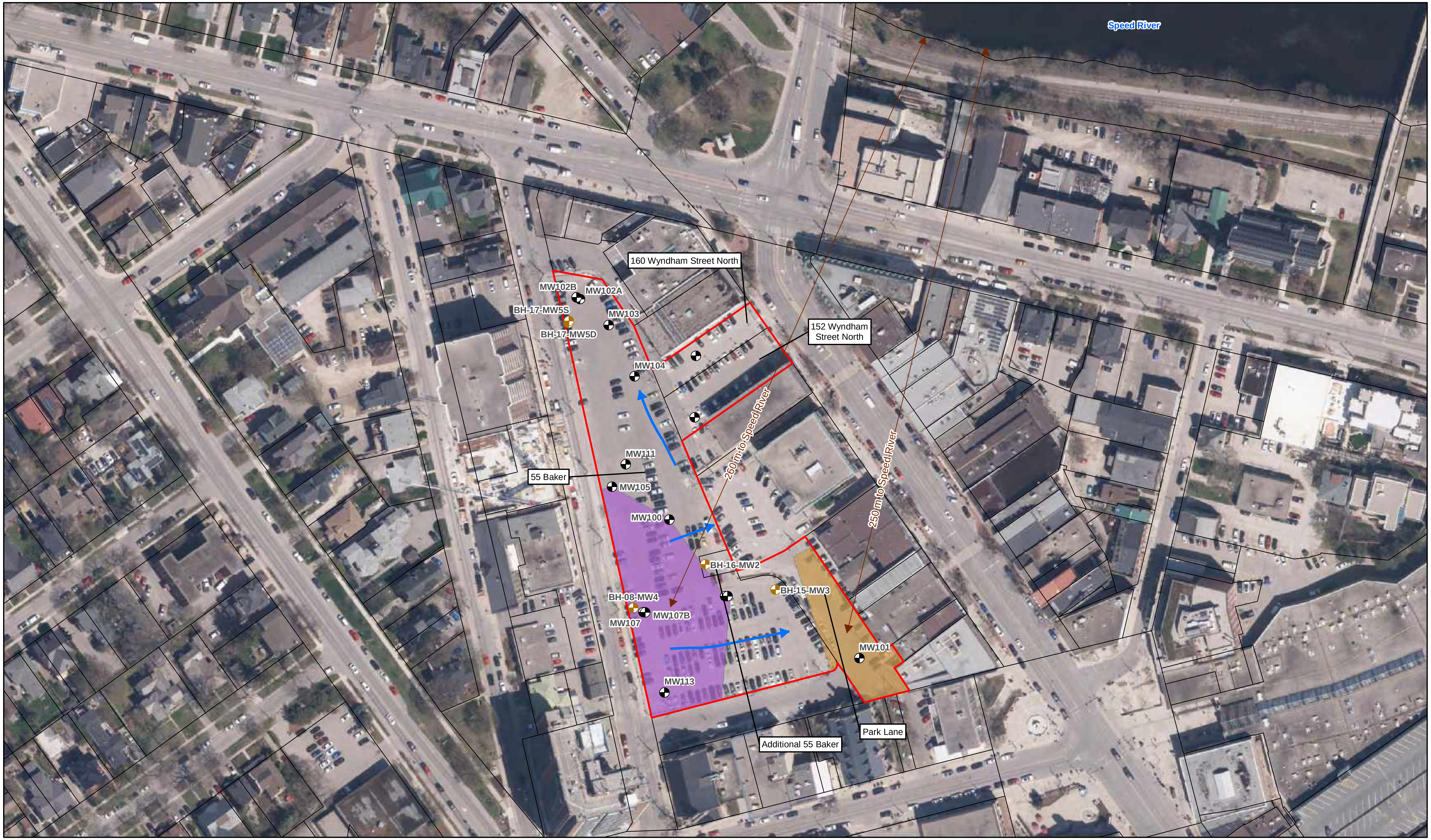
Table H-3. Summary of Hydraulic Conductivity Values

55 Baker Street, 152 and 160 Wyndham Street North, Chapel Lane, and Park Lane, Guelph, Ontario

Well IDs	Date of Test	Screen Top (mbgs)	Screen Bottom (mbgs)	Type of Test	Perched, Confined, Unconfined	Lithology	Analytical Test	Hydraulic Conductivity (m/s)	Location Average Hydraulic Conductivity (m/s)	Geometric Average Hydraulic Conductivity (m/s)	Geometric Average Hydraulic Conductivity (m/d)
MW102A	September 11, 2019	2.13	5.18	Rising	Perched	Silt	Bouwer & Rice, 1976	7.4E-07	7.1E-07	1.6E-07	1.4E-02
MW102A	September 11, 2019	2.13	5.18	Rising	Perched	Silt	Bouwer & Rice, 1976	6.8E-07			
MW103	September 11, 2019	2.13	5.18	Rising	Perched	Silt	Bouwer & Rice, 1976	3.6E-08	3.6E-08		
MW101	September 11, 2019	5.72	8.76	Rising	Unconfined	Bedrock	Bouwer & Rice, 1976	2.5E-06	2.4E-06	6.0E-06	5.2E-01
MW101	September 11, 2019	5.72	8.76	Rising	Unconfined	Bedrock	Bouwer & Rice, 1976	2.3E-06			
MW107	September 11, 2019	5.33	8.38	Rising	Unconfined	Bedrock	Bouwer & Rice, 1976	1.9E-04	2.0E-04		
MW107	September 11, 2019	5.33	8.38	Rising	Unconfined	Bedrock	Bouwer & Rice, 1976	2.0E-04			
MW107	September 11, 2019	5.33	8.38	Rising	Unconfined	Bedrock	Bouwer & Rice, 1976	2.0E-04			
MW107	September 11, 2019	5.33	8.38	Rising	Unconfined	Bedrock	Bouwer & Rice, 1976	2.0E-04			
MW107	September 11, 2019	5.33	8.38	Rising	Unconfined	Bedrock	Bouwer & Rice, 1976	2.0E-04			
MW109	September 11, 2019	7.32	10.36	Rising	Unconfined	Bedrock	Bouwer & Rice, 1976	5.3E-07	4.9E-07		
MW109	September 11, 2019	7.32	10.36	Rising	Unconfined	Bedrock	Bouwer & Rice, 1976	4.6E-07			

Notes:
ID = identification
m/s = metre(s) per second
m/d = metre(s) per day
mbgs = metre(s) below ground surface

Figures



N

0 1 2 3

Kilometers

● Current Monitoring Well

● Historical Monitoring Well

→ Groundwater Flow Direction (April 15, 2020)

Inferred Lateral Extent of Concentration Greater than the Table 2 SCS

🟫 Metals in Soils

🟪 Metals in Groundwater

🟥 Site Boundary

☐ Property Boundary

Notes:
1. Aerial Imagery: ESRI World Imagery 2019. Imagery Date May 6, 2019.
2. Property Boundaries: City of Guelph.

Figure H-1
Distance to Water Body
Modified Generic Risk Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 6/29/2020

Jacobs

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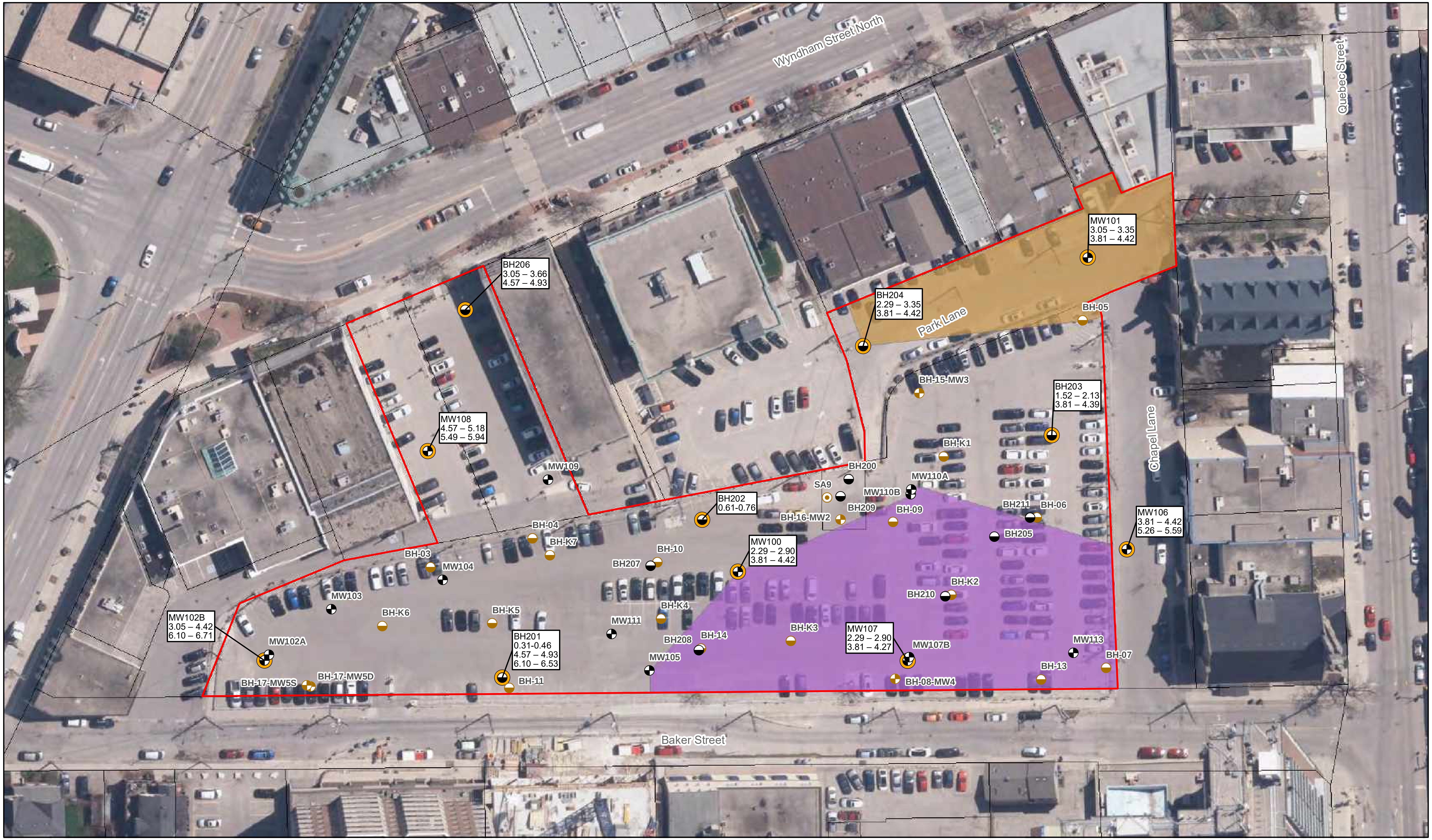

N

0 5 10 15

Metres

Sample Location (Current)
- ◒ Borehole
- ⊕ Monitoring Well

Sample Location (Historical)
- ◒ Borehole
- ⊕ Monitoring Well
- ⊙ Soil Sample

● Sample Locations with Grain Size

Inferred Lateral Extent of Concentration Greater than the Table 2 SCS
- 🟫 Metals in Soils
- 🟪 Metals in Groundwater

🟥 Site Boundary
☐ Property Boundary

Notes:
1. Aerial Imagery: ESRI World Imagery 2019. Imagery Date May 6, 2019.
2. Property Boundaries: City of Guelph.
3. Historical sample locations and site boundaries are approximate. Current sample locations have been surveyed.
4. Locations with Grain Size Analysis show depths of samples.

BH - Borehole
MW - Monitoring Well

Figure H-2
Grain Size Sampling Points
Modified Generic Risk Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 7/9/2020

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N

0 5 10 15 20
Metres

September 18, 2019 Groundwater Elevations (mASL)
- Monitoring Well - Water Table Elevation
- Shallow Monitoring Well - Perched Water Table Elevation

Groundwater Contour (September 18, 2019)
Flow Direction
🟥 Site Boundary

Notes:
1. Historical sample locations and site boundaries are approximate. Current sample locations have been surveyed.

BH - Borehole
MW - Monitoring Well
GW - Groundwater

Figure H-3a
Groundwater Contours - September 2019
MGRA Supporting Information
55 Baker Street, 152 and 160 Wyndham Street North and Park Lane, Guelph, Ontario
Date Exported: 6/9/2020

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December 18, 2019 Groundwater Elevations (mASL)

- ◐ Shallow Monitoring Well - Perched Water Table Elevation
- ◐ Monitoring Well - Water Table Elevation
- ◐ Monitoring Well - Deep
- — Water Table Elevation Contour (masl) - December 18, 2019
- → Flow Direction
- ☐ Site Boundary

Notes:
1. Historical sample locations and site boundaries are approximate. Current sample locations have been surveyed.

BH - Borehole
MW - Monitoring Well
GW - Groundwater

Figure H-3b
Groundwater Contours - December 2019
MGRA Supporting Information
55 Baker Street, 152 and 160 Wyndham Street North and Park Lane, Guelph, Ontario
Date Exported: 6/9/2020

Jacobs

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N

0 5 10 15 20

Metres

April 15, 2020 Groundwater Elevations (mASL)

- ● Shallow Monitoring Well - Perched Water Table Elevation
- ● Monitoring Well - Water Table Elevation
- ● Monitoring Well - Deep

- — Water Table Elevation Contour (masl) - April 15, 2020
- → Flow Direction
- ▭ Site Boundary

Notes:
1. Historical sample locations and site boundaries are approximate. Current sample locations have been surveyed.

BH - Borehole
MW - Monitoring Well
GW - Groundwater

Figure H-3c
Groundwater Contours - April 2020
MGRA Supporting Information
55 Baker Street, 152 and 160 Wyndham Street North and Park Lane, Guelph, Ontario
Date Exported: 6/9/2020

\\DC1VS01\GISPROJ\G\GUELPHCITYOF\55BAKERSTREET\MAPFILES\PHASEII\MAY2020_UPDATE\GWCONTOURS_APR2020.MXD MJOZWIAK 6/9/2020 12:55:40 PM

Jacobs

Attachment H1
Supporting Documents List

Attachment H1. List of Supporting Documents

Jacobs Engineering Group. 2020a. *Geotechnical Investigation and Design Report. 55 Baker Street, 152 & 160 Wyndham Street North, Chapel Lane, and Park Lane, Guelph, Ontario*. February.

Jacobs Engineering Group. 2020b. *Phase Two Environmental Site Investigation for 55 Baker Street, 152 & 160 Wyndham Street North, and Park Lane, Guelph, Ontario*. Prepared for the City of Guelph. (in progress).

Kewen Environmental Limited. 2001. *Baker Street Parking Lot, City of Guelph, Ontario, Phase I Environmental Site Assessment*. Prepared for The City of Guelph. March.

Kewen Environmental Limited. 2001. *Baker Street Parking Lot, City of Guelph, Ontario, Phase II Environmental Site Assessment*. Prepared for The City of Guelph. August 7.

Pinchin Environmental Ltd. (Pinchin). 2018. *Phase One Environmental Site Assessment (Final), 55 Baker Street, 152, 160 Wyndham Street North, Chapel and Park Lane, Guelph, Ontario*. Prepared for the City of Guelph. October 30.

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XCG Environmental Services Inc. 2008. Phase II Environmental Site Assessment, Baker Street Redevelopment Site, Guelph, Ontario. Prepared for City of Guelph. December 18.

Attachment H2
Borehole Logs

Explanation of Borehole Logs

Samples taken in the field, some of which are later subjected to laboratory tests, are retained in our subcontractor's laboratory for 60 days and then disposed unless special disposition is requested by our client. Samples retained over a long period of time, even in sealed jars, are subject to moisture loss, which changes the density and strength of cohesive soil—generally increasing soil strength from that originally encountered in the field. Since the samples are then no longer representative of the moisture, density, and strength conditions initially encountered, potential observers should recognize this factor if considering sample re- examination weeks or months after samples were retained.

Water levels indicated on the boring logs are those measured in the boreholes at the time indicated. In pervious soils (sands, gravels), the indicated groundwater levels are considered reliable. In impervious soils (silts, clays), the indicated levels may not be reliable. For boreholes or wells in low permeability soils, relatively long periods of time are usually required for the groundwater to reach equilibrium. A more reliable and accurate determination of water levels is made from monitoring wells or piezometers sensing aquifers of interest with readings over a period of weeks to months. The water table depth listed in the header block of a boring log is an approximation of the location of the water table based on encountering water or wet conditions in the borehole during drilling or is a water level depth measured in the open borehole while drilling (WD) or after drilling (AD). Since these measurements are made in an open borehole, they may not represent the actual level of the water table.

Drilling and Sampling Symbols

SS	Split spoon	WL	Water Level
TW	Thin Wall tube sample	HSA	Hollow-stem auger
AS	Auger cuttings sample	GRAB	Grab Sample
PST	Piston (Osterberg) sampler	DB	Diamond coring bit
BS	Bulk sample from exposed material	VST	Vane shear test
CST	Continuous sample tube	PT	Pressuremeter test
M&I	Metals and Inorganics	H/P	Herbicides and Pesticides
PAH	Polycyclic Aromatic Hydrocarbons	VOC	Volatile Organic Compounds
PHC	Petroleum Hydrocarbons	PCB	Polychlorinated Biphenyls
Gr	Gravel	Sa	Sand
Si	Silt	Cl	Clay

SOIL IDENTIFICATION

The borehole logs have been prepared in accordance with the Canadian Foundation Engineering Manual (Canadian Geotechnical Society, 2006). The descriptions of the samples are classified based on the percentage by weight and their respective plasticity. Other terms and identification used are provided below.

Identification Term	Percentage by Weight (%)	Example
Noun	>35 and main fraction	gravel, sand, silt, clay
"and"	>35	and gravel, and sand, and silt, and clay
Adjective	20 – 35	gravelly, sandy, silty, clayey
"some"	10 – 19	some gravel, some sand, some silt, some clay
"trace"	1 – 9	trace gravel, trace sand, trace silt, trace clay

The natural moisture content of the soil samples is described based on the field conditions encountered during the advancement of the borehole.

Identification Term	Description
Dry	Soil contains no visible moisture, dusty to the touch
Damp	Moisture is not readily visible, damp to the touch
Moist	Moisture is visible, soil holds water but is not saturated
Wet	Visible free water, soil is saturated

The consistency of cohesive soils and the relative density of cohesionless soils are described based on the Standard Penetration Test N-Values obtained during the in-situ testing as follows.

Consistency of Cohesive Soils			Relative Density of Cohesionless Soils	
Undrained Shear Strength, kPa	**SPT N-Value (blows per 300 mm)**	**Consistency**	**SPT N-Value (blows per 300 mm)**	**Relative Density**
0 to 12	1 – 2	Very Soft	0 – 4	Very Loose
12 to 25	3 – 4	Soft	5 – 9	Loose
25 to 50	5 – 7	Firm	10 – 29	Compact
50 to 100	8 – 15	Stiff	30 – 50	Dense
100 to 200	16 – 30	Very Stiff	>50	Very Dense
Over 200	>30	Hard		

SPT N values equal the total blows for the 2nd and 3rd 150 mm of penetration of a 50 mm O.D. split-spoon sampler driven by a 63.5 kilogram hammer falling 0.76 m, except where otherwise noted. N values are shown on the boring logs for both cohesive and non-cohesive (cohesionless) soils, although the consistency of cohesive soils is generally correlated to Undrained Shear Strength values. Samples for which refusal occurs while driving the split spoon sampler have N values indicated as 100+.

The diameter of the split spoon sampler prevents obtaining larger particle sized stones, such as cobbles and boulders. The occurrences described below are based on the inferred encounters from auger advancement or split spoon refusal.

Identification Term	Occurrence of Cobbles and/or Boulders
Very few (trace)	Fewer than 1 occurrence per 3 metres
Few	Approximately 1 occurrence per 3 metres
Occasional	Approximately 2 to 3 occurrences per 3 metres
Frequent	Approximately 3 to 4 occurrences per 3 metres
Very Frequent	More than 5 occurrences per 3 metres

Soil structures/fabrics can take on various appearances based on their depositional history. Descriptions of common encounters are provided below.

Identification Term	Description of Soil Structure/Fabric
Massive/Homogeneous	Same colour, texture and appearance throughout
Layered	Apparently continuous horizontal bed over 25 mm in thickness
Pocket/Lens	Apparently discontinuous zone over 25 mm in thickness
Laminated	Alternating horizontal beds less than 6 mm in thickness
Stratified	Alternating horizontal layers over 6 mm in thickness
Blocky	Cohesive soil that breaks in cubic lumps

BEDROCK IDENTIFICATION

The following classification systems are used to identify bedrock that has been cored during the investigation. The field supervisor logs the bedrock in accordance with these systems to provide a quantitative understanding of the discontinuities within the rock mass from the obtained core specimens. The systems are based on the International Society for Rock Mechanics (1978).

The weathering grade of the rock describes the discontinuities and/or alterations of the rock mass.

Weathering Classification	Weathering Grade	Description
Fresh	W1	No Visible signs of bedrock weathering. Perhaps slight discoloration along major discontinuities.
Slightly Weathered	W2	Discoloration indicates weathering of bedrock and discontinuity surfaces. All the bedrock material may be discolored by weathering and may be somewhat weaker externally than in its fresh condition.
Moderately Weathered	W3	Less than half the bedrock is decomposed and/or disintegrated to a soil. Fresh or discolored bedrock is present either as a continuous framework or as corestones.
Highly Weathered	W4	More than half the bedrock is decomposed and/or disintegrated to a soil. Fresh or discolored bedrock is present either as a discontinuous framework or as corestones.
Completely Weathered	W5	All the bedrock material is decomposed and/or disintegrated to a soil. The original mass structure is still largely intact.
Residual Soil	W6	All bedrock material is converted to soil. The mass structure and material fabric are destroyed. There is a large change in volume, but the soil has not been significantly transported.

The spacing of discontinuities are logged based on visual observation of the logger. Measurements are taken to confirm the spacing, however, where joints are not parallel, the recorded spacing length is based on the discretion of the logger.

Spacing (mm)	Joint Classification	Bedding, Laminates, Bands
> 6000	Extremely Wide	-
2000 – 6000	Very Wide	Very Thick
600 – 2000	Wide	Thick
200 - 600	Moderate	Medium
60 – 200	Close	Thin
20 – 60	Very Close	Very Thin
< 20	Extremely Close	Laminated
< 6	-	Thinly Laminated

The strength classification of the rock is based on the results of the Uniaxial Compressive Strength (UCS) testing. Where test results are not available, the field identification is based on the International Society for Rock Mechanics classification system.

Point load testing was generally carried out when UCS testing could not be performed due to cementation failure, weathering, and when the testing criteria (length to diameter requirements) were not met. Point load testing only applies to medium-strength rock and the point load test results should only be used as a preliminary level evaluation of variability in rock strength.

Strength Classification	Strength Grade	Uniaxial Compressive Strength (MPa)
Extremely Weak Rock	R0	0.3 – 1
Very Weak Rock	R1	1 – 5
Weak Rock	R2	5 – 30
Medium Strong Rock	R3	30 – 50
Strong Rock	R4	50 – 100
Very Strong Rock	R5	100 – 250
Extremely Strong Rock	R6	> 250

The recovered rock core is measured in the field to provide a measurement of the recovered lengths prior to transportation.

Total Core Recovery (TCR): The percentage of solid drill core recovered regardless of quality or length, measured relative to the length of the total core run.

The retrieved core lengths are calculated in accordance with ASTM International (ASTM) D6032 to provide a quantitative measurement of the quality of the rock.

Rock Quality Designation (RQD): Rock quality classification is based on a modified core recovery percentage, RQD, in which all pieces of sound core over 100 mm long are counted as recovery. The smaller pieces are considered to be due to close shearing, jointing, faulting or weathering in the mass and are not counted.

RQD %	Rock Quality
0 to 25	Very Poor
25 to 50	Poor
50 to 75	Fair
75 to 90	Good
90 to 100	Excellent

REFERENCES

ASTM International (ASTM). 2008. ASTM D6032 – Standard Test Method for Determining Rock Quality Designation (RQD) of Rock Core. West Conshohocken, PA, 2008.

Canadian Geotechnical Society, 2006. Canadian Foundation Engineering Manual. Fourth Edition, 488 p.

International Society for Rock Mechanics. 1978. International Society for Rock Mechanics Commission on Standardization of Laboratory and Field Tests. Suggested Methods for the Quantitative Description of Discontinuities in Rock Masses. Committee on Field Tests Document No. 4. International Journal of Rock Mechanics and Mining Sciences & Geomechanics Abstracts. Volume 15, pp. 319-368. October.

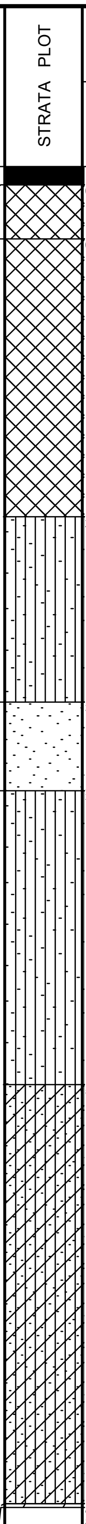
SHEET: 1 of 1

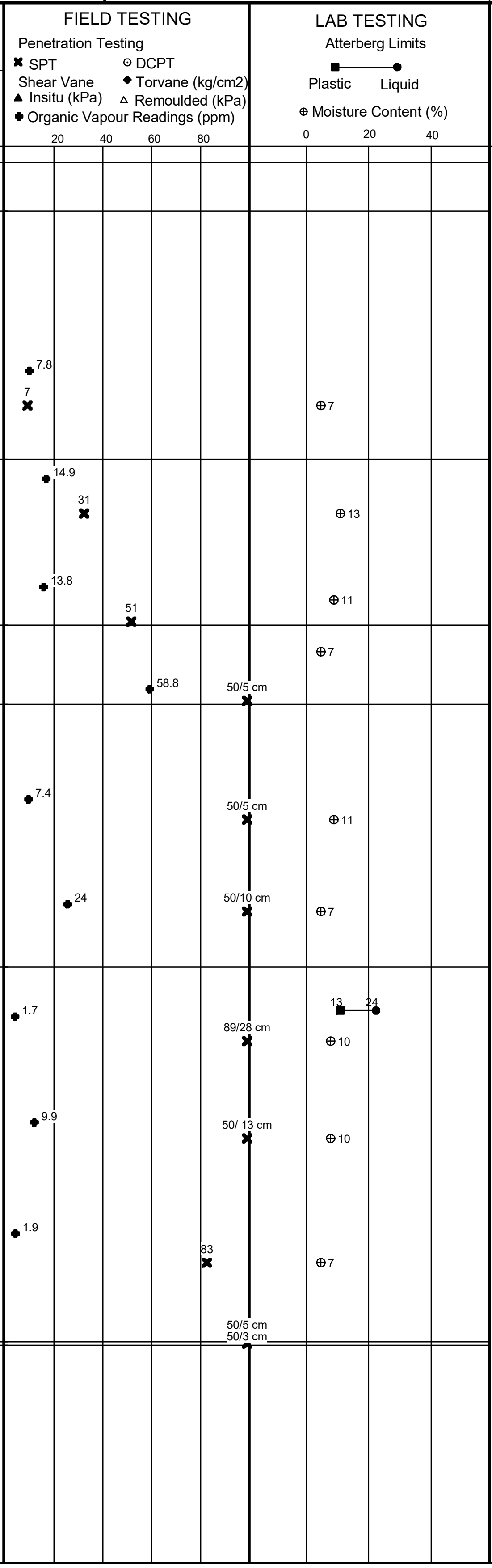
RECORD OF BOREHOLE: BH 201

LOCATION: 55 Baker Street, Guelph, ON
SAMPLER HAMMER WEIGHT AND DROP: 63.5kg, 76.2cm
NORTHING: 4821850.6
DATE STARTED: August 21, 2019
CLIENT: City of Guelph
DRILLING METHOD: Hollow Stem Augers
EASTING: 560443.0
DATE COMPLETED: August 21, 2019
PROJECT NUMBER: CE751900
DRILLING CONTRACTOR: Aardvark
LOGGED BY: JR/VP
REVIEWED BY: KD
GROUND SURFACE ELEVATION: 330.16 masl
GROUNDWATER: Dry Upon Completion

SAMPLES Type	Blows per 150mm	SPT (N - Value)
GS1		
GS2		
GS3		
GS4		
SS1	3 2 5 11	7
SS2	5 13 18 25	31
SS3	4 23 28 30	51
SS4	17 50	50/5 cm
SS5	20 49 50	50/5 cm
SS6	50	50/10 cm
SS7	23 39 50	89/28 cm
SS8	11 50	50/ 13 cm
SS9	13 36 47 50	83
SS10	50	50/5 cm
SS11	50	50/3 cm

SOIL DESCRIPTION	DEPTH (mbgs)	ELEV. (masl)
		330.16
Asphalt approximately 116 mm thick.	0.00	
Fill sand and gravel, light brown, dry.	0.12	330.04
Fill silty sand, some gravel, some cobbles (decreasing with depth), trace clay, brown, moist, ----- loose.	0.46	329.70
Silt and Sand trace clay, trace gravel, brown, very dense, moist.	2.21	327.95
Sand some silt, trace gravel, brown, very dense, moist.	3.38	326.78
Silt and Sand trace clay, trace gravel, trace cinders (crystalline), brown, very dense, moist.	3.94	326.22
Clayey Silt Till sandy, trace gravel, slight oxidation, grey, hard, moist. ----- some gravel.	5.79	324.37
Inferred Dolostone Bedrock buff, hard.	8.43	321.70
END OF BOREHOLE **Borehole Terminated at 8.5 mbgs.** Borehole was dry and backfilled with bentonite upon completion.	8.46	





DEPTH (mbgs): 1, 2, 3, 4, 5, 6, 7, 8, 9

COMMENTS

0 to 1.7 mbgs completed via testpit excavation on July 24, 2019 during archeological investigation with CASE 580 backhoe, testpit backfilled with excavated material upon completion. Augered down to 1.5 mbgs to begin sampling.

Spoon bouncing @4.0 m.

Auger grinding @4.0-4.3 m.

SS5: Non-plastic. 3% Gravel; 43% Sand; 46% Silt; 8% Clay.

SS7: 6% Gravel; 27% Sand; 46% Silt; 21% Clay.

Auger grinding @8.4 m. SS10: Spoon bouncing @8.4 m, no dolomite recover. SS11: Spoon bouncing @8.5 m.

Well/GW

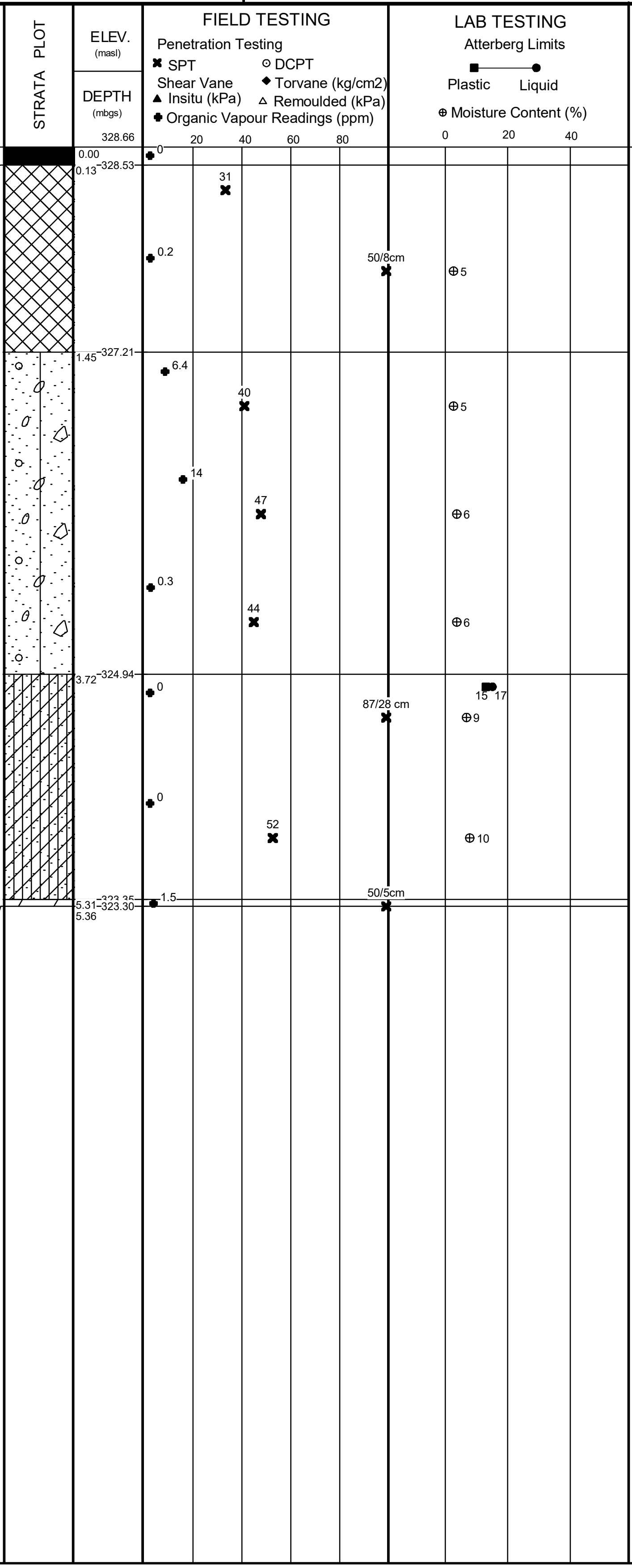
SHEET: 1 of 1

RECORD OF BOREHOLE: BH 203

LOCATION: 55 Baker Street, Guelph, ON
SAMPLER HAMMER WEIGHT AND DROP: 63.5kg, 76.2cm
NORTHING: 4821749.3
DATE STARTED: August 20, 2019
CLIENT: City of Guelph
DRILLING METHOD: Hollow Stem Augers
EASTING: 560516.2
DATE COMPLETED: August 20, 2019
PROJECT NUMBER: CE751900
DRILLING CONTRACTOR: Aardvark
LOGGED BY: JR
REVIEWED BY: KD
GROUND SURFACE ELEVATION: 328.66 masl
GROUNDWATER: Dry Upon Completion

SAMPLES Type	Blows per 150mm	SPT (N - Value)	SOIL DESCRIPTION	ELEV. (masl) / DEPTH (mbgs)	COMMENTS	Well/GW
			Asphalt approximately 127 mm thick.	328.66 0.00		
SS1	10 19 12 26	31	**Fill** sand and gravel (incl. trace buff dolostone), trace silt, brick debris, asphalt debris, brown with pink and red, dense, moist.	0.13 328.53		
SS2	39 50	50/8cm	----- some silt to silty, brick debris, dolostone fragments (buff/dark grey), very dense.			
SS3	35 18 22 19	40	**Sandy Gravel** (incl. trace buff/grey dolostone), silty, trace clay, frequent cobbles, brown, dense, moist.	1.45 327.21	Auger grinding @1.8-2.7 m. SS3: 41% Gravel; 34% Sand; 22% Silt; 3% Clay.	
SS4	12 22 25 29	47				
SS5	13 23 21 17	44				
SS6	16 37 50	87/28 cm	**Clayey Silt Till** sandy, trace gravel (incl. trace buff dolostone), brown, hard, moist. ----- coarse sand seam, brown and black, moist (76 mm thick).	3.72 324.94	Spoon bouncing @4.2 m. SS6: 8% Gravel; 33% Sand; 52% Silt; 7% Clay.	
SS7	10 20 32 31	52				
SS8	50	50/5cm	**Inferred Dolostone Bedrock** buff, hard.	323.35 5.31 323.30 5.36	Auger grinding @5.3 m.	

END OF BOREHOLE
Borehole Terminated at 5.4 mbgs.
Borehole was dry and backfilled with bentonite upon completion.



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SHEET: 1 of 1

RECORD OF BOREHOLE: BH 204

LOCATION: 55 Baker Street, Guelph, ON
SAMPLER HAMMER WEIGHT AND DROP: 63.5kg, 76.2cm
NORTHING: 4821791.5
DATE STARTED: August 22, 2019
CLIENT: City of Guelph
DRILLING METHOD: Hollow Stem Augers
EASTING: 560526.2
DATE COMPLETED: August 22, 2019
PROJECT NUMBER: CE751900
DRILLING CONTRACTOR: Aardvark
LOGGED BY: JR/VP
REVIEWED BY: KD
GROUND SURFACE ELEVATION: 329.19 masl
GROUNDWATER: Dry Upon Completion

FIELD TESTING: Penetration Testing: ✖ SPT, ⊙ DCPT; Shear Vane: ▲ Insitu (kPa), △ Remoulded (kPa); ◆ Torvane (kg/cm2); ✚ Organic Vapour Readings (ppm) — scale 20, 40, 60, 80

LAB TESTING: Atterberg Limits ■—● Plastic, Liquid; ⊕ Moisture Content (%) — scale 0, 20, 40

SAMPLES Type	Blows per 150mm	SPT (N - Value)	SOIL DESCRIPTION	ELEV. (masl) / DEPTH (mbgs) 329.19	FIELD TESTING	LAB TESTING	COMMENTS
			Asphalt approximately 127 mm thick.	0.00			0 to 2.0 mbgs completed via testpit excavation on July 30, 2019 during archeological investigation with CASE 580 backhoe, testpit backfilled with excavated material upon completion. Augered down to 1.5 mbgs to begin sampling.
GS1			**Fill** sand and gravel, trace silt, brown, moist,	0.13 329.06			
GS2			**Fill** sandy clay, some coarse sand and gravel, trace silt, medium plasticity, Fe staining, dark brown, moist. Inconsistent 5 cm layer black with bricks and mortar at upper contact.	0.61 328.58			
GS3			**Fill** silty sand, trace clay, Fe staining at upper contact, light brown, moist,	1.22 327.97			
SS1	2 2 2 2	4	----- few cobbles, very loose.		30.1 4	⊕7	
SS2	1 3 2 2	5	**Clayey Silt** sandy, trace gravel, trace dolostone fragments (buff), firm, moist to wet.	2.21 326.98	10.8 5	16 22 ⊕18	SS2/SS3A: 9% Gravel; 31% Sand; 49% Silt; 11% Clay.
SS3	5 19 20 33	39			33.2 39		
			Silty Sand gravelly, trace clay, few cobbles, brown, dense, moist.	3.35 325.84			
SS4	13 33 27 33	60	----- occasional cobbles, very dense.		36 60	⊕6	SS4: 26% Gravel; 42% Sand; 26% Silt; 6% Clay.
SS5	39 50	50/13cm	----- brown and grey		14.2 50/13cm		Auger grinding @4.6-4.9 m. Spoon bouncing @4.7 m.
SS6	9 22 19 29	41	----- brown, dense.		24.1 41		
			Inferred Dolostone Bedrock highly weathered, buff, hard.	5.72 323.48		⊕5	
SS7	50	50/3cm	**END OF BOREHOLE** **Borehole Terminated at 6.1 mbgs.** Borehole was dry and backfilled with bentonite upon completion.	6.12 323.07	50/3cm		Auger grinding and spoon bouncing @6.1 m.

DEPTH (mbgs): 1, 2, 3, 4, 5, 6, 7, 8, 9

STRATA PLOT

Well/GW

SHEET: 1 of 1

RECORD OF BOREHOLE: BH 206

LOCATION: 55 Baker Street, Guelph, ON		SAMPLER HAMMER WEIGHT AND DROP: 63.5kg, 76.2cm	NORTHING: 4821874.0
DATE STARTED: August 19, 2019	CLIENT: City of Guelph	DRILLING METHOD: Hollow Stem Augers	EASTING: 560516.4
DATE COMPLETED: August 19, 2019	PROJECT NUMBER: CE751900	DRILLING CONTRACTOR: Aardvark	
LOGGED BY: JR/VP	REVIEWED BY: KD	GROUND SURFACE ELEVATION: 329.08 masl	GROUNDWATER: Dry Upon Completion

FIELD TESTING: Penetration Testing: ✖ SPT, ⊙ DCPT; Shear Vane: ▲ Insitu (kPa), △ Remoulded (kPa), ◆ Torvane (kg/cm2); ● Organic Vapour Readings (ppm); scale 20, 40, 60, 80

LAB TESTING: Atterberg Limits: ■ Plastic, ● Liquid; ⊕ Moisture Content (%); scale 0, 20, 40

DEPTH (mbgs)	SAMPLES Type	Blows per 150mm	SPT (N - Value)	SOIL DESCRIPTION	ELEV. (masl) / DEPTH (mbgs)	FIELD TESTING	LAB TESTING	COMMENTS	Well/GW
					329.08				
				Asphalt approximately 102 mm thick.	0.00 0.10 328.98			0 to 1.8 mbgs completed via testpit excavation on July 25, 2019 during archeological investigation with CASE 580 backhoe, testpit backfilled with excavated material upon completion. Augered down to 1.5 mbgs to begin sampling.	
	GS1			**Fill** sand and gravel, some coarse sand, trace silt, few cobbles, reddish brown, moist.					
1	GS2								
	GS3								
2	SS1	2 2 13 14	15	----- compact.		● 0 ✖ 15	⊕ 4		
	SS2	5 16 16 15	32	**Silt and Sand** trace clay, trace gravel, iron oxidation, brown, dense, dry to damp.	2.21 326.87	● 0 ✖ 32			
3	SS3	5 18 16 24	34	**Clayey Silt Till** sandy, some gravel, brown, hard, damp.	2.97 326.11	● 0 ✖ 34	■ 12 ● 19 ⊕ 5	SS3: Corrosivity Package. 19% Gravel; 22% Sand; 47% Silt; 12% Clay.	
4	SS4	3 14 21 50	35			● 0 ✖ 35			
	SS5	16 50 50	100/25 cm	----- gravelly, dolostone fragments.		● 0 ✖ 100/25 cm	⊕ 8	SS5: 24% Gravel; 34% Sand; 33% Silt; 9% Clay.	
5	SS6	50	50/3 cm	**Inferred Dolostone Bedrock** buff, hard.	4.93 324.15	● 0 ✖ 50/3 cm		Auger grinding @4.9-5.1 m.	
				END OF BOREHOLE **Borehole Terminated at 5.1 mbgs.** Borehole was dry and backfilled with bentonite upon completion.	5.08 324.00				
6									
7									
8									
9									

SHEET: 1 of 4

JACOBS®

RECORD OF BOREHOLE: MW 100

LOCATION: 55 Baker Street, Guelph, ON

SAMPLER HAMMER WEIGHT AND DROP: 63.5kg, 76.2cm

NORTHING: 4821807.2

DATE STARTED: August 22, 2019

CLIENT: City of Guelph

DRILLING METHOD: Hollow Stem Augers

EASTING: 560474.8

DATE COMPLETED: August 22, 2019

PROJECT NUMBER: CE751900

DRILLING CONTRACTOR: Aardvark

LOGGED BY: JR/VP

REVIEWED BY: KD

GROUND SURFACE ELEVATION: 329.93 masl

GROUNDWATER: 7.48 mbgs September 18, 2019

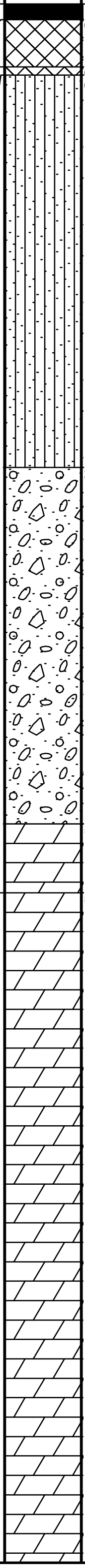
SAMPLES Type	Blows per 150mm	SPT (N - Value)	SOIL DESCRIPTION	DEPTH (mbgs)	ELEV. (masl)	FIELD TESTING: SPT	Organic Vapour Readings (ppm)	LAB TESTING: Moisture Content (%)	COMMENTS
			Asphalt approximately 102 mm thick.	0.00	329.93				0 to 1.5 mbgs completed via testpit excavation on July 24, 2019 during archeological investigation with CASE 580 backhoe, testpit backfilled with excavated material upon completion. Augered down to 1.5 mbgs to begin sampling.
GS1			**Fill** sand and gravel, brown, moist.	0.10	329.83				
GS2			**Fill** clay, some gravel, trace silt, trace sand, Fe staining, medium plasticity, dark brown, moist.	0.41	329.52				
GS3			**Silty Sand** (fine), some gravel (coarse), trace clay, occasional cobbles, few boulders (<45 cm) (observed in TP), brown, moist.	0.46	329.47				
SS1	2 18 19 25	37	----- dense.			37	0.8	5	Gravel seam @2.0-2.1 m.
SS2	6 22 15 23	37				37	0.5	6	SS2: 10% Gravel; 55% Sand; 29% Silt; 6% Clay.
SS3	12 11 13 16	24	**Sand and Gravel** some silt, trace clay, occasional cobbles, brown and grey, compact, moist.	2.97	326.96	24	0.2	7	
SS4	14 19 16 21	35	----- dense.			35	1.5	7	SS4: Corrosivity Package. 41% Gravel; 39% Sand; 16% Silt; 4% Clay.
SS5	11 15 20 31	35				35	0.1	7	Auger grinding @4.6-5.3 m.
SS6	50	50/5 cm	**Inferred Dolostone Bedrock** buff, hard.	5.26	324.67	50/5 cm	0.2	4	Spoon bouncing @5.4 m.
			Rock coring initiated at 5.7 mbgs. Borehole was dry prior to commencement of rock coring. **DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, massive. Refer to the attached rock core log of MW100 for further bedrock details.	5.70	324.23				

Continued on Next Page.

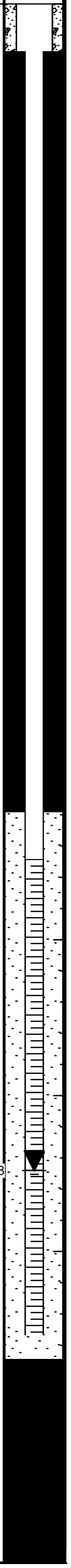
FIELD TESTING legend: Penetration Testing: ✖ SPT ⊙ DCPT; Shear Vane ▲ Insitu (kPa) △ Remoulded (kPa) ◆ Torvane (kg/cm2); ● Organic Vapour Readings (ppm); scale 20 40 60 80

LAB TESTING legend: Atterberg Limits ■—● Plastic Liquid; ⊕ Moisture Content (%); scale 0 20 40

STRATA PLOT



Well/GW



SHEET: 2 of 4

RECORD OF BOREHOLE: MW 100

LOCATION: 55 Baker Street, Guelph, ON

SAMPLER HAMMER WEIGHT AND DROP: 63.5kg, 76.2cm

NORTHING: 4821807.2

DATE STARTED: August 22, 2019

CLIENT: City of Guelph

DRILLING METHOD: Hollow Stem Augers

EASTING: 560474.8

DATE COMPLETED: August 22, 2019

PROJECT NUMBER: CE751900

DRILLING CONTRACTOR: Aardvark

LOGGED BY: JR/VP

REVIEWED BY: KD

GROUND SURFACE ELEVATION: 329.93 masl

GROUNDWATER: 7.48 mbgs September 18, 2019

DEPTH (mbgs)	SAMPLES Type	Blows per 150mm	SPT (N - Value)	SOIL DESCRIPTION	STRATA PLOT	ELEV. (masl) DEPTH (mbgs)	FIELD TESTING Penetration Testing ✖ SPT ⊙ DCPT Shear Vane ◆ Torvane (kg/cm2) ▲ Insitu (kPa) △ Remoulded (kPa) ✚ Organic Vapour Readings (ppm) 20 40 60 80	LAB TESTING Atterberg Limits ■——● Plastic Liquid ⊕ Moisture Content (%) 0 20 40	COMMENTS	Well/GW
11 12 13				**Overburden Logs Continued.** **DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, massive. Refer to the attached rock core log of MW100 for further bedrock details. Refer to the attached rock core log of MW100 for further bedrock details.		316.67 13.26				
14 15 16 17 18 19				**END OF BOREHOLE** **Borehole Terminated at 13.3 mbgs** Monitoring well was installed upon completion. Stabilized groundwater level at 7.48 mbgs on September 18th, 2019. **Rock Coring Log presented on Next Page.**						

RECORD OF BOREHOLE: MW 100

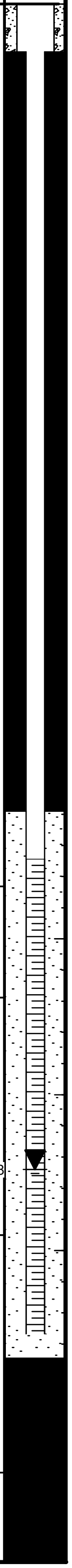
LOCATION:55 Baker Street, Guelph, ON			NORTHING: 4821807.2
DATE STARTED: August 22, 2019	CLIENT: City of Guelph	CORE BARREL: HQ3	EASTING: 560474.8
DATE COMPLETED: August 22, 2019	PROJECT NUMBER: CE751900	DRILLING CONTRACTOR: Aardvark	
LOGGED BY: JR/VP REVIEWED BY: KD	GROUND SURFACE ELEVATION: 329.93 masl	GROUNDWATER: 7.48 mbgs , September 18, 2019	

DEPTH (mbgs)	RUN No.	TCR (%)	RQD (%)	ROCK DESCRIPTION	ELEV. (masl) / DEPTH (mbgs)	FRACTURE INDEX (per 0.3m)	DISCONTINUITY DESCRIPTION	COMMENTS
					329.93			
1 2 3 4 5				**Overburden log presented on previous page**	0.00			
6	RC1	100	66	**DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, highly to slightly weathered (W4-W2), medium strong rock (R3), close to moderately close joint spacing (JS3-JS4), thickly bedded (B2), extremely to moderately fractured, massive, iron oxide staining.	324.27 5.66	>10 >10 1	Fracture Zone at 5.6 to 5.7 m. Fracture Zone at 6.1 to 6.2 m.	UCS: 49.16 MPa at 5.9 m.
7	RC2	100	83	**DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, slightly weathered to fresh (W2-W1), medium strong rock (R3), close to moderately close joint spacing (JS3-JS4), thickly bedded (B2), moderately fractured to sound, massive, iron oxide staining.	323.55 6.38	0 >10 0 0 2	1 mm thick black vein at 6.8 m. Fracture Zone at 7.2 to 7.3 m.	7.48
8 9	RC3	100	100	**DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, fresh to slightly weathered (W1-W2), weak to medium strong rock (R2-R3), close to moderately close joint spacing (JS3-JS4), thickly bedded (B2), moderately fractured to sound, massive, iron oxide staining, fossiliferous.	322.03 7.90	0 0 0 1 0	1 mm thick black veins at 8.2 and 9.3 m. 25 mm large vug wide with calcite mineralization at 8.3 m.	UCS: 42.06 MPa at 8.3 m.
				DOLOSTONE buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, fresh to slightly weathered (W1-W2), weak to medium strong rock (R2-R3), close to moderately close joint spacing (JS3-JS4), thickly bedded (B2),	320.51 9.42	0		

DISCONTINUITY DATA

Depth (mbgs)	Type	Dip (deg)	Infill	Roughness
5.66 5.74	JN	0	-	VIII
5.92	JN	0	FE	IV
5.94	JN	10	-	IV
5.97	JN	0	-	V
6.00	JN	10	CA	V
6.10	JN	10	FE	IV
6.15	JN	10	-	IV
6.22	JN	20	-	IV
6.27				
6.35				
6.40				
6.58				
6.80				
6.88	JN	0	ML	IV
7.19	JN	0	-	IV
7.20	JN	10	ML	IV
7.24	JN	0	FE	IV
7.32	JN	0	-	IV
7.34				
7.42				
7.49 7.80	JN	10	FE	IV
8.00	JN	10	-	IV
8.10				
8.18				
8.20				
8.30				
8.41				
8.71				
9.02				
9.27	JN	20	CL	IV
9.32				
9.63				
9.88	JN	0	-	IV

Well



SHEET: 4 of 4

RECORD OF BOREHOLE: MW 100

LOCATION:55 Baker Street, Guelph, ON			NORTHING: 4821807.2
DATE STARTED: August 22, 2019	CLIENT: City of Guelph	CORE BARREL: HQ3	EASTING: 560474.8
DATE COMPLETED: August 22, 2019	PROJECT NUMBER: CE751900	DRILLING CONTRACTOR: Aardvark	
LOGGED BY: JR/VP REVIEWED BY: KD	GROUND SURFACE ELEVATION: 329.93 masl	GROUNDWATER: 7.48 mbgs , September 18, 2019	

DEPTH (mbgs)	RUN No.	TCR (%)	RQD (%)	ROCK DESCRIPTION	STRATA PLOT	ELEV. (masl) DEPTH (mbgs)	FRACTURE INDEX (per 0.3m)	DISCONTINUITY DESCRIPTION	COMMENTS	Well
	RC4	100	90	moderately fractured to sound, massive, iron oxide staining, fossiliferous.		318.96	0 1 2 0	20 mm wide large vug at 10.7 m. Fracture Zone at 10.7 to 10.8 m. 1 mm thick black veins at 11.0 and 11.1 m.		
11 12	RC5	100	100	**DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, fresh to slightly weathered (W1-W2), weak to medium strong rock (R2-R3), close to moderately close joint spacing (JS3-JS4), thickly bedded (B2), sound, massive, iron oxide staining, fossiliferous.		10.97 317.41	0 0 1 0 0	Increased vug density at 11.1 to 11.3 m. 65 mm wide large vug at 11.2 m.		
13	RC6	100	100	**DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, fresh to slightly weathered (W1-W2), weak to medium strong rock (R2-R3), close to moderately close joint spacing (JS3-JS4), thickly bedded (B2), sound, massive, iron oxide staining, fossiliferous.		12.52 316.67	1 0	30 mm wide large vug at 13.2 m.	UCS: 20.43 MPa at 13.0 m.	
14 15 16 17 18 19				**END OF BOREHOLE** **Borehole Terminated at 13.3 mbgs** Monitoring well was installed upon completion. Stabilized groundwater level at 7.48 mbgs on September 18th, 2019.		13.26				

DISCONTINUITY DATA

Depth (mbgs)	Type	Dip (deg)	Infill	Roughness
9.93				
10.24				
10.54				
10.62	JN	10	CL	IV
10.69	JN	0	-	IV
10.70	JN	10	-	IV
10.77				
10.84				
11.10				
11.15				
11.20				
11.45				
11.76				
12.06	JN	10	FE	IV
12.09				
12.37				
12.67				
12.98				
13.20	JN	0	FE	IV
13.21				

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SHEET: 1 of 4

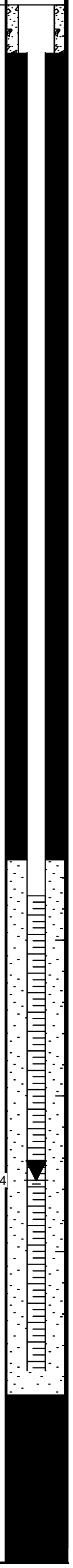
RECORD OF BOREHOLE: MW 101

LOCATION: 55 Baker Street, Guelph, ON
SAMPLER HAMMER WEIGHT AND DROP: 63.5kg, 76.2cm
NORTHING: 4821749.6
DATE STARTED: August 21, 2019
CLIENT: City of Guelph
DRILLING METHOD: Hollow Stem Augers
EASTING: 560553.9
DATE COMPLETED: August 21, 2019
PROJECT NUMBER: CE751900
DRILLING CONTRACTOR: Aardvark
LOGGED BY: JR/VP
REVIEWED BY: KD
GROUND SURFACE ELEVATION: 328.68 masl
GROUNDWATER: 7.54 mbgs September 18, 2019

FIELD TESTING: Penetration Testing: ✖ SPT, ⊙ DCPT; Shear Vane: ▲ Insitu (kPa), △ Remoulded (kPa), ◆ Torvane (kg/cm2); ✚ Organic Vapour Readings (ppm); scale 20, 40, 60, 80

LAB TESTING: Atterberg Limits: ■—● Plastic, Liquid; ⊕ Moisture Content (%); scale 0, 20, 40

DEPTH (mbgs)	SAMPLES Type	Blows per 150mm	SPT (N - Value)	SOIL DESCRIPTION	ELEV. (masl) / DEPTH (mbgs) 328.68	FIELD TESTING	LAB TESTING	COMMENTS
				Asphalt approximately 102 mm thick.	0.00			0 to 1.5 mbgs completed via testpit excavation on July 24, 2019 during archeological investigation with CASE 580 backhoe, testpit backfilled with excavated material upon completion. Augered down to 1.5 mbgs to begin sampling.
	GS1			**Fill** sand and gravel, brick/asphalt/glass debris, black and brown, moist.	0.10 328.58			
	GS2			**Fill** clay, some gravel, trace sand, trace silt, medium plasticity, brown, moist.	0.33 328.35 0.38 328.30			
	GS3			**Fill** silty clay, sand and gravel pockets, few cobbles, moist.	0.66 328.02			
1	GS4			**Fill** assortment of ash, demolition debris, and metal fragments, Fe staining.				
2	SS1	2 3 2 3	5	**Fill** gravelly sand (incl. buff dolostone), trace silt, few cobbles, brown, very loose, moist.	1.52 327.16	✚ 0 ✖ 5	⊕ 7	
	SS2	8 12 11 16	23	**Silty Sand** trace gravel, trace clay, dolostone fragments (buff/dark grey), few cobbles, brown, compact, moist.	2.21 326.47	✚ 0.3 ✖ 23		
3	SS3	20 24 24 22	48	----- frequent cobbles, dense, moist.		✚ 0 ✖ 48	⊕ 9	SS3A: 6% Gravel; 52% Sand; 34% Silt; 8% Clay.
4	SS4	14 40 50 35	90	----- gravelly, occasional cobbles, very dense.		✚ 0 ✖ 90	⊕ 8	SS4: 21% Gravel; 40% Sand; 31% Silt; 8% Clay.
	SS5	19 50	50/13 cm			✚ 0 ✖ 50/13 cm	■—● 14 15 ⊕ 8	Spoon bouncing @ 4.9 m. Auger grinding @4.9-5.0 m.
5	SS6	25 50	50/10 cm	----- some gravel.		✚ 0 ✖ 50/10 cm		SS6: Corrosivity Package
6	SS7	31 50	50/3 cm			✚ 0 ✖ 50/3 cm		
				Inferred Dolostone Bedrock buff, hard. **Rock coring initiated at 6.4 mbgs.** Borehole was dry prior to commencement of rock coring.	6.25 322.41 6.27			Heavy auger grinding and spoon bouncing @6.3 m.
7 8 9				DOLOSTONE buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, massive. Refer to the attached rock core log of MW101 for further bedrock details. Refer to the attached rock core log of MW101 for further bedrock details.				



Continued on Next Page.

RECORD OF BOREHOLE: MW 101

LOCATION: 55 Baker Street, Guelph, ON
SAMPLER HAMMER WEIGHT AND DROP: 63.5kg, 76.2cm
NORTHING: 4821749.6
DATE STARTED: August 21, 2019
CLIENT: City of Guelph
DRILLING METHOD: Hollow Stem Augers
EASTING: 560553.9
DATE COMPLETED: August 21, 2019
PROJECT NUMBER: CE751900
DRILLING CONTRACTOR: Aardvark
LOGGED BY: JR/VP
REVIEWED BY: KD
GROUND SURFACE ELEVATION: 328.68 masl
GROUNDWATER: 7.54 mbgs September 18, 2019

DEPTH (mbgs)	SAMPLES Type	Blows per 150mm	SPT (N - Value)	SOIL DESCRIPTION	STRATA PLOT	ELEV. (masl) DEPTH (mbgs)	FIELD TESTING	LAB TESTING	COMMENTS	Well/GW
				Overburden Logs Continued. **DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, massive. Refer to the attached rock core log of MW101 for further bedrock details.						
11										
12										
13						315.35 13.34				
				END OF BOREHOLE **Borehole Terminated at 13.3 mbgs** Monitoring well was installed upon completion. Stabilized groundwater level at 7.54 mbgs on September 18th, 2019. **Rock Coring Log presented on Next Page.**						
14										
15										
16										
17										
18										
19										

FIELD TESTING
Penetration Testing
✖ SPT ⊙ DCPT
Shear Vane ◆ Torvane (kg/cm2)
▲ Insitu (kPa) △ Remoulded (kPa)
✚ Organic Vapour Readings (ppm)
20 40 60 80

LAB TESTING
Atterberg Limits
■———● Plastic Liquid
⊕ Moisture Content (%)
0 20 40

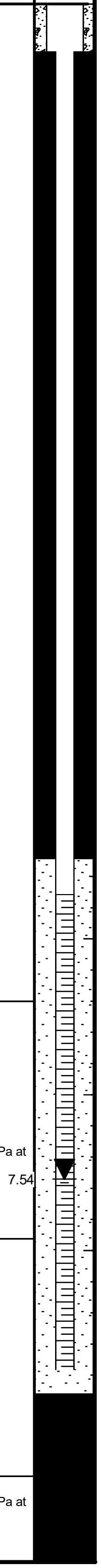
SHEET: 3 of 4

RECORD OF BOREHOLE: MW 101

LOCATION:55 Baker Street, Guelph, ON			NORTHING: 4821749.6
DATE STARTED: August 21, 2019	CLIENT: City of Guelph	CORE BARREL: HQ3	EASTING: 560553.9
DATE COMPLETED: August 21, 2019	PROJECT NUMBER: CE751900	DRILLING CONTRACTOR: Aardvark	
LOGGED BY: JR/VP REVIEWED BY: KD	GROUND SURFACE ELEVATION: 328.68 masl	GROUNDWATER: 7.54 mbgs , September 18, 2019	

DEPTH (mbgs)	RUN No.	TCR (%)	RQD (%)	ROCK DESCRIPTION	STRATA PLOT	ELEV. (masl) / DEPTH (mbgs)	FRACTURE INDEX (per 0.3m)	DISCONTINUITY DESCRIPTION	DISCONTINUITY DATA Depth (mbgs)	Type	Dip (deg)	Infill	Roughness	COMMENTS
1 2 3 4 5 6				**Overburden log presented on previous page**		328.68 0.00								
7	RC1	93	63	**DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, slightly weathered (W2), medium strong rock (R3), close to moderately close joint spacing (JS3-JS4), thickly bedded (B2), slightly fractured, massive, iron oxide staining.		322.28 6.40	>10 >10 0 4 0	Intensely fractured from 6.4 to 6.7 m. Fracture zone at 6.5 to 6.8 m. Black and yellow secondary mineralization at 6.8 m.	6.40 6.50 6.71 6.78 6.80 7.01 7.32 7.39 7.47 7.52 7.62	JN JN JN JN JN	10 90 0 30 0	- FE ML FE ML	IV IV IV IV IV	UCS: 41.57 MPa at 7.3 m.
8 9	RC2	100	81	**DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, fresh to slightly weathered (W1-W2), medium strong rock (R3), close to moderately close joint spacing (JS3-JS4), thickly bedded (B2), moderately fractured to sound, massive, iron oxide staining, fossiliferous.		320.76 7.92	0 2 6 0 0	1 mm thick black veins at 8.0, 8.9, and 9.1 m. Increased vug density from 8.7 to 8.8 m.	7.92 8.23 8.28 8.36 8.53 8.56 8.59 8.69 8.70 8.71 8.74 8.84	JN JN JN JN JN JN JN JN	10 20 10 45 45 10 0 0	ML ML - FE FE - - -	IV IV IV IV IV IV IV IV	
				DOLOSTONE buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, fresh to slightly weathered (W1-W2), medium strong rock (R3), close to moderately close joint spacing (JS3-JS4), thickly bedded (B2), moderately		319.23 9.45	1 1	Black and yellow secondary mineralization at 9.8 and 10.5 m.	9.14 9.45 9.65 9.75 9.80	JN JN	10 40	ML -	IV IV	UCS: 42.48 MPa at 9.6 m.

Well



RECORD OF BOREHOLE: MW 101

LOCATION:55 Baker Street, Guelph, ON			NORTHING: 4821749.6
DATE STARTED: August 21, 2019	CLIENT: City of Guelph	CORE BARREL: HQ3	EASTING: 560553.9
DATE COMPLETED: August 21, 2019	PROJECT NUMBER: CE751900	DRILLING CONTRACTOR: Aardvark	
LOGGED BY: JR/VP REVIEWED BY: KD	GROUND SURFACE ELEVATION: 328.68 masl	GROUNDWATER: 7.54 mbgs , September 18, 2019	

DEPTH (mbgs)	RUN No.	TCR (%)	RQD (%)	ROCK DESCRIPTION	STRATA PLOT	ELEV. (masl) DEPTH (mbgs)	FRACTURE INDEX (per 0.3m)	DISCONTINUITY DESCRIPTION	COMMENTS	Well
11	RC3	100	94	fractured to sound, massive, iron oxide staining, fossiliferous.		317.63 11.05	3 2 1 1			
12	RC4	100	100	**DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, fresh (W1), medium strong rock (R3), close to moderately close joint spacing (JS3-JS4), thickly bedded (B2), sound core pieces, massive, iron oxide staining, fossiliferous.		316.11 12.57	0 0 0 1			
13	RC5	100	90	**DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, fresh (W1), medium strong rock (R3), close to moderately close joint spacing (JS3-JS4), thickly bedded (B2), intensely fractured/sound, massive, iron oxide staining, fossiliferous.		315.35 13.34	>10 0 0	1 mm thick black vein at 12.5 m. Fracture zone at 12.7 to 12.8 m.	UCS: 35.44 MPa at 12.5 m.	
14 15 16 17 18 19				**END OF BOREHOLE** **Borehole Terminated at 13.3 mbgs** Monitoring well was installed upon completion. Stabilized groundwater level at 7.54 mbgs on September 18th, 2019.						

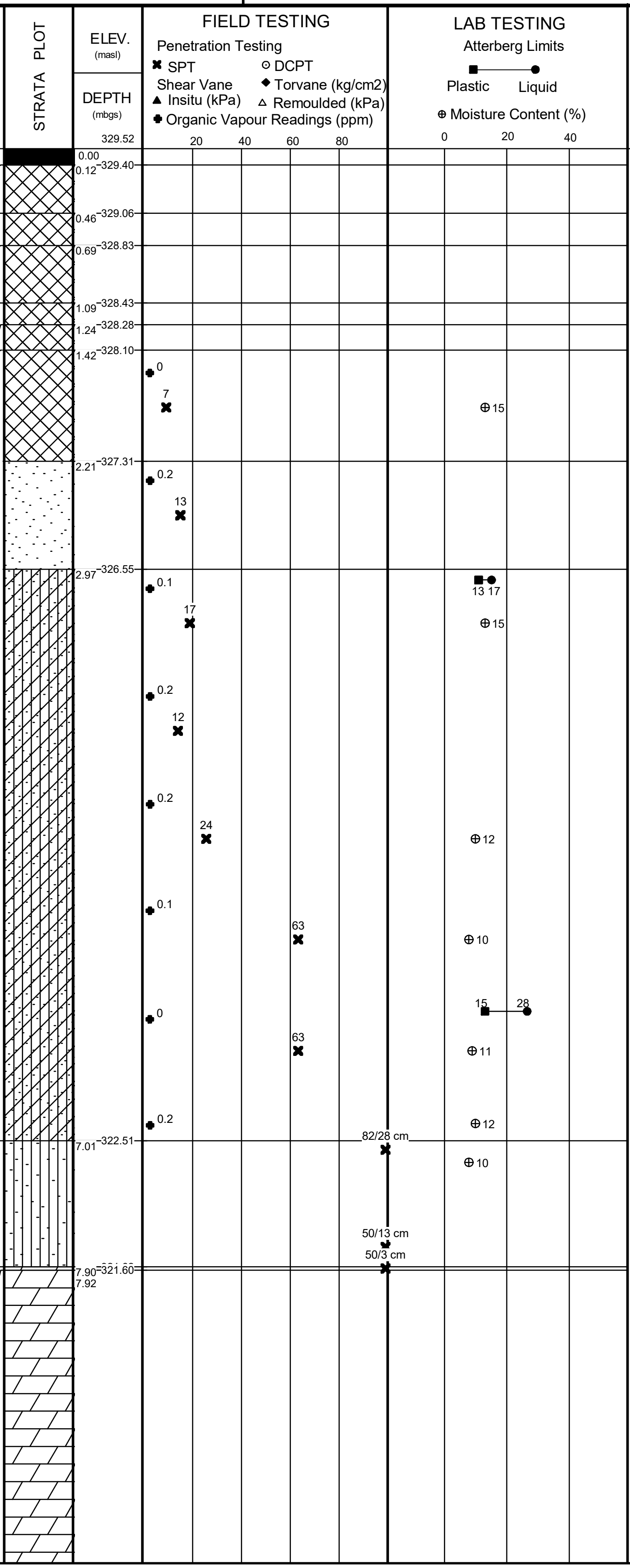
DISCONTINUITY DATA

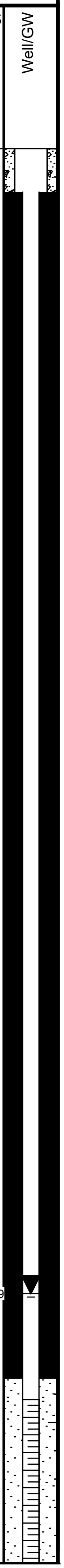
Depth (mbgs)	Type	Dip (deg)	Infill	Roughness
9.81				
10.06	JN	0	ML	IV
10.11	JN	10	ML	IV
10.24	JN	0	CA	IV
10.31	JN	10	-	IV
10.36	JN	20	-	IV
10.39				
10.52				
10.67	JN	10	-	IV
10.90				
10.97				
11.15	JN	0	ML	IV
11.28				
11.58				
11.89				
12.19				
12.29	JN	0	-	IV
12.50				
12.67	JN	0	-	II
12.70	JN	0	-	IV
12.75				
12.80				
13.11				

SHEET: 1 of 4

RECORD OF BOREHOLE: MW 102B

LOCATION: 55 Baker Street, Guelph, ON
SAMPLER HAMMER WEIGHT AND DROP: 63.5kg, 76.2cm
NORTHING: 4821899.7
DATE STARTED: August 26, 2019
CLIENT: City of Guelph
DRILLING METHOD: Hollow Stem Augers
EASTING: 560436.3
DATE COMPLETED: August 26, 2019
PROJECT NUMBER: CE751900
DRILLING CONTRACTOR: Aardvark
LOGGED BY: JR/VP
REVIEWED BY: KD
GROUND SURFACE ELEVATION: 329.52 masl
GROUNDWATER: 8.09 mbgs September 18, 2019





Type	Blows per 150mm	SPT (N - Value)	SOIL DESCRIPTION	ELEV. (masl) / DEPTH (mbgs)	Organic Vapour Readings (ppm)	SPT	Atterberg Limits (Plastic / Liquid)	Moisture Content (%)	COMMENTS
				329.52					
			Asphalt approximately 116 mm thick.	0.00					0 to 1.3 mbgs completed via testpit excavation on July 23, 2019 during archeological investigation with CASE 580 backhoe, testpit backfilled with excavated material upon completion. Augered down to 1.5 mbgs to begin sampling.
GS1			**Fill** sand and gravel, trace silt, brown, moist.	0.12 / 329.40					
GS2			**Fill** sandy clay, trace gravel, few cobbles, medium plasticity, brown, moist.	0.46 / 329.06					
			Fill sand, trace silt, organics, iron oxide staining, moist.	0.69 / 328.83					
GS3			**Fill** silty clay, trace sand (black), metal debris (nails), wood debris, medium plasticity, moist.	1.09 / 328.43					
			Fill clayey silt, some sand, trace gravel, iron oxide staining, light brown, moist.	1.24 / 328.28					
SS1	3 3 4 4	7	**Fill** silty sand, trace gravel, trace clay, iron oxidation, brown, loose, moist.	1.42 / 328.10	0	7		15	
SS2	3 6 7 10	13	**Sand** trace silt, trace gravel, brown, compact, moist.	2.21 / 327.31	0.2	13			
SS3	4 7 10 11	17	**Clayey Silt Till** sandy, trace gravel, brown, very stiff, moist to wet.	2.97 / 326.55	0.1	17	13 17	15	SS3/SS4: 2% Gravel; 33% Sand; 49% Silt; 16% Clay.
SS4	5 6 6 9	12	----- stratified sand seams, wet.		0.2	12			
SS5	10 12 12 16	24			0.2	24		12	
			----- some sand, trace gravel, brown, hard, moist.						
SS6	15 26 37 50	63	----- grey.		0.1	63		10	
SS7	20 22 41 50	63			0	63	15 28	11	SS7: 3% Gravel; 16% Sand; 50% Silt; 31% Clay.
SS8	11 32 50	82/28 cm			0.2	82/28 cm		12	SS8B: Corrosivity Package
			Sandy Silt trace clay, trace gravel, brown, very dense, moist.	7.01 / 322.51				10	
SS9	6 50	50/13 cm	----- dolomite fragments (duff).			50/13 cm			Auger grinding and spoon bouncing @7.9 m.
SS10	50	50/3 cm	**Inferred Dolostone Bedrock** buff, hard.	7.90 / 321.60		50/3 cm			
			Rock coring initiated at 7.9 mbgs. Borehole was dry prior to commencement of rock coring.	7.92					
			DOLOSTONE buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, massive. Refer to the attached rock core log of MW102B for further bedrock details.						

DEPTH (mbgs): 1, 2, 3, 4, 5, 6, 7, 8, 9

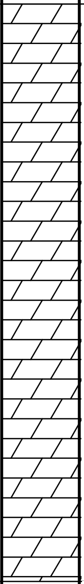
Continued on Next Page.

SHEET: 2 of 4

RECORD OF BOREHOLE: MW 102B

LOCATION: 55 Baker Street, Guelph, ON	SAMPLER HAMMER WEIGHT AND DROP: 63.5kg, 76.2cm	NORTHING: 4821899.7
DATE STARTED: August 26, 2019	CLIENT: City of Guelph DRILLING METHOD: Hollow Stem Augers	EASTING: 560436.3
DATE COMPLETED: August 26, 2019	PROJECT NUMBER: CE751900 DRILLING CONTRACTOR: Aardvark	
LOGGED BY: JR/VP REVIEWED BY: KD	GROUND SURFACE ELEVATION: 329.52 masl	GROUNDWATER: 8.09 mbgs September 18, 2019

DEPTH (mbgs)	SAMPLES Type	Blows per 150mm	SPT (N - Value)	SOIL DESCRIPTION	STRATA PLOT	ELEV. (masl) DEPTH (mbgs)	FIELD TESTING Penetration Testing ✖ SPT ⊙ DCPT Shear Vane ▲ Insitu (kPa) ◆ Torvane (kg/cm2) △ Remoulded (kPa) ✚ Organic Vapour Readings (ppm) 20 40 60 80	LAB TESTING Atterberg Limits ■——● Plastic Liquid ⊕ Moisture Content (%) 0 20 40	COMMENTS	Well/GW
				Overburden Logs Continued. **DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, massive. Refer to the attached rock core log of MW102B for further bedrock details.						
11										
12										
13						315.88 13.64				
14				**END OF BOREHOLE** **Borehole Terminated at 13.6 mbgs** Borehole was abandoned and backfilled with bentonite upon completion. The MW 102B monitoring well was drilled and installed 1 meter north of the current location. Stabilized groundwater level at 8.09 mbgs on September 18th, 2019. **Rock Coring Log presented on Next Page.**						
15										
16										
17										
18										
19										



RECORD OF BOREHOLE: MW 102B

LOCATION:55 Baker Street, Guelph, ON

NORTHING: 4821899.7

DATE STARTED: August 26, 2019

CLIENT: City of Guelph

CORE BARREL: HQ3

EASTING: 560436.3

DATE COMPLETED: August 26, 2019

PROJECT NUMBER: CE751900

DRILLING CONTRACTOR: Aardvark

LOGGED BY: JR/VP

REVIEWED BY: KD

GROUND SURFACE ELEVATION: 329.52 masl

GROUNDWATER: 8.09 mbgs , September 18, 2019

DEPTH (mbgs)	RUN No.	TCR (%)	RQD (%)	ROCK DESCRIPTION	STRATA PLOT	ELEV. (masl) DEPTH (mbgs)	FRACTURE INDEX (per 0.3m)	DISCONTINUITY DESCRIPTION	DISCONTINUITY DATA Depth (mbgs)	Type	Dip (deg)	Infill	Roughness	COMMENTS	Well
				Overburden log presented on previous page		329.52 0.00									
8	RC1	100	100	**DOLOSTONE** boulder: grey, fine to medium-grained, fresh (W1), medium strong rock (R3), sound, massive.		321.62 7.90	0		7.92						
	RC2	100	94	**DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, fresh to slightly weathered (W1-W2), medium strong rock (R3), close to moderately close joint spacing (JS3-JS4), thickly bedded (B2), slightly fractured to sound, massive, iron oxide staining.		321.52 8.00			8.08	JN	10	-	IV	8.09	
							1		8.23					UCS: 35.05 MPa at 8.4 m.	
							0		8.53						
									8.69	JN	20	ML	IV		
									8.79	JN	0	S	IV		
9							2		8.84						
							0		9.14						
						320.00	0		9.45						
				DOLOSTONE buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, fresh to slightly weathered (W1-W2), medium strong rock (R3), close to moderately close joint		9.53	0		9.75						
									9.83	JN	0	S	V		

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SHEET: 4 of 4

RECORD OF BOREHOLE: MW 102B

LOCATION:55 Baker Street, Guelph, ON			NORTHING: 4821899.7
DATE STARTED: August 26, 2019	CLIENT: City of Guelph	CORE BARREL: HQ3	EASTING: 560436.3
DATE COMPLETED: August 26, 2019	PROJECT NUMBER: CE751900	DRILLING CONTRACTOR: Aardvark	
LOGGED BY: JR/VP REVIEWED BY: KD	GROUND SURFACE ELEVATION: 329.52 masl	GROUNDWATER: 8.09 mbgs , September 18, 2019	

DEPTH (mbgs)	RUN No.	TCR (%)	RQD (%)	ROCK DESCRIPTION	STRATA PLOT	ELEV. (masl) DEPTH (mbgs)	FRACTURE INDEX (per 0.3m)	DISCONTINUITY DESCRIPTION	DISCONTINUITY DATA Depth (mbgs)	Type	Dip (deg)	Infill	Roughness	COMMENTS	Well
	RC3	**100**	**100**	spacing (JS3-JS4), thickly bedded (B2), slightly fractured to sound, massive, iron oxide staining.		318.57	**1** **0** **2**	Increased vug density at 10.5 to 10.6 m.	10.06 10.36 10.44 10.50 10.57 10.67	**JN** **JN**	**0** **0**	**CL** **S**	**IV** **IV**	UCS: 44.16 MPa at 10.7 m.	
11 12	**RC4**	**100**	**95**	**DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, fresh (W1), medium strong rock (R3), close to moderately close joint spacing (JS3-JS4), thickly bedded (B2), moderately fractured to sound, massive, iron oxide staining.		10.95 317.02	**0** **2** **0** **2** **1**	Increased vug density and calcite mineralization at 11.2 to 11.3 m.	10.97 11.05 11.10 11.20 11.28 11.58 11.61 11.73 11.89 12.17 12.19	**JN** **JN** **JN** **JN** **JN**	**0** **0** **0** **10** **10**	**ML** **ML** **ML** **ML** **ML**	**IV** **VIII** **IV** **V** **IV**		
13	**RC5**	**100**	**89**	**DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, fresh (W1), medium strong rock (R3), close to moderately close joint spacing (JS3-JS4), thickly bedded (B2), moderately fractured to sound, massive, iron oxide staining.		12.50 315.88	**1** **2** **2** **2**		12.47 12.50 12.57 12.60 12.80 12.98 13.11 13.16 13.28 13.41 13.54	**JN** **JN** **JN** **JN** **JN** **JN** **JN** **JN**	**20** **10** **10** **0** **0** **10** **60** **0**	**S** **FE** **ML** **ML** **-** **-** **-** **FE**	**V** **IV** **IV** **IV** **IV** **IV** **IV** **IV**	UCS: 33.44 MPa at 12.9 m.	
14 15 16 17 18 19				**END OF BOREHOLE** **Borehole Terminated at 13.6 mbgs** Borehole was abandoned and backfilled with bentonite upon completion. The MW 102B monitoring well was drilled and installed 1 meter north of the current location. Stabilized groundwater level at 8.09 mbgs on September 18th, 2019.		13.64			13.59	**JN**	**90**	**-**	**IV**		

SHEET: 1 of 4

RECORD OF BOREHOLE: MW 106

LOCATION: 55 Baker Street, Guelph, ON

SAMPLER HAMMER WEIGHT AND DROP: 63.5kg, 76.2cm

NORTHING: 4821729.0

DATE STARTED: August 20, 2019

CLIENT: City of Guelph

DRILLING METHOD: Hollow Stem Augers

EASTING: 560496.2

DATE COMPLETED: August 20, 2019

PROJECT NUMBER: CE751900

DRILLING CONTRACTOR: Aardvark

LOGGED BY: JR/VP

REVIEWED BY: KD

GROUND SURFACE ELEVATION: 328.23 masl

GROUNDWATER: 6.96 mbgs September 18, 2019

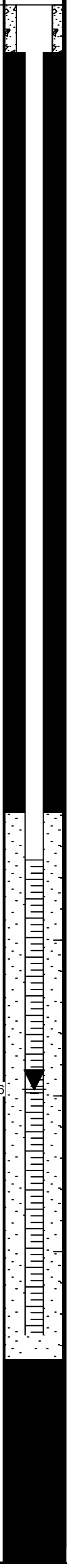
FIELD TESTING: Penetration Testing: ✖ SPT; ⊙ DCPT; Shear Vane: ▲ Insitu (kPa); △ Remoulded (kPa); ◆ Torvane (kg/cm2); ✚ Organic Vapour Readings (ppm) — 20, 40, 60, 80

LAB TESTING: Atterberg Limits: ■—● Plastic, Liquid; ⊕ Moisture Content (%) — 0, 20, 40

DEPTH (mbgs)	SAMPLES Type	Blows per 150mm	SPT (N - Value)	SOIL DESCRIPTION	ELEV. (masl) / DEPTH (mbgs) 328.23	FIELD TESTING	LAB TESTING	COMMENTS
				Asphalt approximately 76 mm thick.	0.00 0.08 328.15			
	GS1			**Fill** Sand and Gravel, black, moist, trace silt, asphlat, brick, motar, clay pipe.				0 to 1.5 mbgs completed via testpit excavation on July 30, 2019 during archeological investigation with CASE 580 backhoe, testpit backfilled with excavated material upon completion. Augered down to 1.5 mbgs to begin sampling.
	GS2			**Fill** Sandy Gravel and Clay, brown, moist, low plasticity, trace cobbles.	0.56 327.67			
1				**Fill** Sand, some gravel, trace silt, few cobbles, light brown, dense, moist.	0.91 327.32			
2	SS1	10 18 16 13	34			✖ 34	⊕ 3	
	SS2	7 34 50	84/25 cm	**Gravelly Sand** silty, trace clay, dolostone fragments (buff), frequent to very frequent cobbles, brown, very dense, damp.	2.20 326.03	✖ 84/25 cm		Auger grinding @2.6-3.0 m.
3	SS3	5 28 50	78/25 cm	----- dolomite fragments (grey).		✖ 78/25 cm	⊕ 6	Spoon bouncing @3.5 m.
4	SS4	17 17 17 8	34	----- dense, moist.		✖ 34	⊕ 9	SS4: 34% Gravel; 36% Sand; 26% Silt; 4% Clay.
5	SS5	12 13 14 15	27	----- compact. ----- highly weathered dolomite seam (buff) from 4.93 to 5.10 m.		✖ 27	⊕ 8	Auger grinding @4.6-4.9 m. SS5: Corrosivity Package
	SS6	20 15 50	65/18 cm			✖ 65/18 cm	⊕ 15	Auger grinding and spoon bouncing @5.7 m. SS6: 29% Gravel; 40% Sand; 27% Silt; 4% Clay.
6				**Inferred Dolostone Bedrock** buff, hard. **Rock coring initiated at 5.7 mbgs.** Borehole was dry prior to commencement of rock coring. **DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, massive. Refer to the attached rock core log of MW106 for further bedrock details.	5.59 322.64 5.66 322.57			
7								
8								
9								

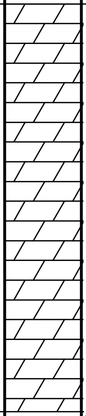
Continued on Next Page.

Well/GW



RECORD OF BOREHOLE: MW 106

LOCATION: 55 Baker Street, Guelph, ON
SAMPLER HAMMER WEIGHT AND DROP: 63.5kg, 76.2cm
NORTHING: 4821729.0
DATE STARTED: August 20, 2019
CLIENT: City of Guelph
DRILLING METHOD: Hollow Stem Augers
EASTING: 560496.2
DATE COMPLETED: August 20, 2019
PROJECT NUMBER: CE751900
DRILLING CONTRACTOR: Aardvark
LOGGED BY: JR/VP
REVIEWED BY: KD
GROUND SURFACE ELEVATION: 328.23 masl
GROUNDWATER: 6.96 mbgs September 18, 2019

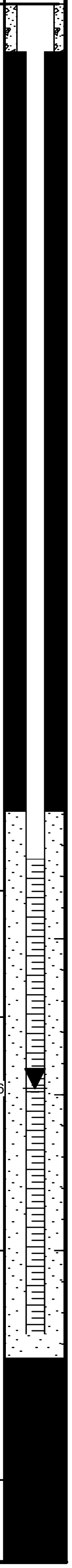
DEPTH (mbgs)	SAMPLES Type	Blows per 150mm	SPT (N - Value)	SOIL DESCRIPTION	STRATA PLOT	ELEV. (masl) DEPTH (mbgs)	FIELD TESTING Penetration Testing ✖ SPT ⊙ DCPT Shear Vane ◆ Torvane (kg/cm2) ▲ Insitu (kPa) △ Remoulded (kPa) ● Organic Vapour Readings (ppm) 20 40 60 80	LAB TESTING Atterberg Limits ■———● Plastic Liquid ⊕ Moisture Content (%) 0 20 40	COMMENTS	Well/GW
11				**Overburden Logs Continued.** **DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, massive. Refer to the attached rock core log of MW106 for further bedrock details.						
12										
				END OF BOREHOLE **Borehole Terminated at 12.6 mbgs** Monitoring well was installed upon completion. Stabilized groundwater level at 6.96 mbgs on September 18th, 2019. **Rock Coring Log presented on Next Page.**		315.66 12.57				
13										
14										
15										
16										
17										
18										
19										

RECORD OF BOREHOLE: MW 106

LOCATION:55 Baker Street, Guelph, ON			NORTHING: 4821729.0
DATE STARTED: August 20, 2019	CLIENT: City of Guelph	CORE BARREL: HQ3	EASTING: 560496.2
DATE COMPLETED: August 20, 2019	PROJECT NUMBER: CE751900	DRILLING CONTRACTOR: Aardvark	
LOGGED BY: JR/VP REVIEWED BY: KD	GROUND SURFACE ELEVATION: 328.23 masl	GROUNDWATER: 6.96 mbgs , September 18, 2019	

DEPTH (mbgs)	RUN No.	TCR (%)	RQD (%)	ROCK DESCRIPTION	STRATA PLOT	ELEV. (masl) / DEPTH (mbgs)	FRACTURE INDEX (per 0.3m)	DISCONTINUITY DESCRIPTION	DISCONTINUITY DATA Depth (mbgs)	Type	Dip (deg)	Infill	Roughness	COMMENTS
1 2 3 4 5				**Overburden log presented on previous page**		328.23 0.00								
6	RC1	100	69	**DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, highly to slightly weathered (W4-W2), medium strong to strong rock (R3-R4), close to moderately close joint spacing (JS3-JS4), thickly bedded (B2), extremely fractured to sound, massive, iron oxide staining, fossiliferous.		322.54 5.69	>10 0 0	Fracture Zone at 5.7 to 5.8 m. Large vug (10 mm wide by 20 mm long) at 6.1 m.	5.69 5.89 5.94 6.00 6.10 6.30	JN JN	80 10	- -	V IV	UCS: 61.76 MPa at 6.2 m.
7	RC2	100	100	**DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, fresh to slightly weathered (W1-W2), medium strong to strong rock (R3-R4), close to moderately close joint spacing (JS3-JS4), thickly bedded (B2), slightly fractured to sound, massive, iron oxide staining, fossiliferous.		321.73 6.50	2 1 1 1 0	Increased vug density at 7.3 to 7.4 m.	6.61 6.78 6.88 6.91 7.21 7.29 7.30 7.42 7.52 7.82	JN JN JN JN JN	20 10 10 10 10	CA CA CL CA CA	IV IV IV IV IV	6.96
8 9	RC3	100	100	**DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, fresh (W1), medium strong to strong rock (R3-R4), close to moderately close joint spacing (JS3-JS4), thickly bedded (B2), sound core pieces, massive, iron oxide staining, fossiliferous.		320.23 8.00	1 1 0 0 1	3 mm thick black/yellow vein at 8.4 m. Increased vug density at 8.5 to 8.9 m.	8.13 8.15 8.36 8.40 8.43 8.50 8.74 9.04 9.32	JN JN JN	10 20 0	CA - CA	IV IV IV	
				DOLOSTONE buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, fresh (W1), medium strong to strong rock (R3-R4), close to moderately close joint spacing		318.76 9.47	0		9.35 9.65					

Well



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SHEET: 4 of 4

RECORD OF BOREHOLE: MW 106

LOCATION:55 Baker Street, Guelph, ON			NORTHING: 4821729.0
DATE STARTED: August 20, 2019	CLIENT: City of Guelph	CORE BARREL: HQ3	EASTING: 560496.2
DATE COMPLETED: August 20, 2019	PROJECT NUMBER: CE751900	DRILLING CONTRACTOR: Aardvark	
LOGGED BY: JR/VP REVIEWED BY: KD	GROUND SURFACE ELEVATION: 328.23 masl	GROUNDWATER: 6.96 mbgs , September 18, 2019	

DEPTH (mbgs)	RUN No.	TCR (%)	RQD (%)	ROCK DESCRIPTION	STRATA PLOT	ELEV. (masl) DEPTH (mbgs)	FRACTURE INDEX (per 0.3m)	DISCONTINUITY DESCRIPTION	DISCONTINUITY DATA Depth (mbgs)	Type	Dip (deg)	Infill	Roughness	COMMENTS	Well
	RC4	100	100	(JS3-JS4), thickly bedded (B2), slightly fractured to sound, massive, iron oxide staining, fossiliferous.			1		9.96						
							1		10.26 10.31	JN	10	FE	IV		
							1		10.46 10.57	JN	10	CA	V		
11						317.18	0		10.84 10.87	JN	0	-	IV	UCS: 61.47 MPa at 11.0 m.	
	RC5	100	100	**DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, fresh (W1), medium strong rock (R3), close to moderately close joint spacing (JS3-JS4), thickly bedded (B2), sound core pieces, massive, iron oxide staining, fossiliferous.		11.05	0		11.18						
							1		11.48 11.51	JN	20	CA	IV		
12							0		11.79						
							1	Increased vug density at 12.2 to 12.6 m.	12.09 12.19	JN	0	-	IV		
						315.66	0		12.20 12.40					UCS: 28.19 MPa at 12.5 m.	
				END OF BOREHOLE **Borehole Terminated at 12.6 mbgs** Monitoring well was installed upon completion.		12.57									
13															
14															
15															
16															
17															
18															
19															

SHEET: 1 of 2

RECORD OF BOREHOLE: MW 107

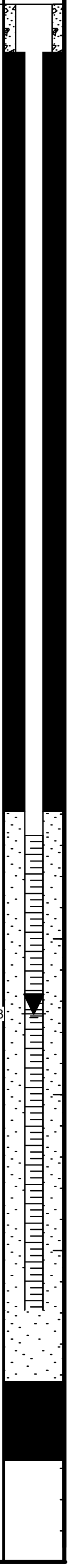
LOCATION: 55 Baker Street, Guelph, ON
SAMPLER HAMMER WEIGHT AND DROP: 63.5kg, 76.2cm
NORTHING: 4821768.8
DATE STARTED: August 19, 2019
CLIENT: City of Guelph
DRILLING METHOD: Hollow Stem Augers
EASTING: 560464.0
DATE COMPLETED: August 19, 2019
PROJECT NUMBER: CE751900
DRILLING CONTRACTOR: Aardvark
LOGGED BY: JR
REVIEWED BY: KD
GROUND SURFACE ELEVATION: 329.17 masl
GROUNDWATER: 6.48 mbgs September 18, 2019

FIELD TESTING
Penetration Testing
✖ SPT
○ DCPT
Shear Vane
◆ Torvane (kg/cm2)
▲ Insitu (kPa)
△ Remoulded (kPa)
● Organic Vapour Readings (ppm)

LAB TESTING
Atterberg Limits
■—● Plastic Liquid
⊕ Moisture Content (%)

SAMPLES Type	Blows per 150mm	SPT (N - Value)	SOIL DESCRIPTION	DEPTH (mbgs) / ELEV. (masl)	Organic Vapour Readings (ppm)	SPT	Moisture Content (%)	COMMENTS
				329.17				
			Asphalt approximately 102 mm thick.	0.00	0.5			
SS1	3 7 7 5	14	**Fill** sand and gravel, trace silt, very few cobbles, trace asphalt debris, brown, compact, moist.	0.11 / 329.06		14	6	
SS2	16 12 12 14	24			0.7	24		
SS3	5 10 14 16	24	**Fill** sand, trace silt, trace gravel, few cobbles, trace dolostone fragments (buff), brown, compact, moist.	1.45 / 327.72	0.7	24	6	
SS4	12 30 35 17	65	**Sandy Gravel to Gravelly Sand** some silt, trace clay, occasional cobbles, brown, very dense, moist.	2.21 / 326.96	0.6	65	6	Auger grinding @2.6 m. Gravel seam @2.6 to 2.7 m. SS4: 47% Gravel; 33% Sand; 17% Silt; 3% Clay.
SS5	10 16 18 24	34	----- dense.		0.2	34	7	
SS6	13 19 23	42	----- silty.		0.2	42	7	SS6: 27% Gravel; 48% Sand; 22% Silt; 3% Clay.
SS7	12 22 33 50	55	----- very dense.		1.6	55		SS7B: Corrosivity Package.
			Inferred Dolostone Bedrock buff, hard.	4.98 / 324.19				Auger grinding @5.0 to 5.4 m.
SS8	50	50/8 cm			0.6	50/8 cm		Spoon bouncing @5.2 and 5.4 m.
			Rock coring initiated at 5.4 mbgs. Borehole was dry prior to commencement of rock coring. **DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, massive. Refer to the attached rock core log of MW107 for further bedrock details.	5.39 / 323.78				
			END OF BOREHOLE **Borehole Terminated at 9.4 mbgs** Monitoring well was installed upon completion. Stabilized groundwater level at 6.48 mbgs on September 18th, 2019. **Rock Coring Log presented on Next Page.**	9.35 / 319.82				

Well/GW



RECORD OF BOREHOLE: MW 107

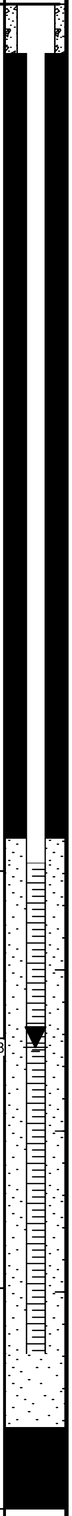
LOCATION:55 Baker Street, Guelph, ON			NORTHING: 4821768.8
DATE STARTED: August 19, 2019	CLIENT: City of Guelph	CORE BARREL: HQ3	EASTING: 560464.0
DATE COMPLETED: August 19, 2019	PROJECT NUMBER: CE751900	DRILLING CONTRACTOR: Aardvark	
LOGGED BY: JR REVIEWED BY: KD	GROUND SURFACE ELEVATION: 329.17 masl	GROUNDWATER: 6.48 mbgs , September 18, 2019	

DEPTH (mbgs)	RUN No.	TCR (%)	RQD (%)	ROCK DESCRIPTION	STRATA PLOT	ELEV. (masl) / DEPTH (mbgs)	FRACTURE INDEX (per 0.3m)	DISCONTINUITY DESCRIPTION	COMMENTS
						329.17			
0				**Overburden log presented on previous page**		0.00			
5.39	RC1	100	56	**DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, highly to slightly weathered (W4-W2), weak to medium strong rock (R2-R3), close to moderately close joint spacing (JS3-JS4), thickly bedded (B2), extremely to slightly fractured, massive, iron oxide staining.		323.78 5.39	>10 4 1 1	Fracture zone at 5.4 to 5.6 m. More frequent vugs at 6.9 to 7.0 m.	
6.43	RC2	100	82	**DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, slightly weathered (W2), weak to medium strong rock (R2-R3), close to moderately close joint spacing (JS3-JS4), thickly bedded (B2), slightly fractured, massive, iron oxide staining.		322.74 6.43	0 2 >10 2 1	Fracture Zone at 7.3 to 7.5 m. Fracture Zone at 7.5 to 7.6 m.	UCS: 24.62 MPa at 6.7 m.
7.98	RC3	100	100	**DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, fresh (W1), medium strong rock (R3), close to moderately close joint spacing (JS3-JS4), thickly bedded (B2), slightly fractured to sound, massive, iron oxide staining.		321.19 7.98	2 0 1 0		UCS: 36.32 MPa at 8.8 m.
9.35				**END OF BOREHOLE** **Borehole Terminated at 9.4 mbgs** Monitoring well was installed upon completion.		319.82 9.35			

DISCONTINUITY DATA

Depth (mbgs)	Type	Dip (deg)	Infill	Roughness
5.41				
5.61	JN	0	-	IV
5.69	JN	0	-	IV
5.72	JN	0	-	IV
5.77	JN	10	-	V
5.82	JN	10	-	V
5.94	JN	10	-	V
6.00	JN	10	-	V
6.00				
6.02				
6.27	JN	0	-	V
6.32				
6.55				
6.63				
6.93				
7.24	JN	0	-	V
7.26	JN	20	-	IV
7.30				
7.39				
7.50				
7.54				
7.85	JN	45	-	IV
7.90	JN	20	-	IV
7.99	JN	20	-	V
8.15				
8.28	JN	10	-	V
8.46				
8.76				
9.07				

Well

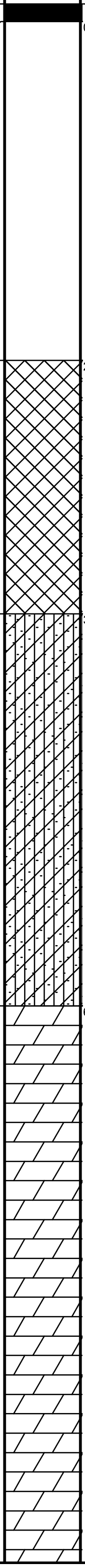


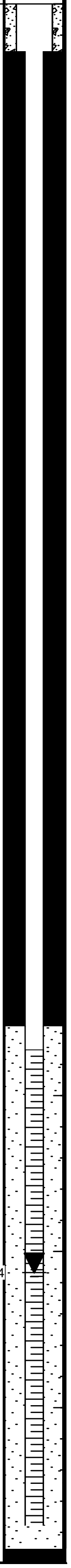
RECORD OF BOREHOLE: MW 108

LOCATION: 55 Baker Street, Guelph, ON
SAMPLER HAMMER WEIGHT AND DROP: 63.5kg, 76.2cm
NORTHING: 4821875.5
DATE STARTED: August 16, 2019
CLIENT: City of Guelph
DRILLING METHOD: Hollow Stem Augers
EASTING: 560485.9
DATE COMPLETED: August 16, 2019
PROJECT NUMBER: CE751900
DRILLING CONTRACTOR: Aardvark
LOGGED BY: KD/VP
REVIEWED BY: JR/KD
GROUND SURFACE ELEVATION: 329.38 masl
GROUNDWATER: 8.14 mbgs September 18, 2019

FIELD TESTING – Penetration Testing: ✖ SPT, ⊙ DCPT; Shear Vane: ▲ Insitu (kPa), ◆ Torvane (kg/cm2), △ Remoulded (kPa); ✚ Organic Vapour Readings (ppm); scale 20, 40, 60, 80

LAB TESTING – Atterberg Limits: ■—● Plastic, Liquid; ⊕ Moisture Content (%); scale 0, 20, 40





SAMPLES Type	Blows per 150mm	SPT (N - Value)	SOIL DESCRIPTION	ELEV. (masl) / DEPTH (mbgs)	Organic Vapour Readings (ppm)	SPT	Atterberg Limits (Plastic / Liquid)	Moisture Content (%)	COMMENTS
			Asphalt approximately 114 mm thick.	0.00 / 329.38					0 to 2.1 mbgs completed via testpit excavation on July 25, 2019 during archeological investigation with CASE 580 backhoe, testpit backfilled with excavated material upon completion. Augered down to 2.3 mbgs to begin sampling.
			FillSand and Gravel, red to brown, moist, some cobbles, trace silt, some asphalt in upper 20 cm.	0.11 / 329.27					
GS1									
GS2									
SS1	10 16 16 21	32	**Fill** sand, some silt, some gravel, brown to grey, dense, moist.	2.29 / 327.09	1.7	32		7	
SS2	10 11 19 24	30	----- brick debris (red).		1.6	30		13	
			----- dolostone fragments, black organic inclusions.		1.7				
SS3	5 22 21 23	43	**Clayey Silt Till** sandy, trace gravel, grey, hard, dry.	3.91 / 325.47		43			
SS4	10 28 38 42	66			0	66	14 / 22	9	SS4: 1% Gravel; 25% Sand; 38% Silt; 36% Clay.
SS5	12 36 54 50	90	----- some sand, dry to damp.		0	90		9	SS5B: 5% Gravel; 30% Sand; 49% Silt; 16% Clay.
SS6	13 41 50	91/18 cm			0	91/18 cm			SS6: Corrosivity Package
			Rock coring initiated at 6.4 mbgs. Borehole was dry prior to commencement of rock coring. **DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, massive.	6.43 / 322.95					Heavy auger grinding @6.4 m.

DEPTH (mbgs): 1, 2, 3, 4, 5, 6, 7, 8, 9

Continued on Next Page.

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SHEET: 2 of 4

RECORD OF BOREHOLE: MW 108

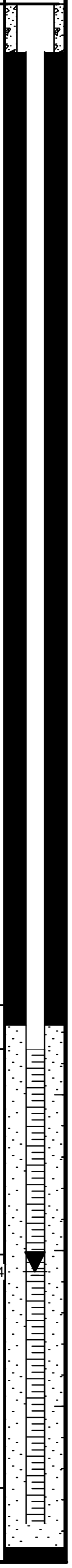
LOCATION: 55 Baker Street, Guelph, ON
SAMPLER HAMMER WEIGHT AND DROP: 63.5kg, 76.2cm
NORTHING: 4821875.5
DATE STARTED: August 16, 2019
CLIENT: City of Guelph
DRILLING METHOD: Hollow Stem Augers
EASTING: 560485.9
DATE COMPLETED: August 16, 2019
PROJECT NUMBER: CE751900
DRILLING CONTRACTOR: Aardvark
LOGGED BY: KD/VP
REVIEWED BY: JR/KD
GROUND SURFACE ELEVATION: 329.38 masl
GROUNDWATER: 8.14 mbgs September 18, 2019

DEPTH (mbgs)	SAMPLES Type	Blows per 150mm	SPT (N - Value)	SOIL DESCRIPTION	STRATA PLOT	ELEV. (masl) DEPTH (mbgs)	FIELD TESTING Penetration Testing ✖ SPT ⊙ DCPT Shear Vane ◆ Torvane (kg/cm2) ▲ Insitu (kPa) △ Remoulded (kPa) ✚ Organic Vapour Readings (ppm) 20 40 60 80	LAB TESTING Atterberg Limits ■——● Plastic Liquid ⊕ Moisture Content (%) 0 20 40	COMMENTS	Well/GW
11 12 13				**Overburden Logs Continued.** **DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, massive.						
14				**END OF BOREHOLE** **Borehole Terminated at 13.9 mbgs** Monitoring well was installed upon completion. Stabilized groundwater level at 8.14 mbgs on September 18th, 2019. **Rock Coring Log presented on Next Page.**		315.44 13.94				
15 16 17 18 19										

RECORD OF BOREHOLE: MW 108

LOCATION:55 Baker Street, Guelph, ON
NORTHING: 4821875.5
DATE STARTED: August 16, 2019
CLIENT: City of Guelph
CORE BARREL: HQ3
EASTING: 560485.9
DATE COMPLETED: August 16, 2019
PROJECT NUMBER: CE751900
DRILLING CONTRACTOR: Aardvark
LOGGED BY: KD/VP
REVIEWED BY: JR/KD
GROUND SURFACE ELEVATION: 329.38 masl
GROUNDWATER: 8.14 mbgs , September 18, 2019

DEPTH (mbgs)	RUN No.	TCR (%)	RQD (%)	ROCK DESCRIPTION	STRATA PLOT	ELEV. (masl) DEPTH (mbgs)	FRACTURE INDEX (per 0.3m)	DISCONTINUITY DESCRIPTION	DISCONTINUITY DATA Depth (mbgs)	Type	Dip (deg)	Infill	Roughness	COMMENTS	Well
1 2 3 4 5 6				**Overburden log presented on previous page**		329.38 0.00									
	RC1	82	82	**DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, slightly weathered (W2), medium strong rock (R3), close to moderately close joint spacing (JS3-JS4), thinly bedded (B4), sound core pieces.		322.95 6.43	0		6.43						
7	RC2	100	94	**DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, fresh to slightly weathered (W1-W2), medium strong rock (R3), moderately close to wide joint spacing (JS4-JS5), thinly bedded (B3), slighty fractured to sound core pieces, fossiliferous.		322.67 6.71	1		6.71	JN	0	-	V	UCS: 34.29 MPa at 6.8 m.	
									6.73						
							2		7.01	JN	0	-	V		
									7.03	JN	0	CA	V		
							0		7.34						
							0		7.64						
							0		7.95						
8	RC3	100	97	**DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, fresh (W1), medium strong rock (R3), close joint spacing (JS3), medium to thinly bedded (B3-B4), slightly fractured to sound core pieces, fossiliferous.		321.35 8.03	0		8.25						8.14
							1		8.56						
							0		8.76	JN	0	CA	V		
9									8.86						
							1		9.14	JN	0	-	V		
									9.17						
							1		9.47						
				DOLOSTONE buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, fresh to slightly weathered (W1-W2), medium strong rock (R3), close joint spacing (JS3), medium to		319.86 9.53			9.60	JN	0	CA	V		
							0		9.78						



SHEET: 4 of 4

RECORD OF BOREHOLE: MW 108

LOCATION:55 Baker Street, Guelph, ON
NORTHING: 4821875.5
DATE STARTED: August 16, 2019
CLIENT: City of Guelph
CORE BARREL: HQ3
EASTING: 560485.9
DATE COMPLETED: August 16, 2019
PROJECT NUMBER: CE751900
DRILLING CONTRACTOR: Aardvark
LOGGED BY: KD/VP
REVIEWED BY: JR/KD
GROUND SURFACE ELEVATION: 329.38 masl
GROUNDWATER: 8.14 mbgs , September 18, 2019

DEPTH (mbgs)	RUN No.	TCR (%)	RQD (%)	ROCK DESCRIPTION	STRATA PLOT	ELEV. (masl) / DEPTH (mbgs)	FRACTURE INDEX (per 0.3m)	DISCONTINUITY DESCRIPTION	DISCONTINUITY DATA					COMMENTS	Well
									Depth (mbgs)	Type	Dip (deg)	Infill	Roughness		
	RC4	100	95	thinly bedded (B3-B4), slightly fractured to sound core stem pieces, fossiliferous.			1	Large vug with calcite lining (70 mm long by 30 mm deep) at 10.3 to 10.4 m,	10.08						
									10.26	JN	90	CA	V		
							1		10.30						
									10.39					UCS: 34.26 MPa at 10.5 m.	
							0		10.67	JN	0	CL	V		
						318.36			10.69						
11	RC5	100	98	**DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, fresh rock (W1), medium strong rock (R3), close joint spacing (JS3), medium to thinly bedded (B3-B4), slightly fractured to sound core stem pieces, fossiliferous.		11.02	0		11.00						
							0		11.30						
							1	Iron oxide staining at 11.8 and 11.9 m.	11.61	JN	0	FE	V	UCS: 37.80 MPa at 11.7 m.	
									11.80						
12							2		11.91						
							0		12.19	JN	10	CA	V		
						316.83			12.22	JN	0	-	V		
	RC6	100	93	**DOLOSTONE** buff Guelph Formation, fine to medium-grained, vuggy/pitted, calcite mineralization in vugs, fresh (W1), medium strong rock (R3), close joint spacing (JS3), medium to thinly bedded (B3-B4), slightly fractured to sound core stem pieces, fossiliferous.		12.55	0		12.52						
13							0		12.83						
							0		13.13						
							2	Iron oxide staining at 13.4 m.	13.39	JN	10	CA	V		
									13.40	JN	0	-	V		
									13.44						
							0		13.49						
						315.44			13.74						
14				**END OF BOREHOLE** **Borehole Terminated at 13.9 mbgs** Monitoring well was installed upon completion.		13.94									
15															
16															
17															
18															
19															

JACOBS

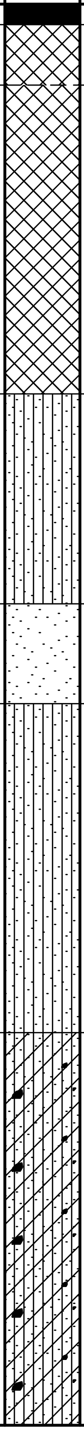
RECORD OF BOREHOLE: BH201

CLIENT: City of Guelph	DATE DRILLED: August 21, 2019	GROUND ELEVATION: 330.16 masl
LOCATION: 55 Baker Street	DRILLER: Aardvark Drilling Inc.	NORTHING: 0560443.0
PROJECT NUMBER: CE751900	DRILL RIG: CME 75 Rotary Power	EASTING: 4821850.6
LOGGED BY: J. Rybicki/V. Peters	DRILL METHOD: 108 mm HSA	BOREHOLE DIAMETER: 210 mm

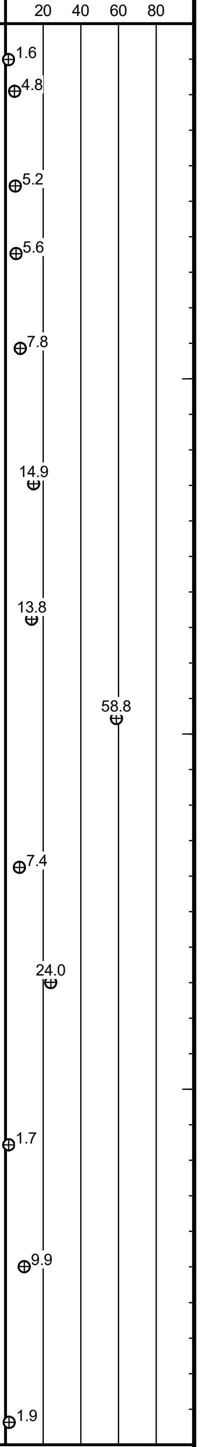
SAMPLE

Recovery (%)	TYPE	N Value	Parameters Analyzed (time) (sample interval mbgs)
	G1		
	G2		Metals & Inorg. PAHs PHCs VOCs Grain Size (10:15) (0.30-0.46)
	G3		
	G4		Metals & Inorg. PAHs PHCs VOCs (10:30) (1.22-1.37)
67	SS1	7	
75	SS2	31	Metals & Inorg. PAHs PHCs VOCs (15:31) (2.29-2.90)
83	SS3	51	
100	SS4	50/ 5cm	PHCs VOCs (15:49) (3.81-3.94) SAR EC (15:49) (3.94-4.01)
100	SS5	50/ 5cm	
99	SS6	50/ 10cm	
100	SS7	50/ 13cm	
	SS8	50/ 13cm	
	SS9	83	SAR EC (16:43) (7.62-8.23)

SOIL DESCRIPTION	ELEV. (masl) / DEPTH (mbgs)
ASPHALT:	330.04 0.12
FILL: Sand and Gravel, light brown, dry.	329.70 0.46
Silty Sand, brown, moist, some coarse gravel and cobbles (decreasing with depth), trace coarse sand and clay.	327.97 2.19
SILT AND SAND: Brown, very dense, moist, trace clay, trace gravel.	326.78 3.38
SAND: Brown, very dense, moist, some silt, trace gravel.	326.22 3.94
SILT AND SAND: Brown, very dense, moist, trace clay, trace gravel, trace cinders.	324.37 5.79
CLAYEY SANDY SILT TILL: Grey, hard, moist, trace gravel, slight oxidation.	



BOREHOLE COMPLETION DETAILS: Borehole backfilled with bentonite upon completion



Notes:
1. Information to be used for intrepretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

JACOBS

RECORD OF BOREHOLE: BH201

CLIENT: City of Guelph	DATE DRILLED: August 21, 2019	GROUND ELEVATION: 330.16 masl
LOCATION: 55 Baker Street	DRILLER: Aardvark Drilling Inc.	NORTHING: 0560443.0
PROJECT NUMBER: CE751900	DRILL RIG: CME 75 Rotary Power	EASTING: 4821850.6
LOGGED BY: J. Rybicki/V. Peters	DRILL METHOD: 108 mm HSA	BOREHOLE DIAMETER: 210 mm

DEPTH (mbgs)	SAMPLE Recovery (%)	SAMPLE TYPE	SAMPLE N Value	SAMPLE Parameters Analyzed (time) (sample interval mbgs)	SOIL DESCRIPTION	STRATA PLOT	(masl) ELEV. / DEPTH (mbgs)	BOREHOLE COMPLETION DETAILS (masl) ELEV. / DEPTH (mbgs)	BOREHOLE COMPLETION DETAILS	ORGANIC VAPOUR READING (ppm) 10.6 eV PID BULB 20 40 60 80
	98	SS10	50/ 5cm		- Some gravel below 8.38 mbgs.		321.73 8.43	321.70 8.46		
	0	SS11	50/ 3cm		**GUELPH FORMATION DOLOSTONE:** Buff.		321.70 8.46			
					Bottom of borehole at 8.46 mbgs - 0 to 1.68 mbgs completed via test pit excavation on July 24, 2019 during archaeological investigation with CASE 580 backhoe, test pit backfilled with excavated material upon completion.					
9										
10										
11										
12										
13										
14										
15										

Notes:
1. Information to be used for intrepretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

Page 1 of 1

JACOBS

RECORD OF BOREHOLE: BH202

CLIENT: City of Guelph	DATE DRILLED: August 12, 2019	GROUND ELEVATION: 329.99 masl
LOCATION: 55 Baker Street	DRILLER: Aardvark Drilling Inc.	NORTHING: 0560483.9
PROJECT NUMBER: CE751900	DRILL RIG: CME 75 Rotary Power	EASTING: 4821816.7
LOGGED BY: A. Vermeersch/V. Peters	DRILL METHOD: 108 mm HSA	BOREHOLE DIAMETER: 210 mm

SAMPLE

Recovery (%)	TYPE	N Value	Parameters Analyzed (time) (sample interval mbgs)
	G1		
	G2		
	G3		
54	SS1	28	Metals & Inorg. PAHs PHCs VOCs Grain Size (15:50) (0.61-0.76)
67	SS2	45	
58	SS3	41	
92	SS4	27	Metals & Inorg. PAHs PHCs VOCs (14:20) (3.05-3.66)
88	SS5	28	
87	SS6	50/ 8cm	SAR EC (14:43) (4.57-5.03)

DEPTH (mbgs): 1, 2, 3, 4, 5, 6, 7

SOIL DESCRIPTION	ELEV. (masl) / DEPTH (mbgs)
ASPHALT:	329.87 0.12
FILL: Sand and Gravel, brown, moist. - Increased coarse gravel below 0.30 mbgs.	329.43 0.56
Silty Sand, brown, moist, fine, some fine to coarse gravel and cobbles, trace medium to coarse sand, brick and cast iron pipe observed.	329.18 0.81
SILTY SAND: Light brown, moist, fine, some fine to coarse gravel and cobbles, trace medium to coarse sand. - Cobble from 1.45 to 1.65 mbgs.	327.55 2.44
SANDY SILT: Light brown to brown, medium dense, dry, low plasticity, fine sand, trace fine gravel, increased moisture top 15 cm.	325.72 4.27
SAND: Black with some white, dry, coarse, poorly graded.	325.65 4.34
SILTY SAND: Light brown to brown, dry to moist, fine sand.	324.96 5.03
GUELPH FORMATION DOLOSTONE: Buff to light brown.	324.94 5.05
Bottom of borehole at 5.05 mbgs - 0 to 1.02 mbgs completed via test pit excavation on July 22, 2019 during archaeological investigation with CASE 580 backhoe, test pit backfilled with excavated material upon completion.	

STRATA PLOT

BOREHOLE COMPLETION DETAILS

ELEV. (masl) / DEPTH (mbgs)	
324.94 5.05	Borehole backfilled with bentonite upon completion

ORGANIC VAPOUR READING (ppm) 10.6 eV PID BULB

20 40 60 80

7.2
8.5
7.3
5.2
7.6
4.3
4.9
4.3

Notes:
1. Information to be used for intrepretation of environmental conditions only

Prepared by: MS

Reviewed by: ET

CH2M HILL Canada Limited

MASTER_BH_FT2M_SS; BAKER.GPJ; MASTER_LIBRARY_R03.GLB; 431079 - WALLACE.GDT; 5/31/20

Attachment H3
Grain-size Results

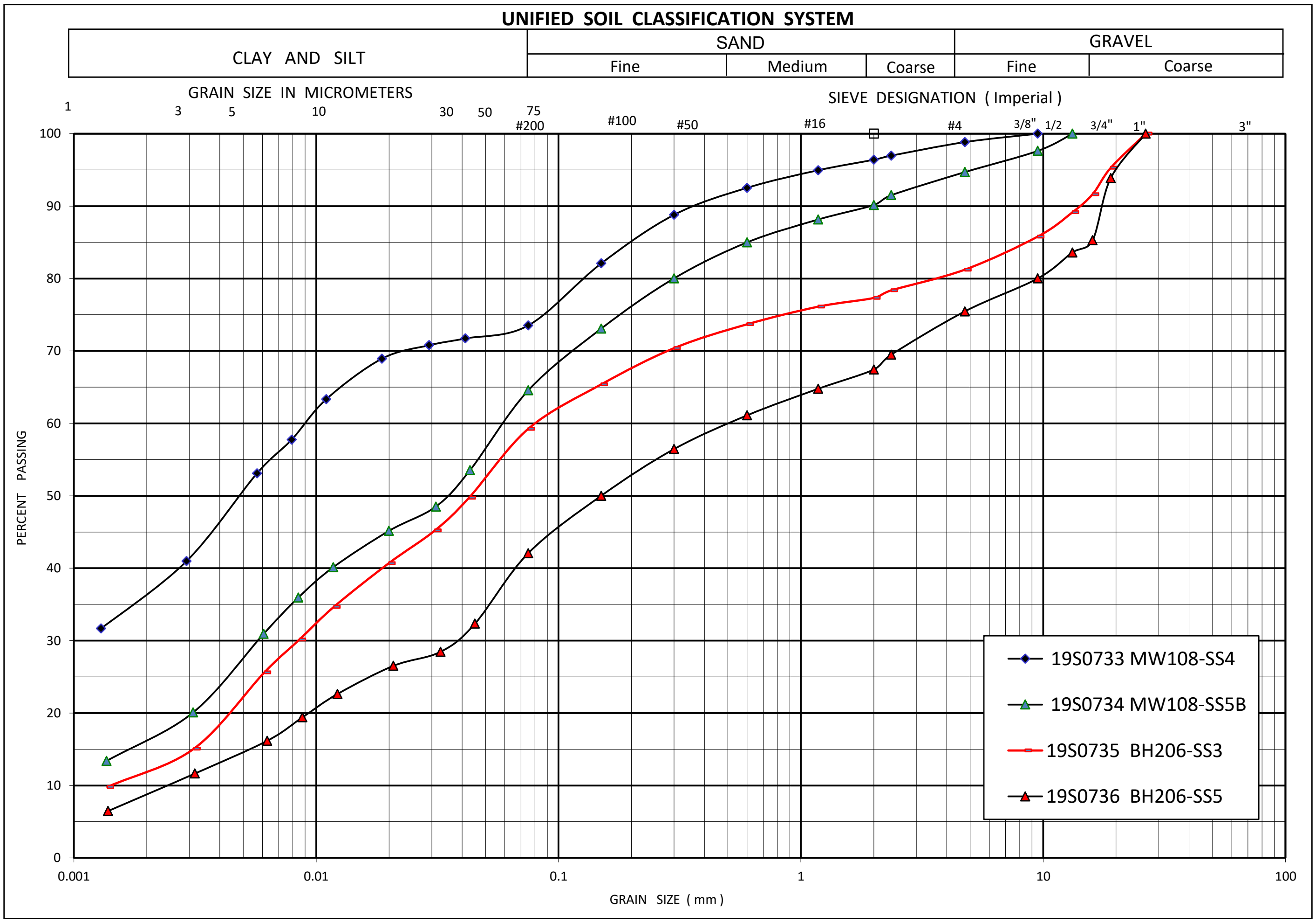
SIRATI & PARTNERS

Grain Size Distribution

ASTM D 422-63

Project No. : CE751900
Project : Baker Street Investigation
Client : Jacobs

Report No. : 19S0733 - 736
Date : 19-Sep-19
SPCL Job No. : SP19-551-40



Sample No.	BH-SS	Percentage of			
		Gravel	Sand	Silt	Clay
19S0733	MW108-SS4	1	25	38	36
19S0734	MW108-SS5B	5	30	49	16
19S0735	BH206-SS3	19	22	47	12
19S0736	BH206-SS5	24	34	33	9

****End of Report****

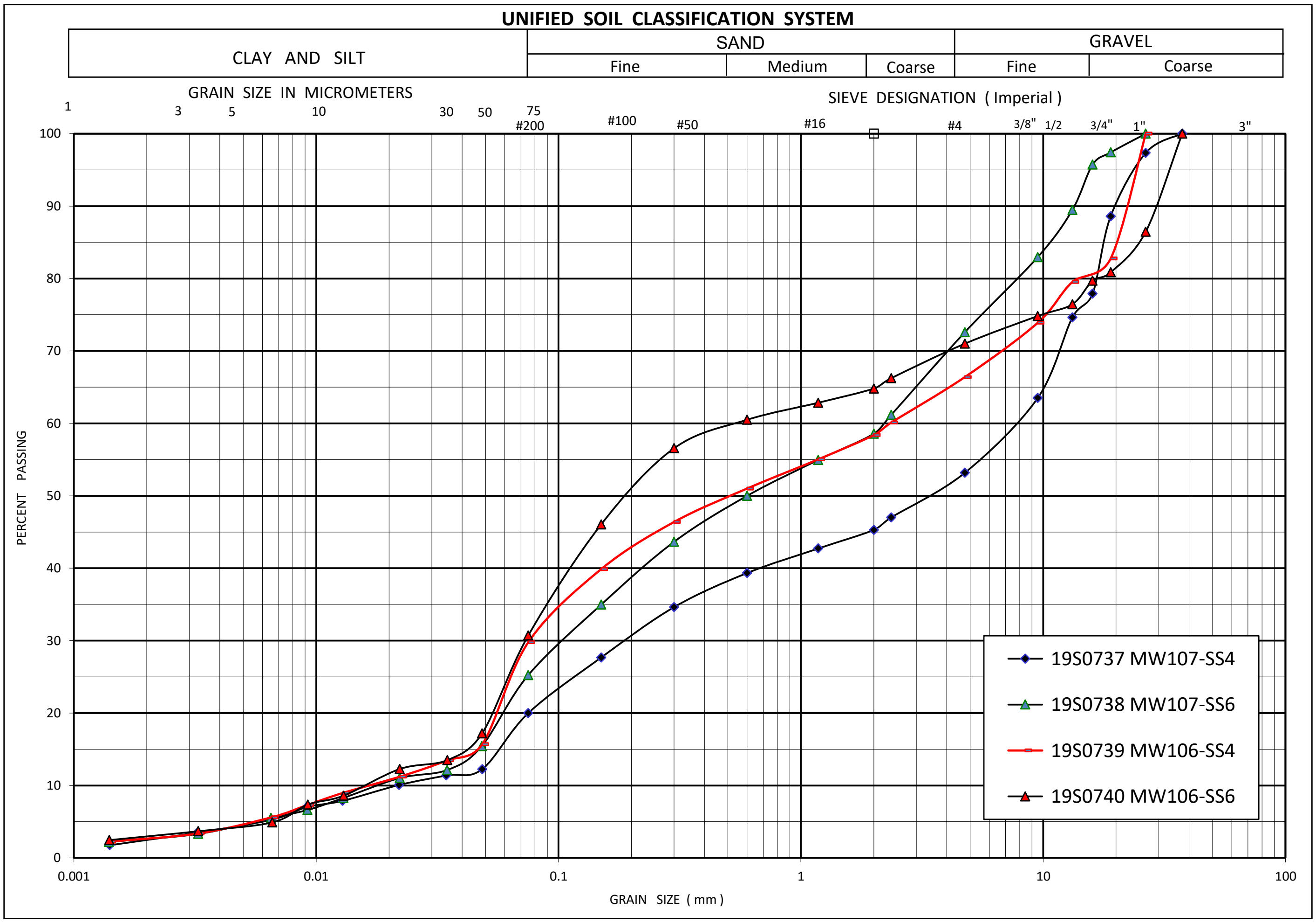
SIRATI & PARTNERS

Grain Size Distribution

ASTM D 422-63

Project No. : CE751900
Project : Baker Street Investigation
Client : Jacobs

Report No. : 19S0737 - 740
Date : 19-Sep-19
SPCL Job No. : SP19-551-40



Sample No.	BH-SS	Percentage of			
		Gravel	Sand	Silt	Clay
19S0737	MW107-SS4	47	33	17	3
19S0738	MW107-SS6	27	48	22	3
19S0739	MW106-SS4	34	36	26	4
19S0740	MW106-SS6	29	40	27	4

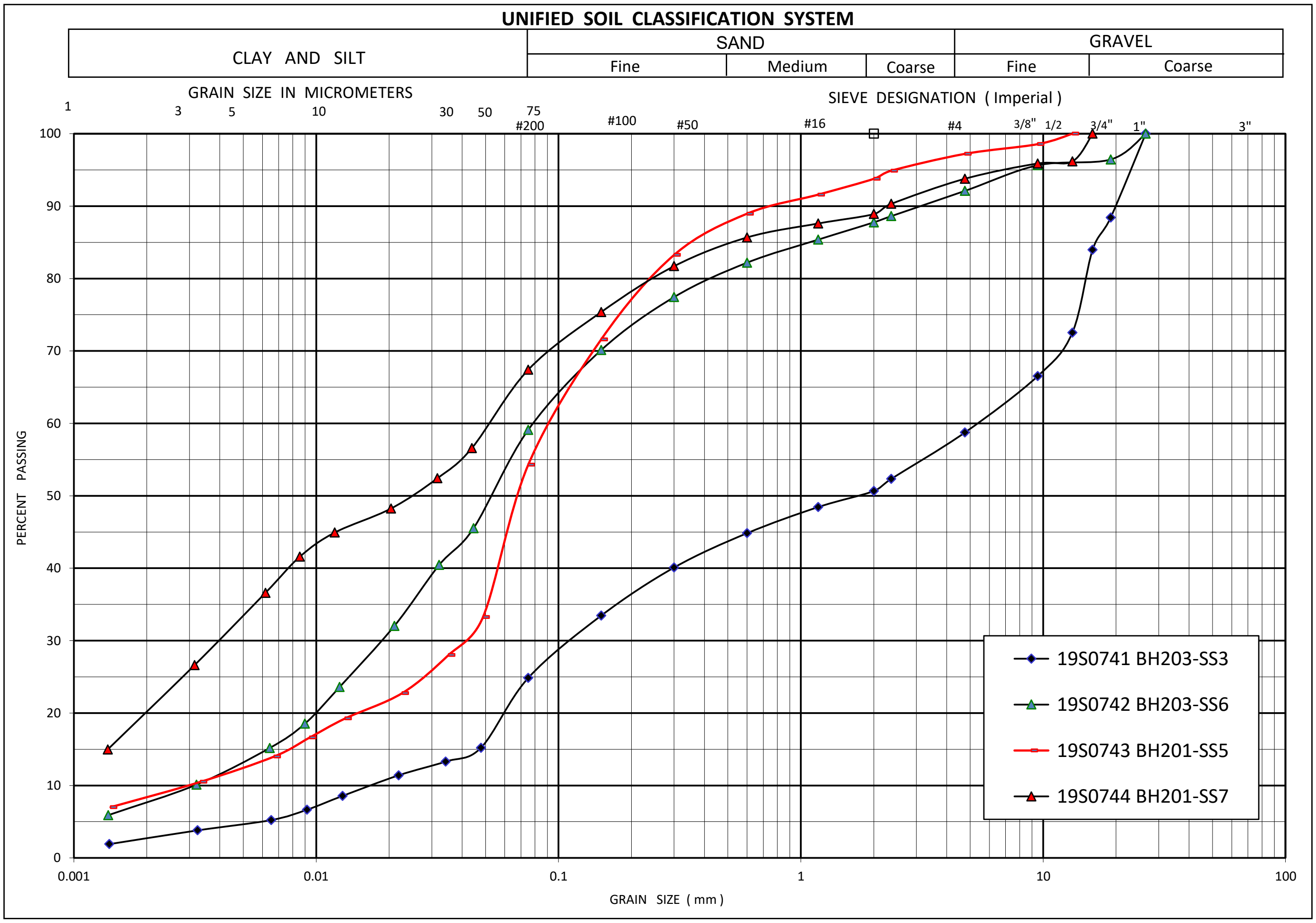
****End of Report****

SIRATI & PARTNERS

Grain Size Distribution

ASTM D 422-63

Project No.	: CE751900	**Report No.**	: 19S0741 - 744
Project	: Baker Street Investigation	**Date**	: 19-Sep-19
Client	: Jacobs	**SPCL Job No.**	: SP19-551-40



Sample No.	BH-SS	Percentage of			
		Gravel	Sand	Silt	Clay
19S0741	BH203-SS3	41	34	22	3
19S0742	BH203-SS6	8	33	52	7
19S0743	BH201-SS5	3	43	46	8
19S0744	BH201-SS7	6	27	46	21

****End of Report****

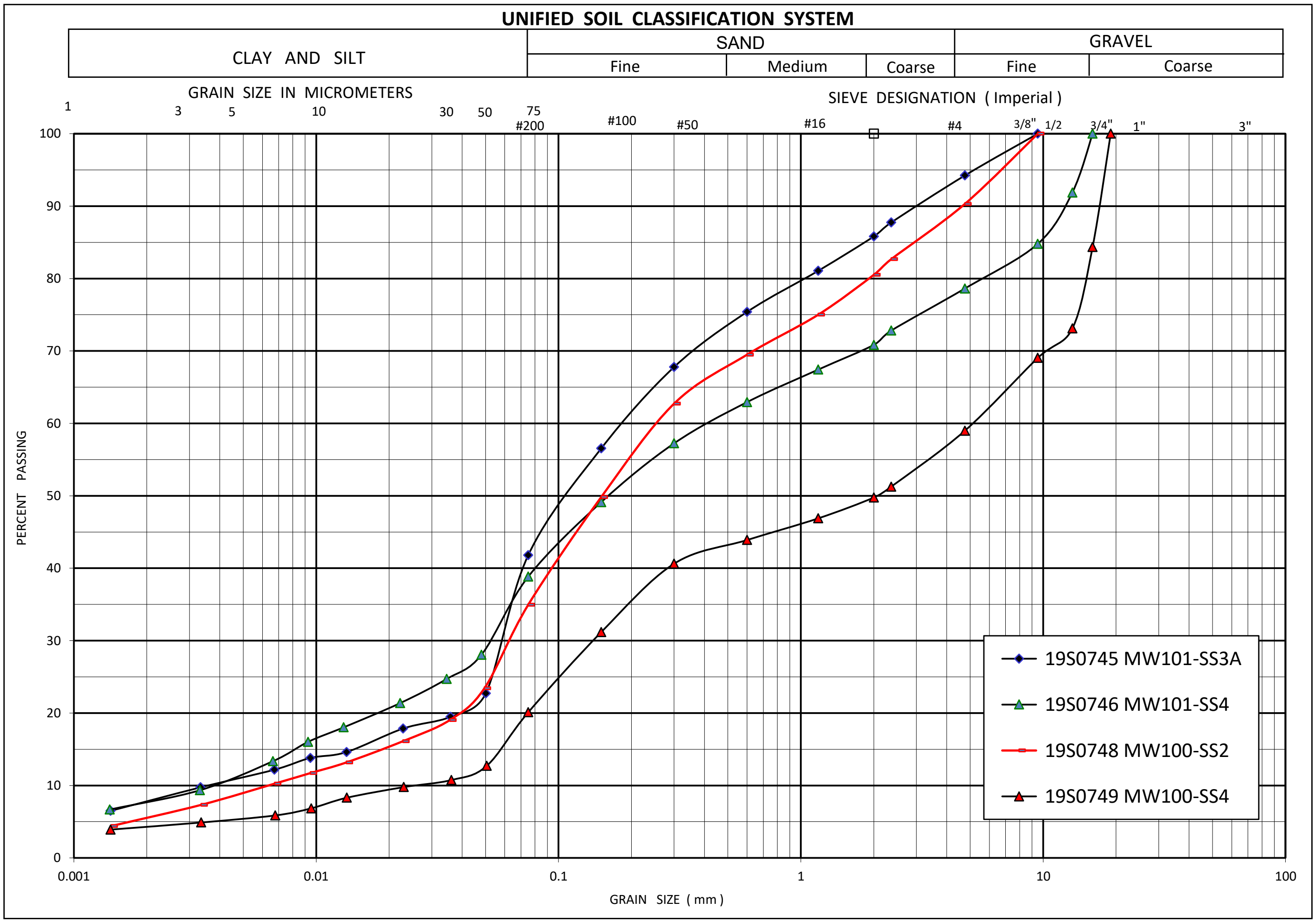
SIRATI & PARTNERS

Grain Size Distribution

ASTM D 422-63

Project No. : CE751900
Project : Baker Street Investigation
Client : Jacobs

Report No. : 19S0745, 46, 48 & 49
Date : 19-Sep-19
SPCL Job No. : SP19-551-40



Sample No.	BH-SS	Percentage of			
		Gravel	Sand	Silt	Clay
19S0745	MW101-SS3A	6	52	34	8
19S0746	MW101-SS4	21	40	31	8
19S0748	MW100-SS2	10	55	29	6
19S0749	MW100-SS4	41	39	16	4

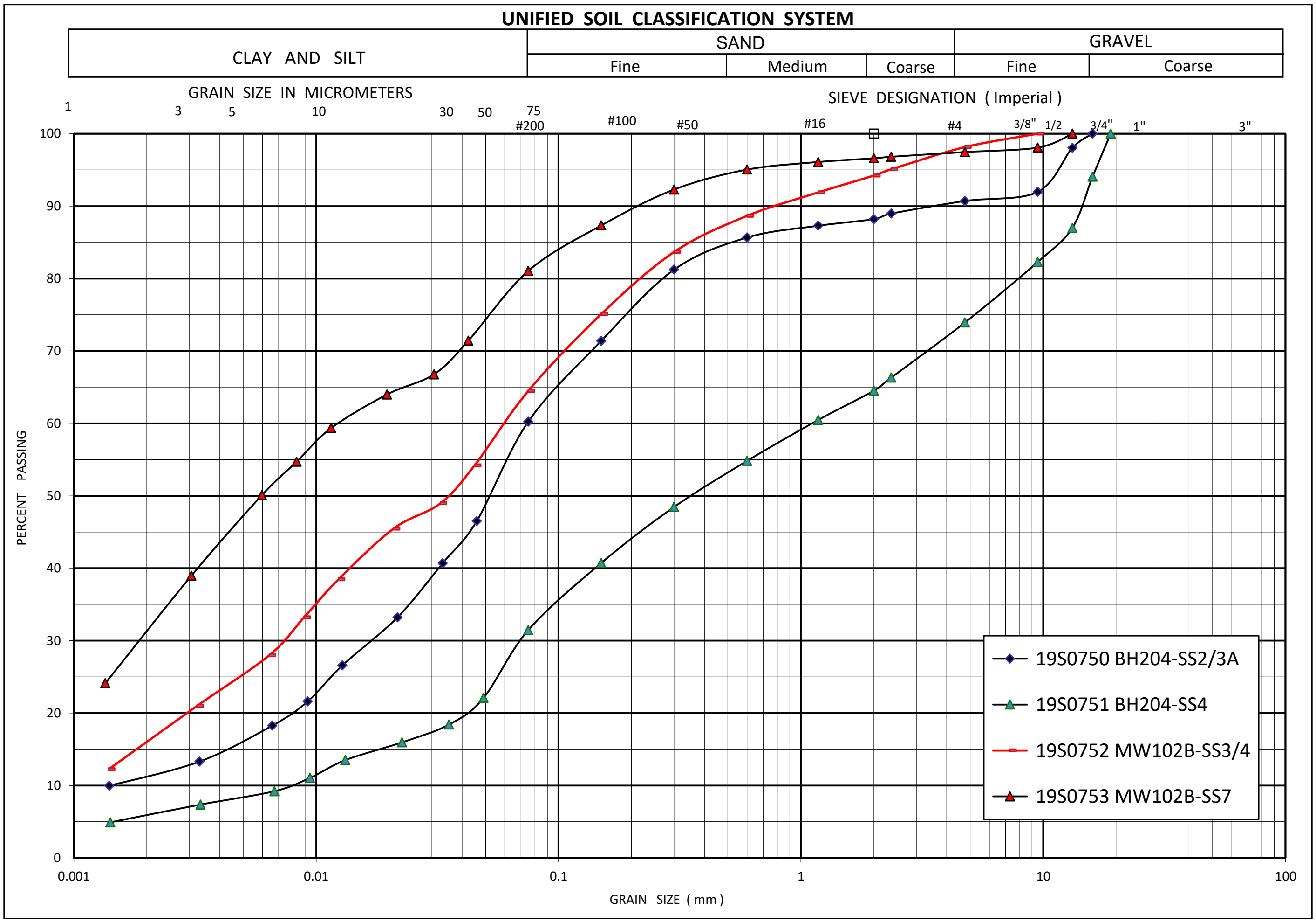
****End of Report****

SIRATI & PARTNERS

Grain Size Distribution

ASTM D 422-63

Project No.	: CE751900	**Report No.**	: 19S0750 - 53
Project	: Baker Street Investigation	**Date**	: 19-Sep-19
Client	: Jacobs	**SPCL Job No.**	: SP19-551-40



Sample No.	BH-SS	Percentage of			
		Gravel	Sand	Silt	Clay
19S0750	BH204-SS2/3A	9	31	49	11
19S0751	BH204-SS4	26	42	26	6
19S0752	MW102B-SS3/4	2	33	49	16
19S0753	MW102B-SS7	3	16	50	31

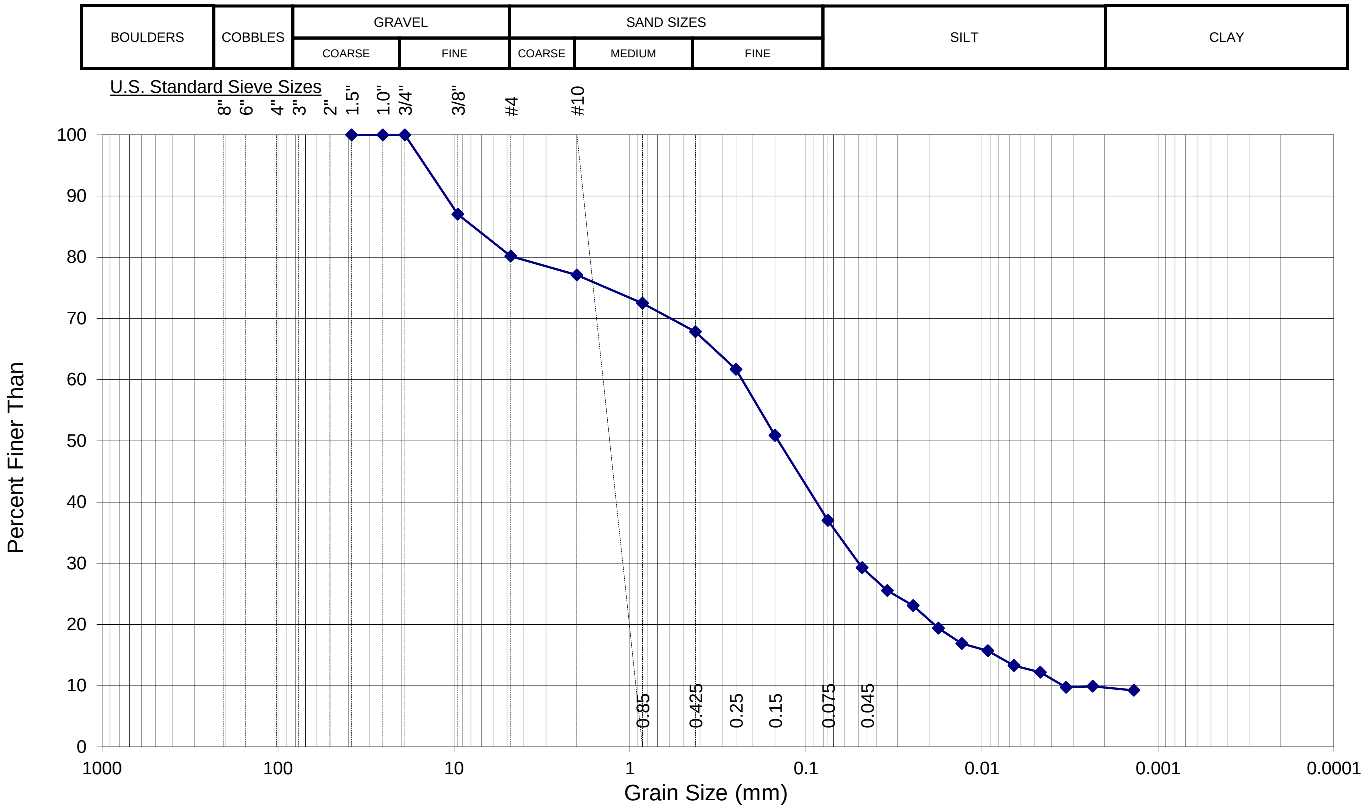
****End of Report****

ALS Environmental

Waterloo, Ontario

PARTICLE SIZE DISTRIBUTION CURVE

Client Name:	CH2M HILL Canada Ltd.~TORONTO
Client Sample ID	BH202-2-2.5'
Lab Sample ID	L2318180-3
Date Sample Received:	26-Jul-19
Test Completion Date:	12-Aug-19
Analyst:	



Particle Size	% Passing	Particle Size	% Passing	Particle Size	% Passing
38.1	100.00	0.2500	61.68	0.00924	15.70
25.4	100.00	0.1500	50.89	0.00659	13.28
19	100.00	0.0750	37.01	0.00467	12.21
9.5	87.02	0.0481	29.26	0.00333	9.73
4.75	80.15	0.0345	25.55	0.00235	9.90
2	77.10	0.0246	23.07	0.00137	9.23
0.85	72.47	0.0177	19.37		
0.425	67.85	0.0130	16.91		

METHOD DESCRIPTION

Method Reference: ASTM D422-63(2007)

Soil classification system used: ASTM D422-63 Classification

Dispersion method: Mechanical

Dispersion period: 1 minute

Hydrometer Type: 151H

Coarse Grained

Hazen Estimated K (cm/s): 3.6E-06

% Pass/Susp: 9.90

Coarse: > 50% particles > 0.075mm

Fine: < 50% particles > 0.075mm

SUMMARY OF RESULTS

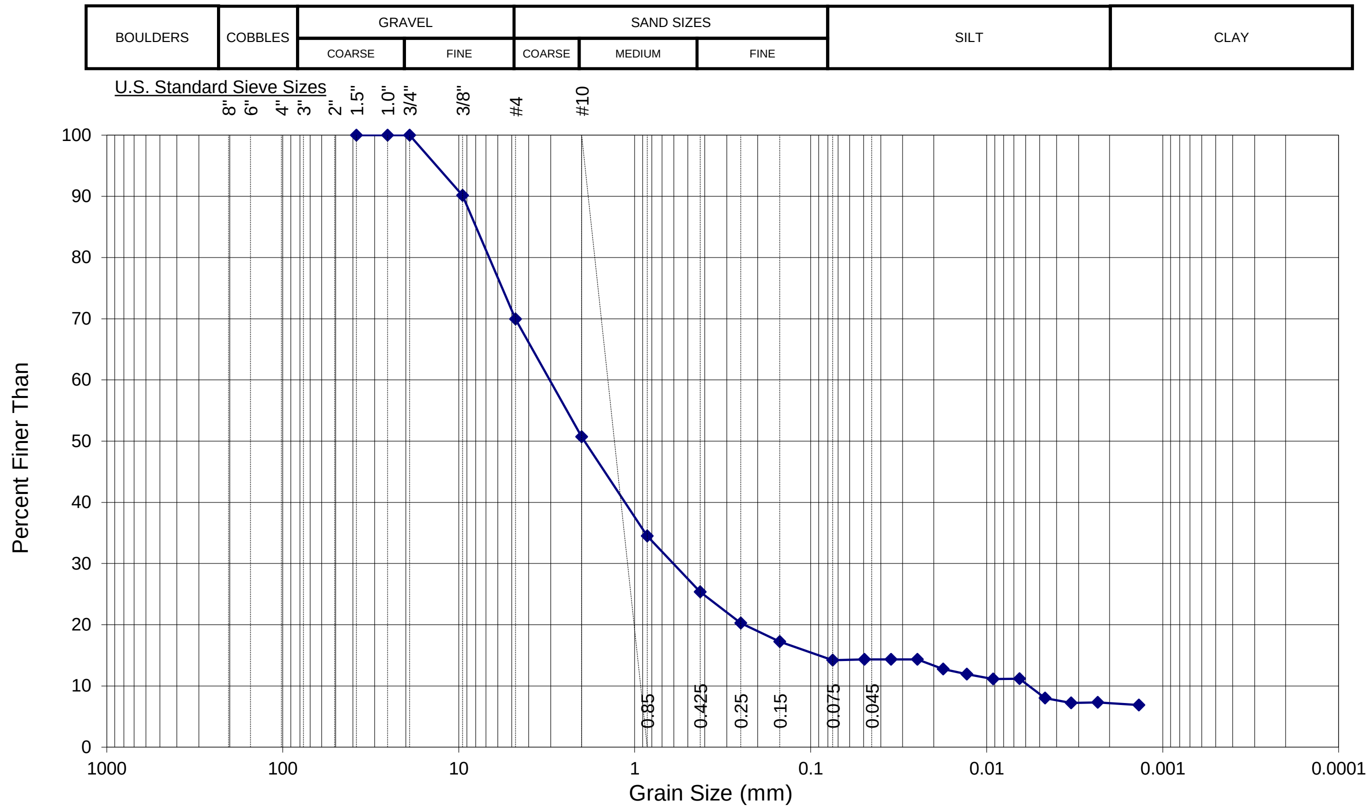
GRAIN SIZE	WT %	DIA. RANGE (mm)
% GRAVEL :	19.85	> 4.75
% COARSE SAND :	3.05	4.75 - 2.0
% MEDIUM SAND :	9.25	2.0 - 0.425
% FINE SAND :	30.84	0.425 - 0.075
% SILT :	24.59	0.075 - 0.005
% CLAY :	12.42	< 0.005
% CLAY:	9.70	< 0.002

ALS Environmental

Waterloo, Ontario

PARTICLE SIZE DISTRIBUTION CURVE

Client Name:	CH2M HILL Canada Ltd.~TORONTO
Client Sample ID	BH201-1-1.5'
Lab Sample ID	L2318180-6
Date Sample Received:	26-Jul-19
Test Completion Date:	12-Aug-19
Analyst:	



Particle Size	% Passing	Particle Size	% Passing	Particle Size	% Passing
38.1	100.00	0.2500	20.28	0.00920	11.14
25.4	100.00	0.1500	17.24	0.00650	11.17
19	100.00	0.0750	14.20	0.00467	8.03
9.5	90.14	0.0495	14.36	0.00331	7.21
4.75	69.95	0.0350	14.36	0.00234	7.32
2	50.70	0.0247	14.36	0.00136	6.88
0.85	34.48	0.0177	12.74		
0.425	25.35	0.0130	11.93		

METHOD DESCRIPTION

Method Reference: ASTM D422-63(2007)

Soil classification system used: ASTM D422-63 Classification

Dispersion method: Mechanical

Dispersion period: 1 minute

Hydrometer Type: 151H

Coarse Grained Hazen Estimated K (cm/s): 3.2E-05

Coarse: > 50% particles > 0.075mm % Pass/Susp: 11.14

Fine: < 50% particles > 0.075mm

SUMMARY OF RESULTS

GRAIN SIZE	WT %	DIA. RANGE (mm)
% GRAVEL :	30.05	> 4.75
% COARSE SAND :	19.25	4.75 - 2.0
% MEDIUM SAND :	25.35	2.0 - 0.425
% FINE SAND :	11.15	0.425 - 0.075
% SILT :	5.51	0.075 - 0.005
% CLAY :	8.68	< 0.005
% CLAY:	7.20	< 0.002

Attachment H4

Supplemental Risk Management Measure Rationale

Attachment H4. Supplemental Risk Management Measure Rationale

At the discretion of the Qualified Person for Risk Assessment (QPRA), supplemental risk management measures (RMMs) are required for the risk assessment (RA) Property to protect subsurface workers. Table 7-1a, below, lists the required supplemental RMMs. These RMMs are not automatically populated by the Modified Generic Risk Assessment (MGRA) Model (MECP, 2016a) in Table 7-1.

Table 7-1a. Risk Management Measures - Supplemental

Risk Management Measure Selected	**Medium**	**Pathway Controlled**	**Exposure Reduction**
Health and Safety Plan	Soil; Groundwater	Subsurface Worker Contact (Dermal and Incidental Ingestion) with Groundwater in a Trench; Subsurface Worker Inhalation in a Trench [a]	100 percent when Subsurface Worker contact with cadmium-impacted groundwater is eliminated with PPE or defined work practices are employed Reduced potential for inhalation risk from mercury in soil when defined work practices are employed
Soil and Ground Water Management Plan	Soil; Groundwater	Dust (Soil) Inhalation and Groundwater Discharge [b]	Reduced potential for the generation of dust from metals-impacted soil when soil is appropriately managed and mitigation measures are employed Reduced potential for cadmium-impacted groundwater discharge when appropriately managed

Notes:

[a] Inhalation of vapours generated from volatile contaminants of concern (COCs) in soil. No volatile COCs were identified in groundwater at the RA Property.

[b] As generated during construction or dewatering activities.

PPE = personal protective equipment

The key details associated with these supplemental RMMs (as provided as items 9 and 10 on the *RMM Description* tab of the MGRA model [MECP, 2016a]) are reproduced below in Sections H4.1 and H4.2 and will be required for the RA Property as part of the Certificate of Property Use (CPU). Section H4.2.1 provides the description of an additional RMM with respect to building foundations in potential contact with groundwater under the Soil and Ground Water Management Plan (SGMP). The additional clause associated with this RMM is provided in red font as item a. viii. under Section H4.2.

H4.1 Health and Safety Plan Requirement

a. In addition to any requirements under the Occupational Health and Safety Act, R.S.O. 1990, c. O.1, preparing and implementing a written health and safety plan for the Property, prepared by a Competent Person in consultation with a Qualified Person and to be retained by the Owner, and be available for inspection upon request by a Provincial Officer, that includes information concerning the potential hazards and safe work measures and procedures with respect to the Property Specific Contaminants of Concern at the Property and the communication of this information to all persons who may be involved in Intrusive Activities at the Property, including, at a minimum:

> i. the procedures and timing for implementing the plan, including the supervision of persons implementing the plan;
>
> ii. all relevant information concerning the presence of, human exposure to, and risk posed by, the Property Specific Contaminants of Concern through dermal contact, soil or ground water ingestion and inhalation of soil particles or vapour, and concerning any biogenic gases such as methane that may be present at the Property including information in the Risk Assessment,
>
> iii. all relevant information, measures and procedures concerning protection of the persons from exposure to the Property Specific Contaminants of Concern and the precautions to be taken when undertaking Intrusive Activities, including the supervision of workers, occupational hygiene requirements, use of personal protective equipment, provision of air flow augmentation in excavations or other areas or situations of minimal air ventilation, and other protective measures and procedures as appropriate;
>
> iv. all relevant information concerning the presence and significance of the risk management measures and requirements which are being, or have been, implemented at the Property,
>
> v. the procedures and timing for implementing emergency response and contingency measures and procedures, including contact information, in the event of a health and safety incident; and
>
> vi. the recording, in writing, of the implementation of the plan and any health and safety incidents that occur, to be retained by the Owner and be available for inspection upon request by a Provincial Officer;

and which is,

> vii. delivered to the Owner before any Intrusive Activities are undertaken at the Property; and
>
> viii. updated and delivered to the Owner within 30 days following making any alteration to the plan.

H4.2 Soil and Ground Water Management Plan Requirement

a. Preparing and implementing a written soil and ground water management plan for the Property, prepared by a Qualified Person and to be retained by the Owner, and be available for inspection upon request by a Provincial Officer, for managing excavated soil or soil brought to the Property, and, if any, ground water from dewatering during Intrusive Activities at the Property, so as to prevent exposure to or uncontrolled movement or discharge of the Property Specific Contaminants of Concern in soil or ground water at the Property, including, at a minimum:

> i. procedures and timing for implementing the plan, including the supervision of persons implementing the plan;

ii. measures to control dust and prevent tracking of soil by vehicles and persons from the Property, including the cleaning of equipment and vehicles;

iii. measures, in addition to any applicable measures specified in O. Reg. 153/04, to manage soil excavated at the Property and any soil brought to or removed from the Property, including:

  (a) characterizing for contaminant quality all excavated soil and any soil brought to the Property, including determining whether the soil:

    1. is Capping Soil;

    2. meets the Property Specific Standards; or

    3. exceeds the Property Specific Standards;

  (b) managing excavated soil separately from any soil brought to the Property, including any excavated soil that is to be:

    1. used as Capping Soil at the Property;

    2. otherwise used as fill at the Property;

    3. removed from the Property for off-site storage or processing but is to be returned for use as fill at the Property; or

    4. removed from the Property for off-site use as fill or disposal; and

  (c) stockpiling of excavated soil and any soil brought to the Property in separate designated areas that:

    1. reflect the distinctions described in parts iii. (a) and (b);

    2. have been lined and covered, as appropriate, to prevent uncontrolled movement or discharge of the Property Specific Contaminants of Concern;

    3. have been bermed or fenced, as appropriate, to restrict access by persons; and

    4. have storm water runoff controls in place to minimize storm water runoff contacting stockpiled soil, with provision for discharge of storm water runoff to a sanitary sewer or to other approved treatment if needed;

iv. measures to manage storm water and any ground water from dewatering at the Property to prevent the movement of entrained soil and Property Specific Contaminants of Concern within and away from the Property, including, in addition to any applicable measures specified pursuant to other applicable law or other instruments, measures such as silt fences, filter socks for catch-basins and utility covers, and provision for discharge to a sanitary sewer or to other approved treatment if needed; and

v. recording, in writing, the soil, storm water and any ground water management measures undertaken, in addition to any applicable record keeping requirements specified in O. Reg. 153/04 or pursuant to other applicable law or other instruments, to be retained by the Owner, and be available for inspection upon request by a Provincial Officer, including:

(a) dates and duration of the Intrusive Activities being undertaken;

(b) weather and site conditions during the Intrusive Activities;

(c) the location and depth of excavation activities, and dewatering activities, if any;

(d) dust control and soil tracking control measures;

(e) characterization results for excavated soil and any soil brought to or removed from the Property, and for any ground water from dewatering;

(f) soil management activities including soil quantities excavated and brought to and removed from the Property, and stockpile management and storm water runoff control;

(g) management activities for any ground water from dewatering;

(h) names and contact information for the Qualified Persons and on-site contractors involved in the Intrusive Activities;

(i) names and contact information for any haulers and receiving sites for soil and any ground water removed from the Property, and for haulers and source sites of any soil brought to the Property; and

(j) any complaints received relating to the Intrusive Activities, including the soil, storm water and any ground water management activities;

and which is,

vi. delivered to the Owner before any Intrusive Activities are undertaken at the Property; and

vii. updated and delivered to the Owner within 30 days following making any alteration to the plan.

viii. characterization and management of groundwater as a result of dewatering activities. Characterization of groundwater as a result of dewatering shall include, but not be limited to, adequate groundwater sampling prior to dewatering activities along with appropriate sampling of the groundwater collected during dewatering activities, in compliance with O. Reg. 63/16, *Registrations Under Part II.2 of the Act - Water Taking*; O. Reg. 387/04, *Water Taking and Transfer*; and applicable municipal bylaws, where determined applicable. Where dewatering is required, dewatering activities will be conducted in accordance with Section H4.2.1 of the MGRA.

H4.2.1 Groundwater Control and Management

Average groundwater elevations at the RA Property (that is, 4.18 and 7.60 m below ground surface [mbgs] for the perched water and the water table, respectively). The design for the proposed redevelopment of the RA Property has not been finalized, but may include up to three levels of underground parking.

Therefore, it has been assumed that the maximum depth of the foundation could be 10 mbgs. Thus, contact between the building foundation and the water table could occur at the RA Property[1]. Groundwater control and management is not required for buildings with foundations that do not intersect the water table.

If buildings with foundations that intersect the water table are to be constructed, groundwater management may require compliance with Ontario Building Code requirements, depending on the design of the building. Often, groundwater is collected by a sump or a weeping tile installed around the perimeter of the foundation.

Excess groundwater collected during construction, dewatering activities, or building drainage, requiring collection or removal from the RA Property will be managed and disposed of in accordance with O. Reg. 63/16, O. Reg 387/04, O. Reg. 347/90, or municipal sewer use bylaws, providing appropriate analyses and approvals are in place. Treatment, disposal, or both, will be determined by sewer-use bylaws, which consider groundwater quality and quantity (that is, contaminant loading). If groundwater is intended to be discharged to the natural environment, a Section 53 approval under the Ontario Water Resources Act will be required. Often, special dispensation is required from the local municipality, and payments are required for estimated or measured usage or exceptions to the by-laws (i.e. discharge of groundwater to sanitary instead of stormwater system).

H4.3 References

Ontario Ministry of the Environment, Conservation and Parks (MECP). 1990. “General – Waste Management” Environmental Protection Act. Ontario Regulation (O. Reg.) 347/90, as amended.

Ontario Ministry of the Environment, Conservation and Parks (MECP). 2004. “Water Taking and Transfer” Environmental Protection Act. Ontario Regulation (O. Reg.) 387/04, as amended.

Ontario Ministry of the Environment, Conservation and Parks (MECP). 2016a. “Modified Generic Risk Assessment Model.” Microsoft Excel Spreadsheet. November 1.

Ontario Ministry of the Environment, Conservation and Parks (MECP). 2016b. “Registrations Under Part II.2 of the Act - Water Taking” Environmental Protection Act. Ontario Regulation (O. Reg.) 63/16, as amended.

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[1] Foundation contact with the perched water (northern portion of the Site) is not considered relevant under future conditions, as all soil at the RA Property is proposed to be removed to bedrock to facilitate the construction of underground parking levels as part of the proposed redevelopment. The silt layer in the northern portion of the Site associated with the perched water will be removed, thereby removing the soil conditions which account for the presence of the perched water.

Attachment H5

Engineer Risk Management Measure Statement

Attachment H5. Engineer Risk Management Measure Statement

As of the **20th of October, 2020**, it is my opinion as a Licensed Professional Engineer in Ontario that, taking into consideration the assumptions specified in the risk assessment report, including the use of the property specified in report section 3 (Property Information, Site Plan and Geological Interpretation) of the risk assessment, that the engineered barrier specified in the MGRA determined as required for risk management, is suitable for this property and the COCs identified.

Name: Jennifer L Caron, P.Eng.

J. L. CARON
Oct 20/20

Signature: Date: Oct 20/2020

Attachment I
Response to MECP Comments on PSF and MGRA

Ministry of the Environment,
Conservation and Parks

Technical Assessment and Standards
Development Branch
40 St. Clair Avenue West
7th Floor
Toronto ON   M4V 1M2
Phone: 416.327.5519
Fax: 416.327.2936

Ministère de l'Environnement, de
la Protection de la nature et des Parcs

Direction des évaluations techniques et de
l'élaboration des normes
40, avenue St. Clair Ouest
7e étage
Toronto, ON   M4V 1M2
Tél: 416 .327.5519
Téléc: 416. 327.2936

September 22, 2020

The Corporation of the City of Guelph

Attention: Prasoon Adhikari, Environmental Engineer

RE: **Notice of a Circumstance requiring additional information for 55 Baker St, 152 and 160 Wyndham Street North and Park Lane, Guelph, Ontario**
IDS No 7882-BRYP6L
SDB file number RA1896-20

This is to acknowledge your submission of a risk assessment report on August 4, 2020 regarding the Property to the Ministry of the Environment, Conservation and Parks (Ministry). By way of this letter I am providing you written notice, prior to making a decision under section 168.5 of the *Environmental Protection Act* (the Act), that the Director is aware of the following circumstance:

- The risk assessment report does not contain sufficient data or information to support the conclusions reached in the report.

Due to the above-noted circumstance, this is to request that you revise and resubmit the risk assessment to the Director in accordance with the directions specified **in Schedule A.**

By way of this letter the Director is providing you notice that a new time to respond to a risk assessment will commence on the date that the Qualified Person submits the revised risk assessment in accordance with this notice

At any time the property owner may withdraw the risk assessment by giving written notice to the Director.

For your information the Act, Regulation, guidance documents and associated fact sheets have been posted on the world wide web at: https://www.ontario.ca/page/brownfields-redevelopment

Please do not hesitate to call if you have any questions.

Craig Kinch
Director, Environmental Protection Act s. 168.5 and s.168.6

cc Katherine Appleby, Jacobs Engineering Group Inc.
Rebekah Blok, Streamlined Risk Assessment Coordinator
Jennifer Volpato, P.Eng., District Engineer (Guelph District Office)

Attach

SCHEDULE A

To Director's Notice dated September 22, 2020

Comments by Ministry of Environment, Conservation and Parks On Modified Generic Risk Assessment

55 Baker St, 152 and 160 Wyndham Street North and Park Lane, Guelph, Ontario

RA1896-20

(IDS Ref No. 7882-BRYP6L)

The following are Ministry of Environment, Conservation and Parks (MECP) comments on the following Documents:

- **"Pre-Submission Form and Modified Generic Risk Assessment for 55 Baker St, 152 and 160 Wyndham Street North and Park Lane, Guelph, Ontario," report prepared by Jacobs Engineering Group Inc., dated July 24, 2020**

General Comments on the RA

The MGRA property is located at for 55 Baker St, 152 and 160 Wyndham Street North and Park Lane, Guelph, Ontario (hereinafter referred to as the "Site"). The Site is located in downtown Guelph, and is approximately 1.28 hectares (ha) in size. It is currently used as a commercial parking lot and laneway.

Past uses include parkland, commercial, and industrial. 55 Baker Street was used a public burial ground (community land use). On-Site potentially contaminating activities (PCAs) include: (30) Importation of Fill Material of an Unknown Quality; (28) Gasoline and Associated Products Storage in Fixed Tanks; (55) Transformer Manufacturing, Processing, and Use; (34) Metal Fabrication; (27) Garages; (Other) former coke storage.

Land uses adjacent to the Site include residential, community (roadway), commercial, and industrial. Off-Site PCAs include: (37) Operation of Dry Cleaning Equipment; (27) Garages and (28) Gasoline and Associated Products; (Other) gasoline spill; (34) Metal Fabrication.

The RA property is proposed to be redeveloped as mixed residential, community, institutional, and commercial land use. Up to three levels of underground parking may be constructed beneath the entire footprint of the RA Property.

Table 2 generic SCS (full depth, potable groundwater condition, coarse textured soils; Residential/Parkland/Institutional land use) were used to screen COCs. 3 COCs were carried forward into the MGRA: Lead and Mercury in soil; Cadmium in GW. Proposed RMMs include: MGRA Fill/Hard Cap; Building with a Storage Garage; No Groundwater Use.

Phase One and Two ESAs used to support the RA

The QP is reminded that the Phase One and Two ESA reports (including the Phase Two CSM) used to support the filing of the RSC will need to be in compliance with the amended O. Reg. 153/04 Schedules D and E.

Comments on Pre-Submission Form

1. *General comments about report format:*
    a. The title page lists a "Pre-Submission Form." If this is an MGRA, the submission should be titled as such.

2. *Table Selection/pH sampling:* In reviewing the PSF, it appears that 4 samples were collected and analysed for pH. It is unclear from which locations and depths these samples were collected, and whether representative samples were collected from both surface and subsurface soil, as required. Please clarify. It is recommended to include a figure illustrating sample locations and depths

3. *PSF Section 5 (HH CSM):* The QP indicated that a subsurface worker may be present on the site during redevelopment. It should be noted that the MGRA Approved Model does not consider the following pathways for a worker in a trench: a) inhalation pathway and b) direct contact with groundwater. These pathways should be considered in the development of the Health and Safety Plan.

4. *PSF Section 11 (MGRA):* The section regarding modification of GW2 (Storage Garage) was not filled out. Please update this section.

Comments on Risk Assessment

5. While *Table 2-1: Risk Assessment Team Membership* is technically complete, the intent of the column titled "Relevant Qualifications or Rationale for Omission" is for the QP to describe how qualifications relate to the given role and expertise required for the RA. This is in accordance with Schedule C, Table 1 and Table 2-1. It appears that PSF Attachment B addresses the concern and could be referred to in the table.

    In addition, Ed Taves is included in the PDF (Section 8), but not in MGRA Table 2-1. Victoria Peters and Maria Digaletos are mentioned in PSF Attachment B, but not elsewhere.

Comments on Phase Two Conceptual Site Model

6. A description and assessment of areas where potentially contaminating activities (PCAs) and areas of potential environmental concern (APECs) have occurred is required to be provided in the phase two conceptual site model (P2CSM). PCAs and APECS were described in the CSM, but limited details describing their locations were provided. The following issue was identified:

    a. Additional information on the nature and specific locations of on- and off-site PCAs (i.e. any infrastructure related to the historic industrial property use , USTs/ASTs, oil/water separators, hydraulics hoists, pump islands, drycleaners, oil sheds/houses, garages, etc.) in relation to each APEC should be provided in the P2CSM narrative and the specific locations/outlines of PCAs should be provided on Figure 4-1 (and/or another larger scale figure for off-site PCAs. In presenting information in the narrative and on figures, PCAs and APECs should be clearly linked.

    Given the above deficiencies, it is currently unclear whether all APECs have been adequately assessed as per Section 5, paragraphs 2 and 3 of Schedule E.

7. Subsection 7(1) of Schedule E requires that the qualified person (QP) ensures that all areas on, in or under the phase two property where a contaminant is present at a concentration greater than the applicable site condition standard for the contaminant shall be delineated laterally and vertically in soil and ground water for each contaminant present. The following issue was identified:

    a. In reviewing Figure 6.5, lead and mercury exceedence identified in soil at MW101 (from 0.46 to 0.61m bgs) does not appear to be adequately laterally delineated since the distance between MW205 to the northwest is approximately 50m away.

8. As per section 22 and clause 23(1)(i) of Schedule E, whenever ground water sampling is undertaken, ground water levels are required to be measured and ground water flow direction must be determined during the site investigation. This must be done through an assessment that includes, among other things, installing a minimum of three monitoring wells, not placed in a straight line, in each aquifer to be investigated. The following issues were identified:

    a. In section 2.(ii) of the P2CSM, the QP describes two hydrogeologic units referred to as “the perched ground water” and “the bedrock aquifer”, however, it does not appear that the perched water table depth was used in the model. Please provide a rationale for why and clarify whether this perched ground water unit is considered a permanent hydrogeologic unit.

Mandatory Appendices and Supporting Documentation

9. *Mandatory Certifications* – the PDF document shows certification boxes checked, but these check boxes do not appear in the Excel file.

10. *Approved Model Input Parameters (Attachment H):*
    a. Depth to Water Table – MGRA Table 3-1 lists the number of stories below grade as 3. MGRA Table 1-2 (RA Assumptions) lists the depth to water table as 300 cm. It appears that the future built form and expected separation distance between the building foundation and the water table may not have been taken into account. It appears as though the building foundation may contact the water table. If this is the case, the minimum possible depth to water table should be entered into the model, and the QP should consider whether other RMMs (to protect the building from water infiltration) are needed.

    b. The fields for soil type do not need to be changed unless the soil vapour screening level option is used; however it appears that the QP has supported the change from default in accordance with Table 4 of Schedule E. **No response required.**

11. *Date of phase one and two ESA reports* – The QP is reminded of the requirement that phase one and two ESA reports used to support filing of an RSC be based on current work (ie: date of the last work is no later than 18 months before the submission of the RSC)

Comments on Risk Management

General Comments from the District Office

12. All of the tables in the MGRA excel spreadsheet need to be exported and converted to a PDF document such that changes cannot be made and can easily be accessed by others.

Specific Review Comments on Risk Management

13. As on site barriers are required, a soil and groundwater management plan and a site specific health and safety plan is also required. These need to be appended to Table 7-1 and key details of the plans need to be included in an appendix.
14. As engineered barriers are required, the Licensed Professional Engineer involved in this project needs to provide a signed statement that the engineered barriers specified in the MGRA are suitable for this property and the COCs identified. This is typically included in an appendix.

RESUBMISSION

The risk assessment should be revised and resubmitted to the following address:

The Director
Client Services and Permissions
(formerly: Environmental Approvals Access and Service Integration Branch)
135 St. Clair Avenue West, 1st Floor
Toronto, ON, M4V 1P5

Four hard copies of the risk assessment should be submitted (one marked original), including a stand-alone, electronic copy of the risk assessment report (in USB format).

To assist MECP in its review of the resubmission, changes to the risk assessment from the version that is the subject of the above review should be outlined in a revision table or errata sheet attached to the resubmission. Use of a redline method in the body of the revised risk assessment also is recommended, if possible and where practicable.

It also is recommended that the QP$_{RA}$ provide responses to the MECP review comments as an attachment to the submission or as an appendix in the revised risk assessment. This will provide an opportunity for the QP$_{RA}$ to explain to MECP reviewers how the MECP review comments have been addressed in the risk assessment. The QP$_{RA}$ should note that submission of a response to the MECP review comments without a revised risk assessment or addendum is not considered to be a resubmission of the risk assessment under the Regulation and it may not be reviewed.

The Property Owner and QP$_{RA}$ should note that upon receipt and review of the resubmission, the Director may issue a decision under Section 168.5 (1) EPA to accept or not to accept the risk assessment. If the decision is not to accept the risk assessment, then subsequent resubmissions or provision of additional information cannot be accepted by the Ministry for review. Advancement of a risk assessment of the subject property will require submission of a new Pre Submission Form followed by a new risk assessment of the site in accordance with Schedule C of the Regulation.

It is recommended that before resubmission of the risk assessment, the QP$_{RA}$ should review the mandatory requirements for risk assessments submitted under the Regulation, as outlined in Section 4 and Table 1 of Schedule C of the Regulation. As well, the Ministry's *Procedures for Use of Risk Assessment Under Part XV.1 of the Environmental Protection Act* should be used for guidance in how to satisfy the requirements of the Regulation. **It is important that the QP$_{RA}$ also confer with the QP$_{ESA}$ to determine whether the PSS provided will support filing of a record of site condition.**

Some of the comments included in this document (Schedule A) may be related to the adequacy of the environmental site assessment (ESA) work performed to support the approach and conclusions of the risk assessment (RA). Note that acceptance of the qualified person (QP's) responses on these ESA-related matters will be for the purpose of supporting a decision on the RA only; a full regulatory review of the ESAs will not be conducted as part of any future RA review. MECP may undertake a more in depth review of the Phase One and Phase Two ESA reports at the time the record of site condition (RSC) is submitted for filing to ensure that all the regulatory requirements have been met. Information relevant to the Phase One and Two ESA reports (e.g., table of areas of environmental concern, the conceptual site models) that may be amended as part of the RA should be reflected in updated Phase One and Two ESA reports prior to submitting RSCs for filing. In addition, if the work on the Phase One and Two ESA exceeds 18 months prior to the submission date of the RSC, the Phase One and Two ESA reports will need to be updated prior to submitting RSCs for filing.

If the QP_{ESA} has any questions regarding meeting the ESA requirements at the time of RSC filing, it is suggested that they contact Rose Ash of CSP (formerly EAASIB) email: rosemary.ash@ontario.ca

If the QP_{RA} has questions regarding the application of the Regulation or the above comments, they should be forwarded by email to:

Rebekah Blok
Streamlined Risk Assessment Coordinator
Technical Assessment and Standards Development Branch
Ontario Ministry of the Environment, Conservation and Parks
rebekah.blok@ontario.ca

Attachment I. Response to MECP Comments on MGRA for 55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario - RA1896-20 (IDS Ref No. 7882-BRYP6L)

	September 22, 2020 MECP Comment	October 20, 2020 Jacobs Response	Document Location
1	General comments about report format: a. The title page lists a "Pre-Submission Form." If this is an MGRA, the submission should be titled as such.	The cover page has been updated to include "Modified Generic Risk Assessment" in the document title.	• Title Page
2	Table Selection/pH sampling: In reviewing the PSF, it appears that 4 samples were collected and analysed for pH. It is unclear from which locations and depths these samples were collected, and whether representative samples were collected from both surface and subsurface soil, as required. Please clarify. It is recommended to include a figure illustrating sample locations and depths	Forty-five samples were collected and analyzed for pH. Locations and depths are provided in Table 6-5 (Attachment D3) which show 14 samples collected from the surface soil and 31 samples from the subsurface soil. Figure 2-3 has been added to the CSM illustrating the locations and depths of the samples. References to the new figure have been updated in Attachment D2 (Phase Two Environmental Site Assessment Summary) and Attachment D3 (Phase Two Conceptual Site Model).	• Attachment D3, Figure 2-3
3	PSF Section 5 (HH CSM): The QP indicated that a subsurface worker may be present on the site during redevelopment. It should be noted that the MGRA Approved Model does not consider the following pathways for a worker in a trench: a) inhalation pathway and b) direct contact with groundwater. These pathways should be considered in the development of the Health and Safety Plan.	Acknowledged. See response to Comment 13.	• Attachment H4
4	PSF Section 11 (MGRA): The section regarding modification of GW2 (Storage Garage) was not filled out. Please update this section.	This section was not filled in because no volatile COCs were identified in groundwater; therefore, modification of the GW2 component was not required as part of the MGRA specifically to address potential inhalation risks from COCs in groundwater. However, the "Building with Storage Garage" RMM was selected, which technically does modify the GW2 component values. This section of the PSF has been filled out, but note that no RMMs are required for the GW2 pathway due to a lack of volatile COCs in groundwater at the Site.	• PSF Section 11
5	While *Table 2-1: Risk Assessment Team Membership* is technically complete, the intent of the column titled "Relevant Qualifications or Rationale for Omission" is for the QP to describe how qualifications relate to the given role and expertise required for the RA. This is in accordance with Schedule C, Table 1 and Table 2-1. It appears that PSF Attachment B addresses the concern and could be referred to in the table. In addition, Ed Taves is included in the PDF (Section 8), but not in MGRA Table 2-1. Victoria Peters and Maria Digaletos are mentioned in PSF Attachment B, but not elsewhere.	Table 2-1 has been updated to be consistent with the RA Team members listed in Section 8 of the PSF. The relevant qualifications of the RA Team are provided in PSF Attachment B; a reference to this attachment has been added to Table 2-1. Jennifer Caron has replaced Travis Tan as the Project Engineer in Table 2-1, Section 8, and Attachment B.	• Attachment B, Section B.5 • Attachment G, Table 2-1 • PSF Section 8
6	A description and assessment of areas where potentially contaminating activities (PCAs) and areas of potential environmental concern (APECs) have occurred is required to be provided in the phase two conceptual site model (P2CSM). PCAs and APECS were described in the CSM, but limited details describing their locations were provided. The following issue was identified: a. Additional information on the nature and specific locations of on- and off-site PCAs (i.e. any infrastructure related to the historic industrial property use , USTs/ASTs, oil/water separators, hydraulics hoists, pump islands, drycleaners, oil sheds/houses, garages, etc.) in relation to each APEC should be provided in the P2CSM narrative and the specific locations/outlines of PCAs should be provided on Figure 4-1 (and/or another larger scale figure for off-site PCAs. In presenting information in the narrative and on figures, PCAs and APECs should be clearly linked. Given the above deficiencies, it is currently unclear whether all APECs have been adequately assessed as per Section 5, paragraphs 2 and 3 of Schedule E.	Two figures have been added to Attachment D3 to show the on- and off-site PCA locations and the respective APECs they contribute to. References to the new figures have been updated in Attachment D1 (Phase One Environmental Site Assessment Summary) and Attachment D3 (Phase Two Conceptual Site Model).	• Attachment D3, Figures 4-1a and 4-1b

September 22, 2020 MECP Comment		**October 20, 2020 Jacobs Response**	**Document Location**
7	Subsection 7(1) of Schedule E requires that the qualified person (QP) ensures that all areas on, in or under the phase two property where a contaminant is present at a concentration greater than the applicable site condition standard for the contaminant shall be delineated laterally and vertically in soil and ground water for each contaminant present. The following issue was identified: a. In reviewing Figure 6.5, lead and mercury exceedance identified in soil at MW101 (from 0.46 to 0.61m bgs) does not appear to be adequately laterally delineated since the distance between MW205 to the northwest is approximately 50m away.	Per the attached email communication with the MECP, it has been clarified that the comment is referring to BH204, and not MW205, which does not exist at the Site. Lead and mercury exceedances at the Site were limited to one location at the southeast end of the property (MW101), from 0.46 to 0.61 mbgs, occurring within the fill. O. Reg. 153/04 does not specify a distance to meet for considering delineation to be adequate, and messaging from the MECP has been for delineation to be at the discretion of the QPESA. Given the dimensions of the Site at this end, the property boundary provides adequate lateral delineation to the east (10-18m away), south (15-20m away) and north to northeast (10 – 21m away). BH-05 provides adequate lateral delineation to the west (13m). Based on the inferred area of impact shown on Figure 6-5 (Attachment D3), the area that has a delineation distance greater than 40 m is limited to a 20-degree radius. Based on these factors, the QPESA considers the lateral delineation complete in soil based on the existing sampling and locations present. As presented in the CSM (Attachment D3), the nature of fill is expected to be similar (i.e. urban fill) in the extent of the right of way, and it is a fair and conservative assumption to assume the area shown (i.e. following the right of way) as impacted with similar constituents. No specific APECs from onsite PCAs were identified in this area other than site-wide fill quality (APEC-2) and use of road salts (APEC-4). Jacobs believes that the characterization presented in the CSM is adequate to support the MGRA and the determination of risks and RMMs applicable to the Site. Practical consideration, the RA is being completed in support of the redevelopment of the Site. Redevelopment plans include the excavation of the area in question and surrounding lands, to bedrock. Therefore, further delineation does not provide any value for current or future land use decision-making. Per the attached email communication with the MECP, further field work for the lateral delineation of soil COCs is not required.	--
8	As per section 22 and clause 23(1)(i) of Schedule E, whenever ground water sampling is undertaken, ground water levels are required to be measured and ground water flow direction must be determined during the site investigation. This must be done through an assessment that includes, among other things, installing a minimum of three monitoring wells, not placed in a straight line, in each aquifer to be investigated. The following issues were identified: a. In section 2.(ii) of the P2CSM, the QP describes two hydrogeologic units referred to as “the perched ground water” and “the bedrock aquifer”, however, it does not appear that the perched water table depth was used in the model. Please provide a rationale for why and clarify whether this perched ground water unit is considered a permanent hydrogeologic unit.	The depth to groundwater input was not modified in the MGRA because per Appendix 3, Chart 3 of the MECP MGRA Guidance, the depth to water input only impacts the GW2 and GW2-Odour components. These components are related to vapour intrusion in groundwater. Cadmium, which is not volatile, was the only groundwater COC retained. Therefore, the site-specific depth to groundwater was not required to be used in the MGRA, as the GW2 and GW2-Odour) components are not relevant to the assessment of risks from groundwater. With regards to the perched groundwater unit: - Perched groundwater unit is not continuous at the Site (i.e. exists in the northern area only). - Perched groundwater does not contain the contaminants of concern identified for Groundwater at the Site - Perched groundwater exists because of the silt unit at the northern end of the Site which is currently “permanent” (i.e. is continually present throughout the year and various seasonal conditions; based on observations) - Based on the current proposed building designs, all soil at the Site will be excavated to bedrock to allow for an underground parking garage, and therefore the silt will no longer be present in this northern portion, and likewise the perched water will cease to exist. This perched groundwater was not noted during the installation of wells southeast of MW103 (refer to figure 6-3a). The installation logs to the south and southeast from and including MW104 did not note the presence of saturated overburden. It was therefore determined that the unit was perched and discontinuous across the site and likely highly variable based on precipitation events possibly following surface undulations in the silt unit. Per the attached email communication with the MECP, the rationale provided above is sufficient justification for not considering the perched ground water in the MGRA model. See response to Comment 10 for the changes made to the MGRA model with regards to the depth to groundwater.	--
9	Mandatory Certifications – the PDF document shows certification boxes checked, but these check boxes do not appear in the Excel file.	It is unknown why the checkboxes in the Certifications PDF and the Excel file differed. The Certifications tab in the MGRA model has been updated.	• Attachment G

September 22, 2020 MECP Comment		October 20, 2020 Jacobs Response	Document Location
10	*Approved Model Input Parameters (Attachment H):* a. Depth to Water Table – MGRA Table 3-1 lists the number of stories below grade as 3. MGRA Table 1-2 (RA Assumptions) lists the depth to water table as 300 cm. It appears that the future built form and expected separation distance between the building foundation and the water table may not have been taken into account. It appears as though the building foundation may contact the water table. If this is the case, the minimum possible depth to water table should be entered into the model, and the QP should consider whether other RMMs (to protect the building from water infiltration) are needed.	Per comment 8, the depth to groundwater input was not initially modified in the MGRA as that input only impacts the GW2 and GW2-Odour components. As described in Attachment D3, the depth to the perched water table ranged from 3.78 to 4.43 mbgs and the bedrock water table is located between 5.83 and 8.66 mbgs. Based on the current design of the proposed buildings, the overburden will be removed, including the silt unit which is believed to be creating the perched water table. Therefore, only the bedrock water table is considered in the future building in terms of foundation drainage for the future subgrade parking structure. Appropriate management of foundation drainage for groundwater has been noted as a requirement for consideration in the SGMP based on the final foundation depth. See response to Comment 13. As the proposed development may extend to a depth of 10 mbgs, contact between the building foundation and the water table is probable. Therefore, considering the future built form, the depth to groundwater has been revised to a depth of 0.1 cm per MECP guidance (for instances where there is no separation between the foundation and the water table). This change did not impact the results of the MGRA or the PSSs developed as no volatile COCs have been identified in groundwater.	• Attachment G, MGRA Model • Attachment H, Section H.6
	b. The fields for soil type do not need to be changed unless the soil vapour screening level option is used; however it appears that the QP has supported the change from default in accordance with Table 4 of Schedule E. **No response required.**	Acknowledged.	--
11	Date of phase one and two ESA reports – The QP is reminded of the requirement that phase one and two ESA reports used to support filing of an RSC be based on current work (ie: date of the last work is no later than 18 months before the submission of the RSC)	Acknowledged. It is the intent to complete an Update to the Phase One ESA so that the last work is completed within 18 months of the RSC submission. The last work for the Phase Two ESA is expected to fall within 18 months of the RSC submission; if it does not, an Update to the Phase Two ESA will be completed.	--
12	All of the tables in the MGRA excel spreadsheet need to be exported and converted to a PDF document such that changes cannot be made and can easily be accessed by others.	Acknowledged. PDF versions of the MGRA report tables have been included in Attachment G of the revised MGRA report. **Note**: It was noticed that on Table 1-1 (PSS) the "HH Driver" (and "Dominant Exposure Pathway") cells for Mercury in soil are showing as "0". Jacobs traced the source of the error within the MGRA model. It appears that the driver formula is linked to Row 6 on the *Table of Drivers – Soil* tab, which typically returns the acronym for each pathway (for example, S-IA, S-GW3 etc). For this Site, the driver for mercury is the Soil to Outdoor Air pathway; however, for all the SCS Tables on this tab, Row 6 under each "Outdoor Air" column is blank; hence the return of a "0" as a driver in Table 1-1. The reference to Row 6 also would provide incomplete driver "names" for other components as only the second line of the whole component name is returned as the result, and should be flagged for updating in future versions of the MGRA. A comment correcting the "0" value has been made on the PDF version of Table 1-1 in Attachment G, but Jacobs is unable to correct the Excel version of the MGRA, as it is locked.	• Attachment G
13	As on site barriers are required, a soil and groundwater management plan and a site specific health and safety plan is also required. These need to be appended to Table 7-1 and key details of the plans need to be included in an appendix.	Per the attached email communication with the MECP, the MECP has confirmed the following approach is acceptable to address the comment: Jacobs is interpreting this request for "key details" as adding a new Section to **Attachment H – MGRA**, entitled "*Supplemental RMM Rationale"*, including the appended rows from Table 7-1 of the MGRA model (as requested) and providing a brief description of the pathways that require these RMMs and the guiding principles that will form the basis for the HASP and SGMP with cross-reference to Items #9 and 10 of MGRA model **RMM Description** tab therefore providing the MECP sufficient information to include in the CPU. Attachment H4 has been added to the MGRA report which includes: • Table 7-1a, which is a supplement for Table 7-1 of the MGRA and requires a HASP and SGMP as additional RMMs. • Description of the minimum requirements for the HASP and SGMP, per the descriptions provided on the *RMM Description* tab of the MGRA model. • Additional clause related to control and disposal of groundwater related to dewatering and associated rationale under the SGMP RMM.	• Attachment H4

September 22, 2020 MECP Comment		October 20, 2020 Jacobs Response	Document Location
14	As engineered barriers are required, the Licensed Professional Engineer involved in this project needs to provide a signed statement that the engineered barriers specified in the MGRA are suitable for this property and the COCs identified. This is typically included in an appendix.	A signed statement that the engineered barriers specified in the MGRA are suitable for this property and COCs identified has been provided and is included as a new attachment to the MGRA report.	• Attachment H5

Notes:

APEC = area of potential environmental concern
CCME = Canadian Council of Ministers of the Environment
City = City of Guelph
COC = contaminant of concern
CSM = conceptual site model
EcoCSM = ecological conceptual site model
ERA = Environmental Risk Assessment
ESA = Environmental Site Assessment
ha = hectare
HH = human health
km^2 = square kilometre
MGRA = Modified Generic Risk Assessment

MECP = Ontario Ministry of the Environment, Conservation and Parks
OTR = Ontario Typical Range
PGMIS = Provincial Groundwater Monitoring Information System
PHC = petroleum hydrocarbon
PSF = pre-submission form
P2 = Phase Two
QP = Qualified Person
RA = Risk Assessment
RSC = Record of Site Condition
RMM = risk management measure
RMP = risk management plan
SCS = site condition standard
VOC = volatile organic compound

Appleby, Katherine/KWO

From: Blok, Rebekah (MECP) <Rebekah.Blok@ontario.ca>
Sent: Wednesday, October 7, 2020 12:16 PM
To: McCarthy, Tania/KWO; Appleby, Katherine/KWO
Cc: Taves, Ed/KWO; prasoon.adhikari@guelph.ca; Mo, Alexina (MECP); Spink, Laura (MECP); Volpato, Jennifer (MECP)
Subject: [EXTERNAL] RE: MGRA1 for 55 Baker St, 152 and 160 Wyndham Street North and Park Lane, Guelph [MGRA1896-20; IDS#7882-BRYP6L]

Hello Katherine and Tania,

Please find notes of clarification and responses regarding your yellow highlighted comments:

1. **Comment 7** (lateral delineation of soil COCs):
    a. **Point of clarification:** we confirm that MECP was referring to BH204, not MW205
    b. **Response:** We do not have concerns with the expanded discussion. No further field work required for lateral delineation of soil COCs.

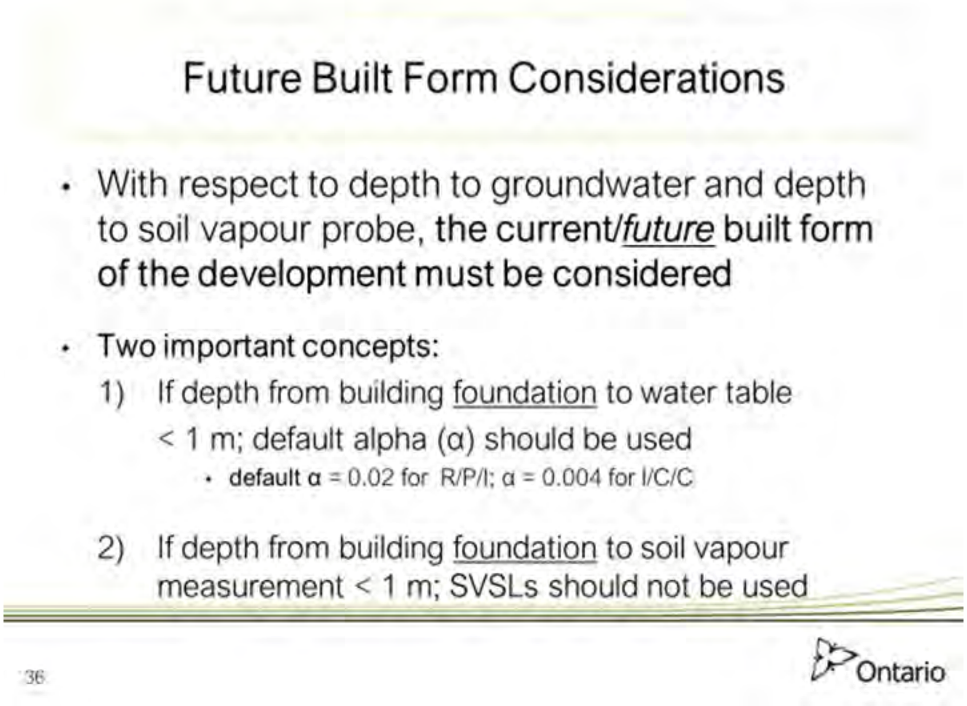
2. **Comments 8 and 10** (depth to GW):
    a. **Response part 1:** we do not have any issues with the expanded discussion regarding the perched water table, nor with the approach of noting appropriate management of foundation drainage for groundwater as a requirement for consideration in the SGMP based on the final foundation depth.
    b. **Response part 2:** while the QP has provided a discussion relating the depth to water table to the component values influenced by this variable, the depth to water table input is, in general, one of the most common and sensitive input values in the MGRA. We ask that you update the depth to water table to a site specific value in accordance with Table 4 of Schedule E, and taking into account the final foundation depth, for this MGRA, and future RAs. Some slides and a common comment are provided below** on the topic of site-specific depth to water table (we plan to simplify how information about true “separation distance” is provided in the next version of the model).

3. **Comment 13 (SGWMP, HASP):**
    a. Response: the proposed approach of adding key details in an appendix is acceptable.

***Table 1-2: Risk Assessment Assumptions* – The QP modified modifiable site characteristics, including minimum depth below soil surface to the highest annual water table. For MGRA submissions, there are specific phase two ESA requirements as per Table 4 of Schedule E which must be met to support these changes. For MGRAs, when there is insufficient* historical groundwater monitoring data to support groundwater elevation, the QP must subtract 1 m from the highest recorded water level and enter that value into the model.

Please also note, for future files, that if the MGRA model is being used at sites where vapour intrusion from contaminants in groundwater is a concern, the minimum depth should reflect the “actual” depth to groundwater based on the type of building that’s planned (ie: a building with multiple storage garages has a smaller separation distance than a building with one basement).

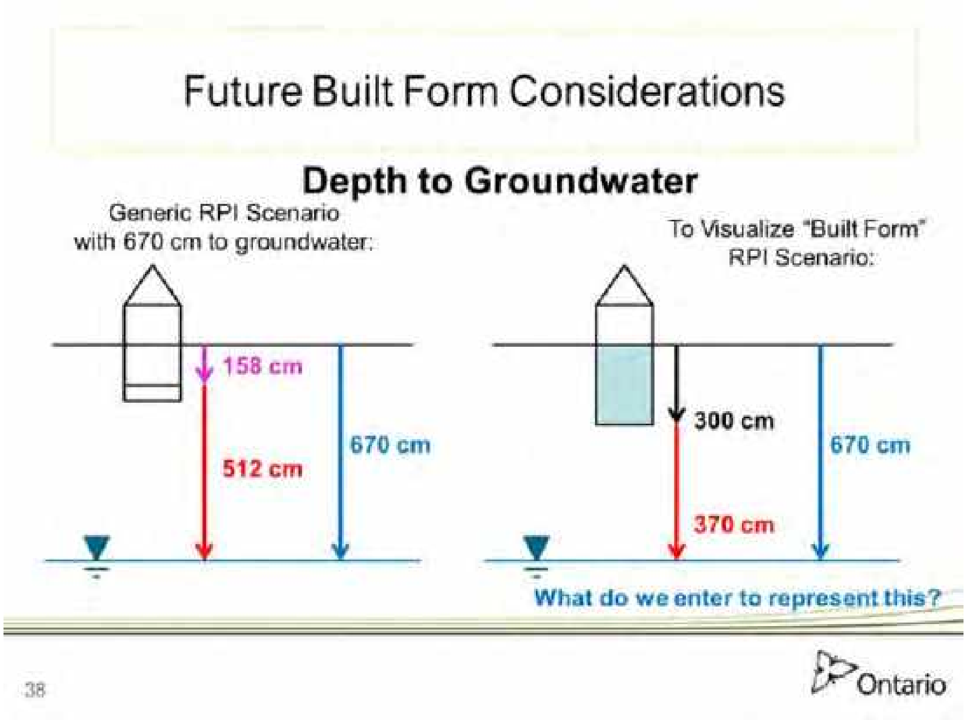
***Sufficient historical groundwater monitoring data**, as described in Schedule E, Table 4 **means**: “at least two years of water table level monitoring done at intervals no less frequent than quarterly” in addition to “water table level monitoring… conducted monthly for three months… conducted during the three months at which the highest water table can reasonably be expected to be at its highest elevation” OR “water table level monitoring shall be conducted monthly for 12 months”



Future Built Form Considerations

- With respect to depth to groundwater and depth to soil vapour probe, **the current/*future* built form of the development must be considered**
- Two important concepts:
  1) If depth from building foundation to water table < 1 m; default alpha (α) should be used
     - **default α** = 0.02 for R/P/I; α = 0.004 for I/C/C
  2) If depth from building foundation to soil vapour measurement < 1 m; SVSLs should not be used

Ontario

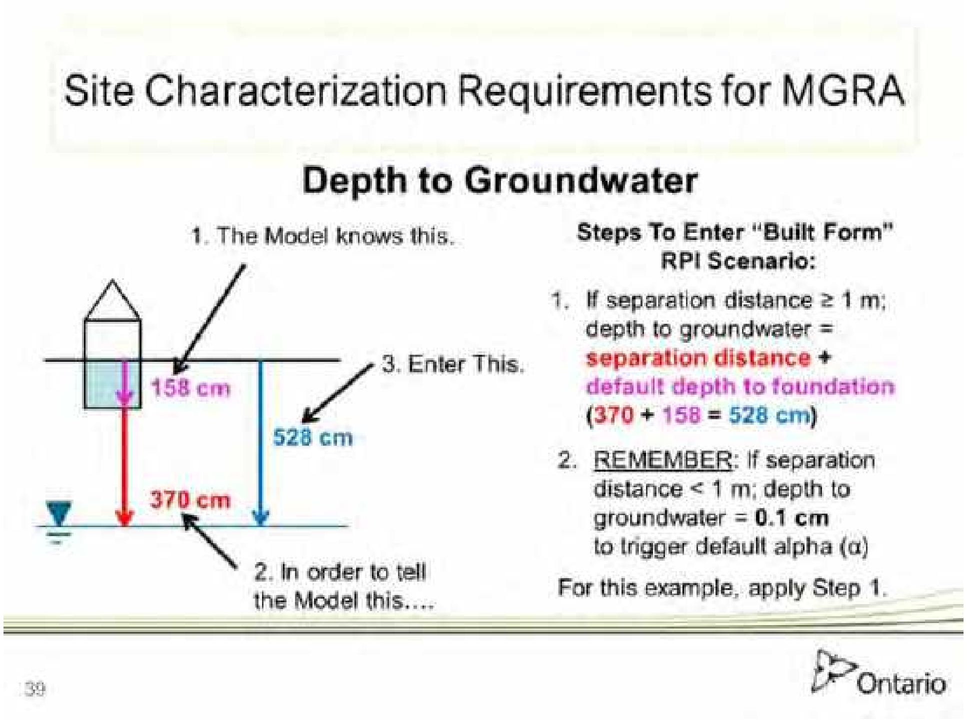


Future Built Form Considerations

Depth to Groundwater

What do we enter to represent this?

Ontario



Site Characterization Requirements for MGRA

Depth to Groundwater

1. The Model knows this.

158 cm

3. Enter This.

528 cm

370 cm

2. In order to tell the Model this....

Steps To Enter "Built Form" RPI Scenario:

1. If separation distance ≥ 1 m; depth to groundwater = **separation distance** + **default depth to foundation** (**370** + **158** = **528 cm**)
2. REMEMBER: If separation distance < 1 m; depth to groundwater = **0.1 cm** to trigger default alpha (α)

For this example, apply Step 1.

Ontario

Rebekah

Rebekah Blok, B.Eng. |
Streamlined Risk Assessment Coordinator

Please consider the environment before printing this email.

From: McCarthy, Tania/KWO <Tania.McCarthy@jacobs.com>
Sent: October-06-20 2:46 PM
To: Blok, Rebekah (MECP) <Rebekah.Blok@ontario.ca>
Cc: Appleby, Katherine/KWO <Katherine.Appleby@jacobs.com>; Taves, Ed/KWO <Ed.Taves@jacobs.com>; Mo, Alexina (MECP) <Alexina.Mo@ontario.ca>; prasoon.adhikari@guelph.ca
Subject: RE: MGRA1 for 55 Baker St, 152 and 160 Wyndham Street North and Park Lane, Guelph [MGRA1896-20; IDS#7882-BRYP6L]

Thank you Rebekah, we'll look forward to hearing back.

Tania McCarthy.

From: Blok, Rebekah (MECP) <Rebekah.Blok@ontario.ca>
Sent: Tuesday, October 6, 2020 2:44 PM
To: McCarthy, Tania/KWO <Tania.McCarthy@jacobs.com>
Cc: Appleby, Katherine/KWO <Katherine.Appleby@jacobs.com>; Taves, Ed/KWO <Ed.Taves@jacobs.com>; Mo, Alexina (MECP) <alexina.mo@ontario.ca>; prasoon.adhikari@guelph.ca
Subject: [EXTERNAL] RE: MGRA1 for 55 Baker St, 152 and 160 Wyndham Street North and Park Lane, Guelph [MGRA1896-20; IDS#7882-BRYP6L]

Hello Tania,

Thank you for sending your detailed request for clarification. I received it and I've reached out to the reviewers. When I hear back, I will let you know about next steps.

Rebekah

Rebekah Blok, B.Eng. |
Streamlined Risk Assessment Coordinator

From: McCarthy, Tania/KWO <Tania.McCarthy@jacobs.com>
Sent: October-05-20 3:19 PM
To: Blok, Rebekah (MECP) <Rebekah.Blok@ontario.ca>
Cc: Appleby, Katherine/KWO <Katherine.Appleby@jacobs.com>; Taves, Ed/KWO <Ed.Taves@jacobs.com>; Mo, Alexina (MECP) <Alexina.Mo@ontario.ca>; Spink, Laura (MECP) <Laura.Spink@ontario.ca>; Volpato, Jennifer (MECP) <Jennifer.Volpato@ontario.ca>; prasoon.adhikari@guelph.ca
Subject: RE: MGRA1 for 55 Baker St, 152 and 160 Wyndham Street North and Park Lane, Guelph [MGRA1896-20; IDS#7882-BRYP6L]

Hi Rebekah,

I've included a draft version of our response to comments that we can use to start discussions on. I have highlighted the specific responses that we are requesting additional clarification or comment on, and in particular comments #7 and #13 where we have questions and are looking at agreement on our proposed approach.

Please let us know if a call is in order and I can set something up.

Much appreciated,

Tania McCarthy, P.Eng | Jacobs | Environmental Engineer
~~O: +1.519.514.1607~~ C: 519.880.4901 | tania.mccarthy@jacobs.com
72 Victoria St. S, Suite 300 | Kitchener, Ontario N4G 4Y9 | Canada

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From: Blok, Rebekah (MECP) <Rebekah.Blok@ontario.ca>
Sent: Monday, October 5, 2020 10:38 AM
To: McCarthy, Tania/KWO <Tania.McCarthy@jacobs.com>
Cc: Appleby, Katherine/KWO <Katherine.Appleby@jacobs.com>; Taves, Ed/KWO <Ed.Taves@jacobs.com>; Mo, Alexina (MECP) <alexina.mo@ontario.ca>; Spink, Laura (MECP) <Laura.Spink@ontario.ca>; Volpato, Jennifer (MECP) <Jennifer.Volpato@ontario.ca>
Subject: [EXTERNAL] RE: MGRA1 for 55 Baker St, 152 and 160 Wyndham Street North and Park Lane, Guelph [MGRA1896-20; IDS#7882-BRYP6L]

Good morning Tania,

Please send me a list of the comments that you'd like clarification on, and let us know what your question is for each. We will respond by email if appropriate, or organize a call if needed. In this way, we can consider your questions, and involve any required reviewers.

Rebekah

Rebekah Blok, B.Eng. |
Streamlined Risk Assessment Coordinator

Please consider the environment before printing this email.

From: McCarthy, Tania/KWO <Tania.McCarthy@jacobs.com>
Sent: October-05-20 10:22 AM
To: Blok, Rebekah (MECP) <Rebekah.Blok@ontario.ca>
Cc: Appleby, Katherine/KWO <Katherine.Appleby@jacobs.com>; Taves, Ed/KWO <Ed.Taves@jacobs.com>
Subject: RE: MGRA1 for 55 Baker St, 152 and 160 Wyndham Street North and Park Lane, Guelph [MGRA1896-20; IDS#7882-BRYP6L]

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

Hi Rebekah,

Would you be available today/tomorrow or some other time this week to discuss some of the comments on the MGRA submission for the Baker Street project? We would like to clarify some of the items as well as discuss the intended approach / reasoning on others to ensure we taking an acceptable path forward to resolving the issues.

If so, we have a response to comment file that we have been putting together with our proposed approach that I can send in advance of a call.
Note that Katherine is on vacation until Thursday, but in the interest of keeping the project moving for the client we are planning to have another of our RA team members join the call.
If you require Katherine to be on the call we can schedule for Thursday or Friday.

Thanks!

Tania McCarthy, P.Eng | Jacobs | Environmental Engineer
~~O: +1.519.514.1607~~ C: 519.880.4901 | tania.mccarthy@jacobs.com
72 Victoria St. S, Suite 300 | Kitchener, Ontario N4G 4Y9 | Canada

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From: Blok, Rebekah (MECP) <Rebekah.Blok@ontario.ca>
Sent: Tuesday, September 22, 2020 10:56 AM
To: Appleby, Katherine/KWO <Katherine.Appleby@jacobs.com>
Cc: prasoon.adhikari@guelph.ca; Mo, Alexina (MECP) <alexina.mo@ontario.ca>; Spink, Laura (MECP) <Laura.Spink@ontario.ca>; Volpato, Jennifer (MECP) <Jennifer.Volpato@ontario.ca>
Subject: [EXTERNAL] MGRA1 for 55 Baker St, 152 and 160 Wyndham Street North and Park Lane, Guelph [MGRA1896-20; IDS#7882-BRYP6L]

Dear Katherine,

The Director s168 EPA has issued a Notice of Circumstance regarding our review of your risk assessment for this site. The notice concludes that the risk assessment report does not contain sufficient data or information to support the conclusions reached in the report, and requires that you revise and resubmit it in accordance with the instructions included in Schedule A. A new timeline will commence on receipt of the revised risk assessment.

An electronic copy of the notice with Schedule A comments is attached.

Rebekah

Rebekah Blok, B.Eng.

Streamlined Risk Assessment Coordinator
Ecological Standards Section
Technical Assessment and Standards Development Branch

Ontario Ministry of the Environment, Conservation and Parks
40 St.Clair Avenue West, 7th Floor
Toronto ON M4V 1M2
E-mail: rebekah.blok@ontario.ca

Please consider the environment before printing this email.

Attachment 2
MGRA Addenda #1 (November 27, 2020)

Jacobs Kitchener
72 Victoria Street South
Sutie 300
Kitchener, ON N2G 4Y9
Canada
T +1.519.579.3500
www.jacobs.com

November 27, 2020

Attention: The Director
Client Services and Permissions Branch
Ontario Ministry of the Environment, Conservation, and Parks
135 St. Clair Avenue West, 1st Floor
Toronto, Ontario   M4V 1P5

Project Name: Baker Street
Project Number: CE751900

Subject: Addendum #1 to report entitled *Baker Street Redevelopment Pre-submission Form and Modified Generic Risk Assessment for 55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario, Revision 1*, dated October 20, 2020 (RA1896-20, IDS Ref No. 7882-BRYP6L)

Dear Sir/Madam:

This letter documents the revisions to figures submitted as part of the modified generic risk assessment (MGRA) for the property located at 55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, in Guelph, Ontario (RA Property). As communicated in an email to the MECP on November 25, 2020, a minor discrepancy with the RA Property boundary was found on the Jacobs-generated Site plans that were submitted with the PSF/MGRA.

Figures have been revised so the RA Property boundary matches the legal survey (provided in Attachment A of the PSF/MGRA submission) and are included in this addendum in Attachment 1. The changes were made for the purposes of document accuracy, and to avoid any future confusion regarding the RA Property boundaries.

The list of revised figures is presented in Table 1-1 of Attachment 1. A revised MGRA submission has not been prepared, as the MECP indicated a file with the revised figures would suffice.

We trust this document will provide adequate information with which to complete the review of the document, and will lead to the acceptance of the submission for the RA Property, now dated November 27, 2020, as updated by the current Errata in Attachment 1.

If you have any questions, please feel free to contact us.

Sincerely

Tania McCarthy
B.A.Sc. P.Eng. QPESA
tania.mccarthy@jacobs.com

Katherine Appleby

Katherine Appleby
B.E.S., E.P., QPRA
Katherine.appleby@jacobs.com

November 27, 2020
Subject: Addendum #1 to report entitled Baker Street Redevelopment Pre-submission Form and Modified Generic Risk Assessment for 55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario, Revision 1, dated October 20, 2020 (RA1896-20

Attachment 1 – Errata List
Attachment 2 – Replacement Figures

Copies to:
Ed Taves, Jacobs
Prasoon Adhikari, City of Guelph

Attachment 1 – Errata List

Attachment 1: Errata to Risk Assessment for Baker Street Redevelopment, Guelph

This attachment is meant to accompany the document entitled **Baker Street Redevelopment Pre-submission Form and Modified Generic Risk Assessment for 55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario, Revision 1** dated October 20, 2020.

Table 1-1 presents the list of figures that require replacement and the reference to each figure location in the above noted document. All changes have been made so the RA Property boundary matches the legal survey (provided in Attachment A of the PSF/MGRA submission).

Table 1-1. Summary of Figure Changes

Errata #	**Figure Name**		**Location**
E-1	D1-1	Water Wells	Attachment D1
E-2	2-1	Site Location	Attachment D3
	2-2a	Site Plan and Historical Buildings	
	2-2b	Site Plan and Known Utilities	
	2-3	Soil pH results	
	3-1	Regional Topography	
	3-2	Source Water Protection Areas	
	4-1a	Potentially Contaminating Activities - Onsite	
	4-1b	Potentially Contaminating Activities - OffSite	
	4-2	APECs and Sampling Locations	
	6-1	Cross Section Locations	
	6-2a	Groundwater Contours - September 2019	
	6-2b	Groundwater Elevations - December 2019	
	6-2c	Groundwater Elevations - March 2020	
	6-4	Soil Results - ORPs: EC, SAR, and Cyanide	
	6-5	Soil Results - Metals and Select ORPs: Metals, Hydride-Forming Metals, Hg, MeHg, and CrVI	
	6-6	Soil Results - BTEX	
	6-7	Soil Results - Petroleum Hydrocarbons	
	6-8	Soil Results - Polycyclic Aromatic Hydrocarbons	
	6-9	Soil Results - Volatile Organic Compounds	
	6-10	Soil Results - Acid/Base/Neutral Compounds	
	6-11	Soil Results - Polychlorinated Biphenyls	
	6-12	Soil Results - Dioxins/Furans	
	6-13	Groundwater Results - Sodium and Select ORPs: Chloride and Cyanide	

Table 1-1. Summary of Figure Changes		
Errata #	**Figure Name**	**Location**
	6-14 Groundwater Results - Metals and Select ORPs: Metals, Hydride-Forming Metals, Hg, and CrVI 6-15 Groundwater Results - BTEX 6-16 Groundwater Results - Petroleum Hydrocarbons 6-17 Groundwater Results - Polycyclic Aromatic Hydrocarbons 6-18 Groundwater Results - Volatile Organic Compounds 6-19 Groundwater Results - Acid/Base/Neutral Compounds	
E-3	H-1 Distance to Water Body H-2 Grain Size Sampling Points H-3a Groundwater Contours - September 2019 H-3b Groundwater Elevations - December 2019 H-3c Groundwater Elevations - March 2020	Attachment H

Attachment 2 – Replacement Figures

Attachment D1 Figures

N

0 50 100 150 200
Meters

🟥 Site Boundary
▭ Site Boundary - 500m Buffer

Ontario Water Well Records Near Project Site
- ● Water Supply Well
- ● Recharge Well
- ● Dewatering Well, Not Used
- ● Purpose not available
- ● Monitoring Well or Test Hole

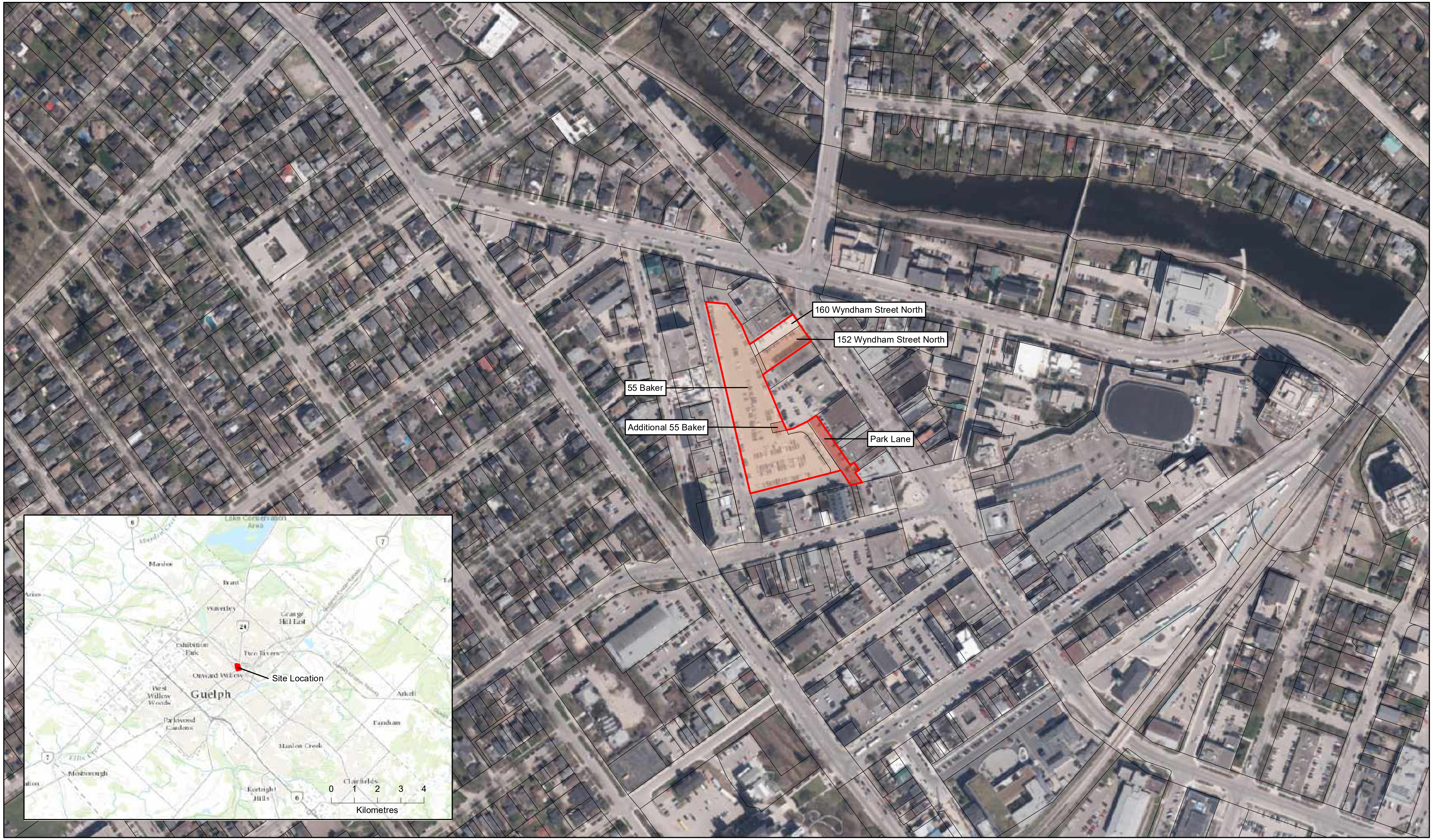
Notes:
1. Aerial Imagery: ESRI World Imagery 2020. Imagery Date: May 2019.
2. Ontario Water Well Records obtained from: https://www.ontario.ca/data/well-records

Figure D1-1
Ontario Water Well Records Near Project Site
Phase One Environmental Site Assessment Summary
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 11/25/2020

Jacobs

\\DC1VS01\GISPROJ\G\GUELPHCITYOF\55BAKERSTREET\MAPFILES\PSF\JULY2020\D1_1_WATERWELLS.MXD SCYR 11/25/2020 11:40:36 AM

Attachment D3 Figures



🟥 Site Boundary

☐ Property Boundary

Notes:
1. Aerial Imagery: ESRI World Imagery 2019. Imagery Date May 6, 2019.
2. Inset Basemap: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
3. Property Boundaries: City of Guelph.

Figure 2-1
Site Location
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street North and Park Lane, Guelph, Ontario
Date Exported: 11/25/2020

Jacobs

\\DC1VS01\GISPROJ\G\GUELPHCITYOF\55BAKERSTREET\MAPFILES\PHASEII\MAY2020_UPDATE\SITELOCATION.MXD SCYR 11/25/2020 2:34:20 PM

Sample Location (Current)
- ◒ Borehole
- ◕ Monitoring Well

Sample Location (Historical)
- ◒ Borehole
- ◕ Monitoring Well
- ⊙ Soil Sample

- 🟥 Site Boundary
- ☐ Property Boundary
- ▨ Historical Building
- ▨ Historical Transformer

Notes:
1. Historical sample locations and site boundaries are approximate. Current sample locations have been surveyed.

BH - Borehole
MW - Monitoring Well

Figure 2-2a
Site Plan and Historical Buildings
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street North and Park Lane, Guelph, Ontario
Date Exported: 11/25/2020

Jacobs

\\DC1VS01\GISPROJ\G\GUELPHCITYOF\55BAKERSTREET\MAPFILES\PHASEII\MAY2020_UPDATE\SITEPLAN_HISTORICALBUILDINGS.MXD SBEGG1 11/25/2020 8:35:55 AM

N

0 5 10 15 20

Metres

Sample Location (Current)

◓ Borehole

◕ Monitoring Well

Gas Meter

■ Catch Basin

○ Man Hole

✱ Light

Storm Sewer

Sanitary Sewer

Water Line

Gas Line

Overhead Hydro

Underground Hydro

🟥 Site Boundary

☐ Property Boundary

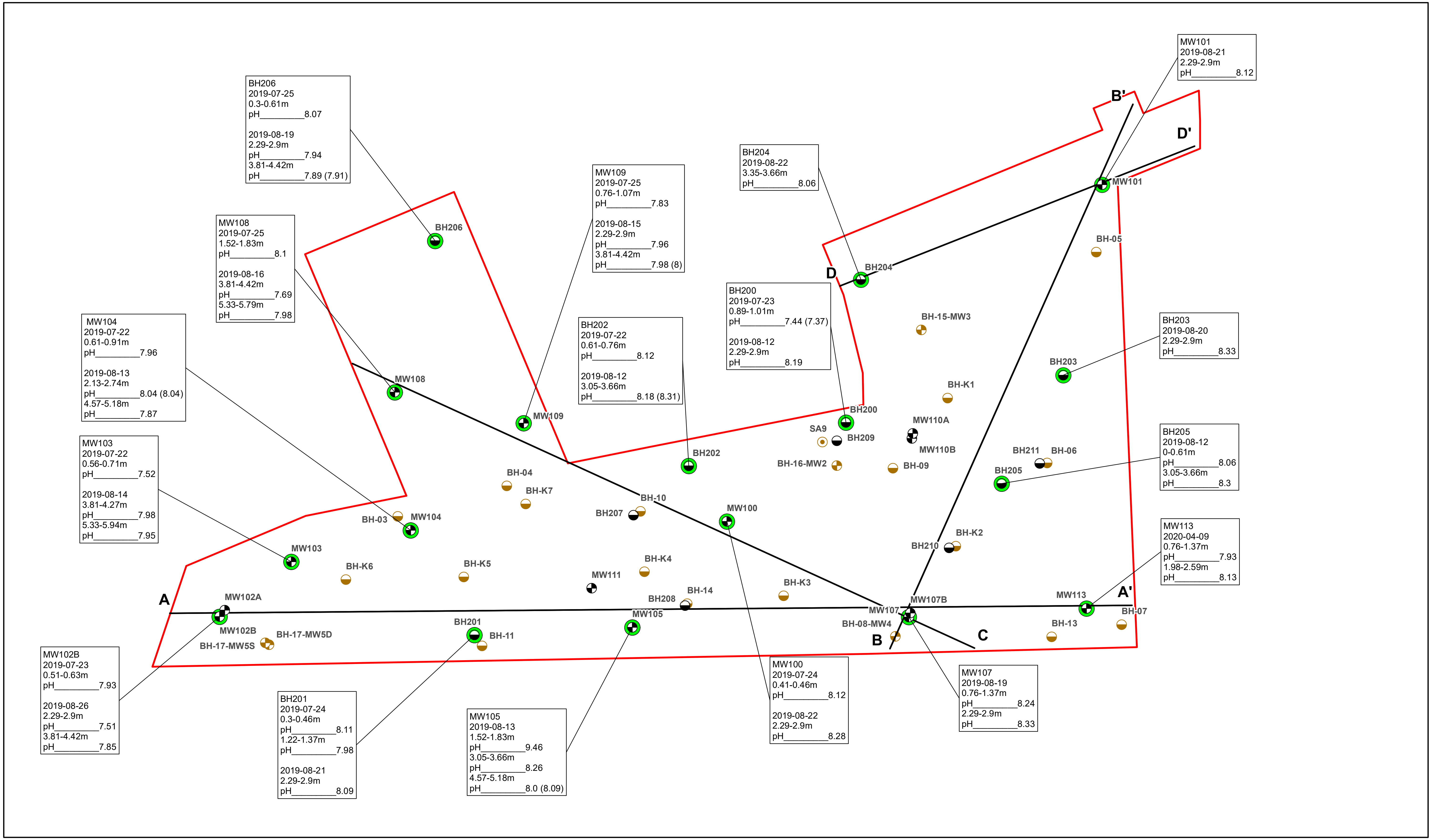
Notes:
1. Historical sample locations and site boundaries are approximate. Current sample locations have been surveyed.

BH - Borehole
MW - Monitoring Well

Figure 2-2b
Site Plan and Known Utilities
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street North and Park Lane, Guelph, Ontario
Date Exported: 11/25/2020

Jacobs

\\DC1VS01\GISPROJ\G\GUELPHCITYOF\55BAKERSTREET\MAPFILES\PHASEII\MAY2020_UPDATE\SITEPLAN_UTILITIES.MXD SBEGG1 11/25/2020 8:37:25 AM



MW101
2019-08-21
2.29-2.9m
pH________8.12

BH206
2019-07-25
0.3-0.61m
pH________8.07

2019-08-19
2.29-2.9m
pH________7.94
3.81-4.42m
pH________7.89 (7.91)

MW109
2019-07-25
0.76-1.07m
pH________7.83

2019-08-15
2.29-2.9m
pH________7.96
3.81-4.42m
pH________7.98 (8)

BH204
2019-08-22
3.35-3.66m
pH________8.06

MW108
2019-07-25
1.52-1.83m
pH________8.1

2019-08-16
3.81-4.42m
pH________7.69
5.33-5.79m
pH________7.98

BH200
2019-07-23
0.89-1.01m
pH________7.44 (7.37)

2019-08-12
2.29-2.9m
pH________8.19

BH203
2019-08-20
2.29-2.9m
pH________8.33

MW104
2019-07-22
0.61-0.91m
pH________7.96

2019-08-13
2.13-2.74m
pH________8.04 (8.04)
4.57-5.18m
pH________7.87

BH202
2019-07-22
0.61-0.76m
pH________8.12

2019-08-12
3.05-3.66m
pH________8.18 (8.31)

BH205
2019-08-12
0-0.61m
pH________8.06
3.05-3.66m
pH________8.3

MW103
2019-07-22
0.56-0.71m
pH________7.52

2019-08-14
3.81-4.27m
pH________7.98
5.33-5.94m
pH________7.95

MW113
2020-04-09
0.76-1.37m
pH________7.93
1.98-2.59m
pH________8.13

MW102B
2019-07-23
0.51-0.63m
pH________7.93

2019-08-26
2.29-2.9m
pH________7.51
3.81-4.42m
pH________7.85

BH201
2019-07-24
0.3-0.46m
pH________8.11
1.22-1.37m
pH________7.98

2019-08-21
2.29-2.9m
pH________8.09

MW105
2019-08-13
1.52-1.83m
pH________9.46
3.05-3.66m
pH________8.26
4.57-5.18m
pH________8.0 (8.09)

MW100
2019-07-24
0.41-0.46m
pH________8.12

2019-08-22
2.29-2.9m
pH________8.28

MW107
2019-08-19
0.76-1.37m
pH________8.24
2.29-2.9m
pH________8.33

N

0 5 10 15
Metres

Sample Location (Current)
- ◒ Borehole
- ◍ Monitoring Well

Sample Location (Historical)
- ◒ Borehole
- ◍ Monitoring Well
- ⊙ Soil Sample

- 🟢 Location without Exceedance
- — Cross-section Location
- 🟥 Site Boundary

Notes:
1. Location is shown as an exceedance if: Sample Depth <1.5m and pH >9
or Sample Depth >1.5m and pH >11

2. Results in ( ) indicate field duplicates.

Figure 2-3
Soil pH Results
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 10/19/2020

Jacobs

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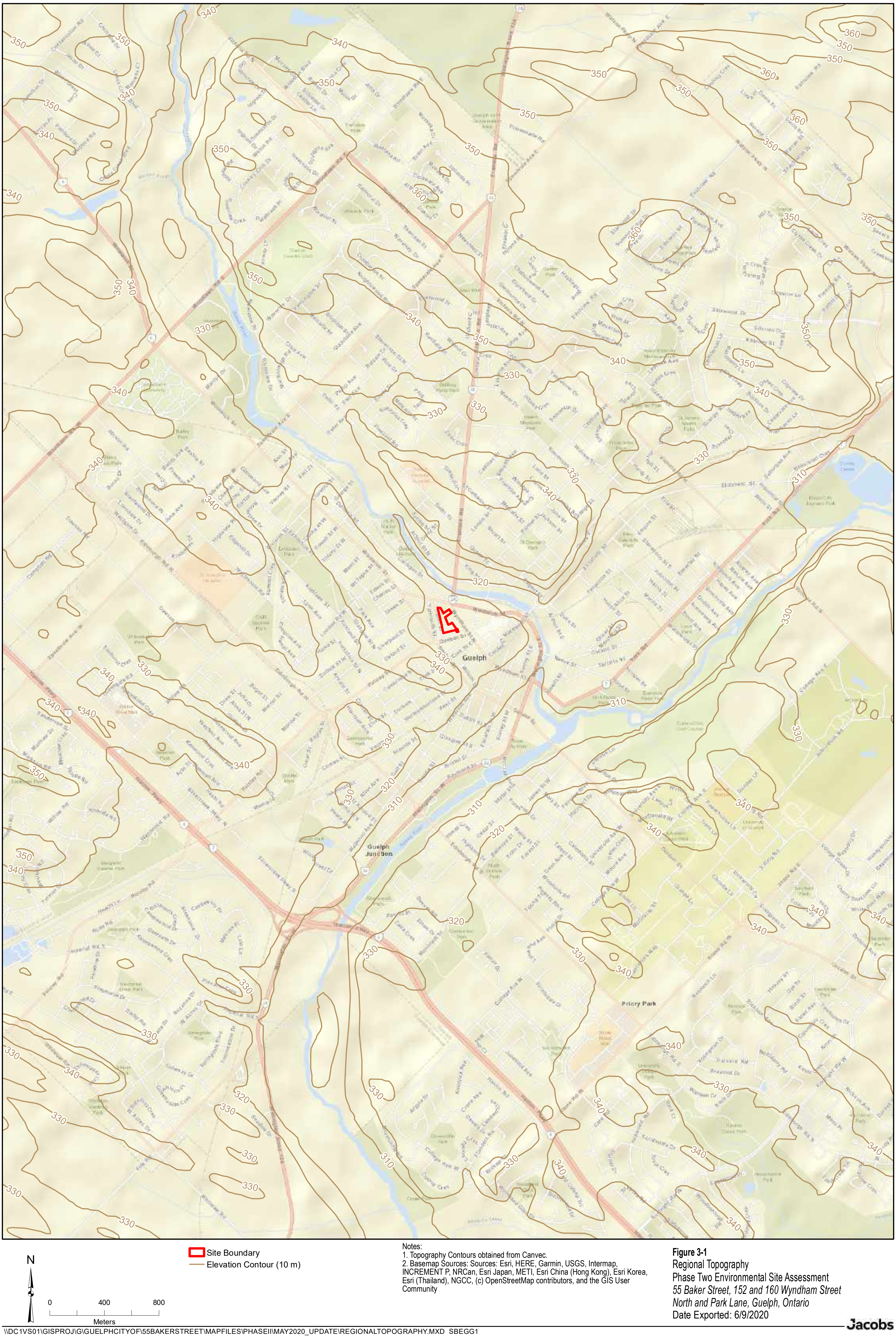

Notes:
1. Topography Contours obtained from Canvec.
2. Basemap Sources: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Figure 3-1
Regional Topography
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 6/9/2020

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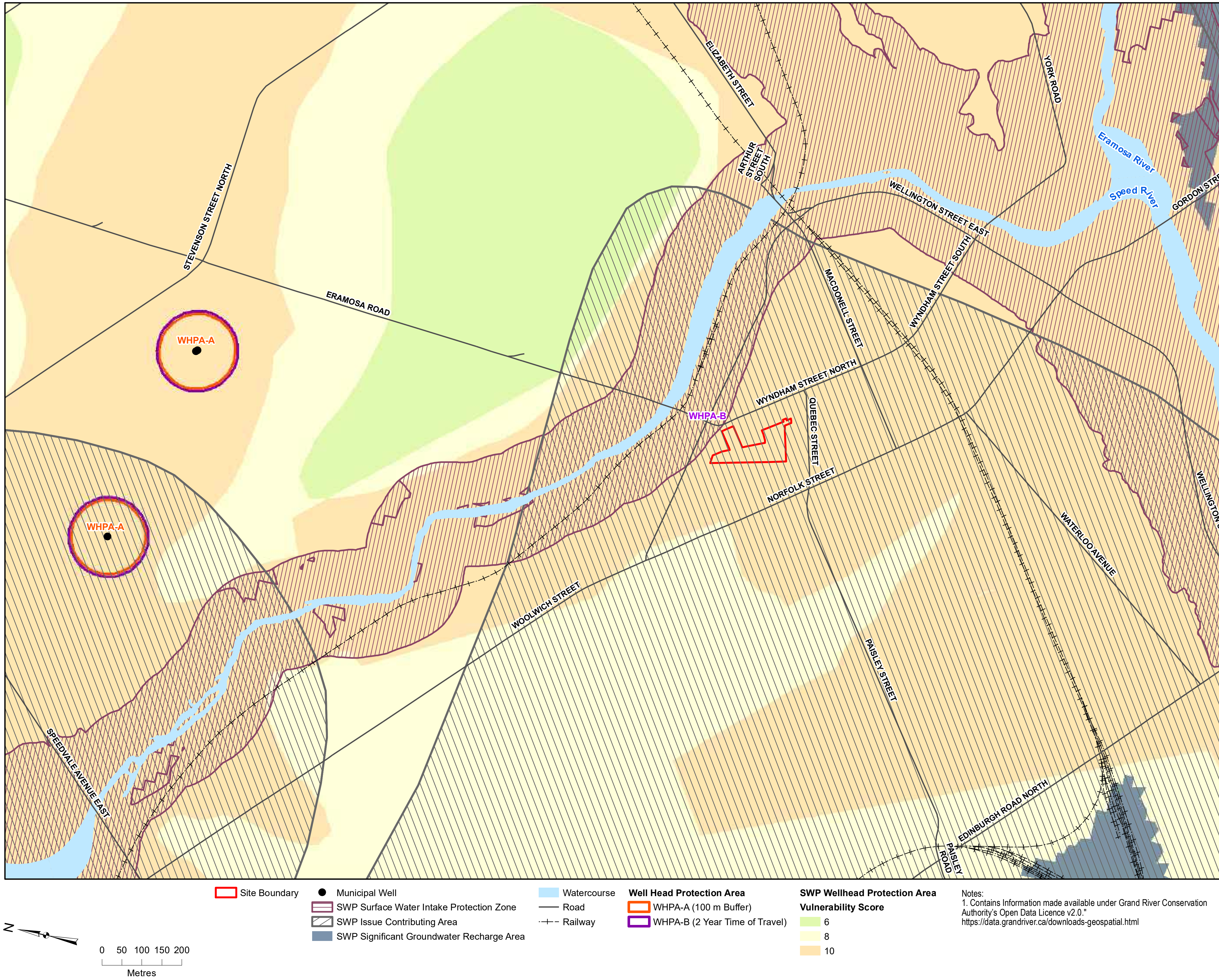

Notes:
1. Contains Information made available under Grand River Conservation Authority's Open Data Licence v2.0."
https://data.grandriver.ca/downloads-geospatial.html

Figure 3-2
Source Water Protection Areas
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario
Date Exported: 7/6/2020

Jacobs

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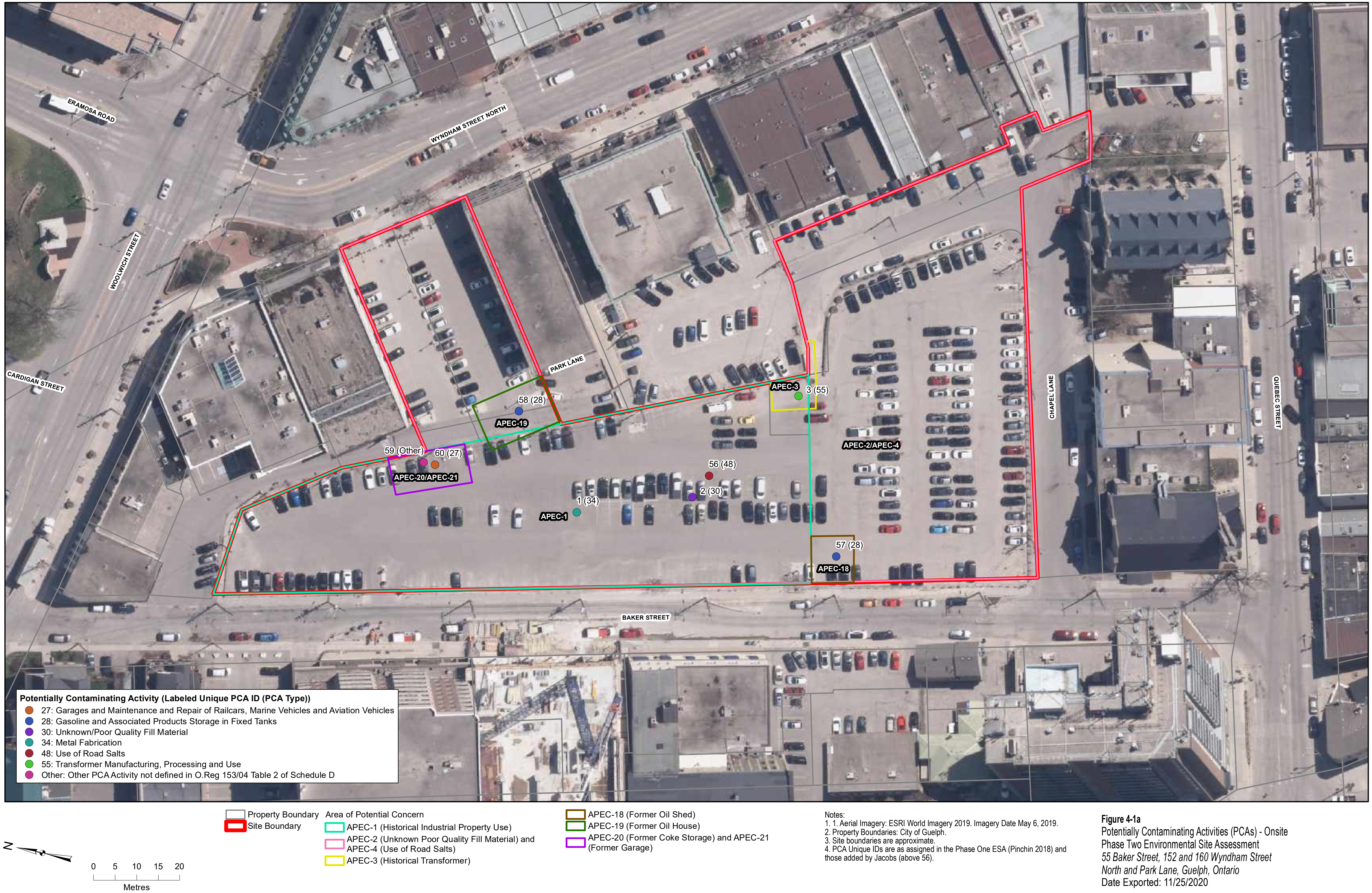

Potentially Contaminating Activity (Labeled Unique PCA ID (PCA Type))

- ● 27: Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles
- ● 28: Gasoline and Associated Products Storage in Fixed Tanks
- ● 30: Unknown/Poor Quality Fill Material
- ● 34: Metal Fabrication
- ● 48: Use of Road Salts
- ● 55: Transformer Manufacturing, Processing and Use
- ● Other: Other PCA Activity not defined in O.Reg 153/04 Table 2 of Schedule D

☐ Property Boundary
🟥 Site Boundary

Area of Potential Concern
☐ APEC-1 (Historical Industrial Property Use)
☐ APEC-2 (Unknown Poor Quality Fill Material) and APEC-4 (Use of Road Salts)
☐ APEC-3 (Historical Transformer)
☐ APEC-18 (Former Oil Shed)
☐ APEC-19 (Former Oil House)
☐ APEC-20 (Former Coke Storage) and APEC-21 (Former Garage)

Notes:
1. 1. Aerial Imagery: ESRI World Imagery 2019. Imagery Date May 6, 2019.
2. Property Boundaries: City of Guelph.
3. Site boundaries are approximate.
4. PCA Unique IDs are as assigned in the Phase One ESA (Pinchin 2018) and those added by Jacobs (above 56).

Figure 4-1a
Potentially Contaminating Activities (PCAs) - Onsite
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 11/25/2020

Jacobs

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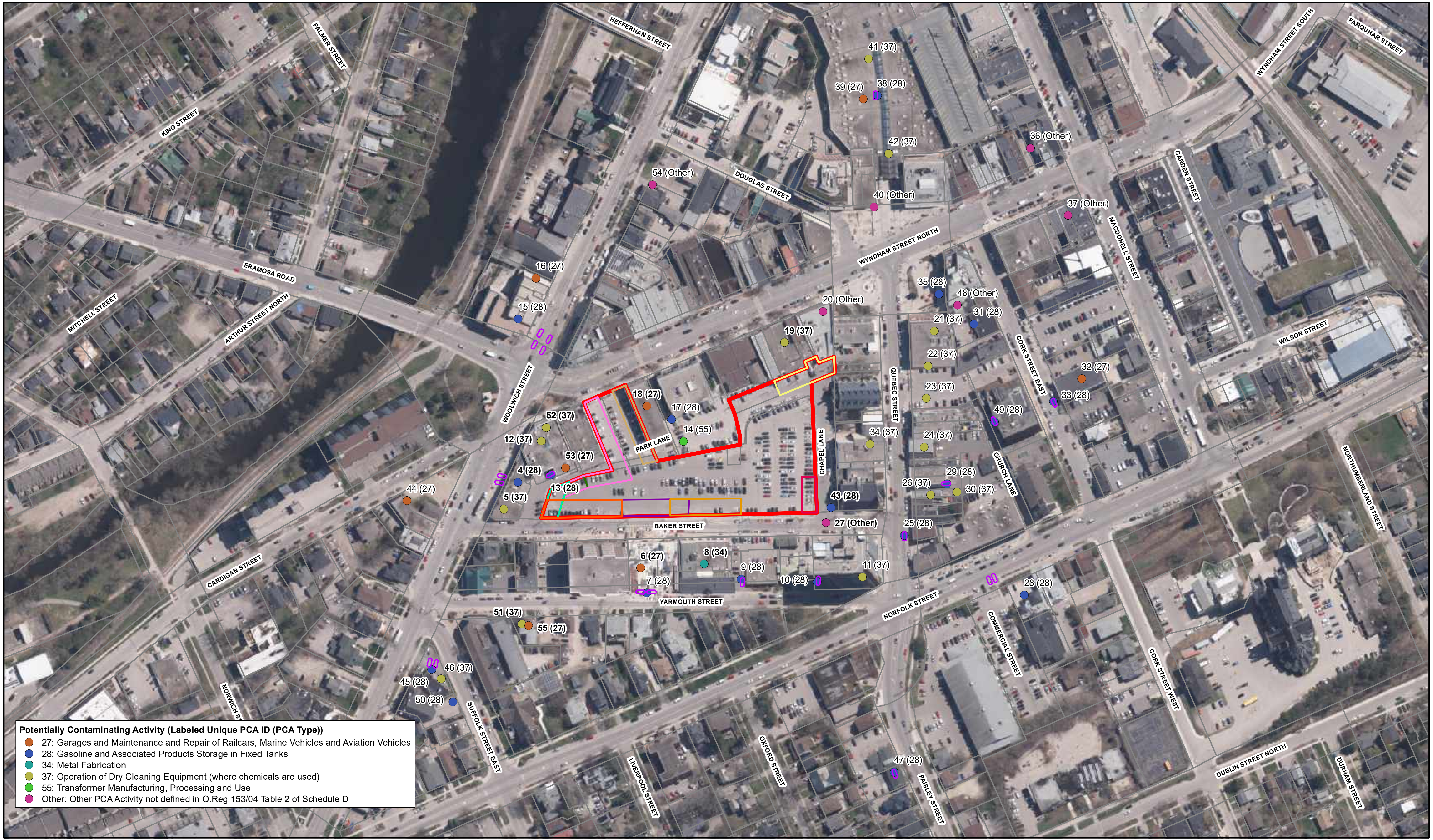


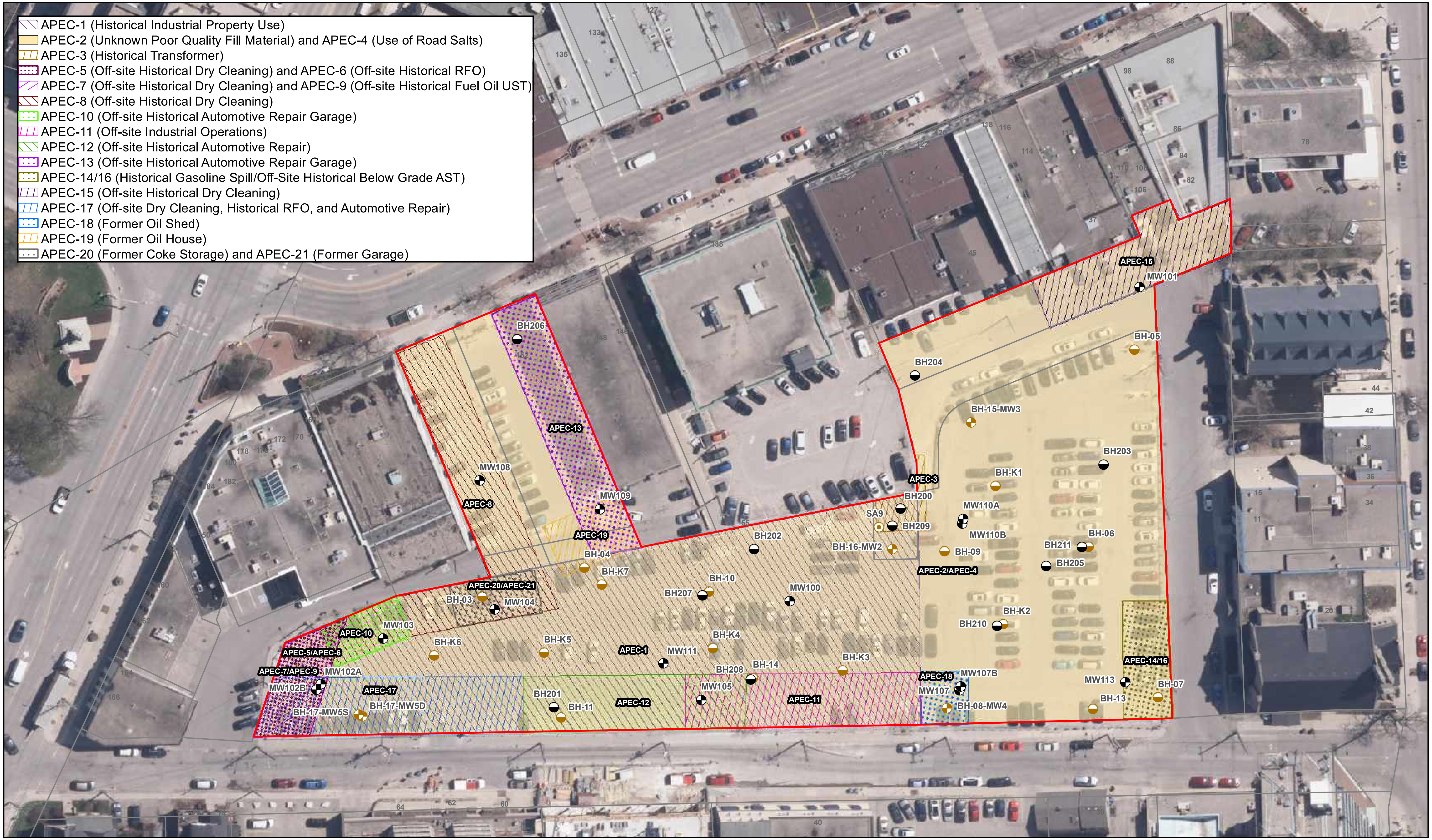
Potentially Contaminating Activity (Labeled Unique PCA ID (PCA Type))
- ● 27: Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles
- ● 28: Gasoline and Associated Products Storage in Fixed Tanks
- ● 34: Metal Fabrication
- ● 37: Operation of Dry Cleaning Equipment (where chemicals are used)
- ● 55: Transformer Manufacturing, Processing and Use
- ● Other: Other PCA Activity not defined in O.Reg 153/04 Table 2 of Schedule D

- ○ Underground Storage Tank
- ▭ Property Boundary
- ▭ Site Boundary

Area of Potential Concern
- ▭ APEC-5 (Off-site Historical Dry Cleaning) and APEC-6 (Off-site Historical RFO)
- ▭ APEC-7 (Off-site Historical Dry Cleaning) and APEC-9 (Off-site Historical Fuel Oil UST)
- ▭ APEC-8 (Off-site Historical Dry Cleaning)
- ▭ APEC-10 (Off-site Historical Automotive Repair
- ▭ APEC-11 (Off-site Industrial Operations)
- ▭ APEC-12 (Off-site Historical Automotive
- ▭ APEC-13 (Off-site Historical Automotive Repair
- ▭ APEC-14/16 (Historical Gasoline Spill/Off-Site Historical Below Grade AST)
- ▭ APEC-15 (Off-site Historical Dry Cleaning)
- ▭ APEC-17 (Off-site Dry Cleaning, Historical RFO, and Automotive Repair)

Notes:
1. 1. Aerial Imagery: ESRI World Imagery 2019. Imagery Date May 6, 2019.
2. Property Boundaries: City of Guelph.
3. Site boundaries are approximate.
4. PCA Unique IDs are as assigned in the Phase One ESA (Pinchin 2018) and those added by Jacobs (above 56).
5. PCAs contributing to an APEC are bolded.

Figure 4-1b
Potentially Contaminating Activities (PCAs) - Offsite
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 11/25/2020



Sample Location (Current)
- ◒ Borehole
- ◉ Monitoring Well

Sample Location
- ◒ Borehole
- ◉ Monitoring Well
- ⊙ Soil Sample

🟥 Site Boundary
☐ Property Boundary

Notes:
1. 1. Aerial Imagery: ESRI World Imagery 2019. Imagery Date May 6, 2019.
2. Property Boundaries: City of Guelph.
3. Historical sample locations and site boundaries are approximate. Current sample locations have been surveyed.

BH - Borehole
MW - Monitoring Well

Figure 4-2
Areas of Potential Environmental Concern and Sampling Locations
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 11/25/2020

Jacobs

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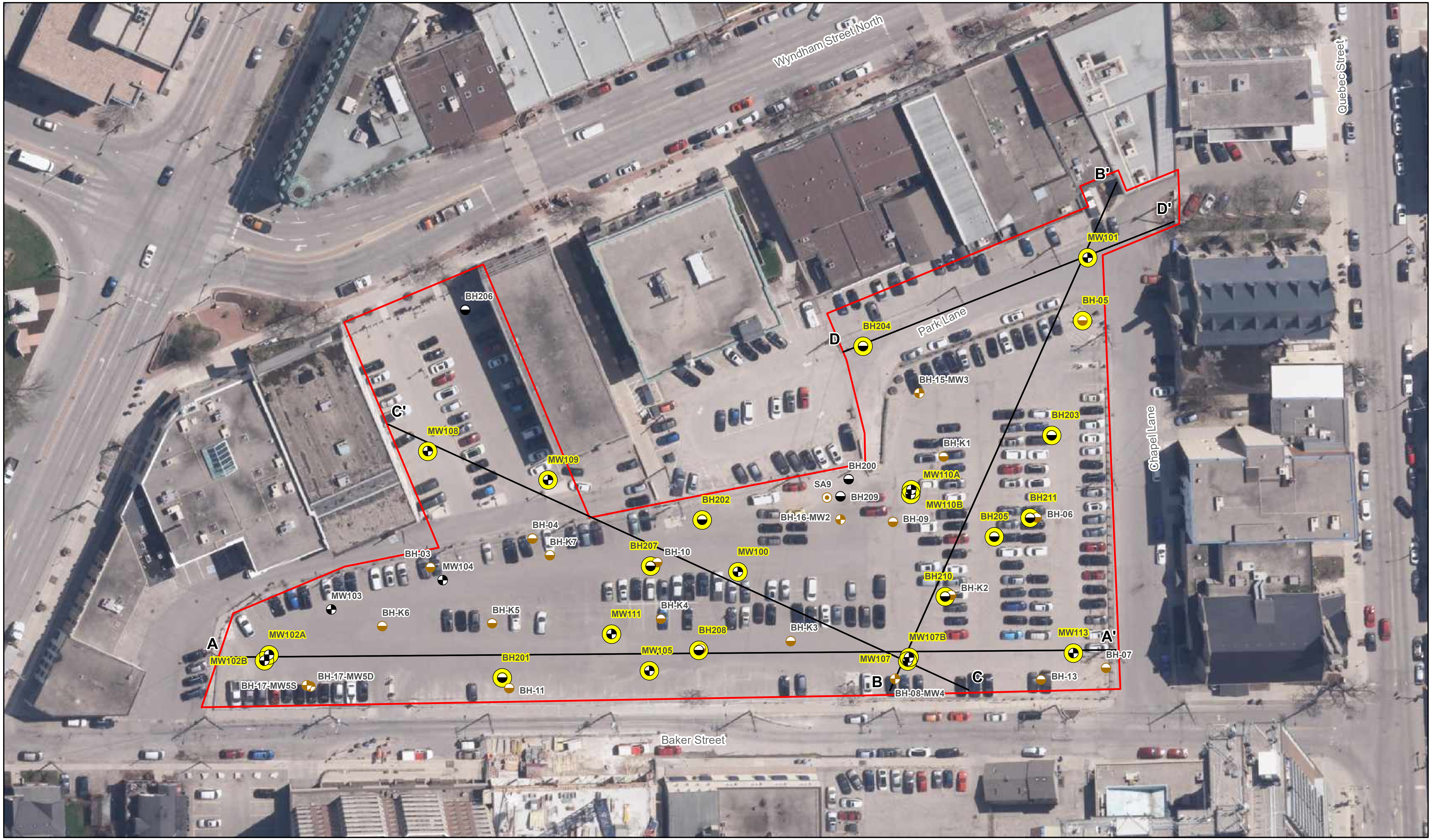

Sample Location (Current)
- ◒ Borehole
- ◕ Monitoring Well

Sample Location (Historical)
- ◒ Borehole
- ◕ Monitoring Well
- ◉ Soil Sample

● Location used in Cross-Section

— Cross-section Location

▭ Site Boundary

Notes:
1. Aerial Imagery: ESRI World Imagery 2019. Imagery Date May 6, 2019.
2. Historical sample locations and site boundaries are approximate. Current sample locations have been surveyed.

BH - Borehole
MW - Monitoring Well

Figure 6-1
Cross-section Locations
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 6/9/2020

Jacobs

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September 18, 2019 Groundwater Elevations (mASL)

- ● Monitoring Well - Water Table Elevation
- ● Shallow Monitoring Well - Perched Water Table Elevation
- Groundwater Contour (September 18, 2019)
- → Flow Direction
- ▭ Site Boundary

N

0 5 10 15 20

Metres

Notes:
1. Historical sample locations and site boundaries are approximate. Current sample locations have been surveyed.

BH - Borehole
MW - Monitoring Well
GW - Groundwater

Figure 6-2a
Groundwater Contours - September 2019
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 6/9/2020

Jacobs

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December 18, 2019 Groundwater Elevations (mASL)

- Shallow Monitoring Well - Perched Water Table Elevation
- Monitoring Well - Water Table Elevation
- Monitoring Well - Deep

Water Table Elevation Contour (masl) - December 18, 2019

Flow Direction

🟥 Site Boundary

Notes:
1. Historical sample locations and site boundaries are approximate. Current sample locations have been surveyed.

BH - Borehole
MW - Monitoring Well
GW - Groundwater

Figure 6-2b
Groundwater Contours - December 2019
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 6/9/2020

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Jacobs

N

0 5 10 15 20
Metres

April 15, 2020 Groundwater Elevations (mASL)
- Shallow Monitoring Well - Perched Water Table Elevation
- Monitoring Well - Water Table Elevation
- Monitoring Well - Deep

- Water Table Elevation Contour (masl) - April 15, 2020
- Flow Direction
- Site Boundary

Notes:
1. Historical sample locations and site boundaries are approximate. Current sample locations have been surveyed.

BH - Borehole
MW - Monitoring Well
GW - Groundwater

Figure 6-2c
Groundwater Contours - April 2020
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 6/9/2020

Jacobs

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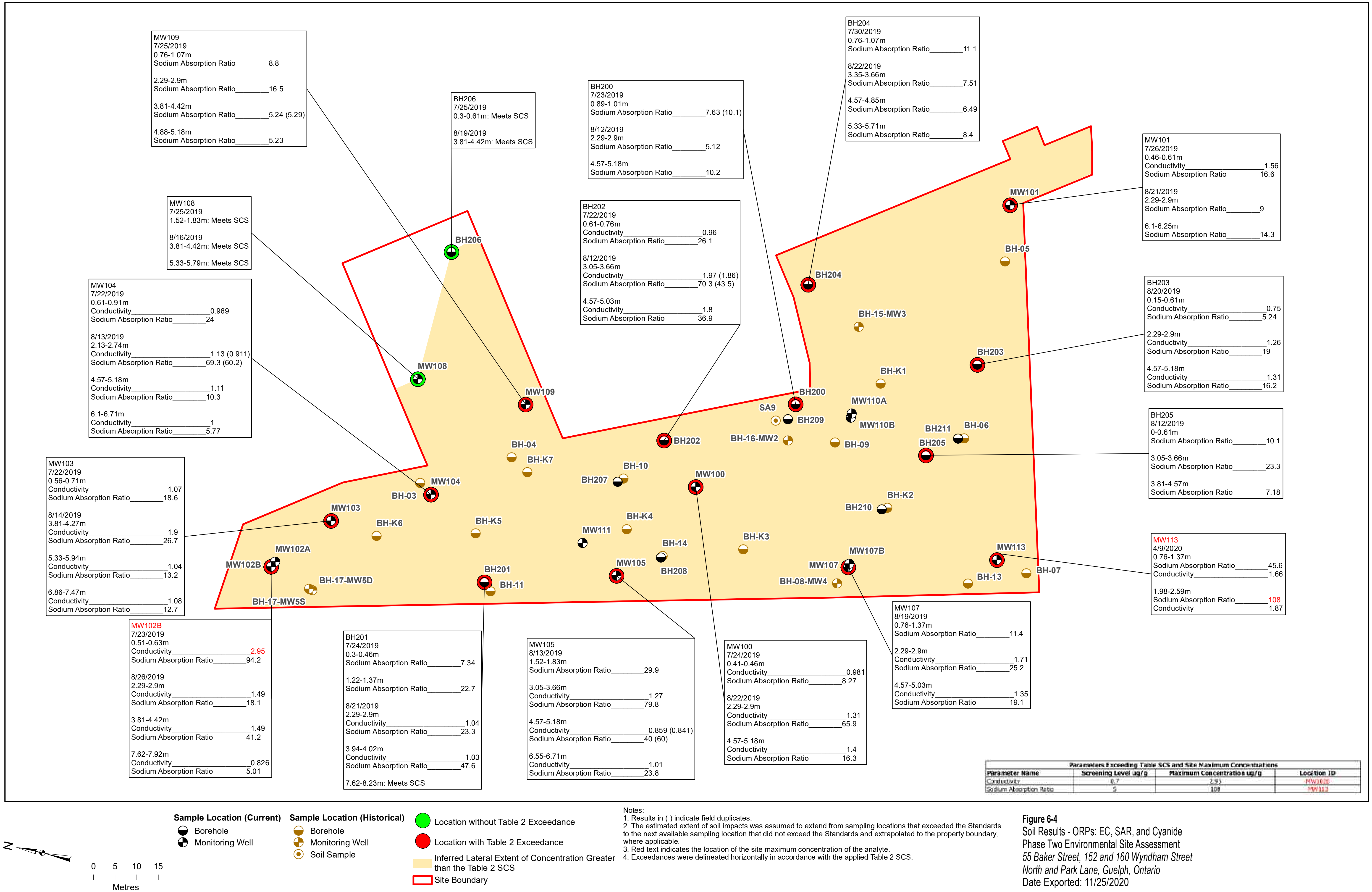

MW109
7/25/2019
0.76-1.07m
Sodium Absorption Ratio________8.8

2.29-2.9m
Sodium Absorption Ratio________16.5

3.81-4.42m
Sodium Absorption Ratio________5.24 (5.29)

4.88-5.18m
Sodium Absorption Ratio________5.23

BH206
7/25/2019
0.3-0.61m: Meets SCS

8/19/2019
3.81-4.42m: Meets SCS

BH200
7/23/2019
0.89-1.01m
Sodium Absorption Ratio________7.63 (10.1)

8/12/2019
2.29-2.9m
Sodium Absorption Ratio________5.12

4.57-5.18m
Sodium Absorption Ratio________10.2

BH204
7/30/2019
0.76-1.07m
Sodium Absorption Ratio________11.1

8/22/2019
3.35-3.66m
Sodium Absorption Ratio________7.51

4.57-4.85m
Sodium Absorption Ratio________6.49

5.33-5.71m
Sodium Absorption Ratio________8.4

MW101
7/26/2019
0.46-0.61m
Conductivity____________________1.56
Sodium Absorption Ratio________16.6

8/21/2019
2.29-2.9m
Sodium Absorption Ratio________9

6.1-6.25m
Sodium Absorption Ratio________14.3

MW108
7/25/2019
1.52-1.83m: Meets SCS

8/16/2019
3.81-4.42m: Meets SCS

5.33-5.79m: Meets SCS

BH202
7/22/2019
0.61-0.76m
Conductivity____________________0.96
Sodium Absorption Ratio________26.1

8/12/2019
3.05-3.66m
Conductivity____________________1.97 (1.86)
Sodium Absorption Ratio________70.3 (43.5)

4.57-5.03m
Conductivity____________________1.8
Sodium Absorption Ratio________36.9

MW104
7/22/2019
0.61-0.91m
Conductivity____________________0.969
Sodium Absorption Ratio________24

8/13/2019
2.13-2.74m
Conductivity____________________1.13 (0.911)
Sodium Absorption Ratio________69.3 (60.2)

4.57-5.18m
Conductivity____________________1.11
Sodium Absorption Ratio________10.3

6.1-6.71m
Conductivity____________________1
Sodium Absorption Ratio________5.77

BH203
8/20/2019
0.15-0.61m
Conductivity____________________0.75
Sodium Absorption Ratio________5.24

2.29-2.9m
Conductivity____________________1.26
Sodium Absorption Ratio________19

4.57-5.18m
Conductivity____________________1.31
Sodium Absorption Ratio________16.2

BH205
8/12/2019
0-0.61m
Sodium Absorption Ratio________10.1

3.05-3.66m
Sodium Absorption Ratio________23.3

3.81-4.57m
Sodium Absorption Ratio________7.18

MW103
7/22/2019
0.56-0.71m
Conductivity____________________1.07
Sodium Absorption Ratio________18.6

8/14/2019
3.81-4.27m
Conductivity____________________1.9
Sodium Absorption Ratio________26.7

5.33-5.94m
Conductivity____________________1.04
Sodium Absorption Ratio________13.2

6.86-7.47m
Conductivity____________________1.08
Sodium Absorption Ratio________12.7

MW113
4/9/2020
0.76-1.37m
Sodium Absorption Ratio________45.6
Conductivity____________________1.66

1.98-2.59m
Sodium Absorption Ratio________108
Conductivity____________________1.87

MW102B
7/23/2019
0.51-0.63m
Conductivity____________________2.95
Sodium Absorption Ratio________94.2

8/26/2019
2.29-2.9m
Conductivity____________________1.49
Sodium Absorption Ratio________18.1

3.81-4.42m
Conductivity____________________1.49
Sodium Absorption Ratio________41.2

7.62-7.92m
Conductivity____________________0.826
Sodium Absorption Ratio________5.01

BH201
7/24/2019
0.3-0.46m
Sodium Absorption Ratio________7.34

1.22-1.37m
Sodium Absorption Ratio________22.7

8/21/2019
2.29-2.9m
Conductivity____________________1.04
Sodium Absorption Ratio________23.3

3.94-4.02m
Conductivity____________________1.03
Sodium Absorption Ratio________47.6

7.62-8.23m: Meets SCS

MW105
8/13/2019
1.52-1.83m
Sodium Absorption Ratio________29.9

3.05-3.66m
Conductivity____________________1.27
Sodium Absorption Ratio________79.8

4.57-5.18m
Conductivity____________________0.859 (0.841)
Sodium Absorption Ratio________40 (60)

6.55-6.71m
Conductivity____________________1.01
Sodium Absorption Ratio________23.8

MW100
7/24/2019
0.41-0.46m
Conductivity____________________0.981
Sodium Absorption Ratio________8.27

8/22/2019
2.29-2.9m
Conductivity____________________1.31
Sodium Absorption Ratio________65.9

4.57-5.18m
Conductivity____________________1.4
Sodium Absorption Ratio________16.3

MW107
8/19/2019
0.76-1.37m
Sodium Absorption Ratio________11.4

2.29-2.9m
Conductivity____________________1.71
Sodium Absorption Ratio________25.2

4.57-5.03m
Conductivity____________________1.35
Sodium Absorption Ratio________19.1

Parameters Exceeding Table SCS and Site Maximum Concentrations			
Parameter Name	Screening Level ug/g	Maximum Concentration ug/g	Location ID
Conductivity	0.7	2.95	MW102B
Sodium Absorption Ratio	5	108	MW113

Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of soil impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.

Figure 6-4
Soil Results - ORPs: EC, SAR, and Cyanide
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 11/25/2020

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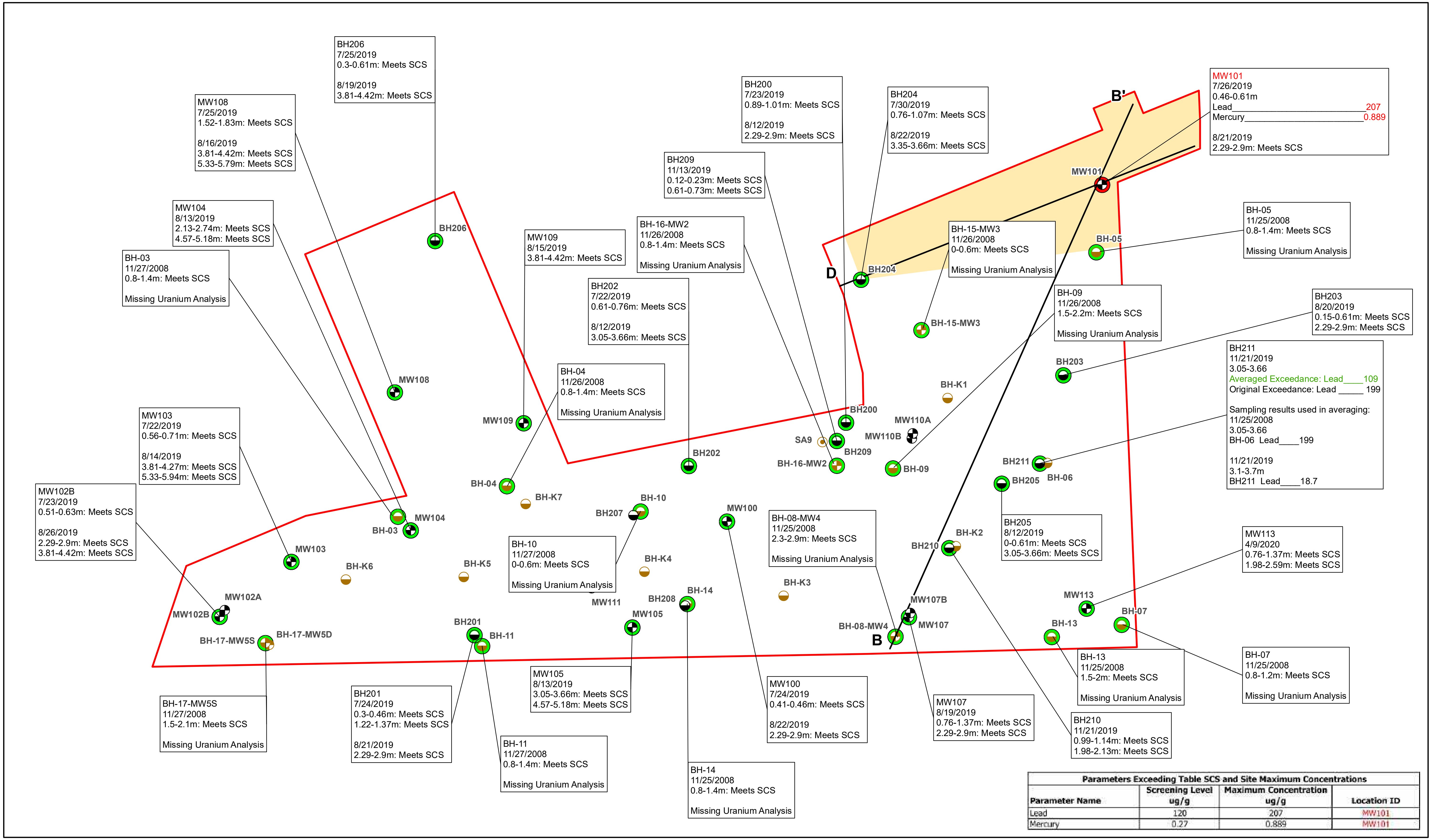
Jacobs



Parameters Exceeding Table SCS and Site Maximum Concentrations			
Parameter Name	Screening Level ug/g	Maximum Concentration ug/g	Location ID
Lead	120	207	MW101
Mercury	0.27	0.889	MW101

N

0 5 10 15
Metres

Sample Location (Current)
- ◒ Borehole
- ◕ Monitoring Well

Sample Location (Historical)
- ◒ Borehole
- ◕ Monitoring Well
- ◎ Soil Sample

- 🟢 Location without Table 2 Exceedance
- 🔴 Location with Table 2 Exceedance
- — Cross-section Location
- 🟨 Inferred Lateral Extent of Concentration Greater than the Table 2 SCS
- 🟥 Site Boundary

Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of soil impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.
5. Samples from 2008 were collected in accordance with O. Reg. 153/04, but are missing analysis of uranium, which was not regulated under the Regulation at the time of investigation. This data is considered valid for RSC purposes.

Figure 6-5
Soil Results - Metals and Select ORPs: Metals, Hydride-Forming Metals, Hg, MeHg, and CrVI
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 11/25/2020

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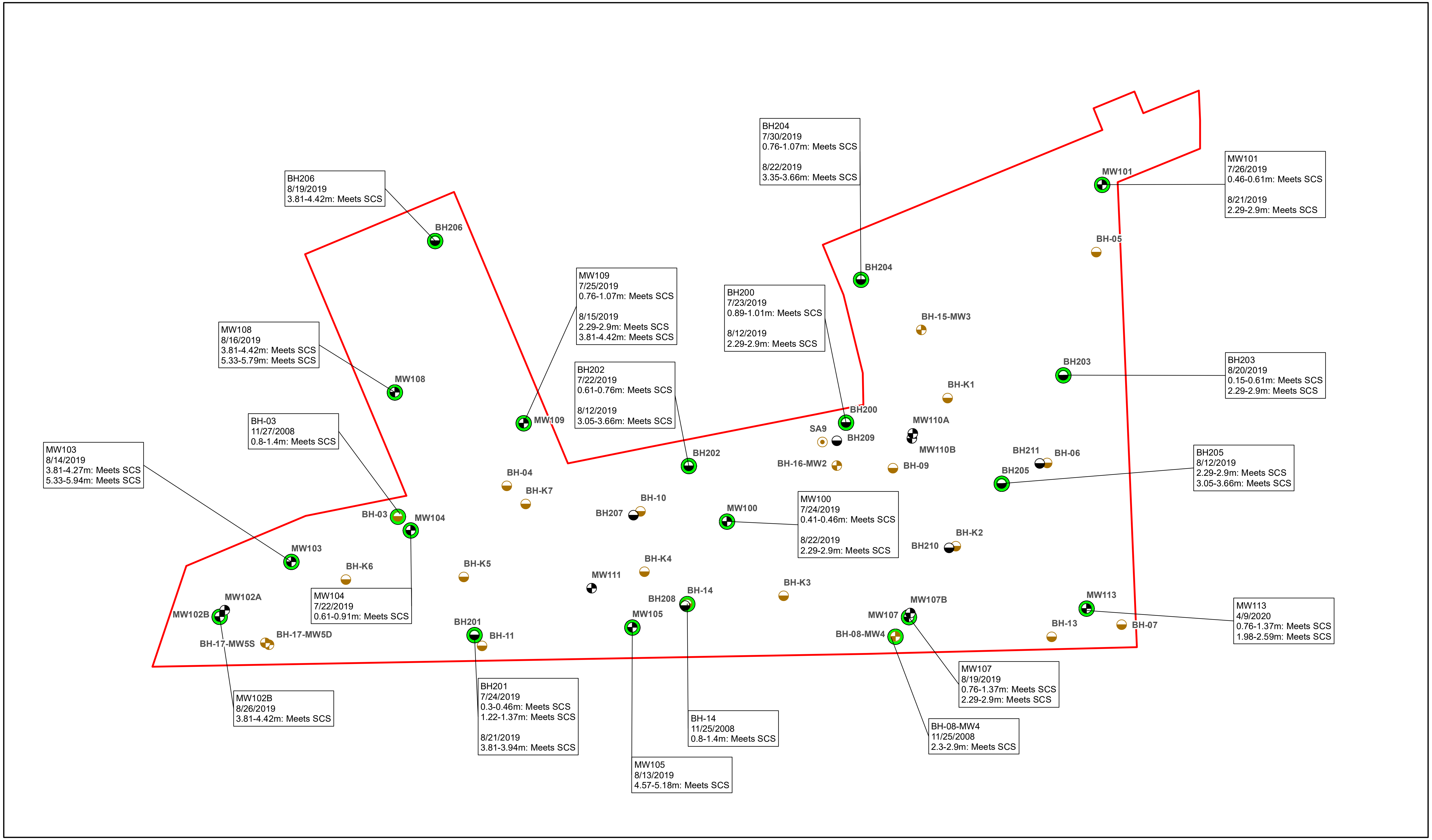

Sample Location (Current)
- ◒ Borehole
- ◕ Monitoring Well

Sample Location (Historical)
- ◒ Borehole
- ◕ Monitoring Well
- ⊙ Soil Sample

🟢 Location without Table 2 Exceedance

🟥 Site Boundary

N

0 5 10 15

Metres

Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of soil impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.

Figure 6-6
Soil Results - BTEX
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 11/25/2020

Jacobs

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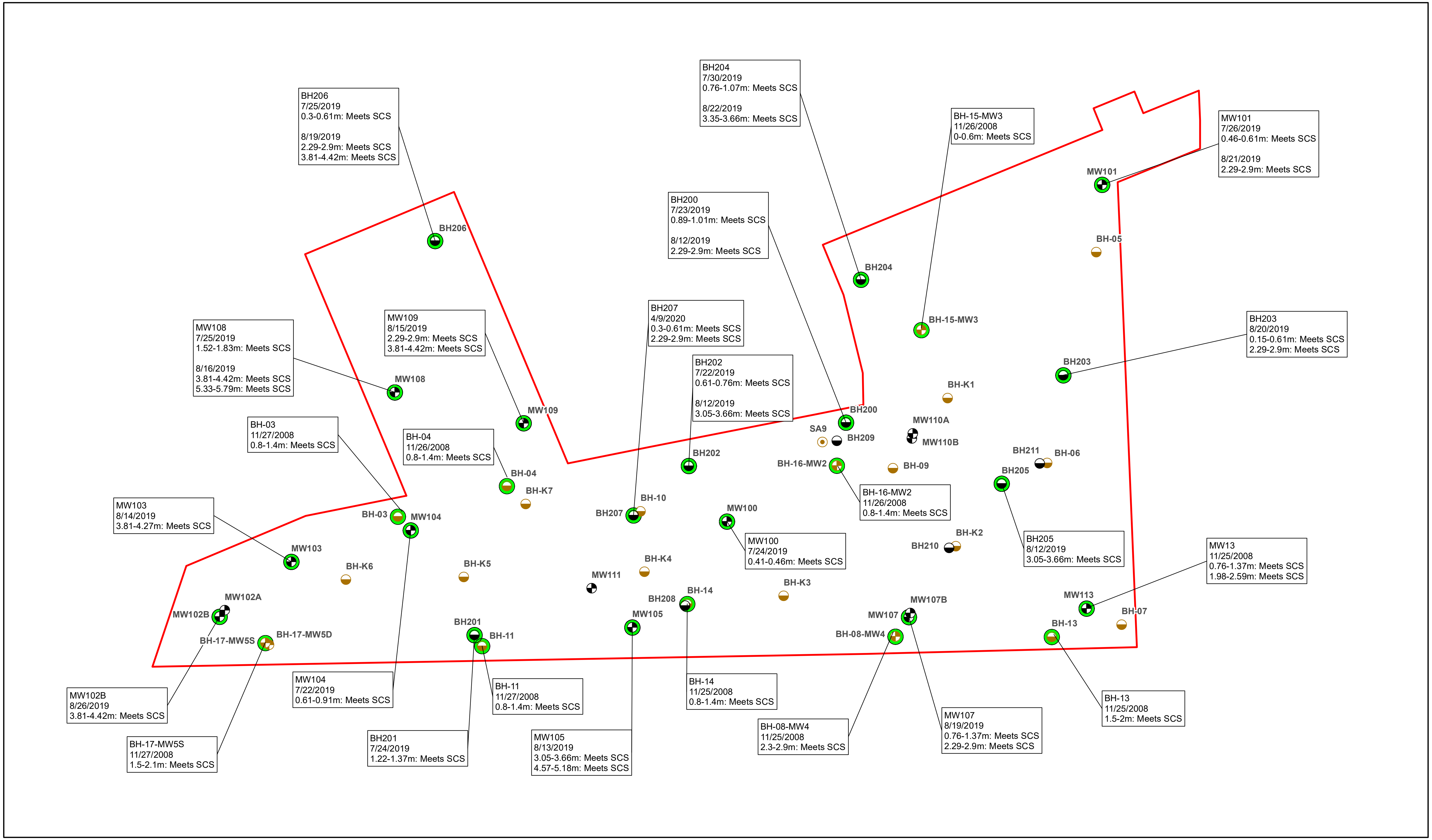

N

0 5 10 15

Metres

Sample Location (Current)
- ● Borehole
- ● Monitoring Well

Sample Location (Historical)
- ● Borehole
- ● Monitoring Well
- ○ Soil Sample

● Location without Table 2 Exceedance

□ Site Boundary

Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of soil impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.

Figure 6-7
Soil Results - Petroleum Hydrocarbons
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 11/25/2020

Jacobs

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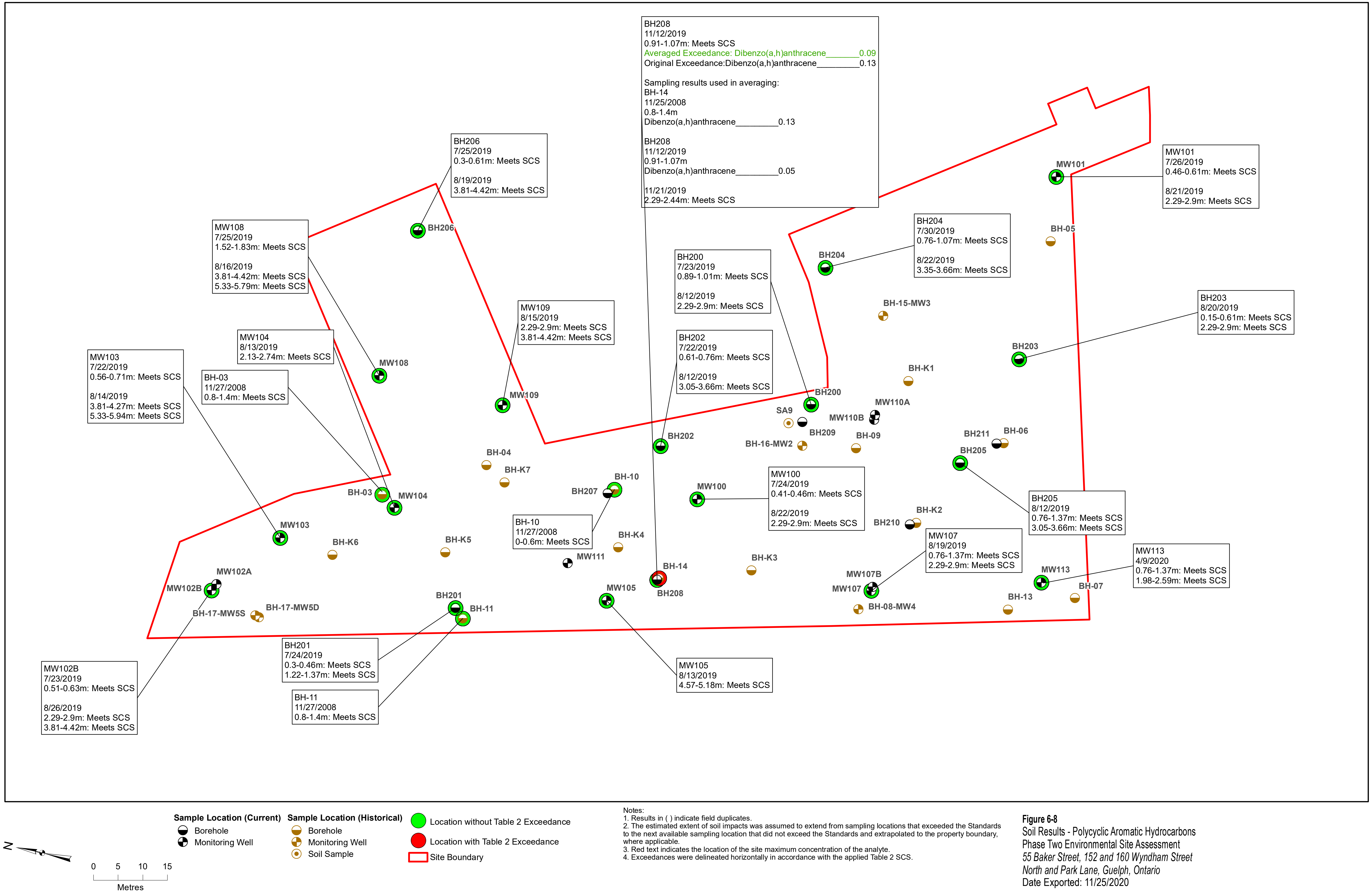


Sample Location (Current)
- Borehole
- Monitoring Well

Sample Location (Historical)
- Borehole
- Monitoring Well
- Soil Sample

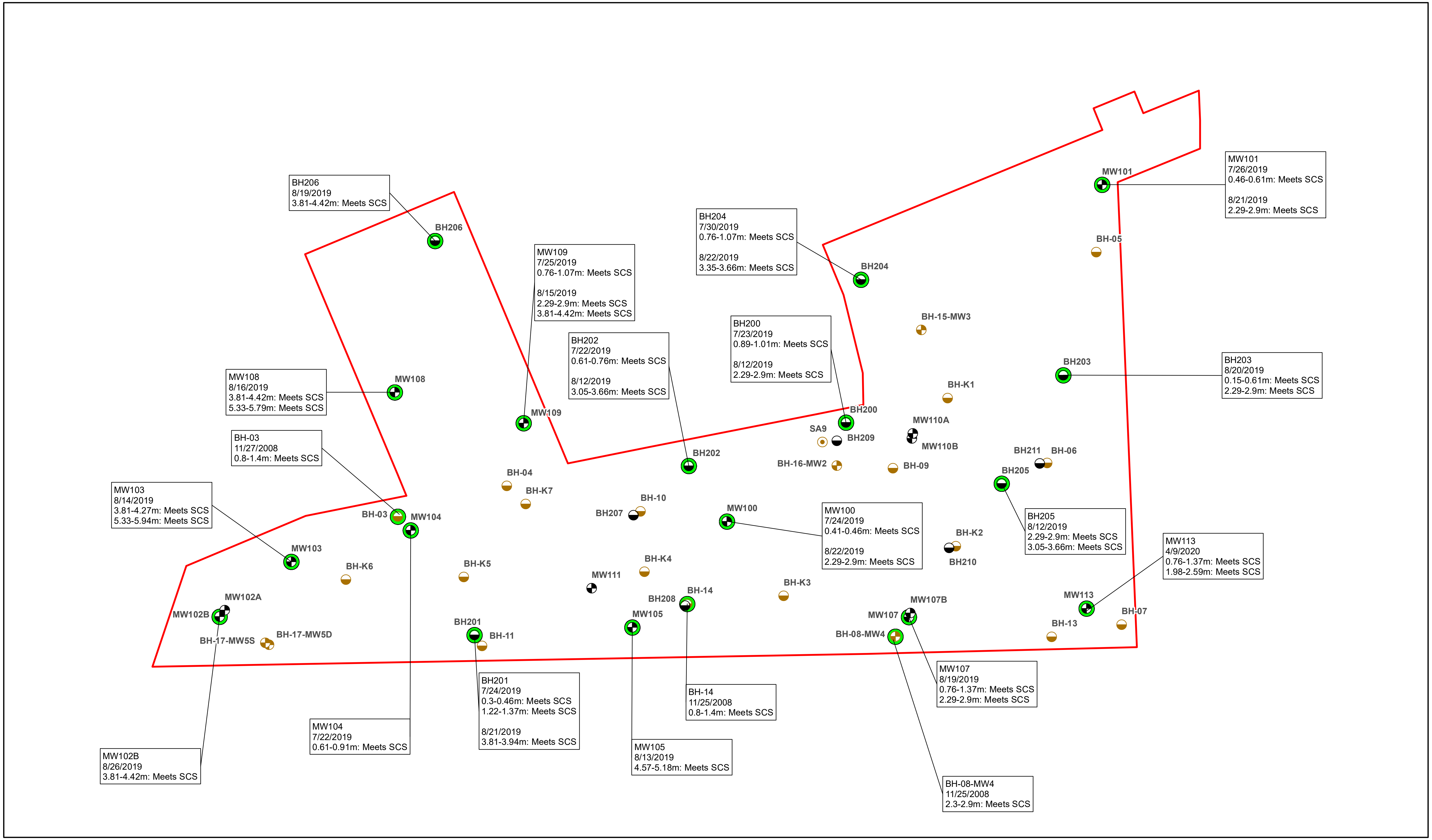
🟢 Location without Table 2 Exceedance
🔴 Location with Table 2 Exceedance
▭ Site Boundary

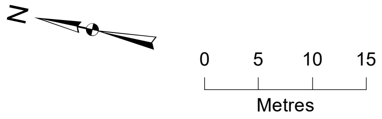
Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of soil impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.

Figure 6-8
Soil Results - Polycyclic Aromatic Hydrocarbons
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 11/25/2020

Jacobs

\\DC1VS01\GISPROJ\G\GUELPHCITYOF\55BAKERSTREET\MAPFILES\PHASEII\MAY2020_UPDATE\EXCEEDANCEFIGURES_DDP.MXD SBEGG1 11/25/2020 9:42:47 AM





Sample Location (Current)
- ◒ Borehole
- ⊕ Monitoring Well

Sample Location (Historical)
- ◒ Borehole
- ⊕ Monitoring Well
- ⊙ Soil Sample

- 🟢 Location without Table 2 Exceedance
- 🟥 Site Boundary

Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of soil impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.

Figure 6-9
Soil Results - Volatile Organic Compounds
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 11/25/2020

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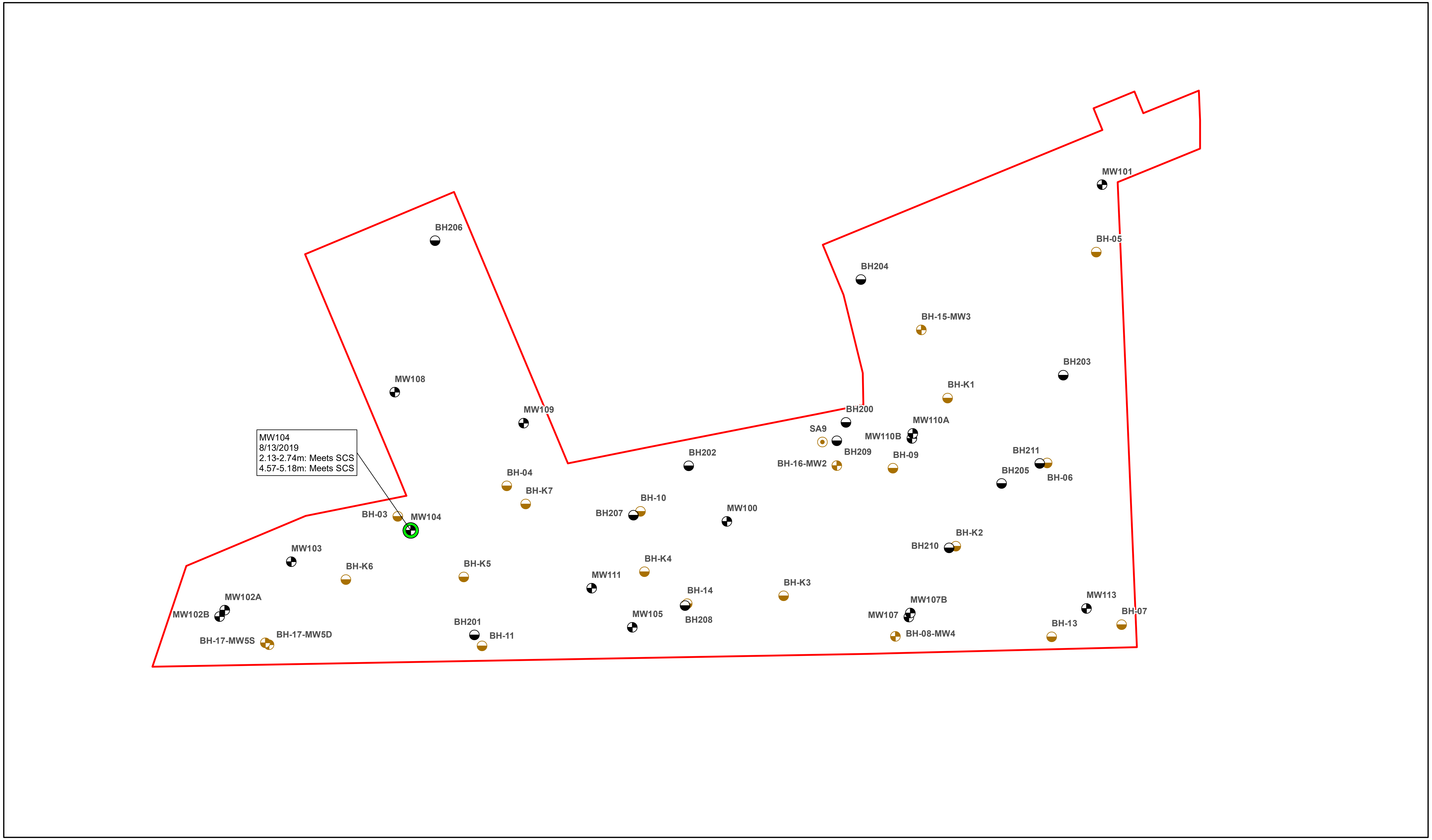

MW104
8/13/2019
2.13-2.74m: Meets SCS
4.57-5.18m: Meets SCS

N

0 5 10 15
Metres

Sample Location (Current)
- ◒ Borehole
- ◕ Monitoring Well

Sample Location (Historical)
- ◒ Borehole
- ◕ Monitoring Well
- ◉ Soil Sample

- 🟢 Location without Table 2 Exceedance
- ▭ Site Boundary

Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of soil impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.

Figure 6-10
Soil Results - Acid/Base/Neutral Compounds
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 11/25/2020

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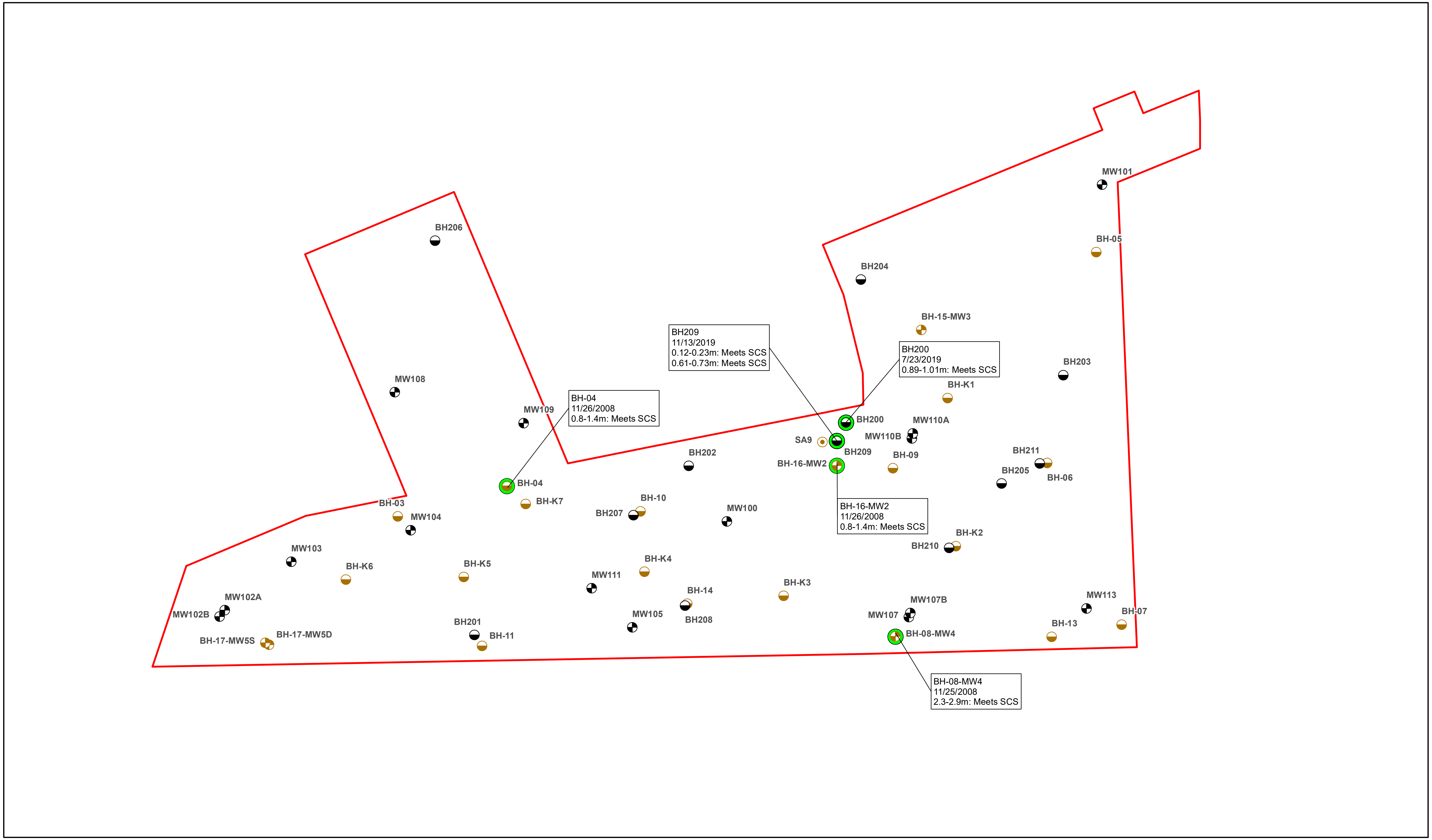

BH209
11/13/2019
0.12-0.23m: Meets SCS
0.61-0.73m: Meets SCS

BH200
7/23/2019
0.89-1.01m: Meets SCS

BH-04
11/26/2008
0.8-1.4m: Meets SCS

BH-16-MW2
11/26/2008
0.8-1.4m: Meets SCS

BH-08-MW4
11/25/2008
2.3-2.9m: Meets SCS

Sample Location (Current)
◒ Borehole
⊕ Monitoring Well

Sample Location (Historical)
◒ Borehole
⊕ Monitoring Well
⊙ Soil Sample

● Location without Table 2 Exceedance
▭ Site Boundary

Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of soil impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.

Figure 6-11
Soil Results - Polychlorinated Biphenyls
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 11/25/2020

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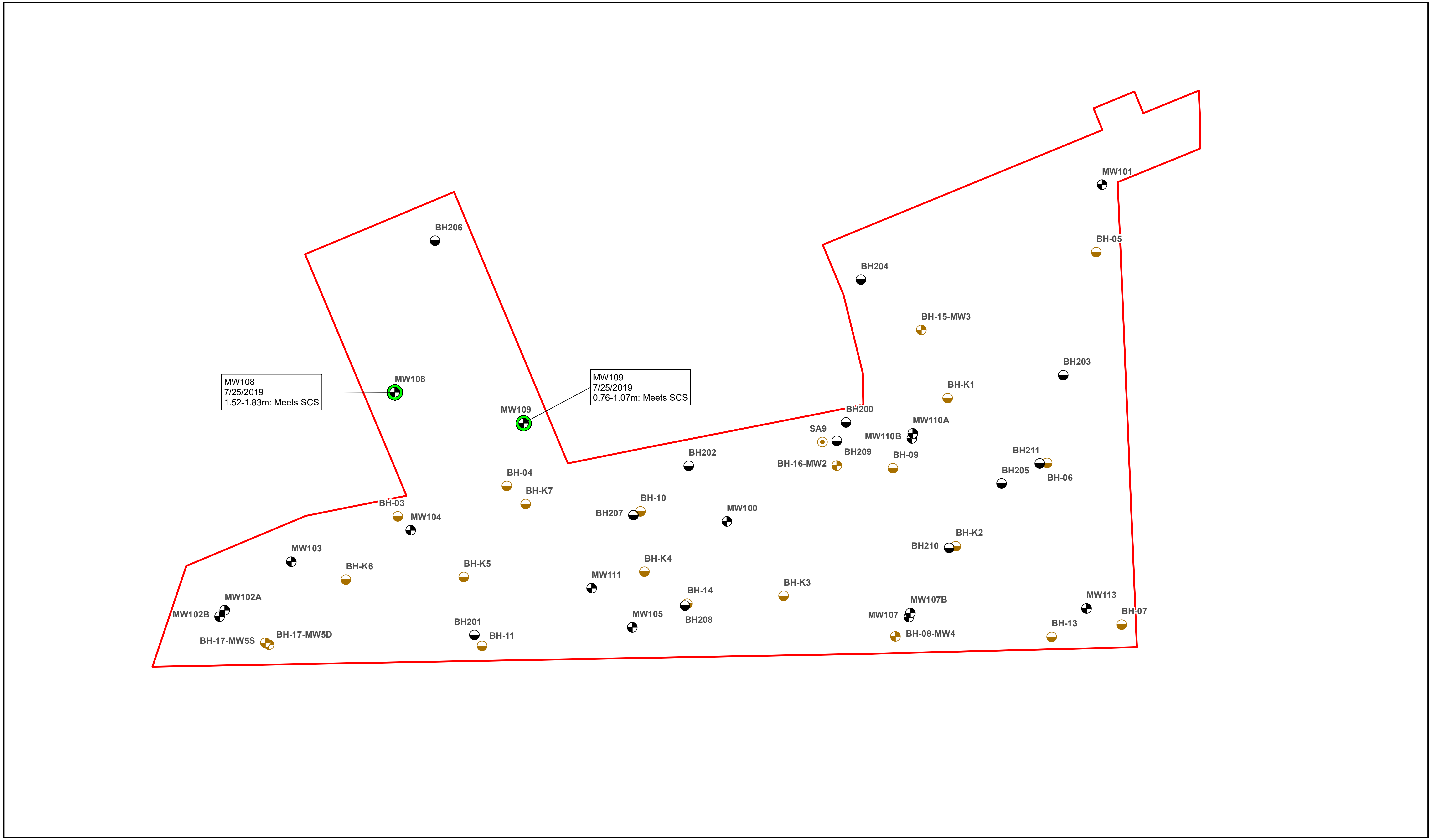

Sample Location (Current)
◒ Borehole
◕ Monitoring Well

Sample Location (Historical)
◒ Borehole
◕ Monitoring Well
◉ Soil Sample

🟢 Location without Table 2 Exceedance
🟥 Site Boundary

N

0 5 10 15
Metres

Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of soil impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.

Figure 6-12
Soil Results - Dioxins/Furans
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 11/25/2020

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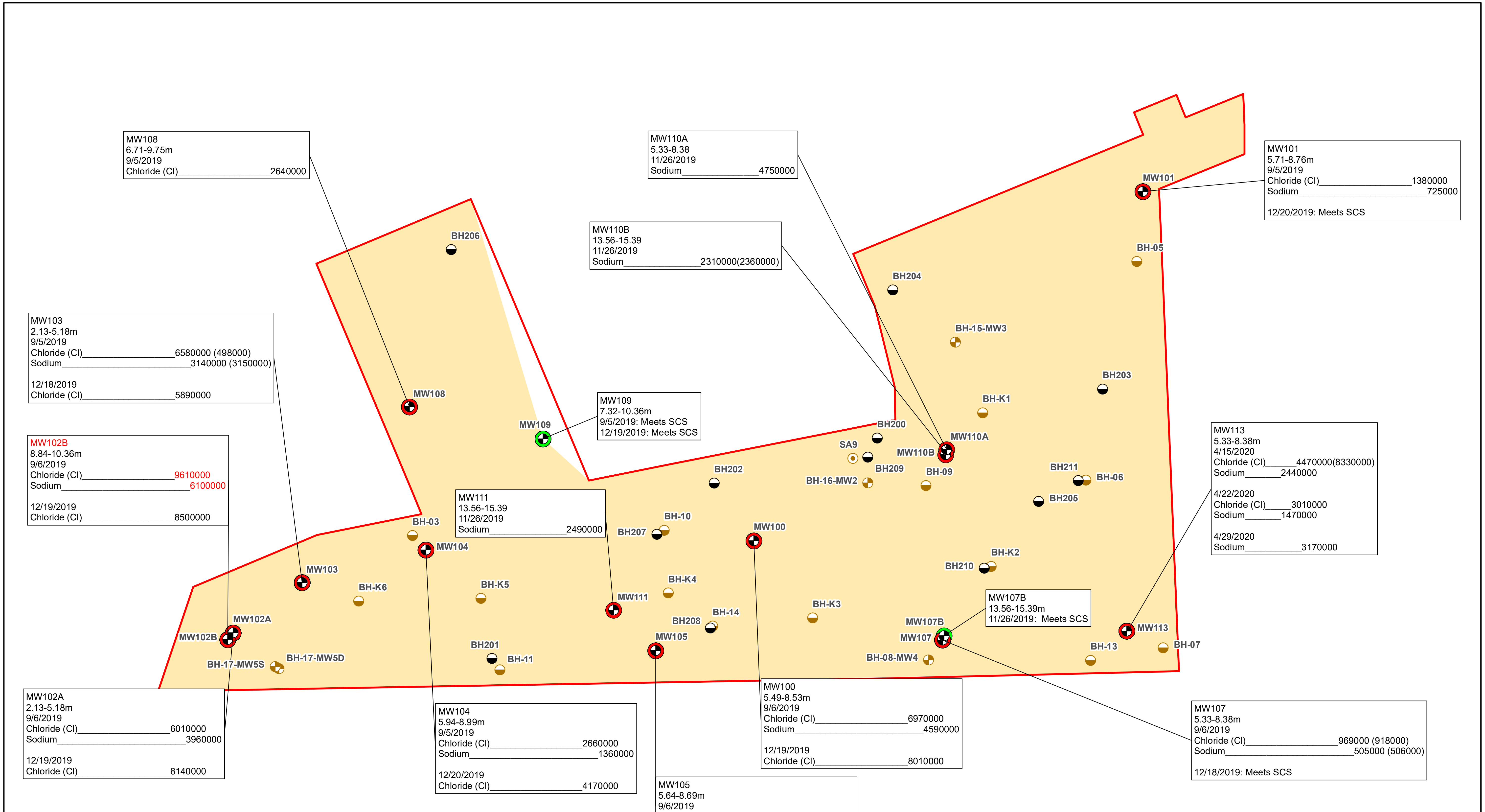

MW108
6.71-9.75m
9/5/2019
Chloride (Cl)________________2640000

MW110A
5.33-8.38
11/26/2019
Sodium________________4750000

MW101
5.71-8.76m
9/5/2019
Chloride (Cl)________________1380000
Sodium________________________725000

12/20/2019: Meets SCS

MW110B
13.56-15.39
11/26/2019
Sodium________________2310000(2360000)

MW103
2.13-5.18m
9/5/2019
Chloride (Cl)________________6580000 (498000)
Sodium________________________3140000 (3150000)

12/18/2019
Chloride (Cl)________________5890000

MW109
7.32-10.36m
9/5/2019: Meets SCS
12/19/2019: Meets SCS

MW102B
8.84-10.36m
9/6/2019
Chloride (Cl)________________9610000
Sodium________________________6100000

12/19/2019
Chloride (Cl)________________8500000

MW113
5.33-8.38m
4/15/2020
Chloride (Cl)______4470000(8330000)
Sodium__________2440000

4/22/2020
Chloride (Cl)______3010000
Sodium__________1470000

4/29/2020
Sodium__________3170000

MW111
13.56-15.39
11/26/2019
Sodium________________2490000

MW107B
13.56-15.39m
11/26/2019: Meets SCS

MW102A
2.13-5.18m
9/6/2019
Chloride (Cl)________________6010000
Sodium________________________3960000

12/19/2019
Chloride (Cl)________________8140000

MW104
5.94-8.99m
9/5/2019
Chloride (Cl)________________2660000
Sodium________________________1360000

12/20/2019
Chloride (Cl)________________4170000

MW100
5.49-8.53m
9/6/2019
Chloride (Cl)________________6970000
Sodium________________________4590000

12/19/2019
Chloride (Cl)________________8010000

MW107
5.33-8.38m
9/6/2019
Chloride (Cl)________________969000 (918000)
Sodium________________________505000 (506000)

12/18/2019: Meets SCS

MW105
5.64-8.69m
9/6/2019
Chloride (Cl)________________2170000
Sodium________________________1200000

Parameters Exceeding Table SCS and Site Maximum Concentrations			
Parameter Name	Screening Level ug/L	Maximum Concentration ug/L	Location ID
Chloride (Cl)	790000	9610000	MW102B
Sodium	490000	6100000	MW102B

Sample Location (Current)
- ◒ Borehole
- ⊕ Monitoring Well

Sample Location (Historical)
- ◒ Borehole
- ⊕ Monitoring Well
- ⊙ Soil Sample

- 🟢 Location without Table 2 Exceedance
- 🔴 Location with Table 2 Exceedance
- 🟨 Inferred Lateral Extent of Concentration Greater than the Table 2 SCS
- 🟥 Site Boundary

Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of groundwater impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.

Figure 6-13
Groundwater Results - Sodium and Select ORPs: Chloride and Cyanide
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 11/25/2020

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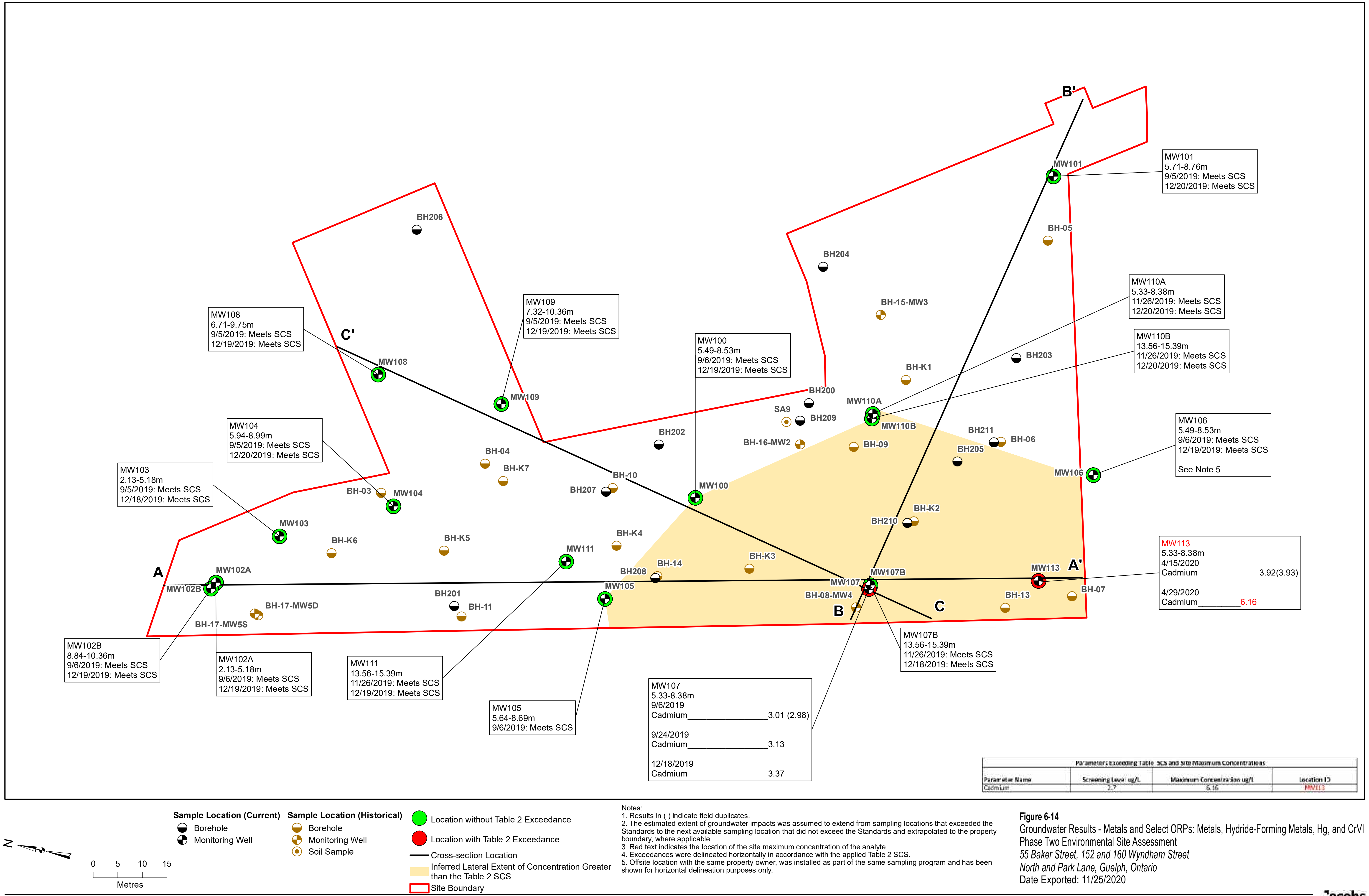

Parameters Exceeding Table SCS and Site Maximum Concentrations			
Parameter Name	Screening Level ug/L	Maximum Concentration ug/L	Location ID
Cadmium	2.7	6.16	MW113

Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of groundwater impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.
5. Offsite location with the same property owner, was installed as part of the same sampling program and has been shown for horizontal delineation purposes only.

Figure 6-14

Groundwater Results - Metals and Select ORPs: Metals, Hydride-Forming Metals, Hg, and CrVI
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 11/25/2020

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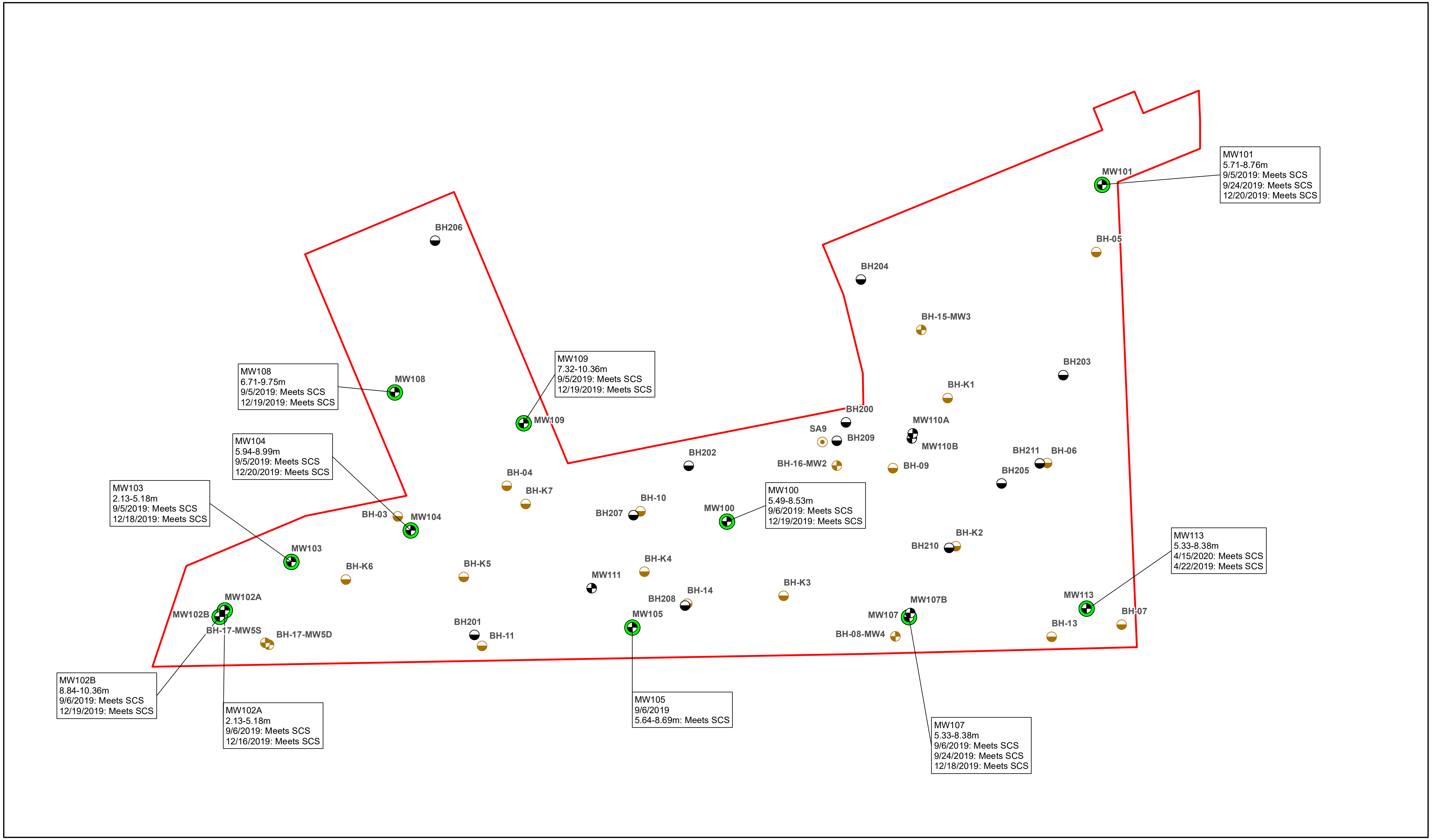

N

0 5 10 15

Metres

Sample Location (Current)
- ◒ Borehole
- ⊕ Monitoring Well

Sample Location (Historical)
- ◒ Borehole
- ⊕ Monitoring Well
- ⊙ Soil Sample

🟩 Location without Table 2 Exceedance

🟥 Site Boundary

Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of groundwater impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.

Figure 6-15
Groundwater Results - BTEX
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 11/25/2020

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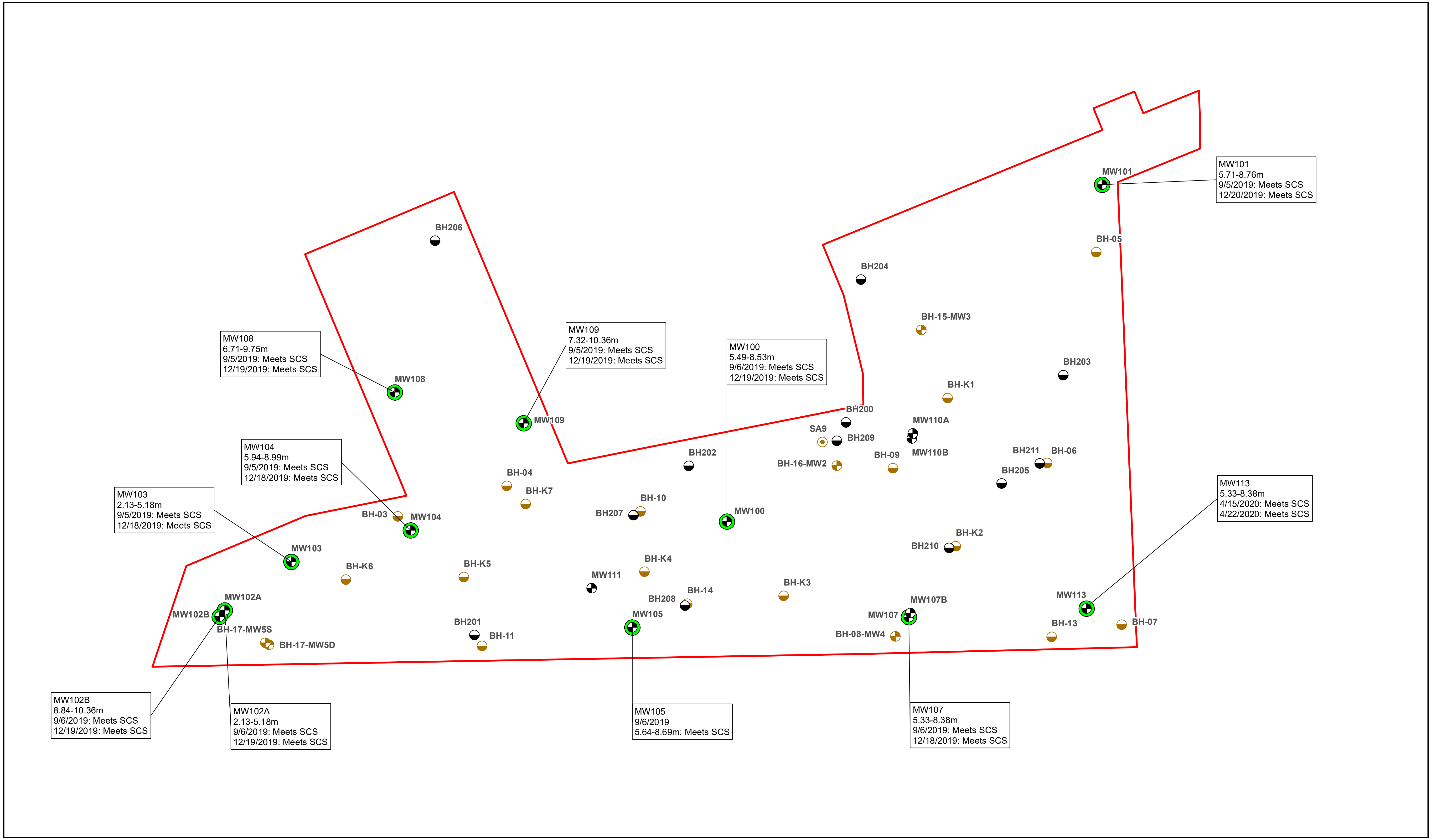

MW101
5.71-8.76m
9/5/2019: Meets SCS
12/20/2019: Meets SCS

MW108
6.71-9.75m
9/5/2019: Meets SCS
12/19/2019: Meets SCS

MW109
7.32-10.36m
9/5/2019: Meets SCS
12/19/2019: Meets SCS

MW100
5.49-8.53m
9/6/2019: Meets SCS
12/19/2019: Meets SCS

MW104
5.94-8.99m
9/5/2019: Meets SCS
12/18/2019: Meets SCS

MW103
2.13-5.18m
9/5/2019: Meets SCS
12/18/2019: Meets SCS

MW113
5.33-8.38m
4/15/2020: Meets SCS
4/22/2020: Meets SCS

MW102B
8.84-10.36m
9/6/2019: Meets SCS
12/19/2019: Meets SCS

MW102A
2.13-5.18m
9/6/2019: Meets SCS
12/19/2019: Meets SCS

MW105
9/6/2019
5.64-8.69m: Meets SCS

MW107
5.33-8.38m
9/6/2019: Meets SCS
12/18/2019: Meets SCS

N

0 5 10 15
Metres

Sample Location (Current)
◒ Borehole
⊕ Monitoring Well

Sample Location (Historical)
◒ Borehole
⊕ Monitoring Well
◉ Soil Sample

🟢 Location without Table 2 Exceedance
🟥 Site Boundary

Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of groundwater impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.

Figure 6-16
Groundwater Results - Petroleum Hydrocarbons
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 11/25/2020

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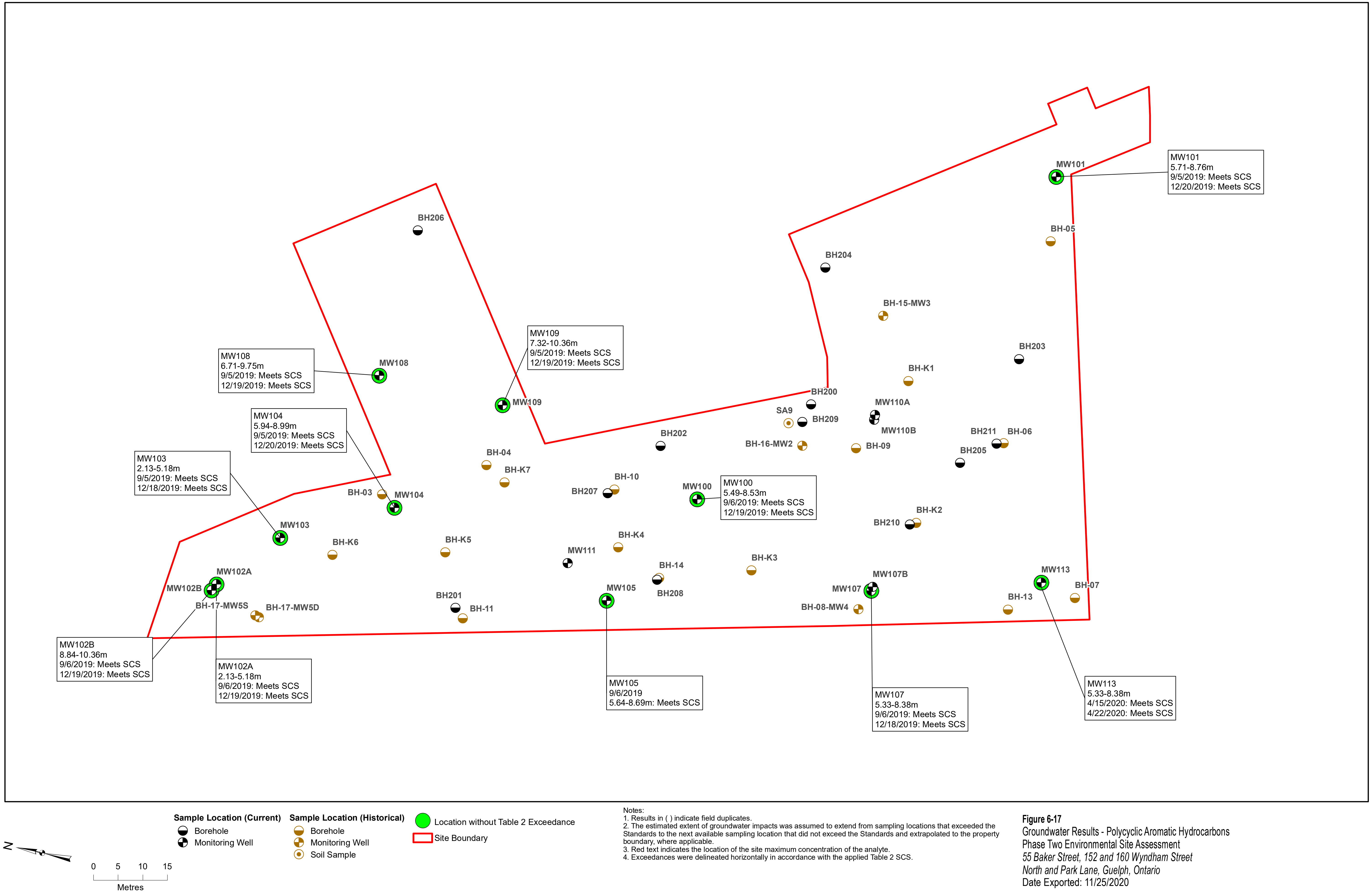

MW101
5.71-8.76m
9/5/2019: Meets SCS
12/20/2019: Meets SCS

MW109
7.32-10.36m
9/5/2019: Meets SCS
12/19/2019: Meets SCS

MW108
6.71-9.75m
9/5/2019: Meets SCS
12/19/2019: Meets SCS

MW104
5.94-8.99m
9/5/2019: Meets SCS
12/20/2019: Meets SCS

MW103
2.13-5.18m
9/5/2019: Meets SCS
12/18/2019: Meets SCS

MW100
5.49-8.53m
9/6/2019: Meets SCS
12/19/2019: Meets SCS

MW102B
8.84-10.36m
9/6/2019: Meets SCS
12/19/2019: Meets SCS

MW102A
2.13-5.18m
9/6/2019: Meets SCS
12/19/2019: Meets SCS

MW105
9/6/2019
5.64-8.69m: Meets SCS

MW107
5.33-8.38m
9/6/2019: Meets SCS
12/18/2019: Meets SCS

MW113
5.33-8.38m
4/15/2020: Meets SCS
4/22/2020: Meets SCS

Sample Location (Current)
- ◒ Borehole
- ⊕ Monitoring Well

Sample Location (Historical)
- ◒ Borehole
- ⊕ Monitoring Well
- ⊙ Soil Sample

- 🟢 Location without Table 2 Exceedance
- 🟥 Site Boundary

Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of groundwater impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.

Figure 6-17
Groundwater Results - Polycyclic Aromatic Hydrocarbons
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 11/25/2020

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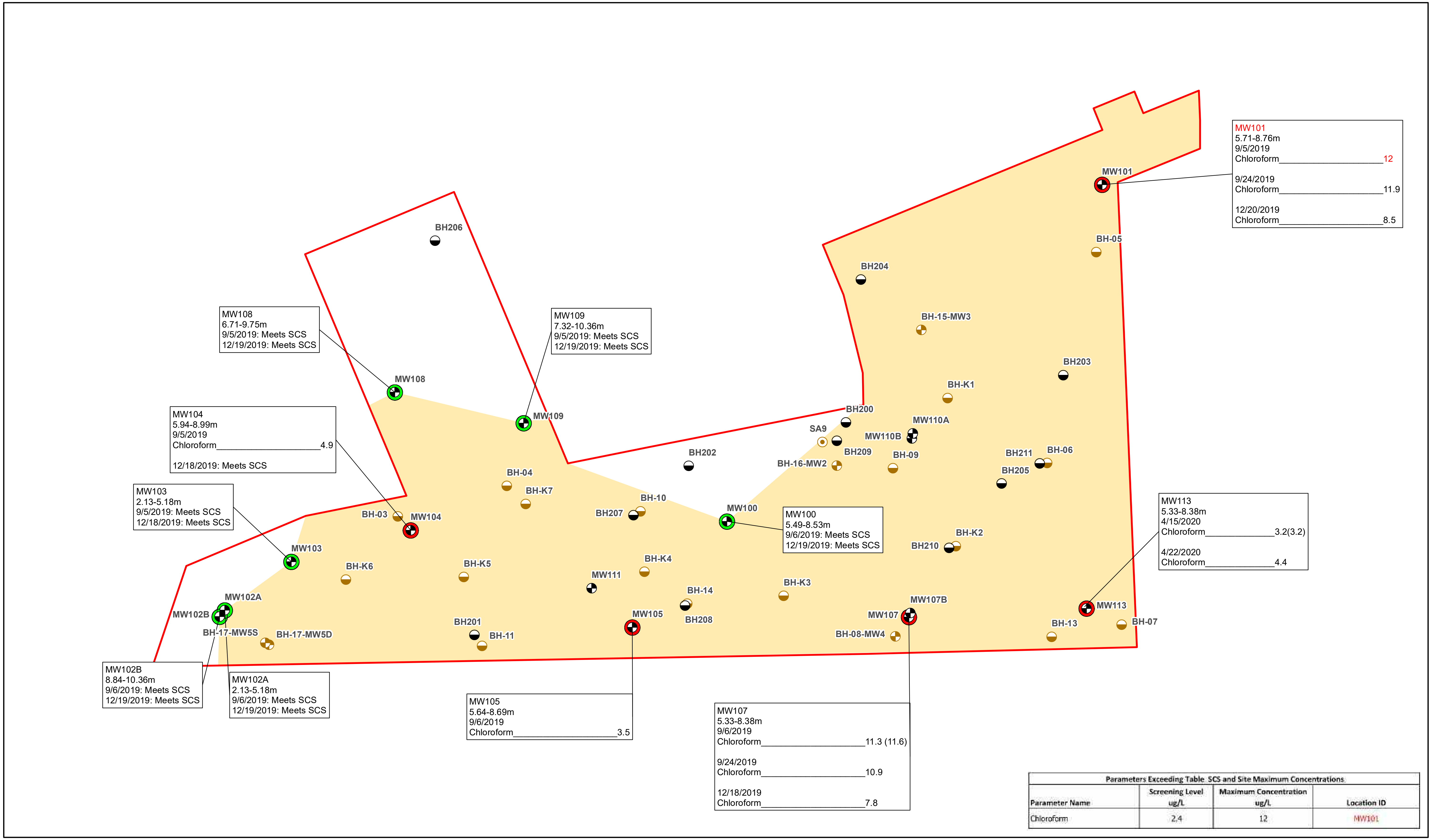

Parameters Exceeding Table SCS and Site Maximum Concentrations			
Parameter Name	Screening Level ug/L	Maximum Concentration ug/L	Location ID
Chloroform	2.4	12	MW101

N

0 5 10 15
Metres

Sample Location (Current)
- Borehole
- Monitoring Well

Sample Location (Historical)
- Borehole
- Monitoring Well
- Soil Sample

🟢 Location without Table 2 Exceedance

🔴 Location with Table 2 Exceedance

Inferred Lateral Extent of Concentration Greater than the Table 2 SCS

Site Boundary

Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of groundwater impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.
5. These chloroform exceedances are believed to be due to the introduction of municipal water during the monitoring well installation activities. Chloroform is, therefore, not considered a COC for the Site.

Figure 6-18
Groundwater Results - Volatile Organic Compounds
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 11/25/2020

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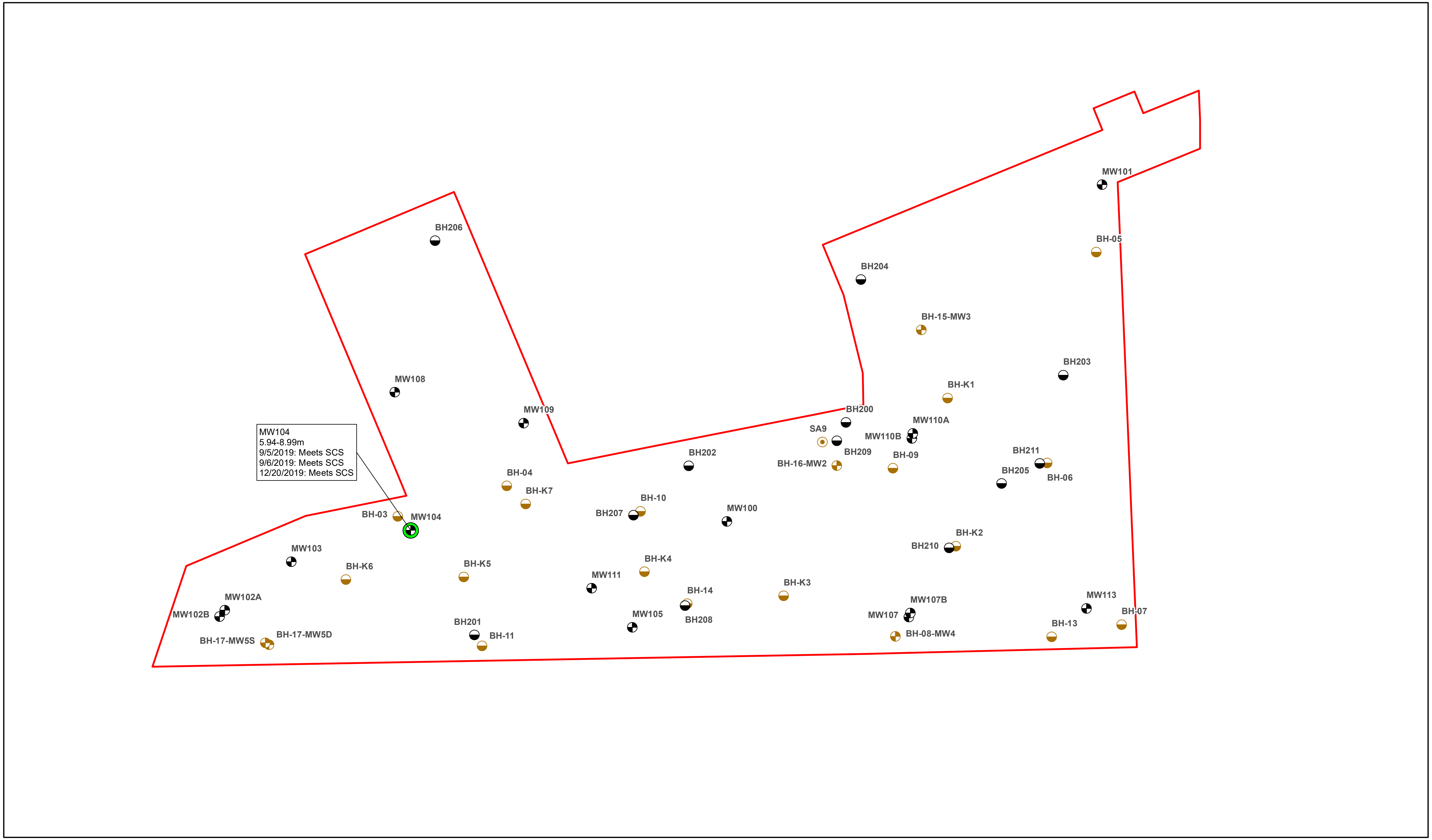

N

0 5 10 15

Metres

Sample Location (Current)

- ◒ Borehole
- ⊕ Monitoring Well

Sample Location (Historical)

- ◒ Borehole
- ⊕ Monitoring Well
- ⊙ Soil Sample

● Location without Table 2 Exceedance

🟥 Site Boundary

Notes:
1. Results in ( ) indicate field duplicates.
2. The estimated extent of groundwater impacts was assumed to extend from sampling locations that exceeded the Standards to the next available sampling location that did not exceed the Standards and extrapolated to the property boundary, where applicable.
3. Red text indicates the location of the site maximum concentration of the analyte.
4. Exceedances were delineated horizontally in accordance with the applied Table 2 SCS.

Figure 6-19
Groundwater Results - Acid/Base/Neutral Compounds
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 11/25/2020

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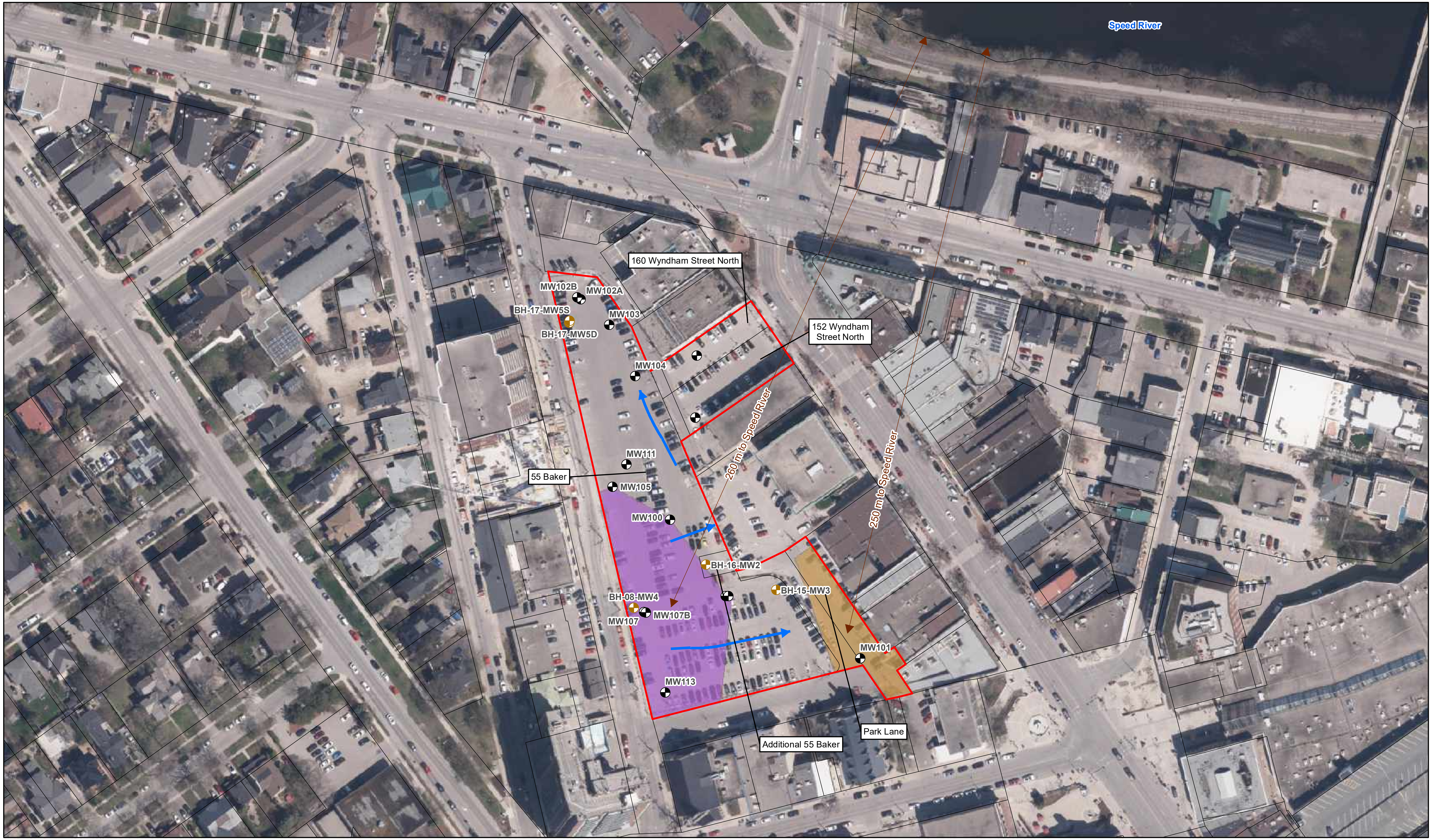
Attachment H Figures



N

0 1 2 3
Kilometers

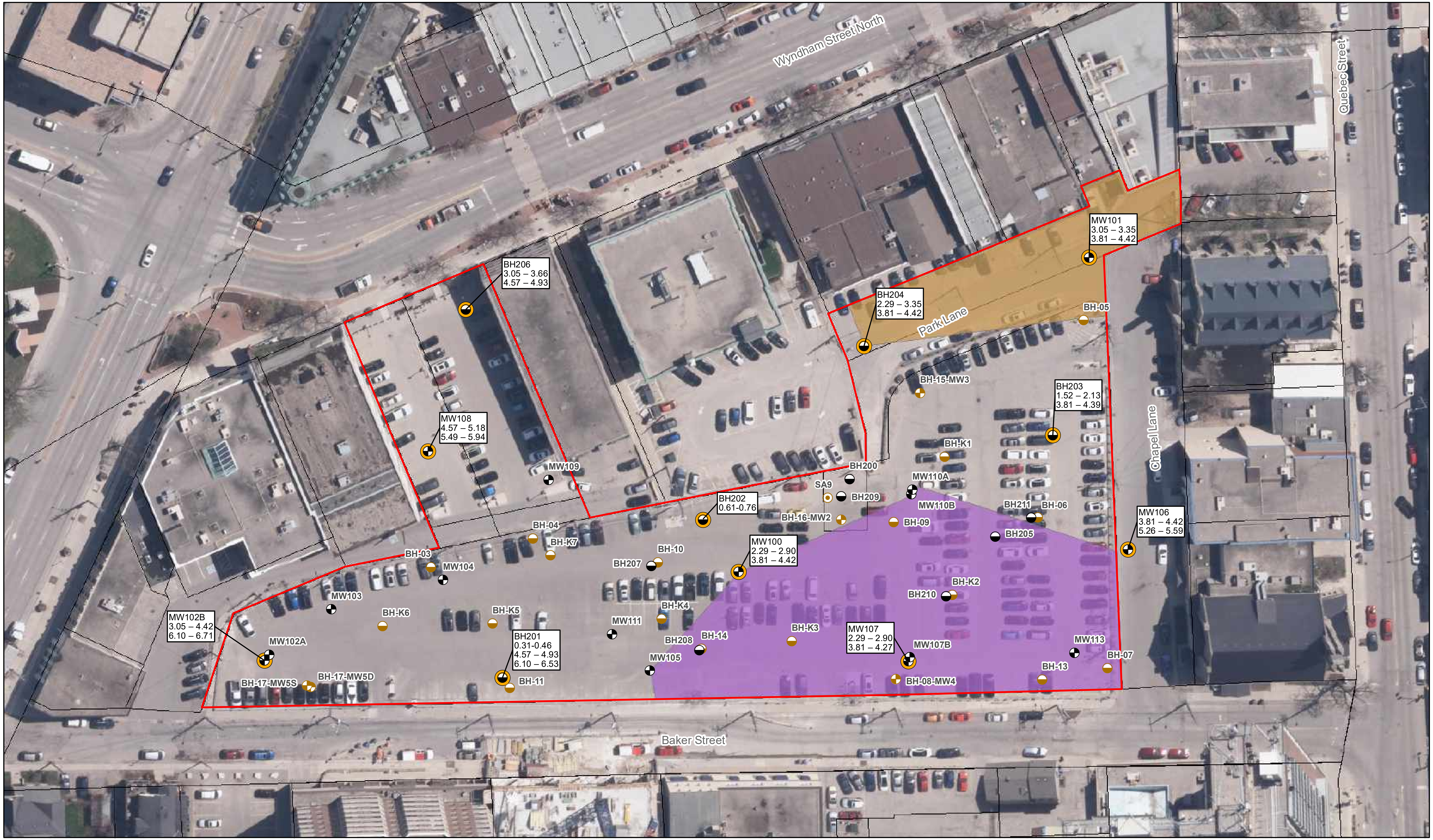
◐ Current Monitoring Well
◐ Historical Monitoring Well
→ Groundwater Flow Direction (April 15, 2020)

Inferred Lateral Extent of Concentration Greater than the Table 2 SCS
🟫 Metals in Soils
🟪 Metals in Groundwater

🟥 Site Boundary
☐ Property Boundary

Notes:
1. Aerial Imagery: ESRI World Imagery 2019. Imagery Date May 6, 2019.
2. Property Boundaries: City of Guelph.

Figure H-1
Distance to Water Body
Modified Generic Risk Assessment
55 Baker Street, 152 and 160 Wyndham Street North and Park Lane, Guelph, Ontario
Date Exported: 11/25/2020



Notes:
1. Aerial Imagery: ESRI World Imagery 2019. Imagery Date May 6, 2019.
2. Property Boundaries: City of Guelph.
3. Historical sample locations and site boundaries are approximate. Current sample locations have been surveyed.
4. Locations with Grain Size Analysis show depths of samples.

BH - Borehole
MW - Monitoring Well

Figure H-2
Grain Size Sampling Points
Modified Generic Risk Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 11/25/2020

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September 18, 2019 Groundwater Elevations (mASL)

- Monitoring Well - Water Table Elevation
- Shallow Monitoring Well - Perched Water Table Elevation

Groundwater Contour (September 18, 2019)

Flow Direction

🟥 Site Boundary

Notes:
1. Historical sample locations and site boundaries are approximate. Current sample locations have been surveyed.

BH - Borehole
MW - Monitoring Well
GW - Groundwater

Figure H-3a
Groundwater Contours - September 2019
MGRA Supporting Information
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 6/9/2020

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Jacobs

N

0 5 10 15 20

Metres

December 18, 2019 Groundwater Elevations (mASL)

- ● Shallow Monitoring Well - Perched Water Table Elevation
- ● Monitoring Well - Water Table Elevation
- ● Monitoring Well - Deep

- — Water Table Elevation Contour (masl) - December 18, 2019
- → Flow Direction
- ▭ Site Boundary

Notes:
1. Historical sample locations and site boundaries are approximate. Current sample locations have been surveyed.

BH - Borehole
MW - Monitoring Well
GW - Groundwater

Figure H-3a
Groundwater Contours - December 2019
MGRA Supporting Information
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 6/9/2020

Jacobs

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N

0 5 10 15 20

Metres

April 15, 2020 Groundwater Elevations (mASL)

⊕ Shallow Monitoring Well - Perched Water Table Elevation

⊕ Monitoring Well - Water Table Elevation

⊕ Monitoring Well - Deep

— Water Table Elevation Contour (masl) - April 15, 2020

→ Flow Direction

▭ Site Boundary

Notes:
1. Historical sample locations and site boundaries are approximate. Current sample locations have been surveyed.

BH - Borehole
MW - Monitoring Well
GW - Groundwater

Figure H-3c
Groundwater Contours - April 2020
MGRA Supporting Information
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 6/9/2020

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Attachment 3
MGRA Addenda #2 (December 20, 2020)

Jacobs Kitchener
72 Victoria Street South
Sutie 300
Kitchener, ON N2G 4Y9
Canada
T +1.519.579.3500
www.jacobs.com

December 14, 2020

Attention: The Director
Client Services and Permissions Branch
Ontario Ministry of the Environment, Conservation, and Parks
135 St. Clair Avenue West, 1st Floor
Toronto, Ontario M4V 1P5

Project Name: Baker Street
Project Number: CE751900

Subject: Addenda #2 to report entitled *Baker Street Redevelopment Pre-submission Form and Modified Generic Risk Assessment for 55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario, Revision 1,* dated October 20, 2020 (RA1896-20, IDS Ref No. 7882-BRYP6L)

Dear Sir/Madam:

This letter documents Jacobs' response to the request for additional information regarding the modified generic risk assessment (MGRA) for the property located at 55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, in Guelph, Ontario. The request was received via email from the Ministry of the Environment, Conservation, and Parks (MECP) on December 4, 2020.

Table 1 (attached) presents the MECP comments and Jacobs' response. Attachment 1 provides the revised files. A revised MGRA submission has not been prepared, as the MECP indicated a file with the revised files would suffice.

We trust this document will provide adequate information with which to complete the review of the document, and will lead to the acceptance of the submission for the RA Property.

If you have any questions, please feel free to contact us.

Sincerely

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Attachment 1 – Errata List
Attachment 2 – Replacement Figures

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MECP Comment (September 2020)	MECP Request for Additional Information (December 2020)	Jacobs Response (December 2020)
Comment on the PSF/RA		
Comment 4 - PSF Section 11 (MGRA): The section regarding modification of GW2 (Storage Garage) was not filled out. Please update this section.	The QP responded that no volatile COCs were included in the RA, and that this RMM was not used to develop PSS. Mercury is assumed to be volatile in the development of generic and Tier 2 standards, and without the Storage Garage RMM in place, the risk based PSS that can be calculated for mercury in the approved model would be lower than the PSS that the QP has proposed (based on reasonable estimate of maximum). This discussion applies to the response in September 2020 Comment 10a (depth to water table) as well.	Mercury is a COC in soil only; the Storage Garage RMM is necessary to address volatile risk from soil and the PSS for mercury in soil is based on the selection of that RMM. There are no volatile COCs in groundwater at the RA Property.
Comment on the Phase Two CSM		
Comment 6 - A description and assessment of areas where potentially contaminating activities (PCAs) and areas of potential environmental concern (APECs) have occurred is required to be provided in the phase two conceptual site model (P2CSM). PCAs and APECS were described in the CSM, but limited details describing their locations were provided. The following issue was identified: a. Additional information on the nature and specific locations of on- and off-site PCAs (i.e. any infrastructure related to the historic industrial property use, USTs/ASTs, oil/water separators, hydraulics hoists, pump islands, drycleaners, oil sheds/houses, garages, etc.) in relation to each APEC should be provided in the P2CSM narrative and the specific locations/outlines of PCAs should be provided on Figure 4-1 (and/or another larger scale figure for off-site PCAs. In presenting information in the narrative and on figures, PCAs and APECs should be clearly linked.	This comment has been partially addressed. The way information has been presented in the narrative, figures and tables does not clearly link which PCAs are linked to which APECs, so the reviewer is still having trouble determining whether APECs have been appropriately refined and assessed. Bottom line – it should be easy for the reviewer to tell which PCAs are causing which APECs. Suggestions for presenting the required information include the following: i. PCAs were given a unique PCA ID on Figures 4-1a and 4-1b which is helpful, but these IDs should be referenced in the narrative, figures and tables when describing PCAs and APECs. ii. Clearly label APEC IDs on Figure 4-1b. Some colours are similar and the reviewer can't tell which colours are referring to which APECs. iii. It would be helpful if PCAs and their resulting APECs were the same colour on Figure 4-1b. Or alternatively, the PCA ID and resulting APEC ID could be indicated in the legend. iv. Consider removing the base map so figures are less cluttered and easier to read. Finally, it is unclear whether all off-site PCAs with the phase one study area have been identified. Even if the QP determines that off-site PCAs are not causing an APEC on the MGRA property, they should be shown on figures, and a description and assessment as well as a rationale for why they weren't considered to be causing APECs should be provided in the P2CSM narrative.	i. The PCA IDs associated with the APECs have been added to the text narrative. The specific descriptions of each PCA are provided in a new table (Table 4-2, attached) including a rationale for whether the PCA results in an APEC on the Phase Two Property. ii. The APEC IDs have been labelled on Figures 4-1a and 4-1b. Colours have been updated to match the colours on the Figure 4-2 (APECs). iii. Lines joining the PCAs to the associated onsite APEC (in the colour of the APEC) have been added to Figure 4-1b to show which offsite PCA(s) contribute to the onsite APECs. iv. The aerials/base map are shown to provide context of the surrounding properties (i.e. building locations, rivers, green space). The figures instead have been revised with a reduced transparency of the base map so the details on the figures are more visible. All of-site PCAs that were identified in the Phase One ESA (Pinchin, 2018) have been shown on the figures and listed in the new Table 4-2 (attached) with a description and rationale for why they were or were not considered to be causing an APEC.
Given the above deficiencies, it is currently unclear whether all APECs have been adequately assessed as per Section 5, paragraphs 2 and 3 of Schedule E.	This final comment still applies. The reviewer should be able to clearly and easily review the narrative and figures and understand exactly where each described PCA is, which PCA contributed to which APEC and how each APEC was assessed. This has not been done.	Refer to the response above and the revised text, table, and figures in Attachment 1.

Attachment 1

Attachment D3 Revised Text

Phase Two Conceptual Site Model

Based on recent and historical Phase Two Environmental Site Assessment (ESA) work completed at the properties at 55 Baker Street, 152 Wyndham Street North, and 160 Wyndham Street North, as well as the right-of-way known as Park Lane in Guelph, Ontario (Phase Two Property or Site), this appendix provides a Phase Two conceptual site model (CSM), as required by Ontario Regulation (O. Reg.) 153/04 (MECP 2011a). The Site is located in downtown Guelph, southwest of the Speed River (~~Appendix C,~~ Figure 2-1) and is approximately 1.14 hectares (ha) in size. The Site is currently in use as a commercial parking lot and includes one laneway.

No buildings are currently located onsite; historical buildings (~~Appendix C,~~ Figure 2-2a) were associated portions of the Site being used for parkland, commercial, and industrial purposes. From approximately 1827 to 1879 the parcel associated with 55 Baker Street was used a public burial ground (community land use). In 1892, a curling club was completed on the southern portion of the Site, and between the late 1890s and early 1900s, an industrial building (sewing machine and accessory manufacturer) was constructed in the central western portion of the Site. The industrial building and curling club were demolished in the early to mid-1960s and mid- to late 1960s, respectively. Subsequently, the Site was redeveloped into an asphalt parking lot.

Historically, 152 and 160 Wyndham Street North were developed with commercial buildings during the mid-1800s. The northern portion of the parcel contained the American Hotel and a movie theatre, and an undertaker used the southern portion of the parcel. These properties were redeveloped for commercial retail use between 1916 and 1938, and remained so until between 2009 and 2013, at which point the buildings were demolished and replaced with an asphalt parking lot.

1(i) Potentially Contaminating Activities

The Phase One ESA (Pinchin 2018) identified several potentially contaminating activities (PCAs)~~, as presented on the Pinchin PCA figure in Appendix A.~~ within and outside the Site. Based on Jacobs Engineering Group Inc.'s (Jacobs') review of the Pinchin Phase One ESA (2018), as well as available historical environmental reports, aerial photographs, and fire insurance plans (FIPs), the following PCAs were identified on the Site, and resulted in an area of potential environmental concern (APEC) (shown on Figure 4-1a):

- 27 - Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles
- 28 - Gasoline and Associated Products Storage in Fixed Tanks
- 30 - Importation of Fill Material of Unknown Quality
- 34 - Metal Fabrication
- 48 - Salt Manufacturing, Processing and Bulk Storage
- 55 - Transformer Manufacturing, Processing and Use

The following PCAs were identified during the Phase One ESA (Pinchin 2018) outside the Phase Two Property, but on lands within 250 metres (m) of that property (that is, Phase Two Study Area) (shown on Figure 4-1b):

- 27 - Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles
- 28 - Gasoline and Associated Products Storage in Fixed Tanks
- 31 – Ink Manufacturing, Processing and Bulk Storage
- 34 - Metal Fabrication
- 37 - Operation of Dry Cleaning Equipment (where chemicals are used)
- 55 – Transformer Manufacturing, Processing and Use

The specific descriptions of each PCA are provided in Table 4-2, including a rationale for whether the PCA results in an APEC on the Phase Two Property.

1.(ii) Areas of Potential Environmental Concern

~~Appendix B,~~ Table 4-~~2~~ 3 identifies the 8 APECs identified from onsite PCAs and the 14~~3~~ APECs identified from offsite PCAs at the Phase Two Property. The following 22~~1~~ APECs were identified within the Phase One ESA (Pinchin 2018) ~~(APECs 1 through 16)~~ and supplemented by Jacobs ~~(APECs 17 through 21)~~ for the Phase Two Property. (Note, these are grouped by area, rather than in numerical order.)

- APECs from Onsite PCAs
  - APEC-1: Historical Industrial Property Use: Coil wire springs, sewing machines, and accessories were historically manufactured at 55 Baker Street. (PCA 1)
  - APEC-2: Unknown/Poor Quality Fill Material: – The XCG Phase II ESA (XCG 2008) identified fill material to 3.0 metres below ground surface (mbgs) at 55 Baker Street, and this is also likely located for the Wyndham properties, based on when they were developed (1862) after historical buildings had been demolished. (PCA 2)
  - APEC-3: Historical Transformers: The 1960 FIP depicted an area of 55 Baker Street labelled as 'transformers.' (PCA-3)
  - APEC-4: Use of Road Salts at the Property: The Site is currently used as a parking lot, and road salts are applied for the vehicular and pedestrian safety. (PCA 56)
  - APEC-18: Former Oil Shed: The 1911 FIP showed a small oil shed in the southwestern corner of the White Sewing Machine of Canada parcel of land on 55 Baker Street. (PCA 57)
  - APEC-19: Former Oil House: The 1911 FIP showed a small oil house on the former White Sewing Machine of Canada parcel, now the western portion of 152 Wyndham Street. (PCA 58)
  - APEC-20: Former Coke Storage: The 1911 FIP showed a garage located on the northeastern portion of 55 Baker Street. (PCA 59)
  - APEC-21: Former Garage: The 1960 FIP showed a garage located on the northeastern portion of 55 Baker Street. (PCA 60)
- APECs from Offsite PCAs to the North
  - APEC-5: Historical Dry Cleaning: Potential dry cleaners were identified at 164 Woolwich Street. (PCA 5)
  - APEC-6: Historical Retail Fuel Outlet and Automotive Repair/Servicing Operations: Former automotive operations were identified at 160 Woolwich Street. (PCA 4)
  - APEC-7: Historical Dry Cleaning: Potential dry cleaners were identified at 152 Woolwich Street. (PCA 12)
  - APEC-8: Historical Dry Cleaning: Potential dry cleaners were identified at 172 Wyndham Street North. (PCA 52)
  - APEC-9: Historical Fuel Oil Underground Storage Tank (UST): A historical UST was identified at 176 Wyndham Street North. (PCA 13)
  - APEC-10: Historical Automotive Repair: A former automotive repair shop was identified at 176 Wyndham Street. (PCA 53)

  - APEC-17: Dry Cleaning, Historical Retail Fuel Outlet, and Automotive Repair: These operations were identified at ~~192 Woolwich Street and 51 Yarmouth Street~~27 Suffolk Street East and 84 Yarmouth Street. (PCAs 50, 51 and 55)
- APECs from Offsite PCAs to the East
  - APEC-13: Historical Automotive Garage: A former garage was identified at 146 Wyndham Street North from 1930 to 1949. (PCA 18)
  - APEC-15: Historical Dry Cleaning: Former dry cleaning operations were identified at 108 Wyndham Street North from 1917 to 1922. (PCA 19)
- APECs from Offsite PCAs to the South
  - APEC-14: Historical Gasoline Spill: Based on database searches, a historical gasoline spill at the intersection of Chapel Lane and Baker Street occurred, with possible environmental impacts to land and water. The quantity and exact location are unknown. (PCA 27)
  - APEC-16: Historical Aboveground Storage Tank (AST): Vent and fill pipes associated with an AST were observed at the corner of 20 Quebec Street, a southern adjacent property to the Site, and hydraulically down- and transgradient from the Site. (PCA 43)
- APECs from Offsite PCAs to the West
  - APEC-11: Historical Offsite Industrial Operations: Cooke & Denison Machine and Tool Works was identified at 40 Baker Street from 1946 to 1960. (PCA 8)
  - APEC-12: Historical Automotive Garage: A former garage was identified at 45 Baker Street from 1946 to 1960. (PCA 6)
  - APEC-22: Historical Dry Cleaning and Historical UST: Potential dry cleaning operations were identified at 2 Quebec Street in 1975, and a historical UST was identified at 2 Baker Street in 1946.

~~Appendix C,~~ Figure 4-~~1~~2 shows the locations of the APECs and the current and historical borehole and monitoring wells. ~~As Appendix B,~~ Table 6-4 shows, the Phase Two Property APECs have been investigated for the associated contaminants of potential concern (COPCs). ~~As Appendix C,~~ Figure 2-2b shows~~,~~ several underground and overhead utilities are present in this area, including a gas line, water line, storm sewer, and several overhead hydro lines.

1.(iii) Subsurface Utilities and Construction Features

Utilities (including sanitary and storm sewers and water lines) were active and connected during the Phase Two ESA investigation, and are still present in the subsurface. Based on these utility connections, there is potential for the preferential flow of COCs within utility corridors. However, based on the following factors, COCs are most likely to be transported (that is, to migrate) via groundwater:

- Depth of groundwater (at least 3.78 mbgs [perched] and 5.82 mbgs [bedrock])
- Suspected depth of underground utilities (1.5 mbgs or deeper)
- Presence of permeable materials onsite (fill, sand, and sand and gravel identified from surface to bedrock at an average depth of 5.99 mbgs)

~~Appendix C,~~ Figures 2-2a and 2-2b show building outlines and identified underground utilities, respectively, on the Phase Two Property.

2. Physical Setting

The topography over the Phase Two Property is moderately flat, with ground surface elevations ranging from 328.34 metres above sea level (masl) (MW113 in the south) to 330.16 masl (BH201 in the west). The Site slopes slightly from the western border towards the south, north, and east. Surface runoff at the Phase Two Property is expected to flow radially from the west in these directions but is directed towards onsite catchbasins. ~~Appendix C,~~ Figure 3-1 shows the regional topography and surface water drainage features. The Speed River is the nearest downgradient waterbody, located approximately 130 to 150 m north-northeast of the Site, and ground surface tends to slope north towards the river. Groundwater from the region is likely to eventually discharge to Speed River.

The City of Guelph (City) categorizes regions of Guelph within Wellhead Protection Areas (City 2012). The Site is within Wellhead Protection Area B (2-year travel time) for several of the City’s municipal water supply wells. The nearest municipal wells to the Site include the Water Street, Edinburgh, Membro and Dean Wells (approximately 1.4 to 2.0 km south of the Site past the Eramosa River), and the Park and Emma Wells (approximately 1.3 to 1.5 km north of the Site past the Speed River).

The municipal groundwater resource is primarily drawn from the Gasport Formation, estimated to occur at least 45 mbgs. A lower-permeability Reformatory Member and Vinemount Member of the Eramosa Formation are generally understood to serve as a regional aquitard, situated above the Gasport and limestone formations of the Goat Island Formation (Brunton 2009).

The City is also part of the Grand River Source Protection Plan (Plan) (Lake Erie Region Source Protection Committee 2019). The Plan assigns Drinking Water Threat Vulnerability Scores across the region based on various risk factors; the Phase Two Property is assigned a Vulnerability Score of 10, the highest possible, indicating it is susceptible to potential contamination. The Site is also in a highly vulnerable aquifer and issues contributing area but is not in a significant groundwater recharge area or in a source water intake protection zone. ~~Appendix C,~~ Figure 3-2 shows the Plan mapping and location of nearest municipal wells.

2.(i) Stratigraphy

The Site is interpreted to consist of a predominantly sandy overburden overlying Guelph Formation dolostone bedrock. Within the northern portion of the Site, there is a thick silt deposit. Exhibit 1 summarizes the geological units encountered beneath the Site during the Phase Two ESA activities.

Exhibit 1: Site Stratigraphy

Geological Unit	Approximate Depth (mbgs)	Average Thickness (m)	Lithology
Asphalt	Up to 0.15		A thin layer of asphalt was observed.
Fill	0.15 to 3.91	1.87	Sand, sand and gravel, or silty sand were encountered. Silty clay and clayey silt were also observed. Anthropogenic materials such as brick, glass, metal products, and wood were commonly reported, as was iron oxide staining on the soil.
Native Overburden	0.81 to bedrock	See below	A sand matrix was encountered with interbedded layers of gravel and silt (described herein), extending to bedrock. The sand is generally brown, dense, and moist.

Exhibit 1: Site Stratigraphy

Geological Unit	Approximate Depth (mbgs)	Average Thickness (m)	Lithology
Silt Layer	2.13 to bedrock	3.58	A silt layer was encountered in the northern portion of the Site. The silt was generally described as brown or grey, fine to coarse sand, low to high plasticity, with traces of gravel.
Silt Lens	2.21 to 3.72	1.37	A smaller silt lens was observed in the southern portion of the Site and is disconnected from the larger silt layer in the north of the Site. The silt in this lens was described as brown, hard and moist, with dolostone bedrock fragments observed.
Gravel and Sand	1.52 to 5.94	2.16	A layer of gravel and sand was encountered in the southern portion of the Site. The material was generally described as brown, dense, with fine to medium sand, trace clay, and occasional cobbles and dolostone fragments.
Clay Lens	1.14 to 2.44	1.30	A clay lens was encountered at a single location in the middle of the Site. As some other fill materials were described as being clayey, it is possible this is layer is also anthropogenic.
Guelph Formation dolostone	4.57 to 8.46 (top of bedrock range)	N/A	Generally, this dolostone was highly weathered and fractured within the first 0.3 to 0.6 m of bedrock contact. It was also noted to be vuggy, with calcite mineralization. The average depth to bedrock is 5.99 mbgs for the Site.

Note:

N/A = not applicable

Geological cross-sections were prepared to show the Site stratigraphy. ~~Appendix C,~~ Figure 6-1 presents cross-section locations, and ~~Appendix C,~~ Figures 6-1a to 6-1d present cross-sections A-A′, B-B’, C-C’, and D-D,’ respectively.

Based on the Site-specific geology, the main units investigated during the Phase Two ESA were an overburden composed of sand and interbedded silt and gravel, and bedrock.

2.(ii) Hydrogeological Characteristics

There are two main hydrogeological units encountered at the Site: (1) perched groundwater above a silt strata in the northern portion of the Site, and (2) a shallow unconfined aquifer generally in the upper bedrock, but extending in places up into the overburden soil. These two hydrogeological units are hereafter referred to as ‘the perched groundwater’ and ‘the bedrock aquifer’.

Twenty-one monitoring wells (18 wells from the current investigation and 3 historical wells) were used at the Phase Two Property to investigate conditions associated with the perched groundwater and the bedrock aquifer:

- Eighteen are installed in the bedrock aquifer; and
- Three are installed to access the perched groundwater.

The bedrock monitoring wells are further defined as ‘bedrock wells’ for the 15 wells installed across or near the water table, and ‘deep bedrock wells’ for the three wells installed approximately 8 metres in to the bedrock, from 4.6 to 6.9 metres below the water table for site characterization purposes. The site has been paved as a parking lot and is anticipated to receive low recharge from precipitation.

~~Appendix C,~~ Figures 6-2a, 6-2b, and 6-2c present the interpreted groundwater elevation contours and flow directions within the bedrock (water table) using groundwater elevations collected during the monitoring events on September 11 and 18, 2019; December 18, 2019; and April 15, 2020, respectively.

Exhibit 2. Hydrogeological Characteristics

Groundwater Unit	Characteristic	Summary
Bedrock	Flow Direction	Groundwater flows radially from a high elevation on the western boundary of the Site towards the north, and east to southeast. The higher groundwater elevations in the western portion of the Site appear to be correlated with higher bedrock layer elevation, as well as the topographical elevation and regional flow direction towards the Speed River.
	Average Horizontal Hydraulic Conductivity	<u>Range between September 18, 2019 and April 15, 2020:</u> 4.6 x 10^{-7} to 2.0 x 10^{-4} m/s <u>Geometric mean:</u> 6.0 x 10^{-6} m/s The K of the bedrock was estimated based on slug testing in three wells (MW101, MW107, and MW109).
	Average Horizontal Hydraulic Gradient	<u>Estimated range between September 18, 2019 and April 15, 2020:</u> 0.009 to 0.025 m/m <u>Estimated average between September 18, 2019 and April 15, 2020:</u> 0.016 m/m The maximum groundwater elevations within the bedrock aquifer were measured during the April 2020 monitoring event and were likely associated with snow melt and increased precipitation in the spring. Elevated groundwater levels may have “flattened” the gradient compared to fall and winter.
	Groundwater Velocity	The horizontal linear groundwater flow velocity was estimated for the bedrock aquifer using the calculated geomean K value of 6.0 x 10^{-6} m/s, the estimated horizontal hydraulic gradient range of 0.009 to 0.025 m/m, and an estimated effective porosity of 0.1 for the weathered and fractured rock. The groundwater velocity within the bedrock is estimated to be approximately 24 to 47 m/y.
	Vertical Hydraulic Gradients	Vertical hydraulic gradients in the bedrock were calculated at two nested monitoring well sets: (1) MW107 and MW107B, and (2) MW110A and MW110B. The vertical hydraulic gradients observed were downwards and ranged from 0.062 m/m to 0.063 m/m at MW107 and MW107B and 0.042 m/m at MW110A and MW110B.

Notes:
cm/y = centimeters per year
COC = contaminant of concern
K = hydraulic conductivity
m/m = metre(s) per metre
m/s = metre(s) per second
m/y = metre(s) per year

The perched groundwater was observed at BH17-MW-5S, MW102A, and MW103 above a low-permeability silt aquitard layer. The K ranging from 3.6 x 10^{-8} to 7.4 x 10^{-7} metres per second (m/s), with a geometric mean of 1.6 x 10^{-7} m/s. Vertical hydraulic gradients observed in this unit (MW102A and MW102B) were downward, ranging between 0.621 and 0.634 m/m, due to the influence of the perched groundwater above the silt layer observed at this well nest. The flow direction, horizontal hydraulic gradient and groundwater velocity were not calculated as the perched groundwater was not present across the entire Site. The full extent of the perched groundwater is currently not fully understood but may have a similar extent to the silt layer.

2.(iii) Depth to Bedrock

The Guelph Formation Dolostone that underlies the Site was encountered between 4.57 and 8.43 mbgs (321.62 to 324.96 masl), with an average depth to bedrock of 5.99 mbgs (323.46 masl). The highest bedrock elevations were encountered along an approximate southwest-to-northeast transect of the Site (MW107, MW100, BH202, MW109, BH206). Note, higher groundwater elevations are also associated with these locations, and the groundwater contours presented on~~ Appendix C,~~ Figures 6-2a, 6-2b, and 6-2c appear to show a radial flow outward from this bedrock high, following the topography and moving towards the Speed River.

2.(iv) Depth to Water Table

The water table within the Phase Two Property is within the Guelph Formation dolostone bedrock unit; in the northern portion of the Site, perched groundwater is associated with a low-permeability silt layer.

The depth to the bedrock aquifer and the perched groundwater were assessed based on three groundwater level monitoring events (September 18, 2019; December 18, 2019; and April 15, 2020).

The depth to the bedrock aquifer ranged from 5.82 to 8.66 (322.90 to 321.13 masl). The depth to the perched groundwater ranged from 3.78 to 4.43 (325.74 to 325.04 masl) based on the three monitoring events.

2.(v) Applicable Site Condition Standards

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

Table 2-3 outlines the items Jacobs considered when selecting the SCS, as outlined in O. Reg. 153/04 (MECP 2011a), discussed here.

The special conditions for environmentally sensitive areas under Sections 41 or 43.1 of O. Reg. 153/04 do not apply to the Phase Two Property:

- The Site is not considered an area of natural significance or to be within the proximity of an area of natural significance, based on the information reviewed as part of the Phase One ESA (Pinchin 2018).
- Jacobs analyzed ~~44~~45 soil samples for pH from 17 locations across the Phase Two Property~~.~~ (shown on Figure 2-3). Based on the results of the Jacobs investigation, soil pH was found to range from 7.37 to 9.46. Soil pH was within the MECP's acceptable range for samples collected in both surface soil (from between surface to 1.5 mbgs, with a pH value in surface soil less than 5 or greater than 9) and subsurface soil (more than 1.5 mbgs with a pH value in subsurface soil less than 5 or greater than 11). Historical investigations reported elevated pH (greater than 9) in surface soil samples; however, brick

fragments or concrete were present in the stratigraphy where samples with elevated pH were collected based on a review of the borehole logs. This information suggests nonsoil materials may have been sampled, potentially biasing the historical soil pH results. Therefore, the historical results may not be representative of actual soil pH conditions. Based on this information, Jacobs has relied solely on the soil pH data collected during the recent investigation to determine the applicable SCS, and soil pH is within the MECP's acceptable range.

- The special conditions for land within 30 m of a water body under Section 43.1 of O. Reg. 153/04 do not apply to the Phase Two Property; no waterbodies are located on the Site or within 30 m of the Site. The Speed River is the nearest downgradient waterbody, located approximately 130 to 150 m north-northwest of the Site.
- The special conditions for shallow soil properties cited under Section 43.1 of O. Reg. 153/04 do not apply to the Phase Two Property; the depth to bedrock is greater than 2 m, as bedrock was encountered between 4.93 mbgs and 8.43 mbgs.

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

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

Based on this information reviewed by the Qualified Person for ESAs (QPESA), the Table 2 Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for coarse grained soil and residential/parkland/institutional land use (Table 2 SCS) was applied to the Site.

2.(vi) Imported Soil

Fill materials were identified across the Site to a maximum depth of 3.91 mbgs, or between 326.32 masl and 329.47 masl, with an average thickness of 1.68 m. The fill is variable in composition; however, the majority of fill is sand, sand and gravel, or silty sand.

The Phase One ESA (Pinchin 2018) reports that "significant quantities of fill material" have been identified onsite through previous Phase Two ESA investigations.

No soil was imported to the Site as part of Jacobs' recent Phase Two ESA activities.

2.(vii) Proposed Buildings and Other Structures

The City (2019) indicates the Site's redevelopment will include the following components:

- New Guelph Public Library
- Residential housing
- Commercial/institutional buildings
- Parking
- Urban square

The buildings' configuration is not known at this time.

3. Contaminants

3.(i-vi) Contaminants Exceeding Applicable Site Condition Standards in Soil and Groundwater

The Phase Two Property was found to be primarily impacted with salt-related analytes (that is, electrical conductivity [EC] and sodium adsorption ratio [SAR] in soil; sodium and chloride in groundwater). Localized metal impacts were identified in soil, and localized cadmium impacts were identified in groundwater. Polycyclic aromatic hydrocarbon (PAH) impacts identified from a historical investigation (Kewen, 2001) were resampled and determined not to be representative of Site conditions. Elevated concentrations of chloroform in groundwater were attributed to well installation activities and not with PCAs or APECs.

Although identified as COPCs at the Site, the following parameters were not identified with exceedances of the Table 2 SCS onsite, either in soil or groundwater:

- Benzene, toluene, ethylbenzene, and xylenes (BTEX)
- Volatile organic compounds (VOCs)
- petroleum hydrocarbons (PHCs)
- Acid, base, neutral compounds (ABNs)
- Dioxins and furans (D&Fs)

~~Appendix B,~~ Tables 6-5 and 6-8 summarize the analytical results of the investigation for soil and groundwater, respectively, and compare these compare to the Table 2 SCS. Figures are provided that present the locations of soil samples (~~Appendix C,~~ Figures 6-4 through 6-12) and groundwater samples (~~Appendix C,~~ Figures 6-13 through 6~~-~~-19) analyzed and a comparison to the Table 2 SCS by analytical group. Where exceedances of the Table 2 SCS are present, at least one cross-section has been prepared presenting the inferred vertical extent of impacts by analytical group, and follows the plan view figure. Maximum concentrations of the parameters exceeding Table 2 SCS are shown in red text on the respective plan view and cross-sectional figures.

The following subsections discuss the soil and groundwater conditions found exceeding the Table 2 SCS on the Phase Two Property.

Other Regulated Parameters

EC and SAR exceedances of the Table 2 SCS were identified in soil across most of the Site, apart from the northeastern portions of the 152 and 160 Wyndham Street North parcels. Exceedances of the Table 2 SCS were also identified in groundwater for sodium and chloride across most of the Site (all monitoring wells were sampled, apart from MW109).

Exceedances of EC and SAR in soil were identified to a maximum depth of 7.92 mbgs (MW102B) and were present at depths extending from the ground surface to the bedrock surface. Maximum concentrations were identified at MW102B (EC) and MW113 (SAR) in the fill. Maximum concentrations of chloride and sodium in groundwater were identified at the northern end of the Site in MW102B.

~~Appendix C,~~ Figures 6-4 and 6-13 show the detected exceedances and locations analyzed for other regulated parameters for soil and groundwater, respectively.

The presence of EC and SAR in soil and sodium and chloride in groundwater is likely a result of the application of deicing materials on the parking lot surfaces (APEC-4). Section 49.1 of O. Reg. 153/104 states the SCS is deemed not to be exceeded for the purpose of Part XV.1 of the Environmental Protection Act when a substance that has been applied to surfaces for the safety of vehicular or pedestrian traffic under conditions of snow or ice, or both, exceeds the SCS. Results are details in ~~Appendix B,~~ Tables 6-7c and 6-10c; at the discretion of the QPESA and based on the revised regulation, these parameters are not considered to be COCs at the Phase Two Property.

Metals (including Mercury, Methylmercury, and Hexavalent Chromium)

Based on the current investigation, metals exceedances of the Table 2 SCS in soil were identified within the southeastern portion of the Phase Two Property at one location (MW101; ~~Appendix C,~~ Figure 6-5) and were limited to lead and mercury. These impacts are likely limited to the fill in the existing laneways, based on results and observations during drilling and test pitting activities, and extend to an estimated maximum of 3.0 mbgs based on fill depth in this area (~~Appendix C,~~ Figures 6-5a and 6-5b). The poor-quality fill was not observed at other locations.

Metals exceedances in groundwater were limited to cadmium. Exceedances occurred in two wells (MW107 and MW113) in the southwestern corner of the site (~~Appendix C,~~ Figure 6-14), with maximum concentrations (6.16 micrograms per litre [µg/L]) found at MW113 (screened in the bedrock aquifer at 5.3 to 8.4 mbgs).The cadmium exceedances at these locations have been vertically delineated by MW107B (screened in the deep bedrock, at 13.7 to 15.5 mbgs), where concentrations were less than the Table 2 SCS (~~Appendix C,~~ Figures 6-14a, 6-14b, and 6-14c).

Based on groundwater flow around monitoring wells MW107 and MW113, groundwater moves from these locations towards the southeastern portion of the Site. MW110A and MW101, located downgradient from the identified cadmium exceedances, have cadmium concentrations less than the Table 2 SCS. The identified cadmium impacts in groundwater are therefore not anticipated to migrate offsite.

Additional available downgradient data from MW106 (5.5 to 8.5 mbgs), which is located offsite, on adjacent City-owned property to the south, had reported concentrations of cadmium five times less than the Table 2 SCS. This, along with reported concentrations less than the Table 2 SCS at MW101 and MW110A, indicate onsite exceedances in groundwater are not likely migrating offsite to the nearest downgradient human receptors.

Metal exceedances in soil (lead and mercury) were identified within the fill (that is, not within native soils) and are potentially associated with historical industrial activities associated with the manufacturing of sewing machine accessories, and wire coils and springs (APEC-1) or general impacts associated with the fill identified onsite (APEC-2). Limited impacts were identified in groundwater at the Site (cadmium), which do not appear to correlate to the identified shallow metal impacts in soil. Therefore, it is unlikely that metal impacts in soil are acting as a source of contaminant mass contributing to the groundwater quality at the Phase Two Property. The onsite cadmium impacts may be related to the APECs associated with offsite and upgradient PCAs (to the west) (for example, APEC-11 for Industrial Operations, APEC-12 for Historical Automotive Garage) or other unknown sources.

Polycyclic Aromatic Hydrocarbons

PAH exceedances of the Table 2 SCS in soil were identified at one sample (historical BH-14, at 0.8 to 1.4 mbgs) within the west-central portion of the Site, containing an elevated concentration of dibenzo[a,h]anthracene within the fill materials. No exceedances of the Table 2 SCS were identified in native soils or in groundwater at the Site.

BH208 was advanced and sampled in the same location as historical BH-14, with PAH samples collected at 0.91-1.07 mbgs and 2.29 to 2.44 mbgs. The results were less than the Table 2 SCS, resulting in the combined average of the samples collected at the same depth interval also meeting the Table 2 SCS. It is the QPESA's opinion that the historical exceedance was likely related to the presence of asphalt directly above the sampling location and is not considered representative of soil conditions on the Site (~~Appendix B,~~ Table 6~~-~~-7c). PAHs are not considered a COC on the Phase Two Property.

~~Appendix C,~~ Figures 6-8 and 6-17 show locations investigated for PAHs in soil and groundwater, respectively, in plan view.

Volatile Organic Compounds

Concentrations of chloroform in groundwater samples were reported exceeding the SCS, and the source of the exceedance was believed to be related to the municipal water that was used during the bedrock coring process. Jacobs encountered similar issues during a previous drilling program in Guelph in 2018. For that project, two samples (one from the water truck and one from the water truck hose that was used during the coring activities) were analyzed for VOCs. The VOCs were nondetect in the municipal water samples, apart from bromodichloromethane (12.5 to 12.9 µg/L), dibromochloromethane (11.5 to 11.8 µg/L), and chloroform (9.8 to 10.1 µg/L). These analytes are trihalomethanes that are typically present in municipally treated water, substantiating that municipal water introduced during drilling activities was the likely source of trihalomethanes in groundwater. For the current project, VOCs were nondetect in groundwater apart from the same three analytes, and from one sample with low detections of 1,1-dichloroethane less than the Table 2 SCS.

Based on the available information, the QPESA determined there was a discharge of drinking water (within the meaning of the Safe Drinking Water Act [2002]), resulting in chloroform exceeding the SCS. Under Paragraph 2 of Section 49.1 of the revised O. Reg. 153/04, the SCS is deemed to not be exceeded for the purpose of Part XV.1 of the Act. Results are detailed in~~ Appendix B,~~ Table 6-10c, and at the discretion of the QPESA and the revised regulation, chloroform was not considered to be a COC for the Phase Two ESA.

3.(vii) Migration of Contaminants of Concern

COCs in soil were limited to lead and mercury in the fill unit, with no exceedances of the Table 2 SCS identified below approximately 3.7 mbgs (~~Appendix C,~~ Figure 6-5b). As the minimum water table in the bedrock at the Site was measured at 5.82 mbgs, soil impacts are above the water table (~~ Appendix C,~~ Figure 6-5b); therefore, the potential for migration is limited.

Groundwater exceedances of the Table 2 SCS were limited to cadmium in two locations (MW113 and MW107) located along the southern and western boundaries, respectively, where a groundwater high is located with radial groundwater flow from this area. Cadmium meets the Table 2 SCS at MW107B, providing vertical delineation for MW107 and MW113, along with two other wells (MW110B and MW111) screened in the deeper unconfined bedrock. Cadmium impacts have not been identified in downgradient or cross-gradient locations (MW105, MW100, MW110, and MW101 [~~Appendix C,~~ Figure 6-14]), including available data from an offsite well (MW106) located adjacent to the southern edge of the property boundary. Based on this information, it is unlikely that the impacts are migrating off the Phase Two Property and the Site therefore meets the MECP drinking water component value (GW1) at the nearest offsite human receptors.

As there is no apparent soil source of the cadmium impacts onsite and groundwater impacts are found in the most upgradient locations onsite, these may be a result of migration from offsite sources from the west, or other urban fill (offsite); however, there is currently no direct evidence to confirm.

3.(viii) Climatic Conditions

Climatic or meteorological conditions that may have influenced the distribution and migration of COCs at the Phase Two Property include temporal fluctuations in groundwater levels. No atypical weather events that would be expected to influence COC transport are known to have occurred during Jacobs' investigation of the Phase Two Property. Changes in water elevations can affect the migration of contaminants.

3.(ix) Soil Vapour Intrusion

Vapour intrusion was not evaluated during this Phase Two ESA. No buildings are currently located on the Site. Buildings are planned as part of the redevelopment, but Jacobs understands all soil at the Phase Two Property will be removed to bedrock to facilitate the creation of underground parking. Therefore, soil vapour related to the existing concentrations in soil onsite will not be a concern under these future conditions.

Current or abandoned utilities may be a preferential pathway for potential contaminants, if present; however, as the utilities would be expected to be found in the depths corresponding to the presence of permeable fill and native sand and gravel (as discussed), the utility corridors are not expected to function as preferential pathways at the Phase Two Property.

4. Distribution of Contaminants

As Section 3 discussed, only metals in soil and groundwater exceeded the Table 2 SCS. As~~ Appendix C,~~ Figure 6-5 shows, soil exceedances for lead and mercury are limited to the southeastern corner of the Site. Similarly, groundwater exceedances of cadmium are localized to the southwestern portion of the Site, as ~~Appendix C, ~~Figure 6~~-~~-14 shows. Cross-section~~ Appendix C,~~ Figures 6-5a and 6-5b for soil, and Figures 6-14a through 6-14c for groundwater, provide the vertical distribution of the metal exceedances at the Site and the water table elevations. In soil, metals exceedances are inferred to extend to approximately 3.5 mbgs within the fill, while in groundwater exceedances are inferred to extend to approximately 14.0 mbgs.

~~Appendix C, ~~Figures 2-2a and 2-2b show building outlines and identified underground utilities on the Phase Two Property, respectively. As depth to utilities are unknown, these were not included on the applicable cross-section figures.

5. Contaminant Exposure Assessment

~~Appendix C, ~~Figures 6-20a-b and 6-21a-b present the human health and ecological contaminant pathway and receptor models, respectively, based on current and potential future Site conditions. ~~Appendix C,~~ Figures 6-20a and 6~~-~~-20b present the human health CSMs, with and without risk management measures, respectively.~~ Appendix C,~~ Figures 6-21a and 6-21b present the ecological conceptual site models, with and without risk management measures, respectively. The proposed future land use of the Site is residential, commercial, community, and institutional. The models present preliminary assessments of the exposure pathways that should be further investigated, should a risk assessment be completed for the Phase Two Property.

These figures identify the following five exposure pathways:

1) Release mechanisms – The Phase Two Property became impacted as a result of historical Site operations (refer to the discussion on PCAs and APECs), when COCs were released to the ground (for example, via a spill or leak) or when contaminated soil was imported to the Site and placed as fill.
2) Contaminant transport pathways – COCs released to soil may adsorb to soil or infiltrate deeper into the soil column. COCs in soil may also desorb and leach to groundwater or migrate vertically to the water table. COCs in soil can also be transported in the following ways: they can become airborne via

wind or traffic erosion, be eroded by overland water flow, be taken up by vegetation planted in the soil, or volatilize to outdoor air or indoor enclosed spaces. COCs in groundwater can be transported via vertical or horizontal groundwater flow, volatilization to outdoor air or indoor enclosed spaces, and uptake by vegetation.

3) Human and ecological receptors located on, in, or under the Phase Two Property – Receptors currently present or expected to be present in the future at the Phase Two Property include:
   - Human Receptors – residents, visitors, indoor workers, outdoor workers, construction workers, and utility workers
   - Ecological Receptors - soil organisms, terrestrial plants, birds, and mammals
4) Receptor exposure points – COCs can be contacted directly in soil or indirectly in outdoor and indoor air. COCs were not identified in groundwater.
5) Routes of exposure – The primary routes of exposure by receptor type include:
   - Human Receptors
     - Direct contact with potable groundwater (ingestion or direct contact)
     - Direct contact with either soil or groundwater (incidental ingestion and dermal contact)
     - Inhalation of particulates (dust)
     - Inhalation of volatiles originating from a soil or groundwater source (indoor and outdoor air)
     - Ingestion of garden produce
   - Ecological Receptors
     - Direct contact with either soil or groundwater (ingestion and dermal)
     - Terrestrial plant root uptake from either soil or groundwater
     - Ingestion via terrestrial biota and prey

6. Nonstandard Delineation

Nonstandard delineation per O. Reg. 153/04 Schedule E, Section 7.1 was not conducted at the Site. Delineation was conducted to the requirements of O. Reg. 153/04 Schedule E, Section 7 for all COCs identified at the Site in soil and groundwater.

7. Reliance on Exemption on Site Condition Standard Exceedances

EC, SAR, sodium, chloride and chloroform exceeded the Table 2 SCS; however, were not considered to be COCs at the Property based on the exemptions in Section 49.1 of O. Reg. 153/04 for meeting the site condition standards.

EC, SAR, chloride and sodium were found widespread across the majority of the Site, at elevated concentrations. As the Site currently is in use as a commercial parking lot and laneway, the presence of EC, SAR, chloride and sodium at the Site are related to the application of salt on the parking lot surface during winter conditions. The application of salt has been used for the safety of vehicular and pedestrian traffic. Under Paragraph 1 of Section 49.1 of the revised O. Reg. 153/04, the SCS is deemed to not be exceeded for the purpose of Part XV.1 of the Environmental Protection Act should a substance be applied to surfaces for the safety of vehicular or pedestrian traffic under conditions of snow or ice or both. Therefore, at the discretion of the QPESA, EC and SAR were not considered to be COCs for the Phase Two Property.

Concentrations of chloroform in ground water exceeded the SCS, and the source of the exceedance was believed to be related to the municipal water that was used during the bedrock coring process. Based on a similar issue for a separate City project in 2018, water samples from the water truck and hose used during the coring activities reported elevated trihalomethanes: bromodichloromethane (12.5 to 12.9 µg/L), dibromochloromethane (11.5 to 11.8 µg/L), and chloroform (9.8 to 10.1 µg/L). These analytes are trihalomethanes that are typically present in municipally treated water, substantiating that municipal water introduced during drilling activities was the likely source of trihalomethanes in groundwater.

Based on the available information, the QPESA determined there was a discharge of drinking water (within the meaning of the Safe Drinking Water Act, 2002), resulting in chloroform exceeding the SCS. Under Paragraph 2 of Section 49.1 of the revised O. Reg. 153/04, the SCS is deemed to not be exceeded for the purpose of Part XV.1 of the Act. Therefore, at the discretion of the QPESA, chloroform was not considered to be a COC for the Phase Two ESA.

8. Reliance on Exemption related to Excess Soils

Jacobs did not rely on Paragraph 3 of Section 49.1 of the revised O. Reg. 153/04.

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Attachment D3 Additional and Revised Tables

Table 4-2 (new) - Potentially Contaminating Activities

Table 4-3 (revised) - Areas of Potential Concern

Table 6-4 (revised) - APEC disposition Table

Table 4-2. Potentially Contaminating Activities
55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph Ontario

Potentially Contaminating Activity (PCA) (1)		PCA Unique ID	Descriptions of PCAs (in Phase One ESA Summary) (2)	Property Address / Location of PCA Onsite	Location of PCA (3)	PCA results in APEC	Resulting APEC	Rationale (4)	Information Source
34	Metal Fabrication	1	Historical Industrial Property Use - Coil wire springs (J. Steele Ltd. / Steele's Wire Spring Ltd.) sewing machines (Raymond Manufacturing Co. Ltd./ White Sewing Machine Co. of Canada), and accessories were historically manufactured at 55 Baker Street.	North and Central Portions of Parcel A	Onsite	YES	APEC-1	PCA on the Phase One Property	FIP
30	Importation of Fill Material of Unknown Quality	2	Unknown/Poor Quality Fill Material – Fill material to 3.0 metres below ground surface (mbgs) was identified at 55 Baker Street in the XCG Phase II ESA (XCG 2008), and is also likely located at the Wyndham properties from demolition of historical buildings, based on when it was developed (1862).	Entire Phase One Property	Onsite	YES	APEC-2	PCA on the Phase One Property	HER
55	Transformer Manufacturing, Processing and Use	3	Historical Transformers – The 1960 FIP identified an area of 55 Baker Street labelled as 'transformers.'	East-Central Portion of Parcel A	Onsite	YES	APEC-3	PCA on the Phase One Property	FIP
28	Gasoline and Associated Products Storage in Fixed Tanks	4	Historical Retail Fuel Outlet – operations were identified at 160 Woolwich Street and showed four associated gasoline USTs fronting on Woolwich on the 1929 FIP, and two gasoline USTs on the 1960 FIP.	160 Woolwich Street	Offsite	YES	APEC-6	Hydraulically downgradient, but adjacent to the Phase One Property	FIP
37	Operation of Dry Cleaning Equipment (where chemicals are used)	5	Historical Dry Cleaning - Potential dry cleaners were identified at 164-166 Woolwich Street on FIPs (1929, 1946). The building is labeled as "Cleaning & Dyeing" on the 1929 FIP with a small area in the back labeled "Dry Cleaning. The 1946 FIP has the building relabeled as "Clothes Cleaning". City directories list Card, JM Co. Cleaners and Dyers and Woolwich Cleaners and Tailors at 164-166 Woolwich between 1917 and 1955.	164-166 Woolwich Street	Offsite	YES	APEC-5	Hydraulically downgradient, but adjacent to the Phase One Property	FIP, CDL
27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	6	Historical Automotive Garage – An automotive garage (Swanston L B Auto Repair and Heffernon Motor Car Co. Garage) was identified at 45 Baker Street from approximately 1929 to 1960 based on FIPs and City directories.	45 Baker Street	Offsite	YES	APEC-12	Hydraulically upgradient and adjacent to the Phase One Property	FIP
28	Gasoline and Associated Products Storage in Fixed Tanks	7	Historical USTs - Two USTs identified on Yarmouth Street on the 1929 and 1946 FIPs were associated with the historical automotive repair/servicing operations at 45 Baker Street.	On Yarmouth Street/ behind 45 Baker Street	Offsite	YES	APEC-12	Hydraulically upgradient and adjacent to the Phase One Property	FIP
34	Metal Fabrication	8	Historical Offsite Industrial Operations - Industrial manufacturing and potential metal fabrication was noted along Yarmouth Street from as early as 1929. Cooke & Denison Machine and Tool Works was identified at 40 Baker Street on FIPs from 1929 to 1960.	40 Baker Street	Offsite	YES	APEC-11	Hydraulically upgradient and adjacent to the Phase One Property	FIP
28	Gasoline and Associated Products Storage in Fixed Tanks	9	Historical UST - One UST identified on the 1946 FIP on the southwest portion of 40 Baker Street.	South of #29-40 Baker Street	Offsite	YES	APEC-11	Hydraulically upgradient and adjacent to the Phase One Property	FIP
28	Gasoline and Associated Products Storage in Fixed Tanks	10	Historical UST - One UST identified within the northwest portion of 2 Baker Street (historically 22 Baker Street), in a building labeled 'auto' occupied by Guelph Creamery (1946 FIP).	2 Baker Street	Offsite	YES	APEC-22	Hydraulically upgradient and adjacent to the Phase One Property	FIP
37	Operation of Dry Cleaning Equipment (where chemicals are used)	11	Historical Dry Cleaning - Ferguson's Cleaners, a potential dry cleaning operation was listed in the city directories at 2 Quebec Street in 1975.	2 Quebec Street	Offsite	YES	APEC-22	Hydraulically upgradient and adjacent to the Phase One Property	CDL
37	Operation of Dry Cleaning Equipment (where chemicals are used)	12	Potential Historical Dry Cleaning - "Chinese Laundry" was located at at 152 Woolwich Street from at least 1911 to 1946 based on FIPs (1911, 1929, 1946) and city directories (Lee, Lee Laundry from 1917 to 1936). It is noted that this laundry service was typically hand-laundry and not likely dry cleaning; in addition, PCE was not being readily used in dry cleaning until the 1930s.	152 Woolwich Street	Offsite	YES	APEC-7	Hydraulically downgradient, but adjacent to the Phase One Property	FIP, CDL
28	Gasoline and Associated Products Storage in Fixed Tanks	13	Historical Fuel Oil Underground Storage Tank (UST) – A historical UST was identified at 176 Wyndham Street North along the west exterior wall (beside the garage and repairs building) on the 1960 FIP.	176 Wyndham Street North	Offsite	YES	APEC-9	Hydraulically downgradient, but adjacent to the Phase One Property	FIP

Table 4-2. Potentially Contaminating Activities
55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph Ontario

Potentially Contaminating Activity (PCA) [1]		PCA Unique ID	Descriptions of PCAs (in Phase One ESA Summary) [2]	Property Address / Location of PCA Onsite	Location of PCA [3]	PCA results in APEC	Resulting APEC	Rationale [4]	Information Source
27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	18	Historical Automotive Repair - Heffernan Motors, a historical garage, was identified at 146 Wyndham Street North (from approximately 1930 until 1946) based on city directories.	146 Wyndham Street North	Offsite	YES	APEC-13	Hydraulically upgradient/ transgradient and adjacent to the Phase One Property	CDL
37	Operation of Dry Cleaning Equipment (where chemicals are used)	19	Potential Historical Dry Cleaning - potential dry cleaning operations were identified at 108 Wyndham Street North from 1917 to 1922 based on city directories (Gemmel & Co. Dyers and Cleaners).	108 Wyndham Street North	Offsite	YES	APEC-15	Hydraulically downgradient, but adjacent to the Phase One Property	CDL
28	Gasoline and Associated Products Storage in Fixed Tanks	25	Historical UST - the 1946 FIP identified one UST under the roadway at 7 Quebec Street.	7 Quebec Street	Offsite	YES	APEC-16	Hydraulically upgradient/ transgradient to the Phase One Property	FIP
other	Activity not defined in O. Reg. 153/04 Table 2 of Schedule D	27	Historical Gasoline Spill – Base on database searches, a historical gasoline spill at the intersection of Chapel Lane and Baker Street occurred, with possible environmental impact to land and water. The quantity and exact location are unknown	intersection of Chapel Lane and Baker Street	Offsite	YES	APEC-14	Hydraulically upgradient and adjacent to the Phase One Property	ELE
28	Gasoline and Associated Products Storage in Fixed Tanks	43	Historical Aboveground Storage Tank (AST): - Vent and fill pipes associated with an AST were observed at the corner of 20 Quebec Street, a southern adjacent property to the Site during the Pinchin Site Visit (in 2018).	20 Quebec Street	Offsite	YES	APEC-16	Hydraulically upgradient and adjacent to the Phase One Property	SR
28	Gasoline and Associated Products Storage in Fixed Tanks	50	Historical Service Station - A service station with 3 associated gasoline USTs is identified at the southwest corner of Suffolk and Yarmouth Streets (25 Suffolk) on the1946 and 1960 FIPs. City directories list Regent C&H Service Station, at 27 Suffolk Street East in 1955.	27 Suffolk Street East	Offsite	YES	APEC-17	Hydraulically upgradient/ transgradient to the Phase One Property	FIP, CDL
37	Operation of Dry Cleaning Equipment (where chemicals are used)	51	Historical Dry Cleaning Operation - Reliable Cleaners, a potential dry cleaning facility was listed at 84 Yarmouth Street in 1955 in city directories.	Yarmouth Street	Offsite	YES	APEC-17	Hydraulically upgradient/ transgradient to the Phase One Property	CDL
37	Operation of Dry Cleaning Equipment (where chemicals are used)	52	Historical Dry Cleaning - Potential dry cleaners (Langley's Ltd. Cleaners) were identified at 172 Wyndham Street North between at least 1930 and 1939 based on city directories.	172 Wyndham Street North	Offsite	YES	APEC-8	Hydraulically downgradient, but adjacent to the Phase One Property	CDL
27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	53	Historical Automotive Repair – A historical automotive repair shop was identified at the back of 176 Wyndham Street on the 1960 FIP.	176 Wyndham Street North	Offsite	YES	APEC-10	Hydraulically downgradient, but adjacent to the Phase One Property	FIP
27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	55	Historical Automotive Repair - City directories list Hasting Motors, an automotive repair/servicing facility at 27 Suffolk Street East in 1955.	27 Suffolk Street East	Offsite	YES	APEC-17	Hydraulically upgradient/ transgradient to the Phase One Property	CDL
48	Salt Manufacturing, Processing and Bulk Storage	56	Use of Road Salts at the Property – The Site is currently used as a parking lot and road salts are known to be applied for vehicular and pedestrian safety.	Entire Phase One Property	Onsite	YES	APEC-4	PCA on the Phase One Property	
28	Gasoline and Associated Products Storage in Fixed Tanks	57	Former Oil Shed – The 1911 FIP showed a small oil shed in the southwestern corner of the White Sewing Machine of Canada parcel of land on 55 Baker Street.	Southwest portion of 55 Baker Street	Onsite	YES	APEC-18	PCA on the Phase One Property	FIP
28	Gasoline and Associated Products Storage in Fixed Tanks	58	Former Oil House – The 1911 FIP showed a small oil house on the former White Sewing Machine of Canada parcel, now the western portion of 152 Wyndham Street.	Western portion of 152 Wyndham Street North	Onsite	YES	APEC-19	PCA on the Phase One Property	FIP
Other	Activity not defined in O. Reg. 153/04 Table 2 of Schedule D	59	Former Coke Storage – The 1911 FIP showed a garage located on the northeastern portion of 55 Baker Street.	Northeast portion of 55 Baker Street	Onsite	YES	APEC-20	PCA on the Phase One Property	FIP
27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	60	Former Garage – The 1960 FIP showed a garage located on the northeastern portion of 55 Baker Street.	Northeast portion of 55 Baker Street	Onsite	YES	APEC-21	PCA on the Phase One Property	FIP

Table 4-2. Potentially Contaminating Activities
55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph Ontario

Potentially Contaminating Activity (PCA) (1)		PCA Unique ID	Descriptions of PCAs (in Phase One ESA Summary) (2)	Property Address / Location of PCA Onsite	Location of PCA (3)	PCA results in APEC	Resulting APEC	Rationale (4)	Information Source
55	Transformer Manufacturing, Processing and Use	14	Transformer - One padmounted oil cooled transformer was identified during the Pinchin Site Visit (in 2018) on the west exterior portion of 138 Wyndham Street North. No staining was observed on the concrete slab in the vicinity of the transformer and no evidence of leakage was observed during the Site reconnaissance.	Behind 138 Wyndham Street North	Offsite	NO		Hydraulically upgradient/ transgradient of the Phase One Property, but nature of PCA is shalllow soil contamination	SR
28	Gasoline and Associated Products Storage in Fixed Tanks	15	Historical Service Station - a former auto servicing and refueling station was located at 145 Woolwich with 4 gasoline USTs located out front, on Woolwich Street. The service station existed from at least 1929 to 1960 based on the FIPs and city directories (Simpson, CT, Service Station).	145 Woolwich Street	Offsite	NO		Hydraulically downgradient of the Phase One Property	FIP, CDL
27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	16	Historical Automotive Repair - Auto repair/servicing activities by Muller Bros were present at 135-139 Woolwich Street from at least 1936 until 1960 based on FIPs and city directories.	135-139 Woolwich Street	Offsite	NO		Hydraulically downgradient of the Phase One Property	FIP, CDL
28	Gasoline and Associated Products Storage in Fixed Tanks	17	Diesel AST - One emergency diesel-fired emergency generator with an associated belly-tank was identified on the west exterior portion of 138 Wyndham Street North during the Pinchin Site Visit (in 2018). No staining was observed on the concrete slab in the vicinity of the emergency generator and no evidence of leakage was observed during the Site reconnaissance.	Behind 138 Wyndham Street North	Offsite	NO		Hydraulically upgradient/ transgradient of the Phase One Property, but nature of PCA is shalllow soil contamination	SR
31	Ink Manufacturing, Processing and Bulk Storage	20	Historical Printing Operation - Printing indicated in back of 90-96 Wyndham Street North on the 1929 and 1946 FIPs. City directories list Kelso Printing Co.,at 96 Wyndham Street North in 1936.	96 Wynhdam Street North	Offsite	NO		Hydraulically downgradient of the Phase One Property	FIP, CDL
37	Operation of Dry Cleaning Equipment (where chemicals are used)	21	Potential Historical Dry Cleaning - "Chinese Laundry" was identified at70 Wyndham Street North on the 1911 and 1916 FIP. Based on city directory searches, these operations were present until approximately 1922 under Young Wong Laundry. It is noted that this laundry service was typically hand-laundry and not likely dry cleaning; in addition, PCE was not being readily used in dry cleaning until the 1930s.	70 Wyndham Street North	Offsite	NO		Hydraulically transgradient, and distance is greater than 50 m from the Phase One Property	FIP, CDL
37	Operation of Dry Cleaning Equipment (where chemicals are used)	22	Potential Historical Dry Cleaning - "Chinese Laundry" was identified at 55-57 Quebec Street on 1911 and 1916 FIPs. City directories indicate Lee Wing Laundry present from 1910 to 1939. It is noted that this laundry service was typically hand-laundry and not likely dry cleaning; in addition, PCE was not being readily used in dry cleaning until the 1930s.	55-57 Quebec Street	Offsite	NO		Based on site-specific groundwater flow, this location is hydraulically transgradient from the Phase One Property. Distance is greater than 50 m from the Phase One Property	FIP, CDL
37	Operation of Dry Cleaning Equipment (where chemicals are used)	23	Potential Historical Dry Cleaning - "Cleaning and Pressing" at 49 Quebec Street on 1911 and 1916 FIPs, and Chas Kutt cleaner listed in the city directories from 1910 to 1916. It is noted that PCE was not being readily used in dry cleaning until the 1930s.	49 Quebec Street	Offsite	NO		Based on site-specific groundwater flow, this location is hydraulically transgradient from the Phase One Property. Distance is greater than 50 m from the Phase One Property	FIP, CDL
37	Operation of Dry Cleaning Equipment (where chemicals are used)	24	Potential Historical Dry Cleaning - Starkman Cleaning and Pressing, a potential dry cleaning operation was listed at 31 Quebec Street, from 1916 until 1917. It is noted that PCE was not being readily used in dry cleaning until the 1930s.	31-35 Quebec Street	Offsite	NO		Based on site-specific groundwater flow, this location is hydraulically transgradient from the Phase One Property. Distance is greater than 50 m from the Phase One Property	CDL
37	Operation of Dry Cleaning Equipment (where chemicals are used)	26	Potential Historical Dry Cleaning - a building labelled ‘cleaning and pressing’, a potential dry cleaning operation was identified at 17 Quebec Street in the 1946 FIP.	17 Quebec Street	Offsite	NO		Based on site-specific groundwater flow, this location is hydraulically transgradient from the Phase One Property. Distance is greater than 50 m from the Phase One Property	FIP
28	Gasoline and Associated Products Storage in Fixed Tanks	28	Historical Service Station and USTs - The 1929 and 1946 FIPs identified a gasoline UST at 88 Norfolk Street, infront of the automotive garage on Norfolk Street. The 1960 FIP identifies a gasoline service station in place of the garage, with 3 USTs within the property and an assoicated address of 90 Norfolk Street.	Corner of Commercial Street and Norfolk Street (88 / 90 Norfolk	Offsite	NO		Hydraulically upgradient/ transgradient, but distance is greater than 100 m from the Phase One Property	FIP

Table 4-2. Potentially Contaminating Activities
55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph Ontario

Potentially Contaminating Activity (PCA) (1)		PCA Unique ID	Descriptions of PCAs (in Phase One ESA Summary) (2)	Property Address / Location of PCA Onsite	Location of PCA (3)	PCA results in APEC	Resulting APEC	Rationale (4)	Information Source
28	Gasoline and Associated Products Storage in Fixed Tanks	29	Historical UST - the 1946 FIP identified one gasoline UST at 17 Quebec Street	behind 19-23 Quebec Street	Offsite	NO		Based on site-specific groundwater flow, this location is hydraulically transgradient from the Phase One Property. Distance is greater than 50 m from the Phase One Property	FIP
37	Operation of Dry Cleaning Equipment (where chemicals are used)	30	Potential Historical Dry Cleaning - "Chinese Laundry" was indicated at 13 Quebec Street on the 1916 FIP. The city directories indicate Ontario Laundry is present from 1917 to 1930. It is noted that this laundry service was typically hand-laundry and not likely dry cleaning; in addition, PCE was not being readily used in dry cleaning until the 1930s.	13 Quebec Street	Offsite	NO		Based on site-specific groundwater flow, this location is hydraulically transgradient from the Phase One Property. Distance is greater than 50 m from the Phase One Property	FIP, CDL
28	Gasoline and Associated Products Storage in Fixed Tanks	31	Historical Gasoline Service Station - a refueling station with 3 associated USTs is identified on the 1946 FIP at 46-48 Cork Street East.	46-48 Cork Street East	Offsite	NO		Hydraulically transgradient, and distance is greater than 50 m from the Phase One Property	FIP
27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	32	Historical Automotive Repair - a garage is identified on the 1916 and 1929 FIPs and automotive repair/servicing activities in the 1946 FIP at 23-25 Cork Street East.	23-25 Cork Street	Offsite	NO		Hydraulically transgradient, and distance is greater than 100 m from the Phase One Property	FIP
28	Gasoline and Associated Products Storage in Fixed Tanks	33	Historical UST - the 1929 and 1946 FIPs iidentify one UST infront of the garage at 23-25 Cork Street East	23 Cork Street	Offsite	NO		Hydraulically transgradient, and distance is greater than 100 m from the Phase One Property	FIP
37	Operation of Dry Cleaning Equipment (where chemicals are used)	34	Potential Historical Dry Cleaning - "Chinese Laundry" was indicated at 34 Quebec Street on the 1911 FIP. Elm Bros Laundry was identified in the city directories at 34 Quebec Street from 1910 until 1916. It is noted that this laundry service was typically hand-laundry and not likely dry cleaning; in addition, PCE was not being readily used in dry cleaning until the 1930s.	34 Quebec Street	Offsite	NO		Based on site-specific groundwater flow, this location is hydraulically transgradient from the Phase One Property. Based on the nature of the indicated services, the likelihood that the operations included dry cleaning are very low.	FIP, CDL
28	Gasoline and Associated Products Storage in Fixed Tanks	35	Historical Oil Cellar - Bond Hardware Co. Ltd. was located at 42-56 Wyndham Street North. This property was labelled on the 1892, 1911 and 1916 FIPs as containing an ‘oil cellar under the sidewalk’ at the northwest exterior corner of this building.	St. George Square	Offsite	NO		Hydraulically transgradient, and distance is greater than 50 m from the Phase One Property	FIP
31	Ink Manufacturing, Processing and Bulk Storage	36	Historical Printing Operation - Clark Printer, a historical printing operation was listed in city directories at 14 Wyndham Street North in 1901.	14 Wyndham Street North	Offsite	NO		Hydraulically transgradient/ downgradient, and distance is greater than 100 m from the Phase One Property	CDL
31	Ink Manufacturing, Processing and Bulk Storage	37	Historical Printing Operation - Turnbull Wright Co. Printers, a historical printing operation was listed in city directories at 13 Wyndham Street North in 1901.	13 Wyndham Street North	Offsite	NO		Hydraulically transgradient, and distance is greater than 100 m from the Phase One Property	CDL
28	Gasoline and Associated Products Storage in Fixed Tanks	38	Historical UST - the 1946 FIP identified one UST at 106 Quebec Street	106 Quebec Street	Offsite	NO		Hydraulically transgradient/ downgradient, and distance is greater than 100 m from the Phase One Property	FIP
27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	39	Historical Automotive Repair - 'Garage & Repairs' were identified in the 1946 FIP at 106 Quebec Street.	106 Quebec Street	Offsite	NO		Hydraulically transgradient/ downgradient, and distance is greater than 100 m from the Phase One Property	FIP
31	Ink Manufacturing, Processing and Bulk Storage	40	Historical Printing Operation - Herald Printing, a historical printing operation was identified at 65 Quebec Street in the 1892, 1897, and 1911 FIPs.	65 Quebec Street	Offsite	NO		Hydraulically transgradient/ downgradient, and distance is greater than 100 m from the Phase One Property	FIP

Table 4-2. Potentially Contaminating Activities
55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph Ontario

Potentially Contaminating Activity (PCA) (1)		PCA Unique ID	Descriptions of PCAs (in Phase One ESA Summary) (2)	Property Address / Location of PCA Onsite	Location of PCA (3)	PCA results in APEC	Resulting APEC	Rationale (4)	Information Source
37	Operation of Dry Cleaning Equipment (where chemicals are used)	41	Potential Historical Dry Cleaning - Based on city directories Sam Sing Landry, a potential dry cleaning operation was identified at 146 Quebec Street in 1917 until 1939. It is noted that this laundry service was typically hand-laundry and not likely dry cleaning; in addition, PCE was not being readily used in dry cleaning until the 1930s.	146 Quebec Street	Offsite	NO		Hydraulically transgradient/ downgradient, and distance is greater than 100 m from the Phase One Property	CDL
37	Operation of Dry Cleaning Equipment (where chemicals are used)	42	Potential Historical Dry Cleaning - Chinese Laundry, a potential dry cleaning operation was identified at 101 Quebec Street in 1910 until 1944 on city directories and on the 1911 FIP. It is noted that this laundry service was typically hand-laundry and not likely dry cleaning; in addition, PCE was not being readily used in dry cleaning until the 1930s.	101 Quebec Street	Offsite	NO		Hydraulically transgradient/ downgradient, and distance is greater than 100 m from the Phase One Property	FIP, CDL
27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	44	Historical Automotive Repair - a garage is identified at 169 Woolwich Street on the 1929 FIP, with an 'Auto Ignition and Battery Service' under construction on the 1946 FIP.	173 Woolwich Street	Offsite	NO		Hydraulically downgradient of the Phase One Property	FIP
28	Gasoline and Associated Products Storage in Fixed Tanks	45	Historical Gasoline Service Station - a refueling and auto service station with 4 associated USTs is identified on the 1929 and 1946 FIPs at the southwest corner of Woolwich and Suffolk Streets. City directories indicate service stations (White Rose Service Station, Can Oil Co's Ltd. Service Station and Daley's Tire Shop Ltd & Service Station) present up to 1980.	192 Woolwich Street	Offsite	NO		Hydraulically transgradient, and distance is greater than 100 m from the Phase One Property	FIP, CDL
37	Operation of Dry Cleaning Equipment (where chemicals are used)	46	Dry Cleaning Operations - Dry cleaning operation (4 Raza Inc, Parkers Cleaners, Daniel's Dry Cleaners Ltd.) have been located at 22 Suffolk Street East from 1986 to present based on city directories and MECP waste generator records.	22 Suffolk Street	Offsite	NO		Hydraulically transgradient, and distance is greater than 100 m from the Phase One Property	CDL, ELE
28	Gasoline and Associated Products Storage in Fixed Tanks	47	Historical UST - the CFOT database indicated that a fuel oil UST (single-wall steel) was installed at 21 Paisley Street in 1957 for Crewgall Properties. A furnace oil spill was reported in 2005 with soil contamination (amount not reported).	21 Paisley Street	Offsite	NO		Hydraulically upgradient/ transgradient, but distance is greater than 100 m from the Phase One Property	ELE
31	Ink Manufacturing, Processing and Bulk Storage	48	Historical Printing Operation - Leaman Printing Co., a historical printing operation was listed in the city directories at 54 Cork Street East, from 1939 until 1944	50 Cork Street East	Offsite	NO		Hydraulically transgradient, and distance is greater than 50 m from the Phase One Property	CDL
28	Gasoline and Associated Products Storage in Fixed Tanks	49	Historical UST - the CFOT database indicated that a 5,072-L fibreglass reinforced plastic single-wall fuel oil UST was installed at 20 Cork Street East in 1986 for Bell Canada.	20 Cork Street East	Offsite	NO		Hydraulically transgradient, and distance is greater than 100 m from the Phase One Property	ELE
31	Ink Manufacturing, Processing and Bulk Storage	54	Historical Printing Operation - a historical printing operation was reported at 90 Woolwich Street in the Pinchin Phase One from the 1946 FIP; however Jacobs reviewed this FIP and did not see the reported operations at this addresss, and therefore this PCA is noted to be removed.	90 Woolwich Street	Offsite	NO		PCA removed, was not found on source material as reported.	

Notes

[1] PCA – potentially contaminating activity (as defined by O.Reg. 153/04)

[2] PCAs 1 to 56 were identified in the Pinchin Phase One ESA (2018), and descriptions have been updated where applicable for clarity. Additional PCAs (57 and above) were identified by Jacobs.

[3] Refer to Figure 4-1a and 4-1b for PCA locations.

[4] Regionl groundwater flow was inferred to be towards Speed River (north to north-east); site-specific groundwater flow was shown to be towards the north on the north portion of the Site, and to the east on the southern portion of the Site (see Figures 6-2a to 6-2c). Some of the updgradient/downgradient terminology may have changed from the Pinchin (2018) report based on this updated interpretation.

APEC = Area of Potential Environmental Concern
AST = Aboveground storage tank
CDL = City Directory Listings
ELE = EcoLog ERIS Database Search
FIP = Fire insurance plan
HER = Historical Environmental Reports
ID = Identification
mbgs = metres below ground surface

MECP = Ontario Ministry of the Environment, Conservation and Parks
offsite = Within Phase One Study area, outside the Phase One Property
onsite = Phase One Property
PCA = Potentially contaminating activity
PCE = tetrachloroethylene
SR = site reconnaissance
UST = Underground storage tank

Table 4-3. Areas of Potential Environmental Concern
55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Areas of Potential Environmental Concern [a]		Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity [b]		Location of PCA (on-site or off-site) [c]	Contaminants of Potential Concern [d]	Media Potentially Impacted (Groundwater, soil and/or sediment)
APEC-1	Historical Industrial Property Use	55 Baker Street Park Lane	34	Metal Fabrication	Onsite	Metals, hydride-forming Metals, ORPs (Hg, CrVI, B-HWS, CN-, EC, SAR), PHCs, PAHs, VOCs, BTEX	Soil and Groundwater
APEC-2	Unknown/Poor Quality Fill Material	Entire Site	30	Importation of Fill Material of Unknown Quality	Onsite	Metals, hydride-forming Metals, ORPs (Hg, CrVI, B-HWS, CN-, EC, SAR), PHCs, PAHs, VOCs, BTEX	Soil and Groundwater
APEC-3	Historical Transformers	East-central portion of 55 Baker Street	55	Transformer Manufacturing, Processing and Use	Onsite	PHCs, BTEX, PCBs, PAHs	Soil
APEC-4	Use of Road Salts	Entire Site	48	Salt Manufacturing, Processing and Bulk Storage	Onsite	EC, SAR, sodium, chloride	Soil and Groundwater
APEC-5	Historical Dry Cleaning	North portion of 55 Baker Street	37	Operation of Dry Cleaning Equipment (where chemicals are used)	Offsite - North	VOCs	Groundwater
APEC-6	Historical Retail Fuel Outlet and automotive repair/servicing operations	North portion of 55 Baker Street	27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	Offsite - North	Metals, hydride-forming Metals, ORPs (Hg, CrVI), PHCs, PAHs, VOCs, BTEX	Groundwater
			28	Gasoline and Associated Products Storage in Fixed Tanks			
APEC-7	Historical Dry Cleaning	North portion of 55 Baker Street	37	Operation of Dry Cleaning Equipment (where chemicals are used)	Offsite - North	VOCs	Groundwater
APEC-8	Historical Dry Cleaning	North portion of 160 Wyndham Street North and northeast portion of 55 Baker Street	37	Operation of Dry Cleaning Equipment (where chemicals are used)	Offsite - Northeast	VOCs	Groundwater
APEC-9	Historical Fuel Oil UST	North portion of 55 Baker Street	28	Gasoline and Associated Products Storage in Fixed Tanks	Offsite - Northeast	PHCs, VOCs, BTEX, PAHs, Metals (Lead)	Groundwater
APEC-10	Historical Automotive Repair	Northeast portion of 55 Baker Street	27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	Offsite - Northeast	Metals, hydride-forming Metals, ORPs (Hg, CrVI), PHCs, PAHs, VOCs, BTEX	Groundwater
APEC-11	Historical Off-Site Industrial Operations and Historical UST	West-central portion of 55 Baker Street	34	Metal Fabrication	Offsite - West	Metals, hydride-forming Metals, ORPs (Hg, CrVI, B-HWS, CN-, EC, SAR), PHCs, PAHs, VOCs, BTEX	Groundwater
			28	Gasoline and Associated Products Storage in Fixed Tanks			
APEC-12	Historical Automotive Garage and Historical USTs	West-central portion of 55 Baker Street	27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	Offsite - West	Metals, hydride-forming Metals, ORPs (Hg, CrVI), PHCs, PAHs, VOCs, BTEX	Groundwater
			28	Gasoline and Associated Products Storage in Fixed Tanks			
APEC-13	Historical Automotive Garage	South portion of 152 Wyndham Street North	27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	Offsite - East	Metals, hydride-forming Metals, ORPs (Hg, CrVI), PHCs, PAHs, VOCs, BTEX	Groundwater
APEC-14	Historical Gasoline Spill	Southwest corner of 55 Baker Street	Other	Activity not defined in O. Reg. 153/04 Table 2 of Schedule D	Offsite - South	PHCs, PAHs, ~~Metals (Lead)~~[a], VOCs (MTBE), BTEX	Groundwater
APEC-15	Historical Dry Cleaning	Southeast portion of Park Lane	37	Operation of Dry Cleaning Equipment (where chemicals are used)	Offsite - East	VOCs	Groundwater
APEC-16	Historical AST and UST	Southwest corner of 55 Baker Street	28	Gasoline and Associated Products Storage in Fixed Tanks	Offsite - South	PHCs, VOCs, BTEX, PAHs, Metals (Lead)	Groundwater
APEC-17	Dry Cleaning, Historical Retail Fuel Outlet, and Automotive Repair	Northwest portion of 55 Baker Street	27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	Offsite - Northwest	Metals, hydride-forming Metals, ORPs (Hg, CrVI), PHCs, PAHs, VOCs, BTEX	Groundwater
			28	Gasoline and Associated Products Storage in Fixed Tanks			
			37	Operation of Dry Cleaning Equipment (where chemicals are used)			
APEC-18	Former Oil Shed	Southwest portion of 55 Baker Street	28	Gasoline and Associated Products Storage in Fixed Tanks	Onsite	Metals, hydride-forming Metals, ORPs (Hg, CrVI), PHCs, PAHs, VOCs, BTEX	Soil and Groundwater
APEC-19	Former Oil House	Western portion of 152 Wyndham Street North	28	Gasoline and Associated Products Storage in Fixed Tanks	Onsite	Metals, hydride-forming Metals, ORPs (Hg, CrVI), PHCs, PAHs, VOCs, BTEX	Soil and Groundwater
APEC-20	Former Coke Storage	Northeast portion of 55 Baker Street	Other	Activity not defined in O. Reg. 153/04 Table 2 of Schedule D	Onsite	Metals, hydride-forming Metals, ORPs (Hg, CrVI), PHCs, PAHs, VOCs, BTEX, ABNs	Soil and Groundwater
APEC-21	Former Garage	Northeast portion of 55 Baker Street	27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	Onsite	Metals, hydride-forming Metals, ORPs (Hg, CrVI), PHCs, PAHs, VOCs, BTEX	Soil and Groundwater
APEC-22	Historical Dry Cleaning Operations and Historical UST	Southwest portion of 55 Baker Street	28	Gasoline and Associated Products Storage in Fixed Tanks	Offsite	Metals, hydride-forming Metals, ORPs (Hg, CrVI), PHCs, PAHs, VOCs, BTEX	Groundwater
			37	Operation of Dry Cleaning Equipment (where chemicals are used)			

Notes:

[a] APEC means the area on, in, or under a Phase One Property where one or more contaminants are potentially present, as determined through the Phase One ESA, including through (a) identification of past or present uses on, in, or under the Phase One Property; and (b) identification of PCAs.

APECs 1 to 16 were identified in the Pinchin (2018) Phase One ESA. APECs shaded in grey were identified by Jacobs. Metals as a COPC were removed from APEC-14 by Jacobs as the gasoline spill occurred in 2003.

[b] PCA – potentially contaminating activity means a use or activity as set out in Column A of Table 2 of Schedule D of O. Reg. 153/04 that is occurring or has occurred in a Phase One study area.

[c] "Onsite" refers to within the Phase One/Two Property; "Offsite" refers to the Phase One Study Area.

[d] Contaminants of potential concern were identified using the Method Groups as identified in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act, March 9, 2004, amended as of July 1, 2011.

ABN = Acid Base Neutrals
APEC = Area of Potential Environmental Concern
B-HWS = hot water soluble boron
BTEX = benzene, toluene, ethylbenzene and xylenes
CN- = cyanide
COPC = contaminant of potential concern

CrVI = hexavalent chromium
EC = electrical conductivity
Hg = mercury
MTBE = methyl tert-butyl ether
O. Reg. = Ontario Regulation
ORP = other regulated parameter

PAH = Polyaromatic Hydrocarbons
PCB = Polychlorinated biphenyl
PHC = Petroleum Hydrocarbons
SAR = sodium adsorption ratio
UST = underground storage tank
VOC = Volatile Organic Compounds

Table 6-4. APEC Disposition Table
55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Areas of Potential Environmental Concern (APEC)		PCA [a.]		Contaminants of Potential Concern [b]	Location Associated with APEC Area	Location Type	List of Parameter Groups Tested (Soil) [b.]	List of Parameter Groups Tested (GW) [b.]
APEC-1	Historical Industrial Property Use	34	Metal Fabrication	Metals, hydride-forming Metals, ORPs (Hg, CrVI, B-HWS, CN-, EC, SAR), PHCs, PAHs, VOCs, BTEX	BH-03	BH	BTEX, Metals (missing Uranium)*, PAHs, PHCs, VOCs	--
					BH-04	BH	Metals (missing Uranium)*, PCBs, PHCs	--
					BH-10	BH	Metals (missing Uranium)*, PAHs	--
					BH-11	BH	Metals (missing Uranium)*, PAHs, PHCs	--
					BH-14	BH	BTEX, Metals (missing Uranium)*, PAHs, PHCs, VOCs	--
					BH-16-MW2	BH	Metals (missing Uranium)*, PCBs, PHCs	--
					BH-17-MW5S	BH	Metals (missing Uranium)*, PHCs	--
					BH200	BH	BTEX, ORPs, Metals, PAHs, PCBs, PHCs, VOCs	--
					BH201	BH	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	--
					BH202	BH	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	--
					BH207	BH	PHCs	--
					BH208	BH	PAHs	--
					BH209	BH	Metals, PCBs	--
					MW100	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
					MW102A	MW	--	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
					MW102B	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
					MW103	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
					MW104	MW	ABNs, BTEX, ORPs, Metals, PAHs, PHCs, VOCs	ABNs, BTEX, ORPs, Metals, PAHs, PHCs, VOCs
					MW105	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
					MW111	MW	--	ORPs, Metals
APEC-2	Unknown/Poor Quality Fill Material	30	Importation of Fill Material of Unknown Quality	Metals, hydride-forming Metals, ORPs (Hg, CrVI, B-HWS, CN-, EC, SAR), PHCs, PAHs, VOCs, BTEX	BH-03	BH	BTEX, Metals (missing Uranium)*, PAHs, PHCs, VOCs	--
					BH-04	BH	Metals (missing Uranium)*, PCBs, PHCs	--
					BH-05	BH	Metals (missing Uranium)*	--
					BH-06	BH	Metals (missing Uranium)*	--
					BH-07	BH	Metals (missing Uranium)*	--
					BH-08-MW4	BH	BTEX, Metals (missing Uranium)*, PCBs, PHCs, VOCs	--
					BH-09	BH	Metals (missing Uranium)*	--
					BH-10	BH	Metals (missing Uranium)*, PAHs	--
					BH-11	BH	Metals (missing Uranium)*, PAHs, PHCs	--
					BH-13	BH	Metals (missing Uranium)*, PHCs	--
					BH-14	BH	BTEX, Metals (missing Uranium)*, PAHs, PHCs, VOCs	--
					BH-15-MW3	BH	Metals (missing Uranium)*, PHCs	--
					BH-16-MW2	BH	Metals (missing Uranium)*, PCBs, PHCs	--
					BH-17-MW5S	BH	Metals (missing Uranium)*, PHCs	--
					BH200	BH	BTEX, ORPs, Metals, PAHs, PCBs, PHCs, VOCs	--
					BH201	BH	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	--
					BH202	BH	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	--
					BH203	BH	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	--
					BH204	BH	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	--
					BH205	BH	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	--
					BH206	BH	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	--
					BH207	BH	PHCs	--
					BH208	BH	PAHs	--
					BH209	BH	Metals, PCBs	--
					BH210	BH	Metals	--
					BH211	BH	Metals	--
					MW100	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
					MW101	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
					MW102A	MW	--	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
					MW102B	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
					MW103	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
					MW104	MW	ABNs, BTEX, ORPs, Metals, PAHs, PHCs, VOCs	ABNs, BTEX, ORPs, Metals, PAHs, PHCs, VOCs
					MW105	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
					MW107	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
					MW107B	MW	--	ORPs, Metals

Table 6-4. APEC Disposition Table
55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Areas of Potential Environmental Concern (APEC)		PCA [a.]		Contaminants of Potential Concern [b]	Location Associated with APEC Area	Location Type	List of Parameter Groups Tested (Soil) [b.]	List of Parameter Groups Tested (GW) [b.]
					MW108	MW	BTEX, Dioxins/Furans, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
					MW109	MW	BTEX, Dioxins/Furans, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
					MW110A	MW	--	ORPs, Metals
					MW110B	MW	--	ORPs, Metals
					MW111	MW	--	ORPs, Metals
					MW113	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
APEC-3	Historical Transformers	55	Transformer Manufacturing, Processing and Use	PHCs, BTEX, PCBs, PAHs	BH200	BH	BTEX, ORPs, Metals, PAHs, PCBs, PHCs, VOCs	--
					BH209	BH	Metals, PCBs	--
APEC-4	Use of Road Salts	48	Salt Manufacturing, Processing and Bulk Storage	EC, SAR, sodium, chloride	BH-03	BH	BTEX, Metals (missing Uranium)*, PAHs, PHCs, VOCs	--
					BH-04	BH	Metals (missing Uranium)*, PCBs, PHCs	--
					BH-05	BH	Metals (missing Uranium)*	--
					BH-06	BH	Metals (missing Uranium)*	--
					BH-07	BH	Metals (missing Uranium)*	--
					BH-08-MW4	BH	BTEX, Metals (missing Uranium)*, PCBs, PHCs, VOCs	--
					BH-09	BH	Metals (missing Uranium)*	--
					BH-10	BH	Metals (missing Uranium)*, PAHs	--
					BH-11	BH	Metals (missing Uranium)*, PAHs, PHCs	--
					BH-13	BH	Metals (missing Uranium)*, PHCs	--
					BH-14	BH	BTEX, Metals (missing Uranium)*, PAHs, PHCs, VOCs	--
					BH-15-MW3	BH	Metals (missing Uranium)*, PHCs	--
					BH-16-MW2	BH	Metals (missing Uranium)*, PCBs, PHCs	--
					BH-17-MW5S	BH	Metals (missing Uranium)*, PHCs	--
					BH200	BH	BTEX, ORPs, Metals, PAHs, PCBs, PHCs, VOCs	--
					BH201	BH	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	--
					BH202	BH	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	--
					BH203	BH	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	--
					BH204	BH	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	--
					BH205	BH	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	--
					BH206	BH	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	--
					BH207	BH	PHCs	--
					BH208	BH	PAHs	--
					BH209	BH	Metals, PCBs	--
					BH210	BH	Metals	--
					BH211	BH	Metals	--
					MW100	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
					MW101	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
					MW102A	MW	--	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
					MW102B	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
					MW103	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
					MW104	MW	ABNs, BTEX, ORPs, Metals, PAHs, PHCs, VOCs	ABNs, BTEX, ORPs, Metals, PAHs, PHCs, VOCs
					MW105	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
					MW107	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
					MW107B	MW	--	ORPs, Metals
					MW108	MW	BTEX, Dioxins/Furans, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
					MW109	MW	BTEX, Dioxins/Furans, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
					MW110A	MW	--	ORPs, Metals
					MW110B	MW	--	ORPs, Metals
					MW111	MW	--	ORPs, Metals
					MW113	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs

Table 6-4. APEC Disposition Table
55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Areas of Potential Environmental Concern (APEC)		PCA [a.]		Contaminants of Potential Concern [b]	Location Associated with APEC Area	Location Type	List of Parameter Groups Tested (Soil) [b.]	List of Parameter Groups Tested (GW) [b.]
APEC-5	Historical Dry Cleaning	37	Operation of Dry Cleaning Equipment (where chemicals are used)	VOCs	MW102A	MW	--	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
					MW102B	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
APEC-6	Historical Retail Fuel Outlet and automotive repair/servicing operations	27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	Metals, hydride-forming Metals, ORPs (Hg, CrVI), PHCs, PAHs, VOCs, BTEX	MW102A	MW	--	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
		28	Gasoline and Associated Products Storage in Fixed Tanks		MW102B	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
APEC-7	Historical Dry Cleaning	37	Operation of Dry Cleaning Equipment (where chemicals are used)	VOCs	MW102A	MW	--	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
					MW102B	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
APEC-8	Historical Dry Cleaning	37	Operation of Dry Cleaning Equipment (where chemicals are used)	VOCs	BH-03	BH	BTEX, Metals (missing Uranium)*, PAHs, PHCs, VOCs	--
					MW103	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
					MW104	MW	ABNs, BTEX, ORPs, Metals, PAHs, PHCs, VOCs	ABNs, BTEX, ORPs, Metals, PAHs, PHCs, VOCs
					MW108	MW	BTEX, Dioxins/Furans, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
APEC-9	Historical Fuel Oil UST	28	Gasoline and Associated Products Storage in Fixed Tanks	PHCs, VOCs, BTEX, PAHs, Metals (Lead)	MW102A	MW	--	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
					MW102B	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
APEC-10	Historical Automotive Repair	27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	Metals, hydride-forming Metals, ORPs (Hg, CrVI), PHCs, PAHs, VOCs, BTEX	MW103	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
APEC-11	Historical Off-Site Industrial Operations and Historical UST	28	Gasoline and Associated Products Storage in Fixed Tanks	Metals, hydride-forming Metals, ORPs (Hg, CrVI, B-HWS, CN-, EC, SAR), PHCs, PAHs, VOCs, BTEX	BH-14	BH	BTEX, Metals (missing Uranium)*, PAHs, PHCs, VOCs	--
					BH208	BH	PAHs	--
		34	Metal Fabrication		MW105	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
APEC-12	Historical Automotive Garage and Historical USTs	27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	Metals, hydride-forming Metals, ORPs (Hg, CrVI), PHCs, PAHs, VOCs, BTEX	BH-11	BH	Metals (missing Uranium)*, PAHs, PHCs	--
		28	Gasoline and Associated Products Storage in Fixed Tanks		BH201	BH	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	--
					MW105	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
APEC-13	Historical Automotive Garage	27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	Metals, hydride-forming Metals, ORPs (Hg, CrVI), PHCs, PAHs, VOCs, BTEX	BH206	BH	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	--
					MW109	MW	BTEX, Dioxins/Furans, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
APEC-14	Historical Gasoline Spill	Other	Activity not defined in O. Reg. 153/04 Table 2 of Schedule D	PHCs, PAHs, VOCs (MTBE), BTEX	BH-07	BH	Metals (missing Uranium)*	--
					MW113	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
APEC-15	Historical Dry Cleaning	37	Operation of Dry Cleaning Equipment (where chemicals are used)	VOCs	MW101	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
APEC-16	Historical Above ground Storage Tank and UST	28	Gasoline and Associated Products Storage in Fixed Tanks	PHCs, VOCs, BTEX, PAHs, Metals (Lead)	BH-07	BH	Metals (missing Uranium)*	--
					MW113	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
APEC-17	Dry Cleaning, Historical Retail Fuel Outlet, and Automotive Repair	27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	Metals, hydride-forming Metals, ORPs (Hg, CrVI), PHCs, PAHs, VOCs, BTEX	BH-17-MW5S	BH	Metals (missing Uranium)*, PHCs	--
		28	Gasoline and Associated Products Storage in Fixed Tanks		MW102A	MW	--	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
		37	Operation of Dry Cleaning Equipment (where chemicals are used)		MW102B	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
APEC-18	Former Oil Shed	28	Gasoline and Associated Products Storage in Fixed Tanks	Metals, hydride-forming Metals, ORPs (Hg, CrVI), PHCs, PAHs, VOCs, BTEX	BH-08-MW4	BH	BTEX, Metals (missing Uranium)*, PCBs, PHCs, VOCs	--
					MW107	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
					MW107B	MW	--	ORPs, Metals
APEC-19	Former Oil House	28	Gasoline and Associated Products Storage in Fixed Tanks	Metals, hydride-forming Metals, ORPs (Hg, CrVI), PHCs, PAHs, VOCs, BTEX	MW109	MW	BTEX, Dioxins/Furans, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
APEC-20	Former Coke Storage	Other	Activity not defined in O. Reg. 153/04 Table 2 of Schedule D	Metals, hydride-forming Metals, ORPs (Hg, CrVI), PHCs, PAHs, VOCs, BTEX, ABNs	BH-03	BH	BTEX, Metals (missing Uranium)*, PAHs, PHCs, VOCs	--
					MW104	MW	ABNs, BTEX, ORPs, Metals, PAHs, PHCs, VOCs	ABNs, BTEX, ORPs, Metals, PAHs, PHCs, VOCs

Table 6-4. APEC Disposition Table

55 Baker Street, 152 and 160 Wyndham Street North, and Park Lane, Guelph, Ontario

Areas of Potential Environmental Concern (APEC)		PCA [a.]		Contaminants of Potential Concern [b]	Location Associated with APEC Area	Location Type	List of Parameter Groups Tested (Soil) [b.]	List of Parameter Groups Tested (GW) [b.]
APEC-21	Former Garage	27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	Metals, hydride-forming Metals, ORPs (Hg, CrVI), PHCs, PAHs, VOCs, BTEX	BH-03	BH	BTEX, Metals (missing Uranium)*, PAHs, PHCs, VOCs	--
					MW104	MW	ABNs, BTEX, ORPs, Metals, PAHs, PHCs, VOCs	ABNs, BTEX, ORPs, Metals, PAHs, PHCs, VOCs
APEC-22	Historical Dry Cleaning Operations and Historical UST	28	Gasoline and Associated Products Storage in Fixed Tanks	Metals, hydride-forming Metals, ORPs (Hg, CrVI), PHCs, PAHs, VOCs, BTEX	MW107	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs
		37	Operation of Dry Cleaning Equipment (where chemicals are used)		MW107B	MW	--	ORPs, Metals
					MW113	MW	BTEX, ORPs, Metals, PAHs, PHCs, VOCs	BTEX, ORPs, Metals, PAHs, PHCs, VOCs

Notes:

[a] PCA – potentially contaminating activity means a use or activity as set out in Column A of Table 2 of Schedule D of O. Reg. 153/04 that is occurring or has occurred in a Phase One study area.

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

*Samples from 2008 were collected in accordance with O. Reg. 153/04, but are missing analysis of uranium, which was not regulated under the Regulation at the time of investigation. This data is considered valid for RSC purposes.

"--" = no data for the specified media

As = arsenic
ABNs = acid base neutral compounds
APEC = area of potential environmental concern
BH = borehole
B-HWS = boron - hot water soluble
BTEX = benzene, toluene, ethylbenzene, xylene
CN- = cyanide
COC = contaminant of concern
CrVI = hexavalent chromium

EC = electrical conductivity
ERIS = environmental risk information services
FIP = fire insurance plan
GW = groundwater
Hg = mercury
MECP = Ontario Ministry of Environment, Conservation and Parks
Metals = Metals, hydride-forming metals
MW = monitoring well
ORPs = Other Regulated Parameters

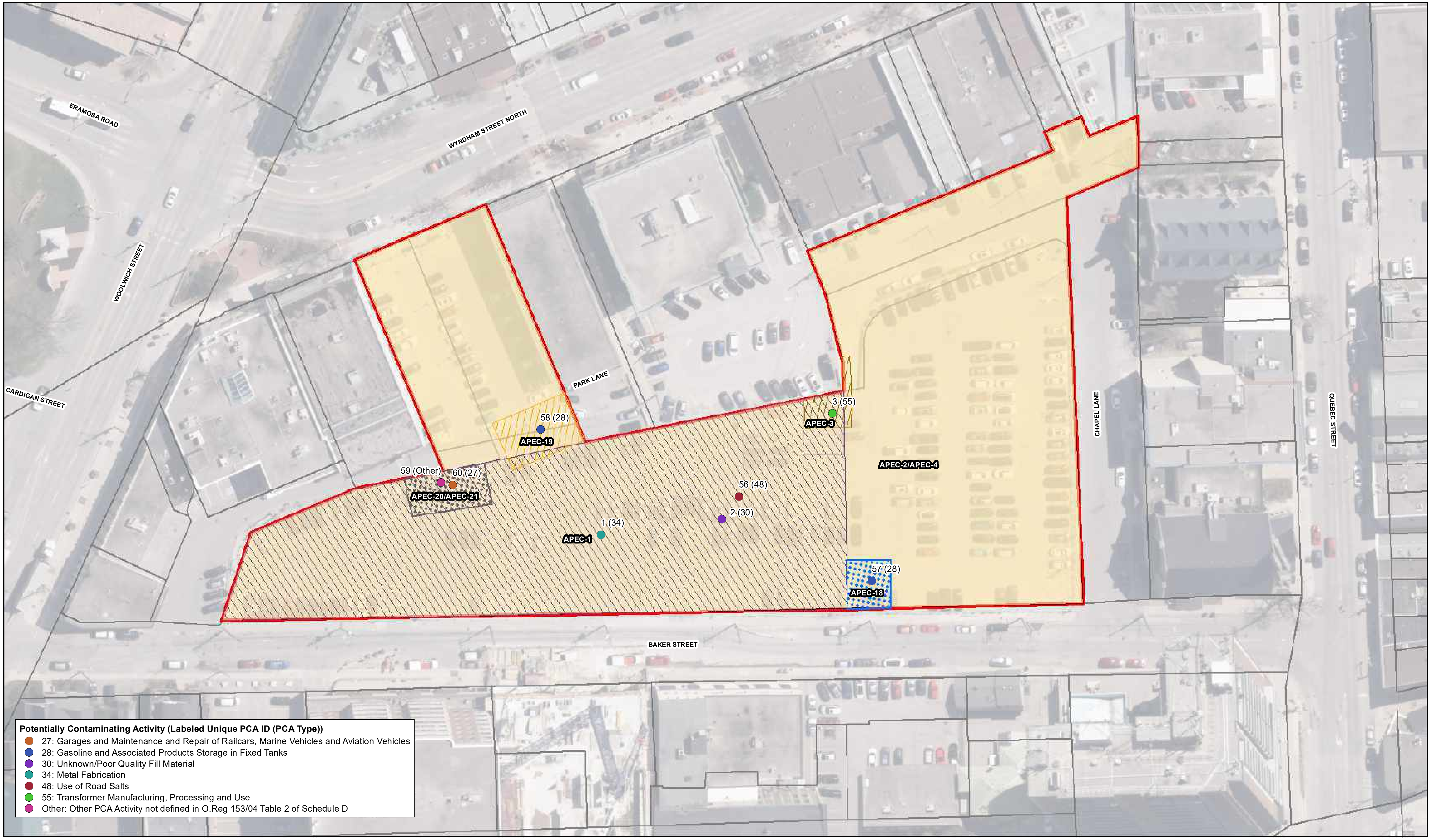
PAHs = polyaromatic hydrocarbons
PCA = potentially contaminating activity
PCBs = polychlorinated biphenyls
PHCs = petroleum hydrocarbons
SAR = sodium adsorption ratio
Sb = antimony
Se = selenium
UST = underground storage tank
VOCs = volatile organic compounds

Attachment D3 Revised Figures

Figure 4-1a - Potentially Contaminating Activities – Onsite

Figure 4-1b – Potentially Contaminating Activities – Offsite

Figure 4-2 – Areas of Potential Concern



N

0 5 10 15 20
Metres

☐ Property Boundary
🟥 Site Boundary

Area of Potential Concern
▨ APEC-1 (Historical Industrial Property Use)
🟨 APEC-2 (Unknown Poor Quality Fill Material) and APEC-4 (Use of Road Salts)
▨ APEC-3 (Historical Transformer)
▦ APEC-18 (Former Oil Shed)
▨ APEC-19 (Former Oil House)
▦ APEC-20 (Former Coke Storage) and APEC-21 (Former Garage)

Notes:
1. 1. Aerial Imagery: ESRI World Imagery 2019. Imagery Date May 6, 2019.
2. Property Boundaries: City of Guelph.
3. Site boundaries are approximate.
4. PCA Unique IDs are as assigned in the Phase One ESA (Pinchin 2018) and those added by Jacobs (above 56).
5. See Table 4-2 for PCA descriptions.

Figure 4-1a
Potentially Contaminating Activities (PCAs) - Onsite
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 12/14/2020

Jacobs

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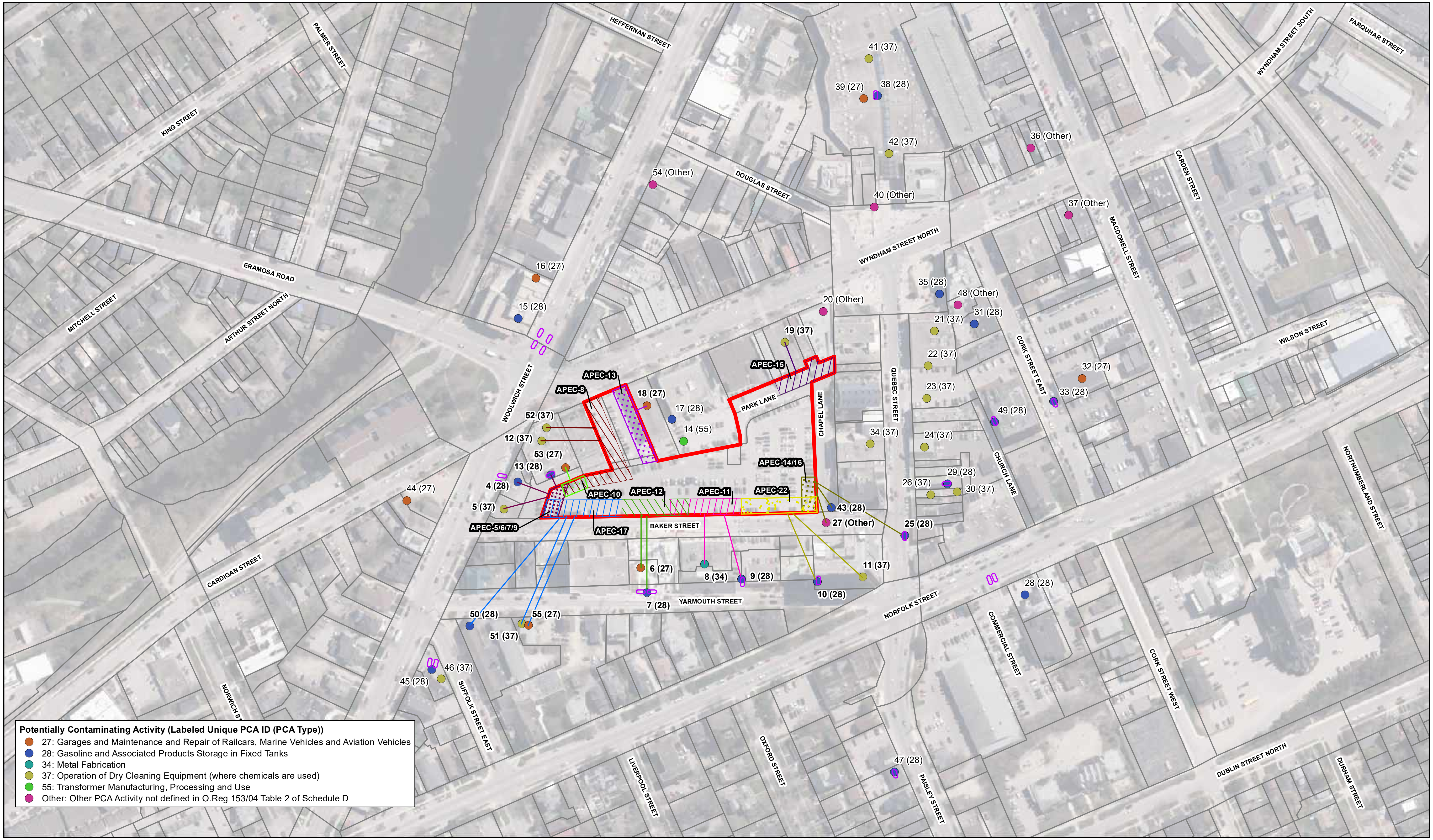

N

0 10 20 30 40

Metres

○ Underground Storage Tank
☐ Property Boundary
▭ Site Boundary

Area of Potential Concern
▨ APEC-5/6/7/9 (Off-site Historical Dry Cleaning, Off-site Historical RFO and Off-site Historical Fuel Oil UST)
▨ APEC-8 (Off-site Historical Dry Cleaning)
▨ APEC-10 (Off-site Historical Automotive Repair Garage)
▨ APEC-11 (Off-site Industrial Operations and Historical UST)
▨ APEC-12 (Off-site Historical Automotive Repair and Historical UST)
▨ APEC-13 (Off-site Historical Automotive Repair Garage)
▨ APEC-14/16 (Historical Gasoline Spill/Off-Site Historical Below Grade AST and Historical UST)
▨ APEC-15 (Off-site Historical Dry Cleaning)
▨ APEC-17 (Off-site Dry Cleaning, Historical RFO, and Automotive Repair)
▨ APEC-22 (Off-site Dry Cleaning and Historical UST)

Notes:
1. 1. Aerial Imagery: ESRI World Imagery 2019. Imagery Date May 6, 2019.
2. Property Boundaries: City of Guelph.
3. Site boundaries are approximate.
4. PCA Unique IDs are as assigned in the Phase One ESA (Pinchin 2018) and those added by Jacobs (above 56).
5. PCAs contributing to an APEC are bolded and are shown with a connecting corresponding coloured line.
6. See Table 4-2 for PCA descriptions and rationale on whether the PCA contributes to a APEC on the Site.

Figure 4-1b
Potentially Contaminating Activities (PCAs) - Offsite
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 12/14/2020

Jacobs

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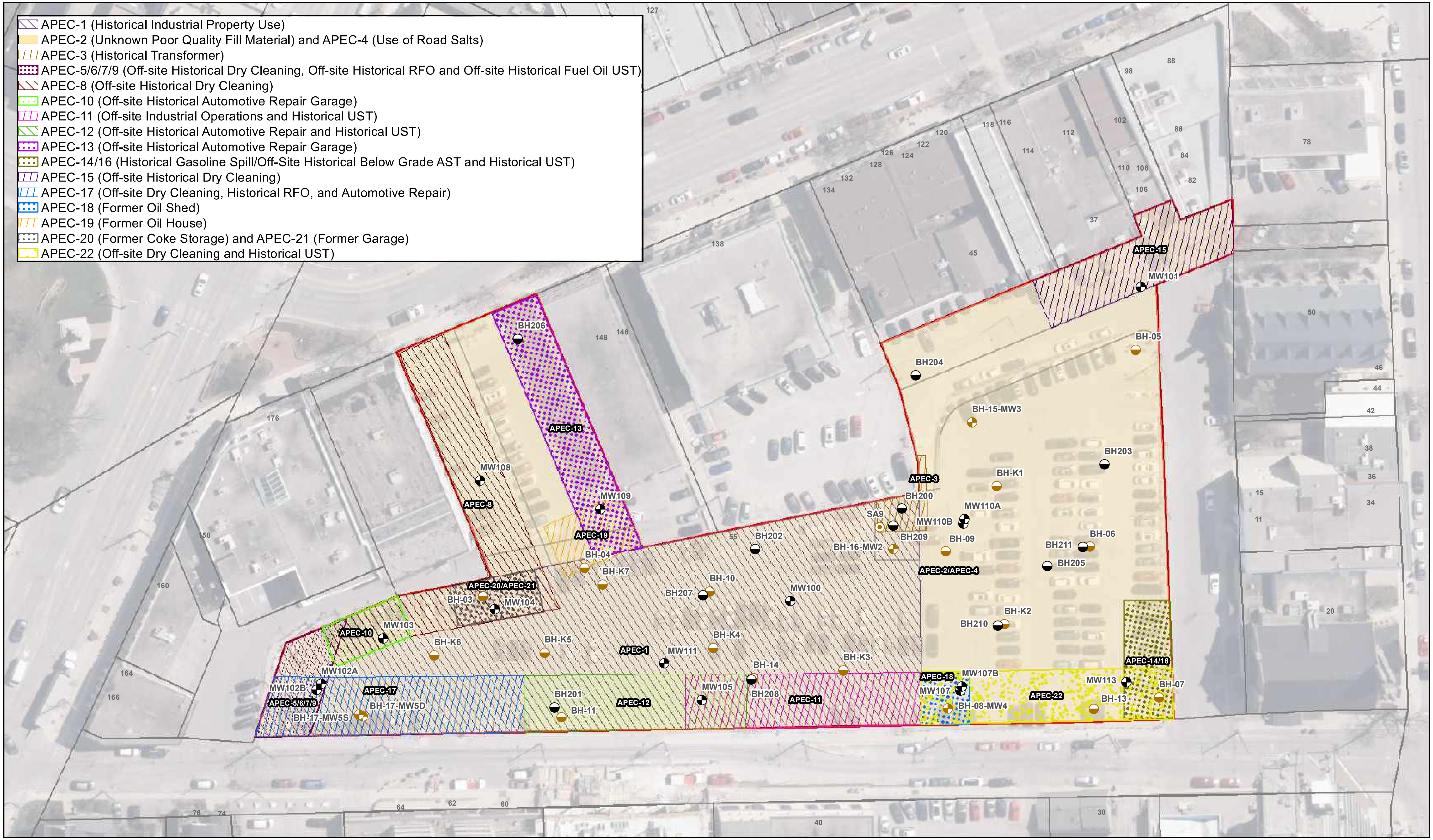

Sample Location (Current)
- ◓ Borehole
- ⊕ Monitoring Well

Sample Location (Historical)
- ◓ Borehole
- ⊕ Monitoring Well
- ⊙ Soil Sample

🟥 Site Boundary
☐ Property Boundary

N

0 5 10 15 20
Metres

Notes:
1. 1. Aerial Imagery: ESRI World Imagery 2019. Imagery Date May 6, 2019.
2. Property Boundaries: City of Guelph.
3. Historical sample locations and site boundaries are approximate. Current sample locations have been surveyed.

BH - Borehole
MW - Monitoring Well

Figure 4-2
Areas of Potential Environmental Concern and Sampling Locations
Phase Two Environmental Site Assessment
55 Baker Street, 152 and 160 Wyndham Street
North and Park Lane, Guelph, Ontario
Date Exported: 12/14/2020

Jacobs

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Attachment 4
MECP and Jacobs Email Correspondence

Appleby, Katherine/KWO

From:	McCarthy, Tania/KWO
Sent:	Friday, November 27, 2020 4:06 PM
To:	Rebekah.blok; Appleby, Katherine/KWO
Cc:	prasoon.adhikari@guelph.ca; Taves, Ed/KWO; Volpato, Jennifer (MECP); Mo, Alexina (MECP)
Subject:	RE: RA1896-20 - PSF and MGRA Second Submission - 55 Baker Street, 152 & 160 Wyndham Street North, and Park Lane, Guelph
Attachments:	Baker_MGRA_Add1_Errata_2020Nov27.pdf

Hi Rebekah,

Attached is the Addenda letter for the PSF/MGRA Submission for Baker Street Site, with the revised figures as discussed. Please forward the package to the appropriate MECP staff and reviewers as necessary.
As well, can you confirm receipt to ensure the file comes through, and let Katherine or I know if you have any issues or questions.

Again we appreciate your assistance expediting and resolving this matter quickly!

Thanks,

Tania McCarthy, P.Eng | Jacobs | Environmental Engineer
~~O: +1.519.514.1607~~ C: 519.880.4901 | tania.mccarthy@jacobs.com
72 Victoria St. S, Suite 300 | Kitchener, Ontario N4G 4Y9 | Canada

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From: Blok, Rebekah (MECP) <Rebekah.Blok@ontario.ca>
Sent: Friday, November 27, 2020 8:22 AM
To: Appleby, Katherine/KWO <Katherine.Appleby@jacobs.com>
Cc: prasoon.adhikari@guelph.ca; McCarthy, Tania/KWO <Tania.McCarthy@jacobs.com>; Taves, Ed/KWO <Ed.Taves@jacobs.com>; Volpato, Jennifer (MECP) <Jennifer.Volpato@ontario.ca>; Mo, Alexina (MECP) <alexina.mo@ontario.ca>
Subject: [EXTERNAL] RE: RA1896-20 - PSF and MGRA Second Submission - 55 Baker Street, 152 & 160 Wyndham Street North, and Park Lane, Guelph

Good morning Katherine,

Please follow up with option 3: submit only a file containing the revised figures (with addenda letter)

As the CSM does not change, and as long as the legal survey and legal description matches the RA Study Area/Area for which the CPU and RSC is to be filed, we do not anticipate issues.

Thank you for alerting us as soon as you identified the discrepancy.

Rebekah

Rebekah Blok, B.Eng. |
Streamlined Risk Assessment Coordinator

From: Appleby, Katherine/KWO <Katherine.Appleby@jacobs.com>
Sent: November-25-20 6:19 PM
To: Blok, Rebekah (MECP) <Rebekah.Blok@ontario.ca>
Cc: prasoon.adhikari@guelph.ca; McCarthy, Tania/KWO <Tania.McCarthy@jacobs.com>; Taves, Ed/KWO <Ed.Taves@jacobs.com>
Subject: RA1896-20 - PSF and MGRA Second Submission - 55 Baker Street, 152 & 160 Wyndham Street North, and Park Lane, Guelph

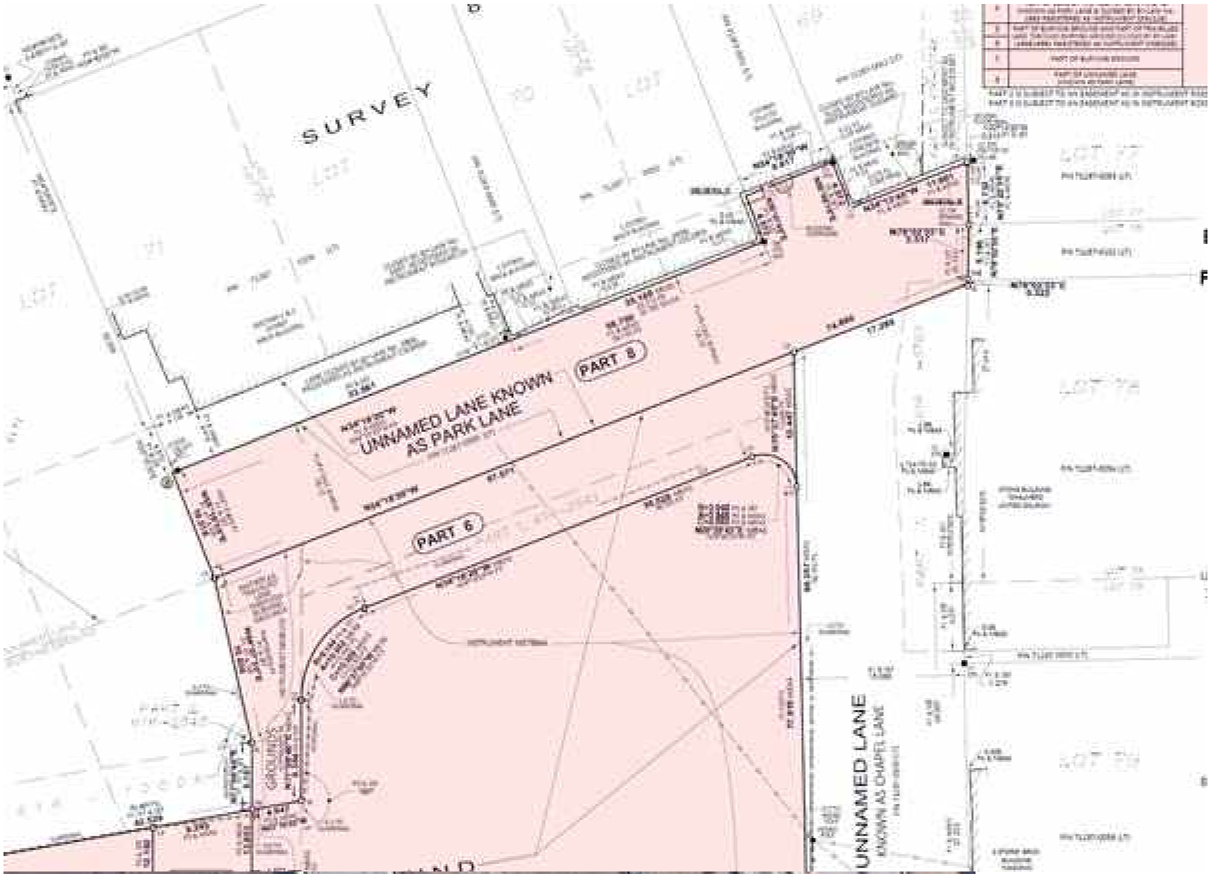
Hello Rebekah,
Jacobs would like to bring an item to the attention of the MECP regarding the following RA submission: *RA1896-20 - PSF and MGRA Second Submission - 55 Baker Street, 152 & 160 Wyndham Street North, and Park Lane, Guelph*. The PSF/MGRA was resubmitted to the MECP on October 21, 2020.

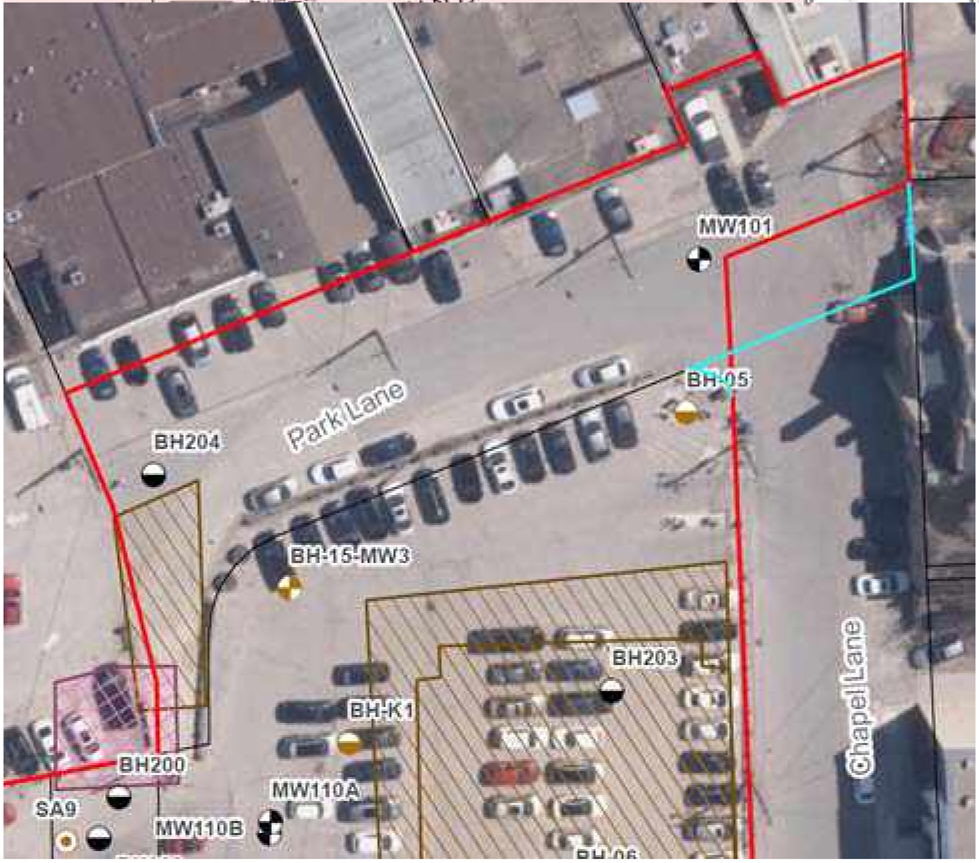
Since the submission of the PSF/MGRA to the MECP, the QP_{ESA} (Tania McCarthy, cc'd on this email) has identified a minor discrepancy with the property boundary on the Jacobs-generated Site plans that were submitted with the PSF/MGRA for this Site, as summarized below:

- There is a small error between the RA Property boundary shown on the Baker Street figures and the RA Property boundary on the legal survey. The variation is located on the east side of Chapel Lane.
- Jacobs notes that all legal documents, including the legal survey and the identified sub-areas, provided in Attachment A of the PSF/MGRA submission (specifically, page 75 of the PDF) are correct; in addition, the boundary correction does not alter the results or interpretation of the Phase Two ESA, the associated Conceptual Site Model (CSM), or the MGRA, as all investigation locations remain within the corrected boundary.
- However, for the purposes of document accuracy and to ensure that the Phase Two CSM to be used for Record of Site Condition (RSC) filing matches the version being reviewed by the MECP, we would like the opportunity to correct the boundary on the plan-view figures in our submission to avoid any future confusion regarding the RA Property boundaries.

Specifically, the change reduces the footprint of Park Lane as well as adds a small area (small curve) at what used to be a corner abutting Chapel Lane, which are shown and described below:

- Screen capture of the Legal Survey and the RA Property identified in Attachment A of the PSF/MGRA; this represents the correct legal Site/RA Property Boundary (light red shading).
- Screen capture of a Phase Two ESA CSM plan-view figure. The "incorrect" boundary (provided with the October 21 PSF/MGRA submission) is provided in light blue; the corrected Property boundary is shown in red (which aligns with the Legal Survey).





Jacobs is prepared to resubmit all or some of the PSF/MGRA report to the MECP electronically following confirmation of the preferred resubmission option:

1. Submit an entire revised PSF/MGRA (with addenda letter)

2. Submit only the revised Phase Two CSM attachment (with addenda letter)
3. Submit only a file containing the revised figures (with addenda letter)
4. Other MECP-specified option

In addition, please note that redevelopment of this property is a priority to the City of Guelph. Therefore, please let us know how we can work with you to minimize the impact this minor change may have on the review timeline associated with the PSF/MGRA and associated Phase Two ESA CSM.

Please contact Tania or I if you have any further questions,

Regards,
Katherine

Katherine Appleby, B.E.S., EP, QPRA | Jacobs | Senior Environmental Scientist
O:+1.519.579.3500 | D: +1.519.514.1681

Appleby, Katherine/KWO

From:	McCarthy, Tania/KWO
Sent:	Monday, December 14, 2020 1:54 PM
To:	Rebekah.blok
Cc:	Spink, Laura (MECP); Volpato, Jennifer (MECP); Mo, Alexina (MECP); Appleby, Katherine/KWO; Taves, Ed/KWO; prasoon.adhikari@guelph.ca
Subject:	RE: Request for Additional Information -- MGRA2 for 55 Baker St, 152 and 160 Wyndham Street North and Park Lane, Guelph [MGRA1896-20; IDS#7882-BRYP6L]
Attachments:	Baker_MGRA_Add2_Errata_2020Dec14.pdf

Hi Rebekah,

Jacobs has prepared the attached letter, with responses and attachments to respond to the additional information requested from the Ministry which we believe will satisfy the outstanding comments on the MGRA submission.

Please confirm receipt of this email and attached document, and let us know if you have any further requests, clarifications or questions.

Thanks,

Tania McCarthy, P.Eng | Jacobs | Environmental Engineer
~~O: +1.519.514.1607~~ C: 519.880.4901 | tania.mccarthy@jacobs.com
72 Victoria St. S, Suite 300 | Kitchener, Ontario N4G 4Y9 | Canada

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From: Blok, Rebekah (MECP) <Rebekah.Blok@ontario.ca>
Sent: Friday, December 4, 2020 10:18 AM
To: Appleby, Katherine/KWO <Katherine.Appleby@jacobs.com>
Cc: Spink, Laura (MECP) <Laura.Spink@ontario.ca>; Volpato, Jennifer (MECP) <Jennifer.Volpato@ontario.ca>; Mo, Alexina (MECP) <alexina.mo@ontario.ca>; McCarthy, Tania/KWO <Tania.McCarthy@jacobs.com>
Subject: [EXTERNAL] Request for Additional Information -- MGRA2 for 55 Baker St, 152 and 160 Wyndham Street North and Park Lane, Guelph [MGRA1896-20; IDS#7882-BRYP6L]

Hello Katherine,

The review for this file is underway. There are two outstanding comments that need to be addressed. Please reply at your earliest convenience with a PDF attachment that includes a cover letter, ministry comments (taken from the email below) and QP responses, and any supporting materials needed to address the comments. Week 8 for this file is December 16; some adjustment of that final date is expected in order to give the QP time to reply and the ministry team time to review the response.

Comment on the PSF/RA

September 2020 Comment 4
PSF Section 11 (MGRA): The section regarding modification of GW2 (Storage Garage) was not filled out. Please update this section. The QP responded that no volatile COCs were included in the RA, and that this RMM was not used to develop PSS. Mercury is assumed to be volatile in the development of generic and Tier 2 standards, and without the Storage Garage RMM in place, the risk based PSS that can be calculated for mercury in the approved model would be lower than the PSS

that the QP has proposed (based on reasonable estimate of maximum). This discussion applies to the response in September 2020 Comment 10a (depth to water table) as well.

Comment on the phase two CSM

September 2020 Comment 6: A description and assessment of areas where potentially contaminating activities (PCAs) and areas of potential environmental concern (APECs) have occurred is required to be provided in the phase two conceptual site model (P2CSM). PCAs and APECS were described in the CSM, but limited details describing their locations were provided. The following issue was identified:

a. Additional information on the nature and specific locations of on- and off-site PCAs (i.e. any infrastructure related to the historic industrial property use, USTs/ASTs, oil/water separators, hydraulics hoists, pump islands, drycleaners, oil sheds/houses, garages, etc.) in relation to each APEC should be provided in the P2CSM narrative and the specific locations/outlines of PCAs should be provided on Figure 4-1 (and/or another larger scale figure for off-site PCAs. In presenting information in the narrative and on figures, PCAs and APECs should be clearly linked. This comment has been partially addressed. The way information has been presented in the narrative, figures and tables does not clearly link which PCAs are linked to which APECs, so the reviewer is still having trouble determining whether APECs have been appropriately refined and assessed. Bottom line – it should be easy for the reviewer to tell which PCAs are causing which APECs. Suggestions for presenting the required information include the following:
    i. PCAs were given a unique PCA ID on Figures 4-1a and 4-1b which is helpful, but these IDs should be referenced in the narrative, figures and tables when describing PCAs and APECs.
    ii. Clearly label APEC IDs on Figure 4-1b. Some colours are similar and the reviewer can't tell which colours are referring to which APECs.
    iii. It would be helpful if PCAs and their resulting APECs were the same colour on Figure 4-1b. Or alternatively, the PCA ID and resulting APEC ID could be indicated in the legend.
    iv. Consider removing the base map so figures are less cluttered and easier to read.

   Finally, it is unclear whether all off-site PCAs with the phase one study area have been identified. Even if the QP determines that off-site PCAs are not causing an APEC on the MGRA property, they should be shown on figures, and a description and assessment as well as a rationale for why they weren't considered to be causing APECs should be provided in the P2CSM narrative.

Given the above deficiencies, it is currently unclear whether all APECs have been adequately assessed as per Section 5, paragraphs 2 and 3 of Schedule E. This final comment still applies. The reviewer should be able to clearly and easily review the narrative and figures and understand exactly where each described PCA is, which PCA contributed to which APEC and how each APEC was assessed. This has not been done. Please get in touch with the P2CSM reviewer (Laura Spink) if you have any questions or would like further clarification. If you wish to schedule a call with Laura, please give times when the QP-ESA is available next week.

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