



## Phase Two Environmental Site Assessment 56 Capilano Drive, Ottawa, Ontario

**Client:**

McDonald Brothers Consulting Inc.

**Type of Document:**

Final

**Project Name:**

Phase Two Environmental Site Assessment

**Project Number:**

OTT-22003851-A0

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**Date Submitted:**

2022-05-27

*McDonald Brothers Consulting Inc.  
Phase Two Environmental Site Assessment  
56 Capilano Drive, Ottawa, Ontario  
OTT-22003851-A0  
May 27, 2022*

## Legal Notification

This report was prepared by EXP Services Inc. for the account of **McDonald Brothers Consulting Inc.**

Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. EXP Services Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this project.

## Executive Summary

EXP Services Inc. (EXP) was retained by McDonald Brothers Consulting Inc. to conduct a Phase Two Environmental Site Assessment (ESA) at 56 Capilano Drive in Ottawa, Ontario (hereinafter referred to as the 'Phase Two property'). At the time of the investigation, the Phase Two property was vacant.

The objective of the Phase Two ESA investigation was to assess the quality of the soil conditions within the area of potential environmental concern (APEC) identified in a Phase One ESA prepared by EXP. It is understood that the report will be used to support a site zoning amendment with the City of Ottawa.

This report has been prepared in accordance with the Phase Two ESA standard as defined by Ontario Regulation 153/04 (as amended), and in accordance with generally accepted professional practices. Subject to this standard of care, EXP makes no express or implied warranties regarding its services and no third-party beneficiaries are intended. Limitation of liability, scope of report and third-party reliance are outlined in Section 8 of this report.

The Phase Two property has the municipal address 56 Capilano Drive in Ottawa. The Phase Two property is located on the south side of Capilano Drive, approximately 120 m east of Merivale Road. The Phase Two property is rectangular in shape with an area of approximately 0.28 hectares and consists of a manicured lawn.

The legal description of the Phase Two property is Part of Lot 15, Plan 356 being Part 2 on Plan 4R-27938, City of Ottawa. The Phase Two property has the property identification number (PIN) 046780068.

The Phase Two property, and all other properties located, in whole or in part, within 250 metres of the boundaries of the Phase Two property, are supplied by a municipal drinking water system provided by the City of Ottawa. Further, the Phase Two property is not located in an area designated in the municipal official plan as a well-head protection area and no properties within the Phase Two study area have a well that is being used or is intended for use as a source of potable water. Thus, in accordance with Section 35 of Ontario Regulation 153/04, non-potable water standards apply to the Phase Two property.

In accordance with Section 41 of Ontario Regulation 153/04, the Phase Two property is not an environmentally sensitive area. In addition, the Phase Two property is not located within an area of natural significance, and it does not include land that is within 30 metres of an area of natural significance.

The Phase Two property is not a shallow soil property as defined in Section 43.1 of the regulation. It does not include all or part of a water body or is adjacent to a water body or includes land that is within 30 metres of a water body.

Bedrock in the general area of the Phase Two property consists of dolostone and sandstone of the Beekmantown Group. Native surficial soil consists of sandy silt till. The ground surface is approximately 95 metres above sea level (masl).

The well records for the area have identified the bedrock as grey limestone. Based on previous investigations, the depth to the bedrock on the Phase Two property is approximately 2.5 metres below grade.

The groundwater flow direction is anticipated to be northeast, towards the Rideau River.

The following PCAs were identified:

- PCA 1 – 1537 Merivale Road (80 m west) – Former gas station (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- PCA 2 – 1533 Merivale Road (100 m northwest) – Automotive service shop with historic UST (PCA #10 – Commercial Autobody Shops, PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- PCA 3 – 1507 Merivale Road (210 m northwest) – Automotive service shop with historic UST (PCA #10 – Commercial Autobody Shops, PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);

- PCA 4 – 1516 Merivale Road (170 m northwest) – Former dry cleaner (PCA#37 – Operation of Dry-Cleaning Equipment);
- PCA 5 – 56 Capilano Drive (Phase One property) – Previous investigation identified fill material on the Phase One property (PCA #30 – Importation of Fill Material of Unknown Quality);
- PCA 6 – 1541 Merivale Road (west adjacent) – Presence of PHC impacted soil and groundwater (#Other – PHC contaminant plume);
- PCA 7 – 1543 Merivale Road (100 m west) – Active gas station (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- PCA 8 – 1509 Merivale Road (170 m northwest) – Active dry cleaner that has been in operation since at least 1964 (PCA #37 – Operation of Dry Cleaning Equipment (where chemicals are used));
- PCA 9 – 1509 Merivale Road (130 m northwest) – Former furnace oil UST on the east side of the building (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- PCA 10 – 1545 Merivale Road (southwest adjacent) – Former gas station (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- PCA 10 – 1541 Merivale Road (west adjacent) – Former dry cleaner (PCA #37 – Operation of Dry Cleaning Equipment (where chemicals are used));
- PCA 11 – 1545 Merivale Road (70 m southwest) – Former gas station (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- PCA 12 – 1545 Merivale Road (southwest adjacent) – Historic furnace oil spill (#Other – furnace oil spill); and
- PCA 13 – 1548 Merivale Road (170 m southwest)– Active gas station (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks).

Since the inferred groundwater flow direction is to the northeast, the properties within the Phase One study area northeast of the Phase Two property were considered to be hydraulically down-gradient; and the properties to the north and south of the Site were considered to be hydraulically trans-gradient to the Phase Two property.

Furthermore, any PCAs located significantly distant (greater than 100 m) from the Phase Two property were considered to be too distant to be contributing to an APEC on the Phase Two property.

In addition, several of the PCAs identified have been investigated and areas of impact delineated. Since soil and groundwater samples taken from the neighbouring property to the west near the property line were non-detect for the contaminants of concern in 2018, it can be inferred that the contamination found in the west part of the neighbouring site has not migrated onto the Phase Two property.

Ontario Regulation 153/04 defines an APEC as an area on a property where one or more contaminants are potentially present. The following APEC were identified on the Phase Two property, as shown in Table EX-1:

**Table EX-1: Areas of Potential Environmental Concern**

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil and/or Sediment)
<b>APEC #1</b>	Entire Phase One property	PCA#30 – Importation of Fill Material of Unknown Quality	On-Site	Metals, petroleum hydrocarbons (PHC), polycyclic aromatic hydrocarbons (PAH), Volatile organic compounds (VOC)	Soil

The site investigative activities consisted of the excavation of test pits to facilitate the collection of soil samples for visual inspection and chemical analysis.

Prior to the commencement of excavation, the locations of underground public utilities including telephone, natural gas and electrical lines were marked at the subject property by public locating companies. A private utility locating contractor was also retained to clear the individual test pit locations.

Six test pits (TP22-1 to TP22-6) were advanced at the Phase Two property by Lacroix Equipment Rentals Ltd. (Lacroix) under the full-time supervision of EXP staff. Test pits were excavated to refusal on bedrock surface. Grab soil samples from the excavator bucket were collected from the fill layer. All soil samples were visually examined in the field for textural classification, logged, preserved in plastic bags and identified.

Six soil samples and a blind duplicate were collected from the fill material and submitted to Caduceon for analysis of PHC, PAH, VOC, and metals.

Results were compared to Regulation 153/04 Table 3 standards for residential/parkland/institutional property use and Table 3 standards for industrial/commercial/community property use and coarse textured soils in a non-potable groundwater condition.

All of the fill samples had concentrations of VOC, PHC, PAH, and metals that were within the Table 3 residential Site Condition Standards (SCS), with the exception of the fill sample from TP22-06 which exceeded the Table 3 residential SCS for benzo(a)anthracene, benzo(a)pyrene, and fluoranthene.

PAH impacted soil was identified in one fill sample from TP22-6 and is associated with poor fill quality, miscellaneous debris was also observed in the fill material at this location. The depth of fill at this location was 0.2 to 1.5 m bgs. Only a small part of the Phase Two property appears to be impacted and the contaminants do not appear to be migrating. It is recommended that the impacted soil be removed from the Phase Two property when the property is re-developed.

Based on the results of the soil sampling, groundwater sampling was not determined to be required at the Phase Two

The Qualified Person can confirm that the Phase Two Environmental Site Assessment was conducted per the requirements of Ontario Regulation 153/04, as amended, and in accordance with generally accepted professional practices.

*This executive summary is a brief synopsis of the report and should not be read in lieu of reading the report in its entirety.*

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## 1.0 Introduction

EXP Services Inc. (EXP) was retained by McDonald Brothers Consulting Inc. to conduct a Phase Two Environmental Site Assessment (ESA) at 56 Capilano Drive in Ottawa, Ontario (hereinafter referred to as the 'Phase Two property'). At the time of the investigation, the Phase Two property was vacant.

The objective of the Phase Two ESA investigation was to assess the quality of the soil conditions within the area of potential environmental concern (APEC) identified in a Phase One ESA prepared by EXP. It is understood that the report will be used to support a site zoning amendment with the City of Ottawa.

This report has been prepared in accordance with the Phase Two ESA standard as defined by Ontario Regulation 153/04 (as amended), and in accordance with generally accepted professional practices. Subject to this standard of care, EXP makes no express or implied warranties regarding its services and no third-party beneficiaries are intended. Limitation of liability, scope of report and third-party reliance are outlined in Section 8 of this report.

### 1.1 Site Description

The Phase Two property has the municipal address 56 Capilano Drive in Ottawa. The Phase Two property is located on the south side of Capilano Drive, approximately 120 m east of Merivale Road. The Phase Two property is rectangular in shape with an area of approximately 0.28 hectares and consists of a manicured lawn.

The legal description of the Phase Two property is Part of Lot 15, Plan 356 being Part 2 on Plan 4R-27938, City of Ottawa. The Phase Two property has the property identification number (PIN) 046780068.

The approximate Universal Transverse Mercator (UTM) coordinates for the Phase Two property are Zone 18, 442483 m E and 5022758 m N. The UTM coordinates are based on measurements from Google Earth Pro, published by the Google Limited Liability Company (LLC). The accuracy of the centroid is estimated to be less than 10 m.

Refer to Table 1.1 for the Site identification information.

**Table 1.1: Site Identification Details**

Civic Address	56 Capilano Drive, Ottawa, Ontario
Current Land Use	Vacant
Proposed Future Land Use	Residential
Property Identification Number	046780068
UTM Coordinates	Zone 18, 442483 m E and 5022758 m N
Site Area	0.28 hectares
Property Owner	McDonald Brothers Consulting Inc.

### 1.2 Property Ownership

The registered owner of the Phase Two property is McDonald Brothers Consulting Inc. Authorization to proceed with this investigation on behalf of the property owner was provided by Mr. Alessandro Guarna. Contact information for Mr. Guarna is 262 Westbrook Road, Ottawa, Ontario, K0A 1L0.

### 1.3 Current and Proposed Future Use

The property is current vacant. The most recent use of the property was community (former curling club). The proposed future use of the property will likely be residential.

### 1.4 Applicable Site Condition Standards

Analytical results obtained for soil and groundwater samples were compared to Site Condition Standards (SCS) established under subsection 169.4(1) of the Environmental Protection Act, and presented in the document entitled *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, 2011*. This document provides tabulated background SCS (Table 1) applicable to environmentally sensitive sites and effects-based generic SCS (Tables 2 to 9) applicable to non-environmentally sensitive sites. The effects-based SCS (Tables 2 to 9) are protective of human health and the environment for different groundwater conditions (potable and non-potable), land use scenarios (residential, parkland, institutional, commercial, industrial, community and agricultural/other), soil texture (coarse or medium/fine) and restoration depth (full or stratified).

Table 1 to 9 SCS are summarized as follows:

- Table 1 – applicable to sites where background concentrations must be met (full depth), such as sensitive sites where site-specific criteria have not been derived
- Table 2 – applicable to sites with potable groundwater and full depth restoration
- Table 3 – applicable to sites with non-potable groundwater and full depth restoration
- Table 4 – applicable to sites with potable groundwater and stratified restoration
- Table 5 – applicable to sites with non-potable groundwater and stratified restoration
- Table 6 – applicable to sites with potable groundwater and shallow soils (bedrock encountered at depths of 2 metres or less across one-third or more of the site)
- Table 7 – applicable to sites with non-potable groundwater and shallow soils (bedrock encountered at depths of 2 metres or less across one-third or more of the site)
- Table 8 – applicable to sites with potable groundwater and that are within 30 m of a water body
- Table 9 – applicable to sites with non-potable groundwater and that are within 30 m of a water body

Application of the generic or background SCS to a specific site is based on a consideration of site conditions related to soil pH, thickness and extent of overburden material, and proximity to an area of environmental sensitivity or of natural significance. For some chemical parameters, consideration is also given to soil textural classification with SCS having been derived for both coarse and medium-fine textured soil conditions.

For assessment purposes, EXP selected the 2011 Table 3 SCS in a non-potable groundwater condition for residential/parkland/institutional property use (the proposed future use), and for commercial/industrial/community (the most recent property use). Analytical results were also compared to Table 1 background SCS.

The selection of these categories was based on the following factors:

- Bedrock is greater than 2 metres below grade across the subject property;
- The Phase Two property is not located within 30 metres of a waterbody;
- The Phase Two property is not located within an area of natural significance, does not include nor is adjacent to an area of natural significance, and does not include land that is within 30 metres of an area of natural significance;
- Potable water for the Phase Two property is provided by the City of Ottawa through its water distribution system;

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- The Phase Two property is not located in an area designated in a municipal official plan as a well-head protection area;
- The proposed building is planned for residential use; and
- It is the opinion of the Qualified Person who oversaw this work that the Phase Two property is not a sensitive site.

## 2.0 Background Information

### 2.1 Physical Setting

The Phase Two property has the municipal address 56 Capilano Drive in Ottawa. The Phase Two property is located on the south side of Capilano Drive, approximately 120 m east of Merivale Road. The Phase Two property is rectangular in shape with an area of approximately 0.28 hectares and consists of a manicured lawn. At the time of the current investigation, the Phase Two property was vacant.

A site plan showing the Phase Two property is presented as Figure 2 in Appendix A.

The Phase Two property, and all other properties located, in whole or in part, within 250 metres of the boundaries of the Phase Two property, are supplied by a municipal drinking water system provided by the City of Ottawa. Further, the Phase Two property is not located in an area designated in the municipal official plan as a well-head protection area and no properties within the Phase Two study area have a well that is being used or is intended for use as a source of potable water. Thus, in accordance with Section 35 of Ontario Regulation 153/04, non-potable water standards apply to the Phase Two property.

In accordance with Section 41 of Ontario Regulation 153/04, the Phase Two property is not an environmentally sensitive area. In addition, the Phase Two property is not located within an area of natural significance, and it does not include land that is within 30 metres of an area of natural significance.

The Phase Two property is not a shallow soil property as defined in Section 43.1 of the regulation. It does not include all or part of a water body or is adjacent to a water body or includes land that is within 30 metres of a water body.

Bedrock in the general area of the Phase Two property consists of dolostone and sandstone of the Beekmantown Group. Native surficial soil consists of sandy silt till. The ground surface is approximately 95 metres above sea level (masl).

The well records for the area have identified the bedrock as gray limestone. Based on previous investigations, the depth to the bedrock on the Phase Two property is approximately 2.5 metres below grade.

The groundwater flow direction is anticipated to be northeast, towards the Rideau River.

### 2.2 Past Investigations

EXP prepared a report entitled *Phase One Environmental Site Assessment, 56 Capilano Drive, Ottawa, Ontario*, dated March 2, 2022. The Phase One study area included the entire Phase Two property as well properties within 250 m of the Phase Two property. Based on the results of the Phase One ESA, EXP identified one area of potential environmental concern (APEC) within the Phase One study area. A summary is provided in Table 2.1.

**Table 2.1: Findings of Phase One ESA**

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil and/or Sediment)
<b>APEC #1</b>	Entire Phase One property	PCA#30 – Importation of Fill Material of Unknown Quality	On-Site	Metals, petroleum hydrocarbons (PHC), polycyclic aromatic hydrocarbons (PAH), Volatile organic compounds (VOC)	Soil

The locations of the APEC are shown on Figures 2 and 3 in Appendix A.

The Phase One ESA was conducted per the requirements of Ontario Regulation 153/04, as amended, and in accordance with generally accepted professional practices. A copy of the Phase One conceptual site model is provided as Figure 3 in Appendix A.

## 3.0 Scope of the Investigation

### 3.1 Overview of Site Investigation

The objective of the Phase Two ESA was to assess the quality of soil on the Phase Two property.

### 3.2 Scope of Work

The scope of work for the Phase Two ESA was as follows:

- Request local utility locating companies (e.g., cable, telephone, gas, hydro) to mark any underground utilities present at the Phase Two property;
- Retain a private utility locating company to mark any underground utilities present in the vicinity of the test pits locations and to clear the test pit locations;
- Excavate six test pits on the subject property;
- Submit soil samples for laboratory analysis of petroleum hydrocarbons (PHC), volatile organic compounds (VOC), polycyclic aromatic hydrocarbons (PAH), and metals;
- Compare the results of the soil and groundwater chemical analyses to applicable criteria, as set out by the Ontario Ministry of the Environment, Conservation and Parks (MECP);
- Conduct an elevation survey of the test pits;
- Prepare a report summarizing the results of the assessment activities.

This report has been prepared in accordance with the Phase Two ESA standard as defined by Ontario Regulation 153/04 (as amended), and in accordance with generally accepted professional practices. Subject to this standard of care, EXP makes no express or implied warranties regarding its services and no third-party beneficiaries are intended. Limitation of liability, scope of report and third-party reliance are outlined in Section 8 of this report.

### 3.3 Media Investigated

The Phase Two ESA included the investigation of soil on the Phase Two property. Based on the nature of the APEC identified in the Phase One ESA, groundwater was not investigated. As there are no water bodies on the Phase Two property, no surface water or sediment sampling was required.

The contaminants of potential concern (COPC) identified in the Phase One ESA were identified as target parameters for this Phase Two ESA. The APEC and COPC identified in the Phase One ESA are outlined in Section 2.2.

### 3.4 Phase One Conceptual Site Model

The Phase One conceptual site model (CSM) was developed by considering the following physical characteristics and pathways. The CSM showing the topography of the site, inferred groundwater flow, general site features, APEC, and PCA is shown in Figures 2 and 3 in Appendix A.

#### 3.4.1 Buildings and Structures

There are no buildings on the Phase Two property.

### 3.4.2 Water Bodies and Groundwater Flow Direction

There are no water bodies on the Phase Two property. The nearest surface water body to the Phase Two property is Nepean Creek, approximately 1.6 km south of the Phase Two property. Nepean Creek flows into the Rideau River, approximately 2.4 km east of the Phase Two property.

Based on previous investigations, the groundwater flow direction varies in the vicinity of the Phase Two property, likely due to subsurface infrastructure. Groundwater flow direction is inferred to be to the east/northeast.

### 3.4.3 Areas of Natural Significance

There are no ANSI within the Phase Two study area.

### 3.4.4 Water Wells

There were 92 well records within the Phase One study area. One of the well records was for a potable well on the Phase Two property. The well was installed in 1957 and served as the water supply well for the former City View Curling Club. Forty-seven of the records were for water supply wells installed in the 1950s. As there is now municipal water in the Phase One study area, it is assumed that these wells are no longer in use. The remainder of the well records were for monitoring wells on adjacent properties.

### 3.4.5 Potentially Contaminating Activity

The following PCAs were identified:

- PCA 1 – 1537 Merivale Road (80 m west) – Former gas station (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- PCA 2 – 1533 Merivale Road (100 m northwest) – Automotive service shop with historic UST (PCA #10 – Commercial Autobody Shops, PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- PCA 3 – 1507 Merivale Road (210 m northwest) – Automotive service shop with historic UST (PCA #10 – Commercial Autobody Shops, PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- PCA 4 – 1516 Merivale Road (170 m northwest) – Former dry cleaner (PCA#37 – Operation of Dry-Cleaning Equipment);
- PCA 5 – 56 Capilano Drive (Phase One property) – Previous investigation identified fill material on the Phase One property (PCA #30 – Importation of Fill Material of Unknown Quality);
- PCA 6 – 1541 Merivale Road (west adjacent) – Presence of PHC impacted soil and groundwater (#Other – PHC contaminant plume);
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- PCA 8 – 1509 Merivale Road (170 m northwest) – Active dry cleaner that has been in operation since at least 1964 (PCA #37 – Operation of Dry Cleaning Equipment (where chemicals are used));
- PCA 9 – 1509 Merivale Road (130 m northwest) – Former furnace oil UST on the east side of the building (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- PCA 10 – 1545 Merivale Road (southwest adjacent) – Former gas station (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);



- PCA 10 – 1541 Merivale Road (west adjacent) – Former dry cleaner (PCA #37 – Operation of Dry Cleaning Equipment (where chemicals are used));
- PCA 11 – 1545 Merivale Road (70 m southwest) – Former gas station (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- PCA 12 – 1545 Merivale Road (southwest adjacent) – Historic furnace oil spill (#Other – furnace oil spill); and
- PCA 13 – 1548 Merivale Road (170 m southwest)– Active gas station (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks.

Since the inferred groundwater flow direction is inferred to be to the northeast, the properties within the Phase One study area northeast of the Phase Two property were considered to be hydraulically down-gradient; and the properties to the north and south of the Site were considered to be hydraulically trans-gradient to the Phase Two property.

Furthermore, any PCAs located significantly distant (greater than 100 m) from the Phase Two property were considered to be too distant to be contributing to an APEC on the Phase Two property.

In addition, several of the PCAs identified have been investigated and areas of impact delineated. Since soil and groundwater samples taken from the neighbouring property to the west near the property line were non-detect for the contaminants of concern in 2018, it can be inferred that the contamination found in the west part of the neighbouring site has not migrated onto the Phase Two property.

### 3.4.6 Areas of Potential Environmental Concern

The APEC identified are summarized in Table 3.1.

**Table 3.1: Areas of Potential Environmental Concern**

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil and/or Sediment)
<b>APEC #1</b>	Entire Phase One property	PCA#30 – Importation of Fill Material of Unknown Quality	On-Site	Metals, PHC, PAH, VOC	Soil

### 3.4.7 Underground Utilities

The Phase Two property is not currently serviced. However, surrounding properties are serviced by municipal sewer and water, and natural gas.

### 3.4.8 Subsurface Stratigraphy

Bedrock in the general area of the Phase Two property consists of dolostone and sandstone of the Beekmantown Group. Native surficial soil consists of sandy silt till. The ground surface is approximately 95 metres above sea level (masl).

The well records for the area have identified the bedrock as gray limestone. Based on previous investigations, the depth to the bedrock on the Phase Two property is approximately 2.5 metres below grade.

### 3.4.9 Uncertainty Analysis

The CSM is a simplification of reality, which aims to provide a description and assessment of any areas where potentially contaminating activity that occurred within the Phase Two study area may have adversely affected the Phase Two property.

All information collected during this investigation, including records, interviews, and site reconnaissance, has contributed to the formulation of the CSM.

Information was assessed for consistency, however EXP has confirmed neither the completeness nor the accuracy of any of the records that were obtained or of any of the statements made by others. All reasonable inquiries to obtain accessible information were made, as required by Schedule D, Table 1, Mandatory Requirements for Phase Two Environmental Site Assessment Reports. The CSM reflects our best interpretation of the information that was available during this investigation.

### 3.5 Deviations from Sampling and Analysis Plan

The field investigative and sampling program was carried out following the requirements of the Phase Two property, as described in Section 4.

No significant deviations from the SAAP, as provided in Appendix C, were reported that affected the sampling and data quality objectives for the Phase Two property.

### 3.6 Impediments

No impediments were encountered during this investigation.

## 4.0 Investigation Method

### 4.1 General

The current investigation was performed following requirements given under Ontario Regulation 153/04 and in accordance with generally accepted professional practices.

### 4.2 Test Pit Excavation

The site investigative activities consisted of the excavation of six test pits to facilitate the collection of soil samples for visual inspection and chemical analysis.

Prior to the commencement of excavation, the locations of underground public utilities including telephone, natural gas and electrical lines were marked at the subject property by public locating companies. A private utility locating contractor was also retained to clear the individual borehole locations.

On May 16, 2022, six test pits (TP22-1 to TP22-6) were advanced at the Phase Two property by Lacroix Equipment Rentals Ltd. (Lacroix) under the full-time supervision of EXP staff. Test pits were excavated to refusal on bedrock surface. Dedicated nitrile gloves (one pair per sample) were used during sample handling. No petroleum-based greases or solvents were used during excavation activities. EXP staff continuously monitored the excavating activities to log the stratigraphy observed from the pits, to record the depth of the samples, to record total depths of excavation, and to screen the samples by recording visual or olfactory observations of potential impacts and measuring petroleum vapours.

Grab soil samples from the excavator bucket were collected from the fill layer. All soil samples were visually examined in the field for textural classification, logged, preserved in plastic bags and identified.

The locations of the test pits are shown on Figure 2 in Appendix A.

### 4.3 Soil Sampling

The soil sampling during the completion of this Phase Two ESA was undertaken in general accordance with the SAAP presented in Appendix C.

Soil samples were selected for laboratory analysis based on combustible vapour measurements and visual and olfactory evidence of impacts, where observed. Soil samples identified for possible laboratory analysis were placed directly into pre-cleaned, laboratory-supplied glass sample jars/vials. Samples to be analysed for PHC fraction F1 and BTEX were collected using a soil core sampler and placed into vials containing methanol as a preservative. The jars and vials were sealed with Teflon-lined lids to minimize headspace and reduce the potential for induced volatilization during storage/transport prior to analysis. All soil samples were placed in clean coolers containing ice prior to and during transportation to the subcontract laboratory, Caduceon Environmental Laboratories (Caduceon) of Ottawa, Ontario. The samples were transported/submitted within 24 hours of collection to the laboratory following chain of custody protocols for chemical analysis. Soil samples were submitted for laboratory analysis of PHC, VOC, PAH, and metals.

EXP staff continuously monitored the excavating activities to log the stratigraphy observed, to record the depth of soil sample collection, to record total depths of excavation, and to record visual or olfactory observations of potential impacts. Field observations are summarized on the borehole logs provided in Appendix C.

### 4.4 Field Screening Measurements

Soil samples were placed in a sealed Ziploc plastic bag and allowed to reach ambient temperature prior to field screening with a combustible vapour meter calibrated to hexane gas prior to use. The field screening measurements were made by

inserting the instrument's probe into the plastic bag while manipulating the sample to ensure volatilization of the soil gases. These 'headspace' readings provide a real-time indication of the relative concentration of combustible vapours encountered in the subsurface during drilling and are used to aid in the assessment of the vertical and horizontal extent of potential impacts and the selection of soil samples for analysis.

Readings of combustible vapour concentrations in the soil samples collected during the drilling investigation were recorded using an RKI Eagle 2, where there was sufficient recovery. This instrument is designed to detect and measure concentrations of combustible gas in the atmosphere to within 5 parts per million by volume (ppmv) from 0 ppmv to 200 ppmv, 10 ppmv increments from 200 ppmv to 1,000 ppmv, 50 ppmv increments from 1,000 ppmv to 10,000 ppmv, and 250 ppmv increments above 10,000 ppmv. It is equipped with two ranges of measurement, reading concentrations in ppmv or in percentage lower explosive limit (% LEL). The RKI Eagle 2 instrument can determine combustible vapour concentrations in the range equivalent to 0 to 11,000 ppmv of hexane.

The instrument was configured to eliminate any response from methane for all sampling conducted at the subject property. Instrument calibration is checked on a daily basis in both the ppmv range and % LEL range using standard gases comprised of known concentrations of hexane (400 ppmv, 40% LEL) in air. If the instrument readings are within  $\pm 10\%$  of the standard gas value, then the instrument is deemed to be calibrated, however if the readings are greater than  $\pm 10\%$  of the standard gas value then the instrument is re-calibrated prior to use.

The field screening measurements, in parts per million by volume (ppmv), are presented in the borehole logs provided in Appendix C.

#### 4.5 Analytical Testing

The contracted laboratory selected to perform chemical analysis on all soil samples was Caduceon Environmental Laboratories (Caduceon). Caduceon is an accredited laboratory under the Standards Council of Canada/Canadian Association for Laboratory Accreditation in accordance with ISO/IEC 17025:1999- General Requirements for the Competence of Testing and Calibration Laboratories.

#### 4.6 Residue Management

The excavated soil from test pit advancement was backfilled in the test pit after samples were collected.

#### 4.7 Elevation Surveying

A relative elevation survey was conducted by EXP. The test pit ground surface elevation was surveyed relative to a sanitary manhole located on Capilano Drive.

#### 4.8 Quality Assurance and Quality Control Measures

All soil and groundwater samples were placed in coolers containing ice packs prior to and during transportation to the contract laboratory, Caduceon. Caduceon is accredited to the ISO/IEC 17025:2005 standard - *General Requirements for the Competence of Testing and Calibration Laboratories*.

A QA/QC program was also implemented to ensure that the analytical results received are accurate and dependable. A QA/QC program is a system of documented checks that validate the reliability of the data. Quality Assurance is a system that ensures that quality control procedures are correctly performed and documented. Quality Control refers to the established procedures observed both in the field and in the laboratory, designed to ensure that the resulting end data meet intended quality objectives. The QA/QC program implemented by EXP incorporated the following components:

- Collecting and analysing field duplicate samples to ensure analytical precision;

*McDonald Brothers Consulting Inc.  
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May 27, 2022*

- Using dedicated and/or disposable sampling equipment;
- Following proper decontamination protocols to minimize cross-contamination;
- Maintaining field notes and completing field forms to document field activities; and
- Using only laboratory-supplied sample containers and following prescribed sample protocols, including using proper preservation techniques, meeting sample hold times, and documenting sample transmission on chains of custody, to ensure the integrity of the samples is maintained.

Caduceon's QA/QC program involved the systematic analysis of control standards for the purpose of optimizing the measuring system as well as establishing system precision and accuracy and included calibration standards, method blanks, reference standards, spiked samples, surrogates and duplicates.

## 5.0 Review and Evaluation

### 5.1 Geology

A 60 to 80 mm layer of topsoil was contacted at the surface of all of the test pits. In TP22-1, TP22-2, TP22-3, and TP22-6, the topsoil was underlain by a layer of granular fill that extends to a depth of 0.2 to 0.3 m below the existing ground surface. Underlying the granular fill or topsoil was a layer of sandy clay and gravel fill to a depth of 1.0 to 1.5 m below ground surface. Small amounts of debris material (bricks, concrete, rubber debris) were present in the fill material in TP22-5 and TP22-6.

Native silty sand was encountered below the fill in all the test pits, with the exception of TP22-4, between 0.1 and 0.7 metres thick. The silty sand extends to depths of 1.2 m to 2.1 m. In TP22-1, TP22-2, and TP22-4, the silty clay or fill was underlain by a layer of glacial till that extends to 2.2 m to 2.4 m depth.

There were no odours or staining observed in the fill or native material in any of the test-pits. Refusal was met in all the test pits at depths ranging between 2.0 m to 2.4 m.

A plan view showing cross-sections is provided as Figure 4 in Appendix A, while the Phase Two property geology is depicted in cross-sections on Figure 5 in Appendix A.

### 5.2 Soil: Field Screening

The methodology for the collection of soil vapour concentration measurements is described in Section 4.4.

Petroleum vapours ranged from non-detectable to 20 ppm in samples collected from the boreholes. Field screening data is presented in the borehole logs in Appendix C.

### 5.3 Soil: Quality

In accordance with the scope of work, chemical analyses were performed on selected soil samples recovered from the test pits. Six soil samples and a duplicate were collected from the fill material and submitted to Caduceon for analysis of PHC, PAH, VOC, and metals.

All of the fill sample concentrations were within the Table 3 residential SCS for VOC, PHC, PAH, and metals, with the exception of the fill sample from TP22-6 which exceeded the Table 3 residential SCS for benzo(a)anthracene, benzo(a)pyrene, and fluoranthene.

The soil results are provided in Tables 1 to 3 in Appendix D. They are shown in plan view on Figures 6 to 8 and on cross-sections on Figures 9 to 11 in Appendix A.

Copies of the laboratory Certificates of Analysis are provided in Appendix E.

#### 5.3.1 Chemical Transformation and Contaminant Sources

A variety of physical, chemical and biochemical mechanisms affect the fate and transport of the potential COC in soil and groundwater, the contribution of which is dependent on the soil and groundwater conditions at the Phase Two property, as well as the chemical/physical properties of the COC. Relevant fate and transport mechanisms are natural attenuation mechanisms, including advection mixing, mechanical dispersion/molecular diffusion, phase partitions (i.e. sorption and volatilization), and possibly abiotic or biotic chemical reactions, which effectively reduce COC concentrations.

PAH impacted soil was identified in one fill sample from TP22-6 and is associated with poor fill quality, miscellaneous debris was also observed in the fill material at this location. The depth of fill at this location was 0.2 to 1.5 m bgs.

Only a small part of the Phase Two property appears to be impacted and the contaminants do not appear to be migrating. It is recommended that the impacted soil be removed from the Phase Two property when the property is re-developed.

Based on the results of the soil sampling, groundwater sampling was not determined to be required at the Phase Two property.

### 5.3.2 Maximum Concentrations

Contaminants that exceeded the Table 3 SCS for residential land use were:

**Soil:** benzo(a)anthracene, benzo(a)pyrene, and fluoranthene.

Maximum soil concentrations are provided in Table 4 in Appendix D.

## 5.4 Quality Assurance and Quality Control Results

Quality assurance and quality control measures were taken during the field activities to meet the objectives of the sampling and quality assurance plan to collect unbiased and representative samples to characterize existing conditions in the fill materials and groundwater at the site. QA/QC measures, included:

- Collection and analysis of blind duplicate soil and groundwater samples to ensure sample collection precision;
- Analysis of a groundwater field blank for all parameters that were analysed to assess potential impact during sampling;
- Using dedicated and/or disposable sampling equipment;
- Following proper decontamination protocols to minimize cross-contamination;
- Maintaining field notes and completing field forms to document on-site activities; and
- Using only laboratory supplied sample containers and following prescribed sample protocols, including proper preservation, meeting sample hold times, proper chain of custody documentation, to ensure integrity of the samples.

Caduceon's QA/QC program consisted of the preparation and analysis of laboratory duplicate samples to assess precision and sample homogeneity, method blanks to assess analytical bias, spiked blanks and QC standards to evaluate analyte recovery, matrix spikes to evaluate matrix interferences and surrogate compound recoveries to evaluate extraction efficiency. The laboratory QA/QC results are presented in the Quality Assurance Report provided in the Certificates of Analysis prepared by Caduceon. The QA/QC results are reported as percent recoveries for matrix spikes, spiked blanks and QC standards, relative percent difference for laboratory duplicates and analyte concentrations for method blanks.

Review of the laboratory QA/QC results reported indicated that they were mostly within acceptable control limits or below applicable alert criteria for the sampled media and analytical test groups. The exceptions are summarized in the table below.

**Table 5.6: Laboratory QA/QC Results**

Caduceon Job#	Matrix	Test Affected	Deviation	Interpretation
B22-14241	Soil	VOC	Spike Recovery for dichlorodifluoromethane (36.0%) is less than the acceptance criteria (50-140%).	Possible low bias of data. Since all VOCs were well below the standards, the deviation should have no effect on the interpretation of results.

For QA/QC purposes, the analytical sample results are quantitatively evaluated by calculating the relative percent difference (RPD) between the samples and their duplicates. To accurately calculate a statistically valid RPD, the concentration of the analytes found in both the original and duplicate sample must be greater than five times the reporting detection limit (RDL).

The results of the RPD calculations are provided in Appendix D in Tables 5 to 7. All of the RPD for soil were either not calculable or within the applicable alert limits.

## 5.5 Phase Two Conceptual Site Model

A Conceptual Site Model (CSM) provides a narrative, graphical and tabulated description integrating information related to the Phase Two property's geologic and hydrogeological conditions, areas of potential environmental concern/potential contaminating activities, the presence and distribution of contaminants of concern, contaminant fate and transport, and potential exposure pathways.

### 5.5.1 Introduction

EXP Services Inc. (EXP) was retained by McDonald Brothers Consulting Inc. to conduct a Phase Two Environmental Site Assessment (ESA) at 56 Capilano Drive in Ottawa, Ontario (hereinafter referred to as the 'Phase Two property'). At the time of the investigation, the Phase Two property was vacant.

The objective of the Phase Two ESA investigation was to assess the quality of the soil conditions within the area of potential environmental concern (APEC) identified in a Phase One ESA prepared by EXP. It is understood that the report will be used to support a site zoning amendment with the City of Ottawa.

The most recent use of the property was community. The proposed future use of the property will likely be residential.

### 5.5.2 Physical Site Description

The Phase Two property has the municipal address 56 Capilano Drive in Ottawa. The Phase Two property is located on the south side of Capilano Drive, approximately 120 m east of Merivale Road. The Phase Two property is rectangular in shape with an area of approximately 0.28 hectares and consists of a manicured lawn.

The legal description of the Phase Two property is Part of Lot 15, Plan 356 being Part 2 on Plan 4R-27938, City of Ottawa. The Phase Two property has the property identification number (PIN) 046780068. The site layout is shown on Figure 2.

Refer to Table 5.7 for the Site identification information.

**Table 5.7: Site Identification Details**

Civic Address	56 Capilano Drive, Ottawa, Ontario
Current Land Use	Vacant
Proposed Future Land Use	Residential
Property Identification Number	046780068
UTM Coordinates	Zone 18, 442483 m E and 5022758 m N
Site Area	0.28 hectares
Property Owner	McDonald Brothers Consulting Inc.

The Phase One Conceptual Site Model is provided as Figure 3.

The Phase Two property, and all other properties located, in whole or in part, within 250 metres of the boundaries of the Phase Two property, are supplied by a municipal drinking water system provided by the City of Ottawa. Further, the Phase Two property is not located in an area designated in the municipal official plan as a well-head protection area and no properties within the Phase Two study area have a well that is being used or is intended for use as a source of potable water.



Thus, in accordance with Section 35 of Ontario Regulation 153/04, non-potable water standards apply to the Phase Two property.

In accordance with Section 41 of Ontario Regulation 153/04, the Phase Two property is not an environmentally sensitive area. In addition, the Phase Two property is not located within an area of natural significance, and it does not include land that is within 30 metres of an area of natural significance.

The Phase Two property is not a shallow soil property as defined in Section 43.1 of the regulation. It does not include all or part of a water body or is adjacent to a water body or includes land that is within 30 metres of a water body.

Bedrock in the general area of the Phase Two property consists of dolostone and sandstone of the Beekmantown Group. Native surficial soil consists of sandy silt till. The ground surface is approximately 95 metres above sea level (masl).

The well records for the area have identified the bedrock as gray limestone. Based on previous investigations, the depth to the bedrock on the Phase Two property is approximately 2.5 metres below grade.

The groundwater flow direction is anticipated to be northeast, towards the Rideau River.

### 5.5.3 Geological and Hydrogeological

Soil at the Phase Two property generally consisted of sandy clay and gravel fill material overlying silty clay and glacial till. Small amounts of debris material (bricks, concrete, rubber debris) were present in the fill material in TP22-5 and TP22-6. There were no odours or staining observed in the fill or native material in any of the test-pits. Refusal was met in all the test pits at depths ranging between 2.0 m to 2.4 m.

A plan view showing cross-sections is provided as Figure 4, while the Phase Two property geology is depicted in cross-sections on Figure 5.

A summary of factors that apply to the Phase Two property is provided in Table 5.8.

**Table 5.8: Site Characteristics**

Characteristic	Description
Minimum Depth to Bedrock	2.0 metres below ground surface
Minimum Depth to Groundwater	N/A
Shallow Soil Property	No, bedrock is greater than 2.0 mbgs
Proximity to water body or ANSI	Approximately 1.6 km – Nepean Creek
Soil pH	7.46 – 7.65
Soil Texture	Coarse
Current Property Use	Community
Future Property Use	Residential
Areas Containing Suspected Fill	Entire Phase Two property

### 5.5.4 Utilities and Impediments

The Phase Two property is not currently serviced. However, surrounding properties are serviced by municipal sewer and water, and natural gas.

### 5.5.5 Potentially Contaminating Activities

The following potentially contaminating activities (PCA) were identified:

- PCA 1 – 1537 Merivale Road (80 m west) – Former gas station (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- PCA 2 – 1533 Merivale Road (100 m northwest) – Automotive service shop with historic UST (PCA #10 – Commercial Autobody Shops, PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- PCA 3 – 1507 Merivale Road (210 m northwest) – Automotive service shop with historic UST (PCA #10 – Commercial Autobody Shops, PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- PCA 4 – 1516 Merivale Road (170 m northwest) – Former dry cleaner (PCA#37 – Operation of Dry-Cleaning Equipment);
- PCA 5 – 56 Capilano Drive (Phase One property) – Previous investigation identified fill material on the Phase One property (PCA #30 – Importation of Fill Material of Unknown Quality);
- PCA 6 – 1541 Merivale Road (west adjacent) – Presence of PHC impacted soil and groundwater (#Other – PHC contaminant plume);
- PCA 7 – 1543 Merivale Road (100 m west) – Active gas station (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- PCA 8 – 1509 Merivale Road (170 m northwest) – Active dry cleaner that has been in operation since at least 1964 (PCA #37 – Operation of Dry Cleaning Equipment (where chemicals are used));
- PCA 9 – 1509 Merivale Road (130 m northwest) – Former furnace oil UST on the east side of the building (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- PCA 10 – 1545 Merivale Road (southwest adjacent) – Former gas station (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- PCA 10 – 1541 Merivale Road (west adjacent) – Former dry cleaner (PCA #37 – Operation of Dry Cleaning Equipment (where chemicals are used));
- PCA 11 – 1545 Merivale Road (70 m southwest) – Former gas station (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- PCA 12 – 1545 Merivale Road (southwest adjacent) – Historic furnace oil spill (#Other – furnace oil spill); and
- PCA 13 – 1548 Merivale Road (170 m southwest) – Active gas station (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks).

Since the inferred groundwater flow direction is inferred to be to the northeast the properties within the Phase One study area northeast of the Phase Two property were considered to be hydraulically down-gradient; and the properties to the north and south of the Phase Two property were considered to be hydraulically trans-gradient.

Furthermore, any PCAs located significantly distant (greater than 100 m) from the Phase Two property were considered to be too distant to be contributing to an APEC

In addition, several of the PCAs identified have been investigated and areas of impact delineated (Section 3.5.2). Since soil and groundwater samples taken from the neighbouring property to the west near the property line were non-detect for the contaminants of concern in 2018, it can be inferred that the contamination found in the west part of the neighbouring site has not migrated onto the Phase Two property.

### 5.5.6 Areas of Potential Environmental Concern/Potential Contaminates of Concern

Ontario Regulation 153/04 defines an APEC as an area on a property where one or more contaminants are potentially present. The following APEC were identified on the Phase Two property, as shown on Figure 2 and Table 5.9 below:

**Table 5.9: Areas of Potential Environmental Concern**

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil and/or Sediment)
APEC #1	Entire Phase One property	PCA#30 – Importation of Fill Material of Unknown Quality	On-Site	Metals, PHC, PAH, VOC	Soil

### 5.5.7 Investigation

The site investigative activities consisted of the excavation of six test pits to facilitate the collection of soil samples for visual inspection and chemical analysis.

Prior to the commencement of excavation, the locations of underground public utilities including telephone, natural gas and electrical lines were marked at the subject property by public locating companies. A private utility locating contractor was also retained to clear the individual test pit locations.

On May 16, 2022, six test pits (TP22-1 to TP22-6) were advanced at the Phase Two property by Lacroix Equipment Rentals Ltd. (Lacroix) under the full-time supervision of EXP staff. Test pits were excavated to refusal on bedrock surface. Dedicated nitrile gloves (one pair per sample) were used during sample handling. No petroleum-based greases or solvents were used during excavation activities. EXP staff continuously monitored the excavating activities to log the stratigraphy observed from the pits, to record the depth of the samples, to record total depths of excavation, and to screen the samples by recording visual or olfactory observations of potential impacts and measuring petroleum vapours.

Grab soil samples from the excavator bucket were collected from the fill layer. All soil samples were visually examined in the field for textural classification, logged, preserved in plastic bags and identified

The locations of the test pits are shown on Figure 2 in Appendix A.

### 5.5.8 Soil Sampling

Soil samples were selected for laboratory analysis based on combustible vapour measurements and visual and olfactory evidence of impacts, where observed. Soil samples identified for possible laboratory analysis were placed directly into pre-cleaned, laboratory-supplied glass sample jars/vials. Samples to be analyzed for PHC fraction F1 and VOC were collected using a soil core sampler and placed into vials containing methanol as a preservative. The jars and vials were sealed with Teflon-lined lids to minimize headspace and reduce the potential for induced volatilization during storage/transport prior to analysis. All soil samples were placed in clean coolers containing ice prior to and during transportation to the subcontract laboratory, Caduceon Environmental Laboratories (Caduceon) of Ottawa, Ontario. The samples were transported/submitted within 24 hours of collection to the laboratory following chain of custody protocols for chemical analysis.

Six soil samples and a duplicate were collected from the fill material and submitted to Caduceon for analysis of PHC, PAH, VOC, and metals.

All of the fill samples had concentrations of VOC, PHC, PAH, and metals that were within the Table 3 residential SCS, with the exception of the fill sample from TP22-6 which exceeded the Table 3 residential SCS for benzo(a)anthracene, benzo(a)pyrene, and fluoranthene.

The soil results are provided in Tables 1 to 3 in Appendix D. They are shown in plan view on Figures 6 to 8 and on cross-sections on Figures 9 to 11 in Appendix A.

### 5.5.9 Contaminants of Concern

Contaminants that exceeded the Table 3 SCS for residential land use were:

**Soil:** benzo(a)anthracene, benzo(a)pyrene, and fluoranthene.

### 5.5.10 Contaminant Fate and Transport

A variety of physical, chemical and biochemical mechanisms affect the fate and transport of the potential COC in soil and groundwater, the contribution of which is dependent on the soil and groundwater conditions at the Phase Two property, as well as the chemical/physical properties of the COC. Relevant fate and transport mechanisms are natural attenuation mechanisms, including advection mixing, mechanical dispersion/molecular diffusion, phase partitions (i.e. sorption and volatilization), and possibly abiotic or biotic chemical reactions, which effectively reduce COC concentrations.

PAH impacted soil was identified in one fill sample from TP22-6 and is associated with poor fill quality, miscellaneous debris was also observed in the fill material at this location. The depth of fill at this location was 0.2 to 1.5 m bgs.

Only a small part of the Phase Two property appears to be impacted and the contaminants do not appear to be migrating. It is recommended that the impacted soil be removed from the Phase Two property when the property is re-developed.

Based on the results of the soil sampling, groundwater sampling was not determined to be required at the Phase Two property.

## 6.0 Conclusion

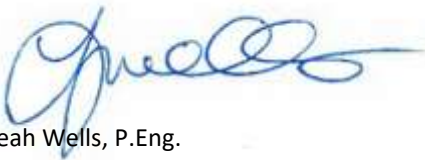
During the current investigation, the soil quality at the Phase Two property was investigated. The investigation included a soil sampling program. Results were compared to Regulation 153/04 Table 3 standards for residential/parkland/institutional property use and Table 3 standards for industrial/commercial/community property use and coarse textured soils in a non-potable groundwater condition.

PAH impacted soil was identified in one fill sample from TP22-6 and is associated with poor fill quality, miscellaneous debris was also observed in the fill material at this location. The depth of fill at this location was 0.2 to 1.5 m bgs.

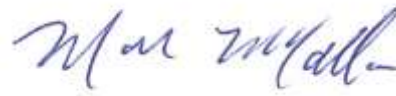
Only a small part of the Phase Two property appears to be impacted and the contaminants do not appear to be migrating. It is recommended that the impacted soil be removed from the Phase Two property when the property is re-developed.

Based on the results of the soil sampling, groundwater sampling was not determined to be required at the Phase Two

The Qualified Person can confirm that the Phase Two Environmental Site Assessment was conducted per the requirements of Ontario Regulation 153/04, as amended, and in accordance with generally accepted professional practices.



Leah Wells, P.Eng.  
Environmental Engineer  
Earth and Environment



Mark McCalla, P.Geo.  
Team Lead/Senior Project Manager  
Earth and Environment

## 7.0 References

This study was conducted in accordance with the applicable Regulations, Guidelines, Policies, Standards, Protocols and Objectives. Specific reference is made to the following documents.

- EXP Services Inc., *Phase One Environmental Site Assessment, 56 Capilano Drive, Ottawa, Ontario*, March 2, 2022.
- Freeze and Cherry, *Groundwater*, Prentice Hall, 1979.
- Ontario Ministry of the Environment, Conservation and Parks, *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario*, December 1996.
- Ontario Ministry of the Environment, Conservation and Parks, *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, April 15, 2011.
- Ontario Ministry of the Environment, Conservation and Parks, *Guide for Completing Phase Two Environmental Site Assessments under Ontario Regulation 153/04*, June 2011.
- Ontario Ministry of the Environment, Conservation and Parks, *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*, July 1, 2011.
- Ontario Ministry of the Environment, Conservation and Parks, *Management of Excess Soil – A Guide for Best Management Practices*, January 2014.
- Ontario Regulation 153/04, made under the *Environmental Protection Act*, as amended.
- Ontario R.R.O. 1990, Regulation 347, made under the *Environmental Protection Act*, as amended.
- Ontario R.R.O. 1990, Regulation 903, made under the *Water Resources Act*, as amended.

## 8.0 General Limitations

### Basis of Report

This report ("Report") is based on site conditions known or inferred by the investigation undertaken as of the date of the Report. Should changes occur which potentially impact the condition of the site the recommendations of EXP may require re-evaluation. Where special concerns exist, or McDonald Brothers Consulting Inc. ("the Client") has special considerations or requirements, these should be disclosed to EXP to allow for additional or special investigations to be undertaken not otherwise within the scope of investigation conducted for the purpose of the Report.

### Reliance on Information Provided

The evaluation and conclusions contained in the Report are based on conditions in evidence at the time of site inspections and information provided to EXP by the Client and others. The Report has been prepared for the specific site, development, building, design or building assessment objectives and purpose as communicated by the Client. EXP has relied in good faith upon such representations, information and instructions and accepts no responsibility for any deficiency, misstatement or inaccuracy contained in the Report as a result of any misstatements, omissions, misrepresentation or fraudulent acts of persons providing information. Unless specifically stated otherwise, the applicability and reliability of the findings, recommendations, suggestions or opinions expressed in the Report are only valid to the extent that there has been no material alteration to or variation from any of the information provided to exp. If new information about the environmental conditions at the Site is found, the information should be provided to EXP so that it can be reviewed and revisions to the conclusions and/or recommendations can be made, if warranted.

### Standard of Care

The Report has been prepared in a manner consistent with the degree of care and skill exercised by engineering consultants currently practicing under similar circumstances and locale. No other warranty, expressed or implied, is made. Unless specifically stated otherwise, the Report does not contain environmental consulting advice.

### Complete Report

All documents, records, data and files, whether electronic or otherwise, generated as part of this assignment form part of the Report. This material includes, but is not limited to, the terms of reference given to EXP by the Client, communications between EXP and the Client, other reports, proposals or documents prepared by EXP for the Client in connection with the site described in the Report. In order to properly understand the suggestions, recommendations and opinions expressed in the Report, reference must be made to the Report in its entirety. EXP is not responsible for use by any party of portions of the Report.

### Use of Report

The information and opinions expressed in the Report, or any document forming part of the Report, are for the sole benefit of the Client. No other party may use or rely upon the Report in whole or in part without the written consent of EXP. Any use of the Report, or any portion of the Report, by a third party are the sole responsibility of such third party. EXP is not responsible for damages suffered by any third party resulting from unauthorised use of the Report.

### Report format

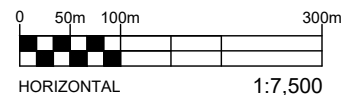
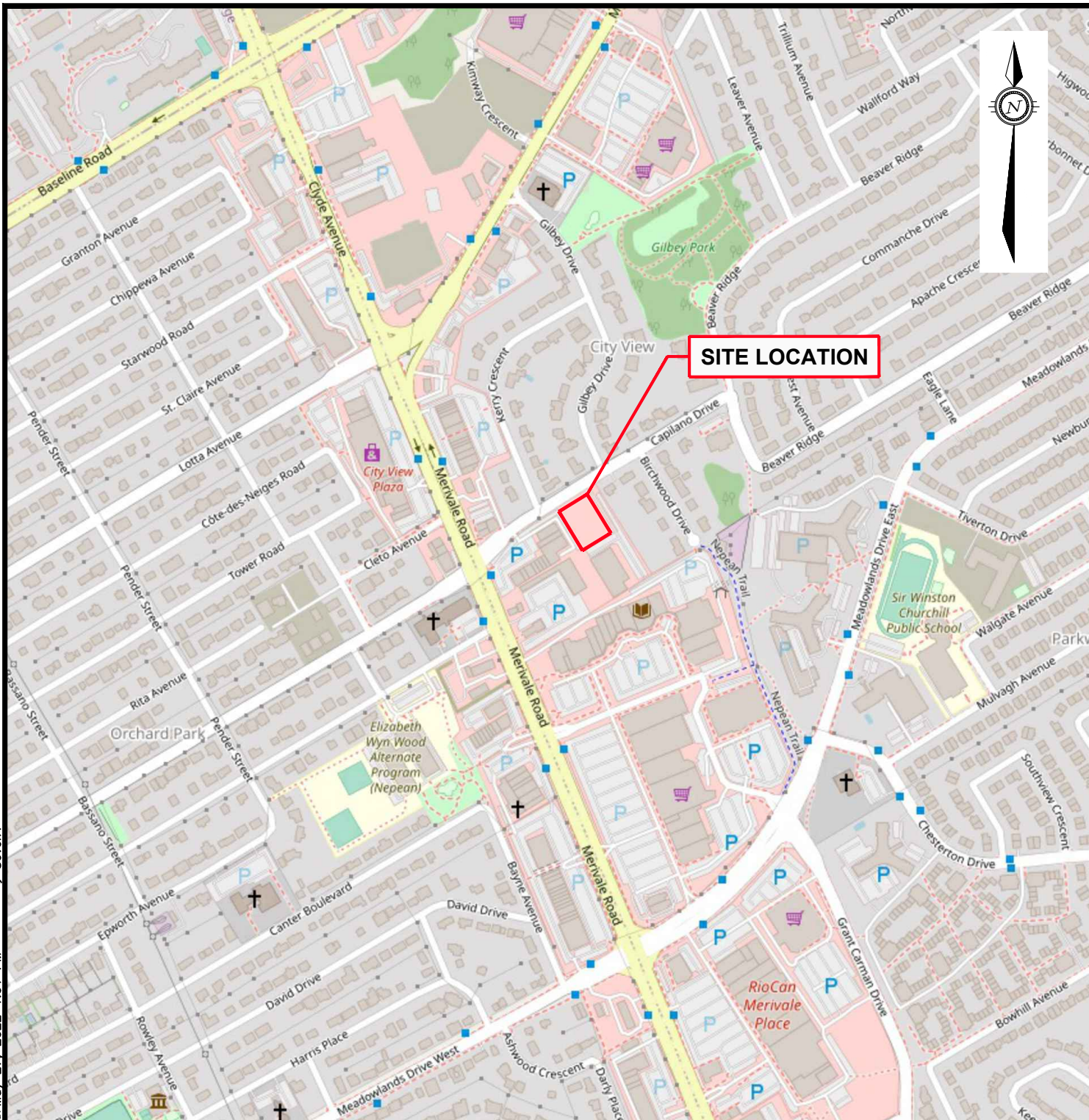
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56 Capilano Drive, Ottawa, Ontario  
OTT-22003851-A0  
May 27, 2022*

## Appendix A: Figures





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DATE MAY 2022		<b>PHASE TWO ENVIRONMENTAL SITE ASSESSMENT</b>	project no. OTT-22003851-A0
DESIGN LW	CHECKED MM		scale 1:7,500
DRAWN BY AS		<b>SITE LOCATION PLAN</b> 56 CAPILANO DRIVE, OTTAWA, ONTARIO	FIG 1





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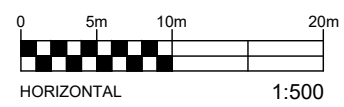


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**LEGEND**

	PROPERTY BOUNDARY
	TEST PIT NAME & LOCATION
	APEC 1 (PCA #30)
	INFERRED GROUNDWATER FLOW DIRECTION



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DATE MAY 2022	<b>PHASE TWO ENVIRONMENTAL SITE ASSESSMENT</b>	project no. OTT-22003851-A0
DESIGN LW		scale 1:500
CHECKED MM		
DRAWN BY AS	TITLE: <b>TEST PIT LOCATION PLAN</b> 56 CAPILANO DRIVE, OTTAWA, ONTARIO	<b>FIG 2</b>



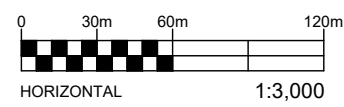


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**LEGEND**

	PROPERTY BOUNDARY
	PHASE TWO STUDY AREA (250m)
	APEC 1 (PCA #30)
	INFERRED GROUNDWATER FLOW DIRECTION

- PCA 28** POTENTIALLY CONTAMINATING ACTIVITY - NOT RESULTING IN AN APEC
- PCA 28** POTENTIALLY CONTAMINATING ACTIVITY - RESULTING IN AN APEC



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DATE MAY 2022	PHASE TWO ENVIRONMENTAL SITE ASSESSMENT	project no. OTT-22003851-A0
DESIGN LW		CHECKED MM
DRAWN BY AS	TITLE: CONCEPTUAL SITE MODEL – PHASE TWO STUDY AREA 56 CAPILANO DRIVE, OTTAWA, ONTARIO	FIG 3

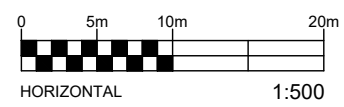


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**LEGEND**

	PROPERTY BOUNDARY
	TEST PIT NAME & LOCATION
	SECTION MARK

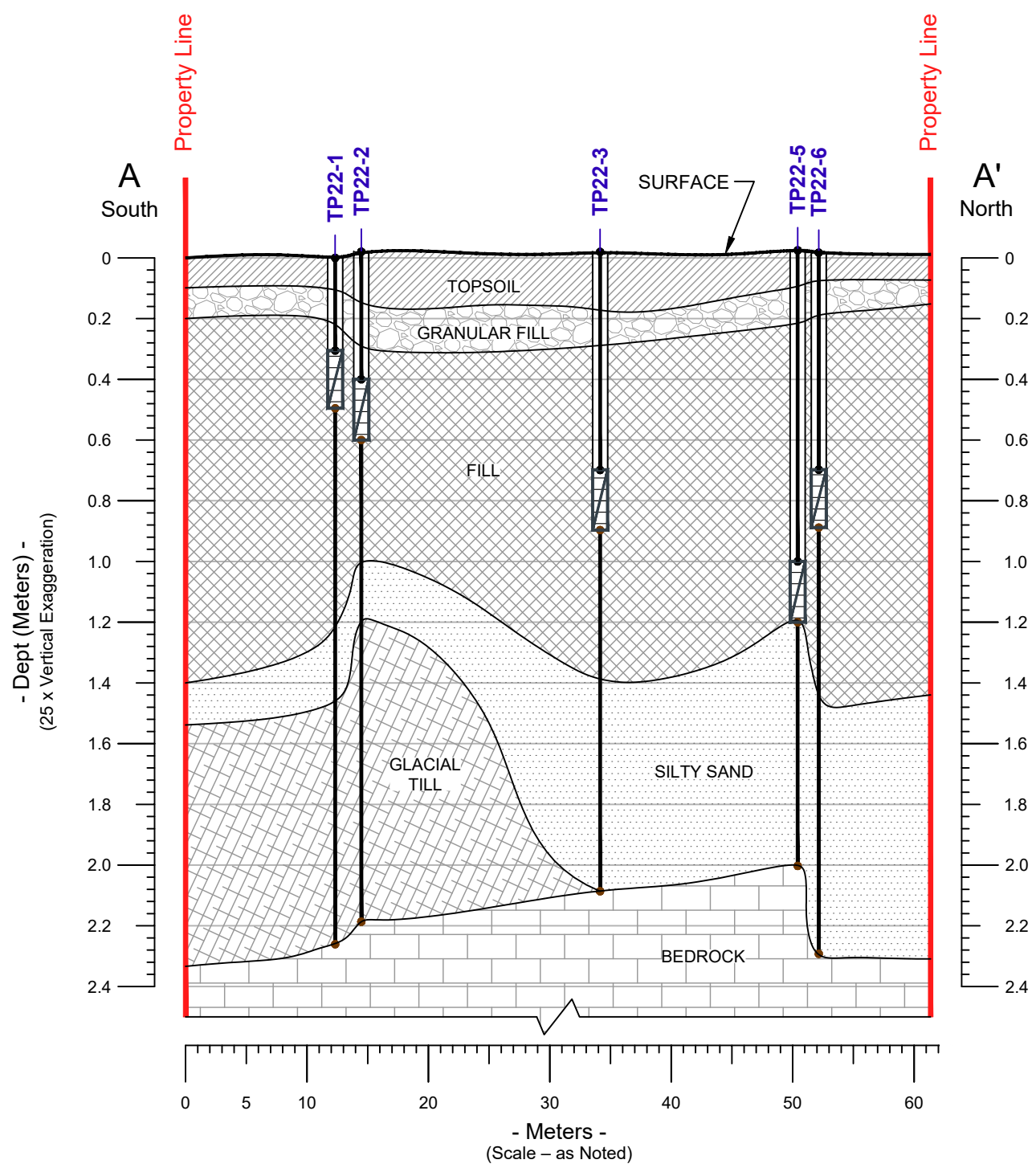


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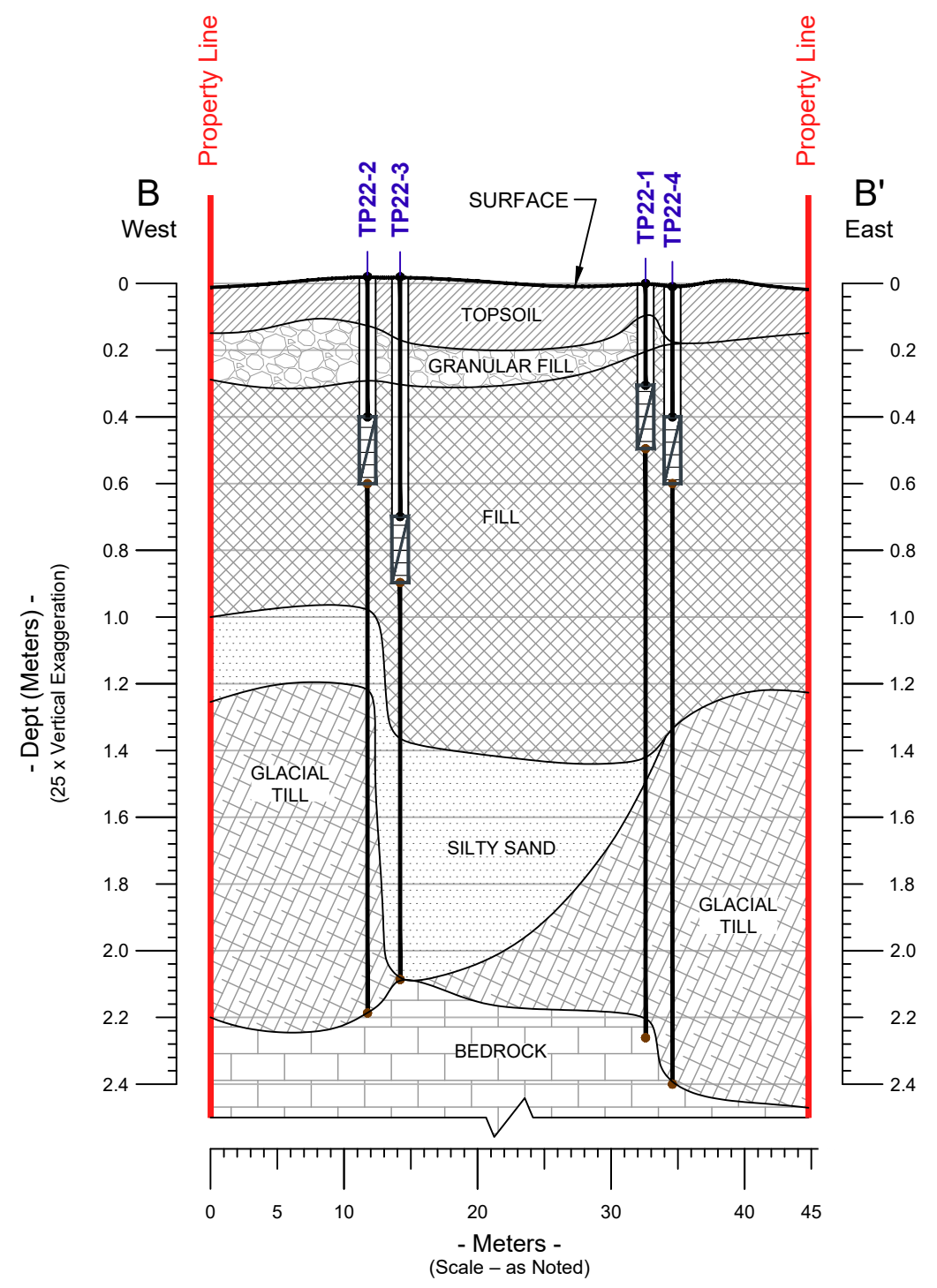
DATE MAY 2022	<b>PHASE TWO ENVIRONMENTAL SITE ASSESSMENT</b>	project no. OTT-22003851-A0
DESIGN LW		scale 1:500
CHECKED MM		
DRAWN BY AS	TITLE: CROSS SECTION PLAN 56 CAPILANO DRIVE, OTTAWA, ONTARIO	FIG 4



Filename: E:\OTT\22003851-A0\60\_Execution\65 Drawings\CAD\22003851-A0.dwg  
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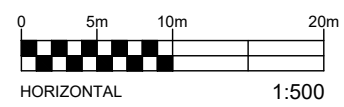
**CROSS SECTION A-A'**



**CROSS SECTION B-B'**

**LEGEND**

	PROPERTY BOUNDARY
	TEST PIT NAME & LOCATION
	SAMPLE LOCATION



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DATE MAY 2022	<b>PHASE TWO ENVIRONMENTAL SITE ASSESSMENT</b>	project no. OTT-22003851-A0
DESIGN LW		checked MM
DRAWN BY AS		scale 1:500
<b>CROSS-SECTIONS A-A' &amp; B-B'</b> 56 CAPILANO DRIVE, OTTAWA, ONTARIO		<b>FIG 5</b>



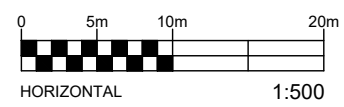
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PARAMETERS	ABBREVIATION	REG 153/04 TABLE 3 SCS Residential
Benzene	B	0.21
Toluene	T	2.3
Ethylbenzene	E	2
Total Xylenes	X	3.1
F1	F1 (C6-C10)	65
F2	F2 (C10-C16)	250
F3	F3 (C16-C34)	2500
F4	F4 (C34-C50)	6600
1,1-Dichloroethane	1,1-DCA	3.5
1,2-Dichloroethane	1,2-DCA	0.05
1,1-Dichloroethylene	1,1-DCE	0.05
Cis-1,2-Dichloroethylene	c-1,2-DCE	3.4
Trans-1,2-Dichloroethylene	t-1,2-DCE	0.084
Tetrachloroethylene	PCE	0.28
Trichloroethylene	TCE	0.061
Vinyl Chloride	VC	0.02

TP22-1	Depth (mbgs)	16-May-22															
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
	0.4	<0.02	<0.2	<0.05	<0.03	<10	<5	<10	<10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.02
TP22-2	Depth (mbgs)	16-May-22															
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
	0.5	<0.02	<0.2	<0.05	<0.03					<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.02
TP22-3	Depth (mbgs)	16-May-22															
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
	0.8	<0.02	<0.2	<0.05	<0.03					<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.02
Dup	0.8	<0.02	<0.2	<0.05	<0.03					<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.02
TP22-4	Depth (mbgs)	16-May-22															
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
	0.5	<0.02	<0.2	<0.05	<0.03					<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.02
TP22-5	Depth (mbgs)	16-May-22															
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
	1.0	<0.02	<0.2	<0.05	<0.03					<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.02
TP22-6	Depth (mbgs)	16-May-22															
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
	0.8	<0.02	<0.2	<0.05	<0.03					<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.02

<b>LEGEND</b>	PROPERTY BOUNDARY	SAMPLE MET TABLE 3 RESIDENTIAL SCS
TP22-1	TEST PIT NAME & LOCATION	SAMPLE EXCEEDED TABLE 3 RESIDENTIAL SCS



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DATE MAY 2022	PHASE TWO ENVIRONMENTAL SITE ASSESSMENT	project no. OTT-22003851-A0
DESIGN LW		scale 1:500
DRAWN BY AS		TITLE: SOIL ANALYTICAL RESULTS – PHC & VOC 56 CAPILANO DRIVE, OTTAWA, ONTARIO
		FIG 6

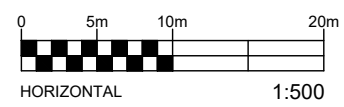




PARAMETERS	ABBREVIATION	REG 153/04 TABLE 3 SCS Residential
Acenaphthene	Ace	7.9
Acenaphthylene	Acl	0.15
Anthracene	An	0.67
Benzo(a)anthracene	B(a)A	0.5
Benzo(a)pyrene	B(a)P	0.3
Benzo(b)fluoranthene	B(b)F	0.78
Benzo(g,h,i)perylene	B(ghi)P	6.6
Benzo(k)fluoranthene	B(k)F	0.78
Chrysene	C	7
Dibenz(a,h)anthracene	DA	0.1
Fluoranthene	Fl	0.69
Fluorene	F	62
Indeno(1,2,3-cd)pyrene	I(123)P	0.38
Total Methylnaphthalene	T-MN	0.99
Naphthalene	N	0.6
Phenanthrene	P	6.2
Pyrene	Py	78

TP22-1	Depth (m bgs)	16-May-22																
		Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
	0.4	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
TP22-2	Depth (m bgs)	16-May-22																
		Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
	0.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
TP22-3	Depth (m bgs)	16-May-22																
		Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
	0.8	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dup	0.8	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
TP22-4	Depth (m bgs)	16-May-22																
		Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
	0.5	< 0.05	< 0.05	< 0.05	0.09	0.09	0.11	0.06	< 0.05	0.1	< 0.05	0.12	< 0.05	0.07	< 0.05	< 0.05	< 0.05	< 0.05
TP22-5	Depth (m bgs)	16-May-22																
		Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
	1.0	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
TP22-6	Depth (m bgs)	16-May-22																
		Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
	0.8	0.15	< 0.05	0.32	<b>0.52</b>	<b>0.41</b>	0.57	0.25	0.21	0.53	0.06	<b>1.35</b>	0.16	0.32	< 0.05	< 0.05	1.29	1.02

<b>LEGEND</b>	PROPERTY BOUNDARY	SAMPLE MET TABLE 3 RESIDENTIAL SCS
TP22-1	TEST PIT NAME & LOCATION	SAMPLE EXCEEDED TABLE 3 RESIDENTIAL SCS



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DATE MAY 2022	PHASE TWO ENVIRONMENTAL SITE ASSESSMENT	project no. OTT-22003851-A0
DESIGN LW		scale 1:500
DRAWN BY AS		TITLE: SOIL ANALYTICAL RESULTS – PAH 56 CAPILANO DRIVE, OTTAWA, ONTARIO
		<b>FIG 7</b>

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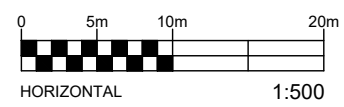


PARAMETERS	ABBREVIATION	REG 153/04 TABLE 3 SCS Residential
Antimony	Sb	7.5
Arsenic	As	18
Barium	Ba	390
Beryllium	Be	4
Boron	B	120
Boron (HWS)	B (HWS)	1.5
Cadmium	Cd	1.2
Chromium	Cr	160
Chromium VI	Cr VI	8
Cobalt	Co	22
Copper	Cu	140
Lead	Pb	120
Mercury	Hg	0.27
Molybdenum	Mo	6.9
Nickel	Ni	100
Selenium	Se	2.4
Silver	Ag	20
Thallium	Tl	1
Uranium	U	23
Vanadium	V	86
Zinc	Zn	340



TEST PIT	Depth (mbgs)	PARAMETERS																			DATE			
		Sb	As	Ba	Be	B	B (HWS)	Cd	Cr	Cr VI	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Tl	U	V	Zn	15-Mar-21	15-Mar-21
TP22-1	0.4	<0.5	2.7	108	0.4	12	0.05	<0.5	17	<0.2	9	13	11	0.114	<1	15	0.7	<0.2	0.2	0.5	22	25	15-Mar-21	15-Mar-21
TP22-2	0.5	<0.5	1.7	109	0.3	9.8	0.05	<0.5	21	<0.2	7	11	8	0.022	<1	12	0.5	<0.2	0.10	0.7	29	90	15-Mar-21	15-Mar-21
TP22-3	0.8	<0.5	1.5	81	0.3	9.8	0.09	<0.5	18	<0.2	6	9	7	0.022	<1	11	<0.5	<0.2	0.1	0.6	28	45	15-Mar-21	15-Mar-21
Dup	0.8	<0.5	1.6	107	0.3	9.4	0.07	<0.5	22	<0.2	6	12	7	0.022	<1	13	0.5	<0.2	0.1	0.60	29	66	15-Mar-21	15-Mar-21
TP22-4	0.5	<0.5	2.4	83	0.3	12.4	0.06	<0.5	16	<0.2	7	12	16	0.024	<1	12	0.6	<0.2	0.1	0.5	20	26	15-Mar-21	15-Mar-21
TP22-5	1.0	<0.5	5.3	128	0.6	13.1	0.06	<0.5	19	<0.2	9	13	14	0.064	<1	17	0.7	<0.2	0.2	0.5	23	28	15-Mar-21	15-Mar-21
TP22-6	0.8	<0.5	2.3	112	0.4	10.3	0.06	<0.5	21	<0.2	7	13	11	0.083	<1	14	0.7	<0.2	0.1	0.6	29	39	15-Mar-21	15-Mar-21

<b>LEGEND</b>	PROPERTY BOUNDARY	SAMPLE MET TABLE 3 RESIDENTIAL SCS
TP22-1	TEST PIT NAME & LOCATION	SAMPLE EXCEEDED TABLE 3 RESIDENTIAL SCS



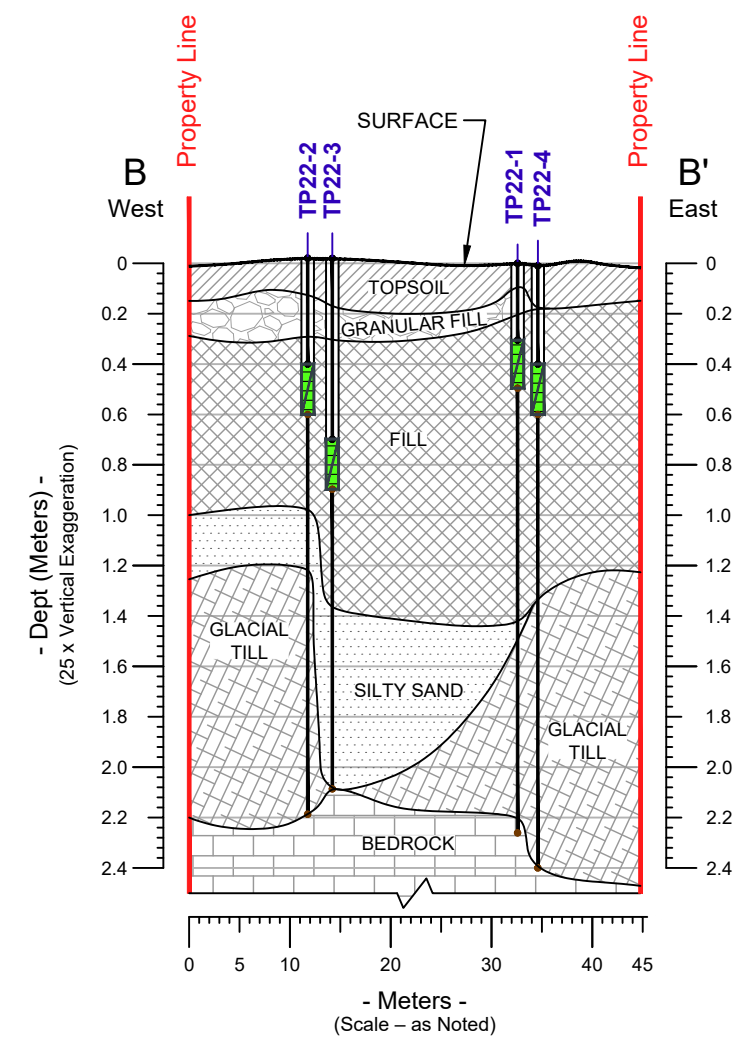
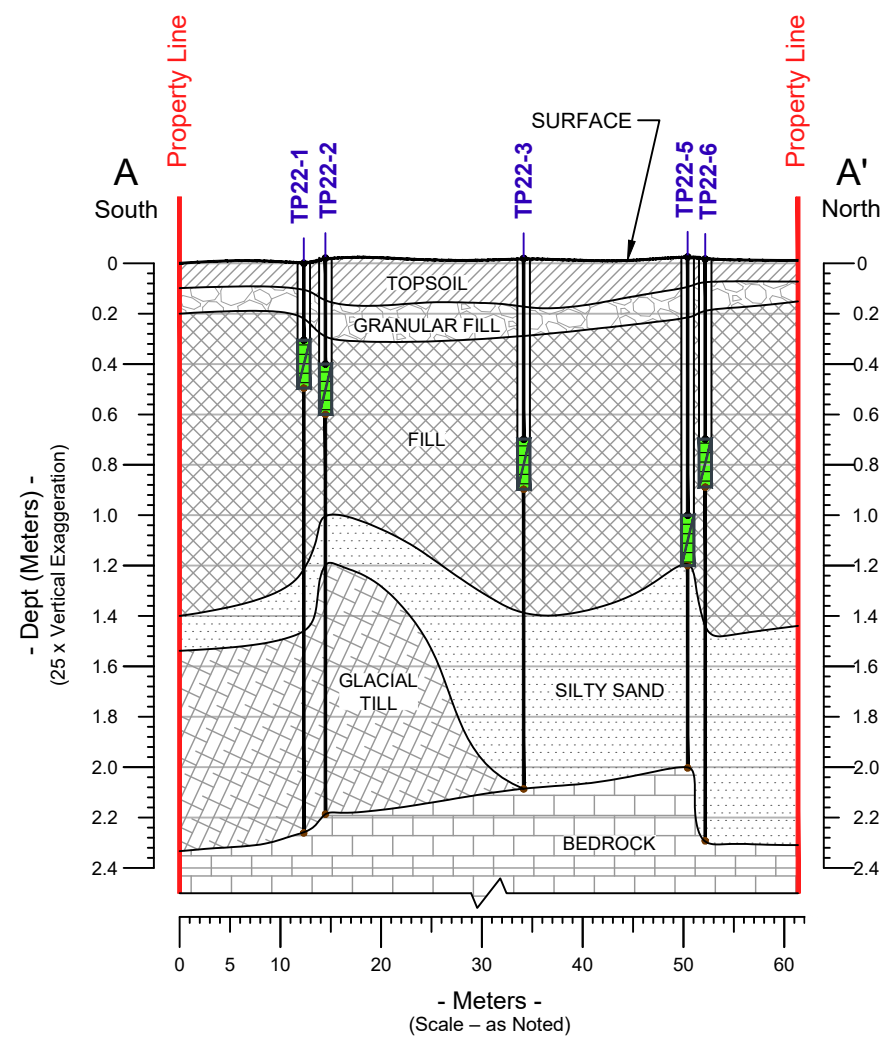
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DATE MAY 2022	<b>PHASE TWO ENVIRONMENTAL SITE ASSESSMENT</b> <b>SOIL ANALYTICAL RESULTS – INORGANICS</b> 56 CAPILANO DRIVE, OTTAWA, ONTARIO	project no. OTT-22003851-A0
DESIGN LW		scale 1:500
CHECKED MM		<b>FIG 8</b>
DRAWN BY AS	TITLE:	

Filename: E:\OTT-22003851-A0\_60\_Execution\65 Drawings\CAD\22003851-A0.dwg  
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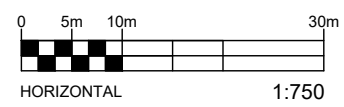


PARAMETERS	ABBREVIATION	REG 153/04 TABLE 3 SCS Residential
Benzene	B	0.21
Toluene	T	2.3
Ethylbenzene	E	2
Total Xylenes	X	3.1
F1	F1 (C6-C10)	65
F2	F2 (C10-C16)	250
F3	F3 (C16-C34)	2500
F4	F4 (C34-C50)	6600
1,1-Dichloroethane	1,1-DCA	3.5
1,2-Dichloroethane	1,2-DCA	0.05
1,1-Dichloroethylene	1,1-DCE	0.05
Cis-1,2-Dichloroethylene	c-1,2-DCE	3.4
Trans-1,2-Dichloroethylene	t-1,2-DCE	0.084
Tetrachloroethylene	PCE	0.28
Trichloroethylene	TCE	0.061
Vinyl Chloride	VC	0.02

TP	Depth (mbgs)	16-May-22															
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
TP22-1	0.4	<0.02	<0.2	<0.05	<0.03	<10	<5	<10	<10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.02
TP22-2	0.5	<0.02	<0.2	<0.05	<0.03					<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.02
TP22-3	0.8	<0.02	<0.2	<0.05	<0.03					<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.02
Dup	0.8	<0.02	<0.2	<0.05	<0.03					<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.02
TP22-4	0.5	<0.02	<0.2	<0.05	<0.03					<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.02
TP22-5	1.0	<0.02	<0.2	<0.05	<0.03					<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.02
TP22-6	0.8	<0.02	<0.2	<0.05	<0.03					<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.02

**LEGEND**

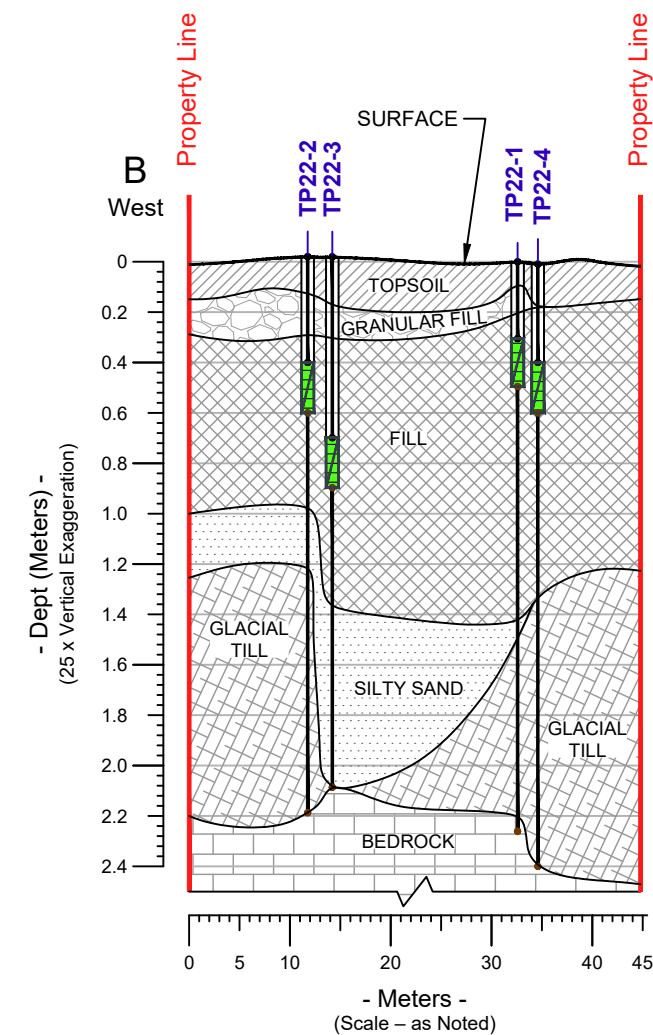
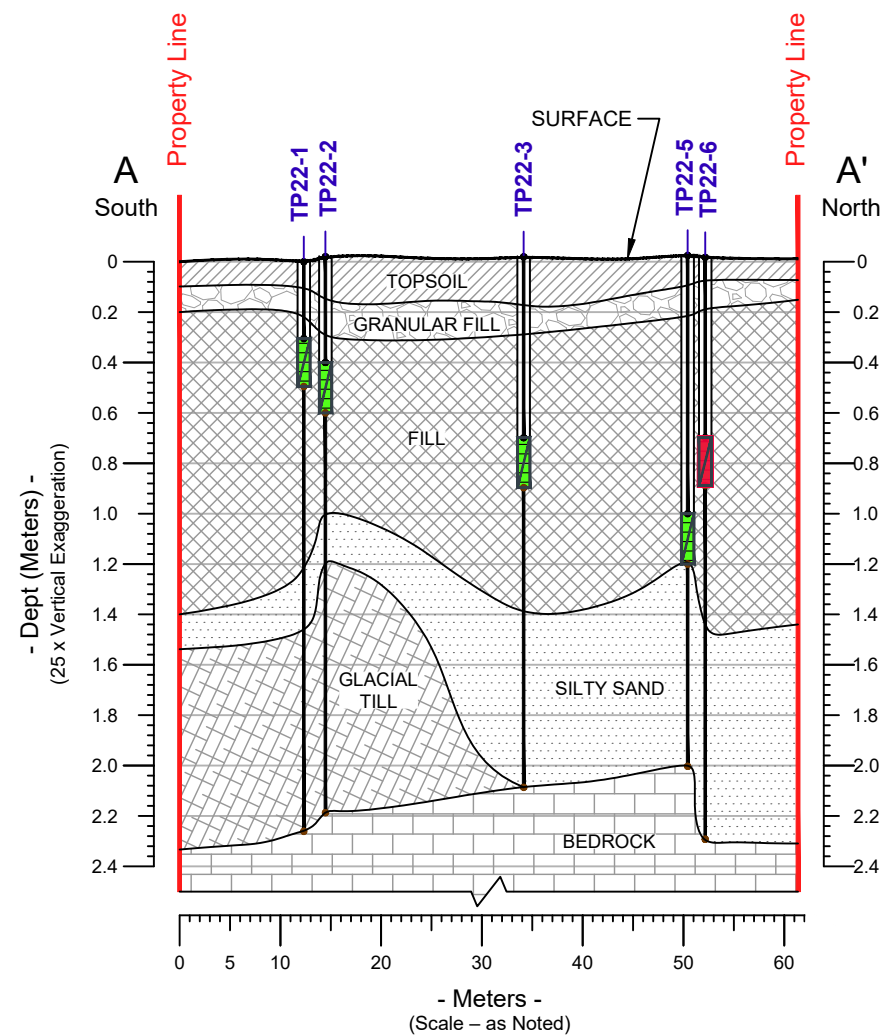
	PROPERTY BOUNDARY		SAMPLE MET TABLE 3 RESIDENTIAL SCS
	TEST PIT NAME & LOCATION		SAMPLE EXCEEDED TABLE 3 RESIDENTIAL SCS
	SAMPLE LOCATION		



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DATE MAY 2022	<b>PHASE TWO ENVIRONMENTAL SITE ASSESSMENT</b> SOIL CROSS-SECTIONS A-A' & B-B' – PHC & VOC 56 CAPILANO DRIVE, OTTAWA, ONTARIO	project no. OTT-22003851-A0	
DESIGN LW		checked MM	scale 1:750
DRAWN BY AS		TITLE:	<b>FIG 9</b>

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 Last Plotted: May 27, 2022 1:02 PM  
 Plotted by: Severa

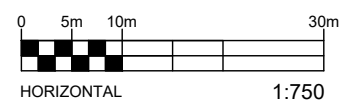


PARAMETERS	ABBREVIATION	REG 153/04 TABLE 3 SCS Residential
Acenaphthene	Ace	7.9
Acenaphthylene	Acl	0.15
Anthracene	An	0.67
Benzo(a)anthracene	B(a)A	0.5
Benzo(a)pyrene	B(a)P	0.3
Benzo(b)fluoranthene	B(b)F	0.78
Benzo(g,h,i)perylene	B(ghi)P	6.6
Benzo(k)fluoranthene	B(k)F	0.78
Chrysene	C	7
Dibenz(a,h)anthracene	DA	0.1
Fluoranthene	Fl	0.69
Fluorene	F	62
Indeno(1,2,3-cd)pyrene	I(123)P	0.38
Total Methylnaphthalene	T-MN	0.99
Naphthalene	N	0.6
Phenanthrene	P	6.2
Pyrene	Py	78

TP	Depth (m bgs)	16-May-22																
		Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
TP22-1	0.4	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
TP22-2	0.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
TP22-3	0.8	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dup	0.8	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
TP22-4	0.5	< 0.05	< 0.05	< 0.05	0.09	0.09	0.11	0.06	< 0.05	0.1	< 0.05	0.12	< 0.05	0.07	< 0.05	< 0.05	< 0.05	< 0.05
TP22-5	1.0	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
TP22-6	0.8	0.15	< 0.05	0.32	0.52	0.41	0.57	0.25	0.21	0.53	0.06	1.35	0.16	0.32	< 0.05	< 0.05	1.29	1.02

**LEGEND**

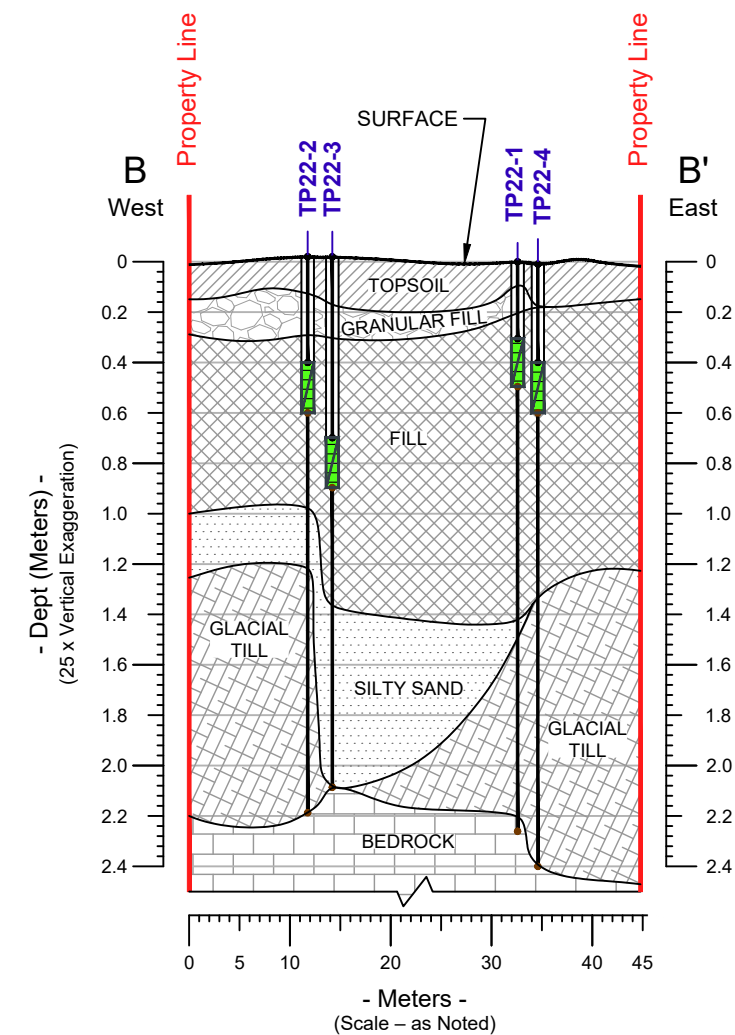
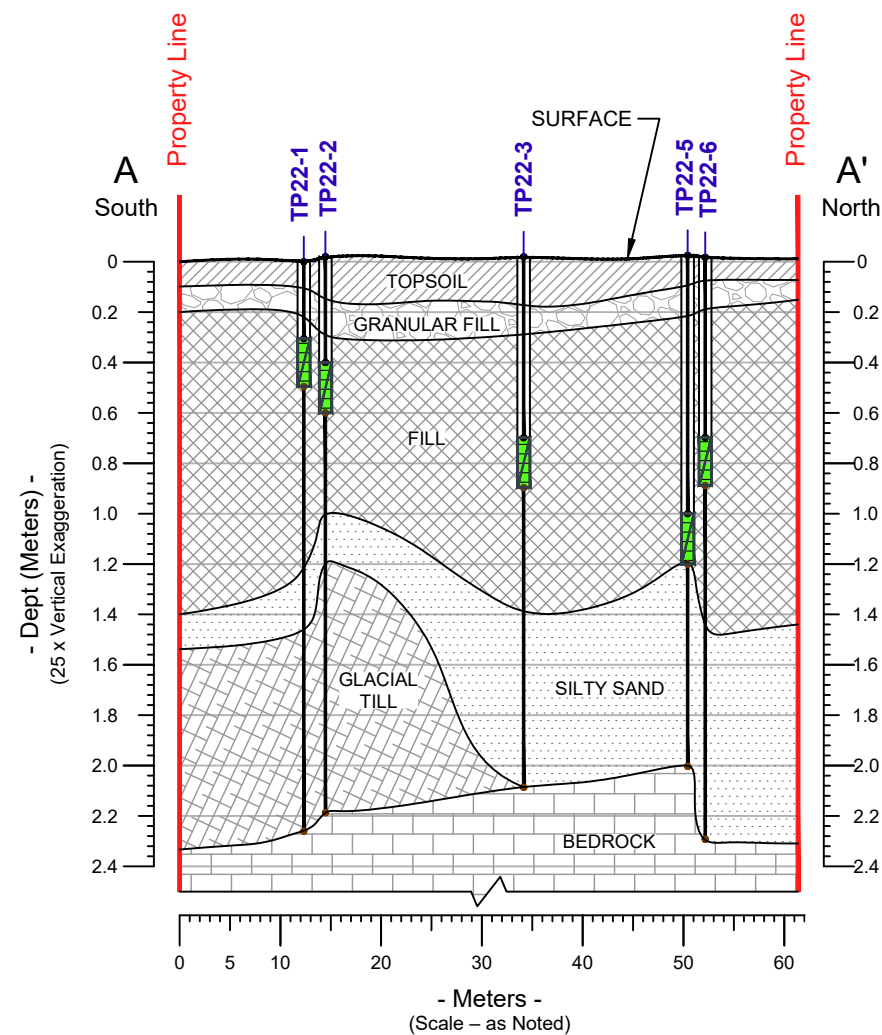
	PROPERTY BOUNDARY		SAMPLE MET TABLE 3 RESIDENTIAL SCS
	TEST PIT NAME & LOCATION		SAMPLE EXCEEDED TABLE 3 RESIDENTIAL SCS
	SAMPLE LOCATION		



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DATE	MAY 2022	<b>PHASE TWO ENVIRONMENTAL SITE ASSESSMENT</b> SOIL CROSS-SECTIONS A-A' & B-B' – PAH 56 CAPILANO DRIVE, OTTAWA, ONTARIO	project no.	OTT-22003851-A0		
DESIGN	LW		CHECKED	MM	scale	1:750
DRAWN BY	AS		TITLE:	FIG 10		

Filename: E:\OTT\OTT-22003851-A0\_60\_Execution\65 Drawings\CAD\22003851-A0.dwg  
 Last Saved: May 27, 2022 1:01 PM  
 Last Plotted: May 27, 2022 1:02 PM  
 Plotted by: Severa

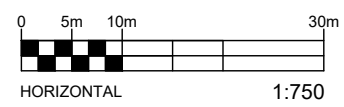


PARAMETERS	ABBREVIATION	REG 153/04 TABLE 3 SCS Residential
Antimony	Sb	7.5
Arsenic	As	18
Barium	Ba	390
Beryllium	Be	4
Boron	B	120
Boron (HWS)	B (HWS)	1.5
Cadmium	Cd	1.2
Chromium	Cr	160
Chromium VI	Cr VI	8
Cobalt	Co	22
Copper	Cu	140
Lead	Pb	120
Mercury	Hg	0.27
Molybdenum	Mo	6.9
Nickel	Ni	100
Selenium	Se	2.4
Silver	Ag	20
Thallium	Tl	1
Uranium	U	23
Vanadium	V	86
Zinc	Zn	340

Test Pit	Depth (mbgs)	15-Mar-21																				
		Sb	As	Ba	Be	B	B (HWS)	Cd	Cr	Cr VI	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Tl	U	V	Zn
TP22-1	0.4	<0.5	2.7	108	0.4	12	0.05	<0.5	17	<0.2	9	13	11	0.114	<1	15	0.7	<0.2	0.2	0.5	22	25
	0.5	<0.5	1.7	109	0.3	9.8	0.05	<0.5	21	<0.2	7	11	8	0.022	<1	12	0.5	<0.2	0.10	0.7	29	90
TP22-3	0.8	<0.5	1.5	81	0.3	9.8	0.09	<0.5	18	<0.2	6	9	7	0.022	<1	11	<0.5	<0.2	0.1	0.6	28	45
	Dup	0.8	<0.5	1.6	107	0.3	9.4	0.07	<0.5	22	<0.2	6	12	7	0.022	<1	13	0.5	<0.2	0.1	0.60	29
TP22-4	0.5	<0.5	2.4	83	0.3	12.4	0.06	<0.5	16	<0.2	7	12	16	0.024	<1	12	0.6	<0.2	0.1	0.5	20	26
	1.0	<0.5	5.3	128	0.6	13.1	0.06	<0.5	19	<0.2	9	13	14	0.064	<1	17	0.7	<0.2	0.2	0.5	23	28
TP22-6	0.8	<0.5	2.3	112	0.4	10.3	0.06	<0.5	21	<0.2	7	13	11	0.083	<1	14	0.7	<0.2	0.1	0.6	29	39

**LEGEND**

- PROPERTY BOUNDARY
- TEST PIT NAME & LOCATION
- SAMPLE LOCATION
- SAMPLE MET TABLE 3 RESIDENTIAL SCS
- SAMPLE EXCEEDED TABLE 3 RESIDENTIAL SCS



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DATE MAY 2022	<b>PHASE TWO ENVIRONMENTAL SITE ASSESSMENT</b> <b>SOIL CROSS-SECTIONS A-A' &amp; B-B' – INORGANICS</b> 56 CAPILANO DRIVE, OTTAWA, ONTARIO	project no. OTT-22003851-A0
DESIGN LW		scale 1:750
CHECKED MM		FIG 11
DRAWN BY AS	TITLE:	



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56 Capilano Drive, Ottawa, Ontario  
OTT-22003851-A0  
May 27, 2022*

## **Appendix B: Sampling and Analysis Plan**

**OTT-22003851-A0**  
**56 Capilano Drive, Ottawa, Ontario**  
**Sampling and Analysis Plan**

**Project Objective**

Future use of the property is intended to be residential. Based on a Phase One ESA completed by EXP, the previous use of the RSC property was defined as community, based on the definitions outlined in Ontario Regulation 153/04.

**Test Pits**

Based on the previous uses of the Phase Two property, the following on-site potentially contaminating activities (PCA) were identified:

- PCA #30 – Importation of Fill of Unknown Quality

Consequently, the following areas of potential environmental concern (APEC) were identified:

- APEC #1 – Entirety of Phase Two property

Investigative requirements are as follows:

- Excavate six test pits to bedrock surface.
- Bedrock is expected to be present at approximately 2.0 mbgs.
- As excavation progresses, log stratigraphy, describing soil type, colour, staining, odour.
- One fill sample will be collected from each test pit.

**Locates**

- See project folder and HASP binder.

**Soil Sampling**

- Soil samples should be submitted to Caduceon
- Six samples and a duplicate shall be submitted for analysis of metals, PHC, PAH, and VOC

**Soil Cuttings**

- Test pits will be backfilled upon completion

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OTT-22003851-A0  
May 27, 2022*

## **Appendix C: Borehole Logs**

# Log of Test Pit TP22-01



Project No: OTT-22003851-A0  
 Project: Phase Two Environmental Site Assessment  
 Location: 56 Cpaillano Drive, Ottawa, ON

Figure No. C-1  
 Page. 1 of 1

Date Drilled: 5/16/22  
 Drill Type: \_\_\_\_\_  
 Datum: Relative  
 Logged by: L.W. Checked by: M.M.

Split Spoon Sample  Combustible Vapour Reading   
 Auger Sample  Natural Moisture Content   
 SPT (N) Value  Atterberg Limits   
 Dynamic Cone Test \_\_\_\_\_ Undrained Triaxial at % Strain at Failure   
 Shelby Tube  Shear Strength by Penetrometer Test   
 Shear Strength by Vane Test

G W L	S O B O L	SOIL DESCRIPTION	Approximate Elevation m	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			Natural Unit Wt. kN/m <sup>3</sup>
				Shear Strength kPa				250	500	750	
				20	40	60	80	Natural Moisture Content % Atterberg Limits (% Dry Weight)			
		<b>TOPSOIL</b> ~100mm thick									
		<b>GRANULAR FILL</b>									
		<b>FILL</b> Sandy clay fill with cobbles, brown, moist, no odours or staining.								S1	
		<b>SILTY SAND</b> Silty sand, brown/grey, moist, no odours of staining.								S2	
		<b>GLACIAL TILL</b> Silty clay with cobbles, dark brown, moist, no odours of staining.									
		<b>Refusal at 2.3 m Depth</b>									

LOG OF TEST PIT OTT-22003851-TP LOGS.GPJ TROW OTTAWA.GDT 5/24/22

NOTES:  
 1. Borehole/Test Pit data requires Interpretation by exp. before use by others  
 2. Test pit was backfilled upon completion.  
 3. Field work supervised by an EXP representative.  
 4. See Notes on Sample Descriptions  
 5. This Figure is to read with exp. Services Inc. report OTT-22003851-A0

WATER LEVEL RECORDS		
Elapsed Time	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD			
Run No.	Depth (m)	% Rec.	RQD %

# Log of Test Pit TP22-02



Project No: OTT-22003851-A0

Figure No. C-2

Project: Phase Two Environmental Site Assessment

Page. 1 of 1

Location: 56 Cpaillano Drive, Ottawa, ON

Date Drilled: 5/16/22

Split Spoon Sample

Combustible Vapour Reading

Drill Type: \_\_\_\_\_

Auger Sample

Natural Moisture Content

SPT (N) Value

Atterberg Limits

Datum: Relative

Dynamic Cone Test

Undrained Triaxial at % Strain at Failure

Shelby Tube

Shear Strength by Penetrometer Test

Logged by: L.W. Checked by: M.M.

Shear Strength by Vane Test

GWL	SOIL SYMBOL	SOIL DESCRIPTION	Approximate Elevation m	Depth m	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			Natural Unit Wt. kN/m <sup>3</sup>
					Shear Strength kPa				250	500	750	
					20	40	60	80	Natural Moisture Content % Atterberg Limits (% Dry Weight)			
		<b>TOPSOIL</b> ~150mm thick		0								
		<b>GRANULAR FILL</b>										
		<b>FILL</b> Sandy clay fill with cobbles, brown, moist, no odours or staining.		0.5								S1
		<b>SILTY SAND</b> Silty sand, brown/grey, moist, no odours of staining.		1.0								S2
		<b>GLACIAL TILL</b> Silty clay with cobbles, dark brown, moist, no odours of staining.		2.0								
		<b>Refusal at 2.2 m Depth</b>		2.2								

LOG OF TEST PIT OTT-22003851-TP LOGS.GPJ TROW OTTAWA.GDT 5/24/22

NOTES:  
 1. Borehole/Test Pit data requires Interpretation by exp. before use by others  
 2. Test pit was backfilled upon completion.  
 3. Field work supervised by an EXP representative.  
 4. See Notes on Sample Descriptions  
 5. This Figure is to read with exp. Services Inc. report OTT-22003851-A0

WATER LEVEL RECORDS		
Elapsed Time	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD			
Run No.	Depth (m)	% Rec.	RQD %



# Log of Test Pit TP22-03



Project No: OTT-22003851-A0  
 Project: Phase Two Environmental Site Assessment  
 Location: 56 Cpailano Drive, Ottawa, ON

Figure No. C-3  
 Page. 1 of 1

Date Drilled: 5/16/22  
 Drill Type: \_\_\_\_\_  
 Datum: Relative  
 Logged by: L.W. Checked by: M.M.

Split Spoon Sample   
 Auger Sample   
 SPT (N) Value   
 Dynamic Cone Test \_\_\_\_\_  
 Shelby Tube   
 Shear Strength by Vane Test   
 Combustible Vapour Reading   
 Natural Moisture Content   
 Atterberg Limits   
 Undrained Triaxial at % Strain at Failure   
 Shear Strength by Penetrometer Test

G W L	S Y M B O L	SOIL DESCRIPTION	Approximate Elevation m	D e p t h m	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			Natural Unit Wt. kN/m <sup>3</sup>
					20	40	60	80	250	500	750	
					Shear Strength kPa				Natural Moisture Content % Atterberg Limits (% Dry Weight)			
		<b>TOPSOIL</b> ~180mm thick		0								
		<b>GRANULAR FILL</b>										
		<b>FILL</b> Sandy clay fill with cobbles, brown, moist, no odours or staining.		1					0			S1
		<b>SILTY SAND</b> Silty sand, brown/grey, moist, no odours of staining.		2					0			S2
		<b>Refusal at 2.1 m Depth</b>										

LOG OF TEST PIT OTT-22003851-TP LOGS.GPJ TROW OTTAWA.GDT 5/24/22

**NOTES:**  
 1. Borehole/Test Pit data requires Interpretation by exp. before use by others  
 2. Test pit was backfilled upon completion.  
 3. Field work supervised by an EXP representative.  
 4. See Notes on Sample Descriptions  
 5. This Figure is to read with exp. Services Inc. report OTT-22003851-A0

WATER LEVEL RECORDS		
Elapsed Time	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD			
Run No.	Depth (m)	% Rec.	RQD %

# Log of Test Pit TP22-04



Project No: OTT-22003851-A0  
 Project: Phase Two Environmental Site Assessment  
 Location: 56 Cpailano Drive, Ottawa, ON  
 Date Drilled: 5/16/22  
 Drill Type: \_\_\_\_\_  
 Datum: Relative  
 Logged by: L.W. Checked by: M.M.

Figure No. C-4  
 Page. 1 of 1

- Split Spoon Sample
- Auger Sample
- SPT (N) Value
- Dynamic Cone Test
- Shelby Tube
- Shear Strength by Vane Test
- Combustible Vapour Reading
- Natural Moisture Content
- Atterberg Limits
- Undrained Triaxial at % Strain at Failure
- Shear Strength by Penetrometer Test

GWL	SOIL SYMBOL	SOIL DESCRIPTION	Approximate Elevation m	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			Natural Unit Wt. kN/m <sup>3</sup>
				Shear Strength kPa				250	500	750	
				20	40	60	80	Natural Moisture Content % Atterberg Limits (% Dry Weight)			
		<b>TOPSOIL</b> ~180mm thick									
		<b>FILL</b> Sandy clay fill with cobbles, brown, moist, no odours or staining.									S1
		<b>GLACIAL TILL</b> Silty clay with cobbles, dark brown, moist, no odours or staining.									S2
		<b>Refusal at 2.4 m Depth</b>									

LOG OF TEST PIT OTT-22003851-TP LOGS.GPJ TROW OTTAWA.GDT 5/24/22

**NOTES:**  
 1. Borehole/Test Pit data requires Interpretation by exp. before use by others  
 2. Test pit was backfilled upon completion.  
 3. Field work supervised by an EXP representative.  
 4. See Notes on Sample Descriptions  
 5. This Figure is to read with exp. Services Inc. report OTT-22003851-A0

WATER LEVEL RECORDS		
Elapsed Time	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD			
Run No.	Depth (m)	% Rec.	RQD %

# Log of Test Pit TP22-05



Project No: OTT-22003851-A0  
 Project: Phase Two Environmental Site Assessment  
 Location: 56 Cpaillano Drive, Ottawa, ON

Figure No. C-5  
 Page. 1 of 1

Date Drilled: 5/16/22  
 Drill Type: \_\_\_\_\_  
 Datum: Relative  
 Logged by: L.W. Checked by: M.M.

Split Spoon Sample  Combustible Vapour Reading   
 Auger Sample  Natural Moisture Content   
 SPT (N) Value  Atterberg Limits   
 Dynamic Cone Test  Undrained Triaxial at % Strain at Failure   
 Shelby Tube  Shear Strength by Penetrometer Test   
 Shear Strength by Vane Test

GWL	SYMBOL	SOIL DESCRIPTION	Approximate Elevation m	Depth m	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			Natural Unit Wt. kN/m <sup>3</sup>
					20	40	60	80	250	500	750	
					Shear Strength kPa				Natural Moisture Content % Atterberg Limits (% Dry Weight)			
		<b>TOPSOIL</b> ~200mm thick		0								
		<b>FILL</b> Sandy clay fill with cobbles, brown, moist, no odours or staining, some minor debris (<1%).		1								S1
		<b>SILTY SAND</b> Silty sand, brown/grey, moist, no odours of staining.										S2
		<b>Refusal at 2.0 m Depth</b>										

LOG OF TEST PIT OTT-22003851-TP LOGS.GPJ TROW OTTAWA.GDT 5/24/22

**NOTES:**  
 1. Borehole/Test Pit data requires Interpretation by exp. before use by others  
 2. Test pit was backfilled upon completion.  
 3. Field work supervised by an EXP representative.  
 4. See Notes on Sample Descriptions  
 5. This Figure is to read with exp. Services Inc. report OTT-22003851-A0

WATER LEVEL RECORDS		
Elapsed Time	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD			
Run No.	Depth (m)	% Rec.	RQD %

# Log of Test Pit TP22-06



Project No: OTT-22003851-A0  
 Project: Phase Two Environmental Site Assessment  
 Location: 56 Cpailano Drive, Ottawa, ON  
 Date Drilled: 5/16/22  
 Drill Type: \_\_\_\_\_  
 Datum: Relative  
 Logged by: L.W. Checked by: M.M.

Figure No. C-6  
 Page. 1 of 1

- Split Spoon Sample
- Auger Sample
- SPT (N) Value
- Dynamic Cone Test
- Shelby Tube
- Shear Strength by Vane Test
- Combustible Vapour Reading
- Natural Moisture Content
- Atterberg Limits
- Undrained Triaxial at % Strain at Failure
- Shear Strength by Penetrometer Test

GWL	SOIL DESCRIPTION	Approximate Elevation m	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			Natural Unit Wt. kN/m <sup>3</sup>
			20	40	60	80	250	500	750	
			Shear Strength kPa				Natural Moisture Content % Atterberg Limits (% Dry Weight)			
	<b>TOPSOIL</b> ~100mm thick <b>GRANULAR FILL</b> <b>FILL</b> Sandy clay fill with cobbles, brown, moist, no odours or staining, some minor debris (<1%).	0								S1
	<b>SILTY SAND</b> Silty sand, brown/grey, moist, no odours of staining.	1								S2
	<b>Refusal at 2.3 m Depth</b>	2								

LOG OF TEST PIT OTT-22003851-TP LOGS.GPJ TROW OTTAWA.GDT 5/24/22

**NOTES:**  
 1. Borehole/Test Pit data requires Interpretation by exp. before use by others  
 2. Test pit was backfilled upon completion.  
 3. Field work supervised by an EXP representative.  
 4. See Notes on Sample Descriptions  
 5. This Figure is to read with exp. Services Inc. report OTT-22003851-A0

WATER LEVEL RECORDS		
Elapsed Time	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD			
Run No.	Depth (m)	% Rec.	RQD %

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56 Capilano Drive, Ottawa, Ontario  
OTT-22003851-A0  
May 27, 2022*

## **Appendix D: Analytical Summary Tables**

**Table 1 - Analytical Results in Soil - PHC and VOC**  
**56 Capilano Drive, Ottawa, Ontario**  
**OTT-22003851-A0**

Sample ID	UNITS	Provincial			Samples						
		MECP Table 3 Commercial <sup>1</sup>	MECP Table 3 Residential <sup>2</sup>	MECP Table 1 Commercial <sup>3</sup>	TP22-1	TP22-2	TP22-3	DUP (Field Duplicate TP22-3)	TP22-4	TP22-5	TP22-6
		Dark Orange	Light Orange	Bold	16-May-22 0.4 m	16-May-22 0.5 m	16-May-22 0.8 m	16-May-22 0.8 m	16-May-22 0.5 m	16-May-22 1.0 m	16-May-22 0.8 m
<b>Petroleum Hydrocarbons</b>											
F1 PHC (C6-C10)	µg/g	55	55	25	< 10	< 10	< 10	< 10	< 10	< 10	< 10
F2 PHC (C10-C16)	µg/g	98	98	10	< 5	< 5	< 5	< 5	< 5	< 5	< 5
F3 PHC (C16-C34)	µg/g	300	300	240	< 10	15	11	14	19	12	34
F4 PHC (C34-C50)	µg/g	2800	2800	120	< 10	172	< 10	< 10	< 10	< 10	23
<b>Volatile Organic Compounds</b>											
Acetone	µg/g	16	16	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	µg/g	0.320	0.21	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Bromodichloromethane	µg/g	18	13	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Bromoform	µg/g	0.61	0.27	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Bromomethane	µg/g	0.05	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Carbon Tetrachloride	µg/g	0.21	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chlorobenzene	µg/g	2.4	2.4	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chloroform	µg/g	0.47	0.05	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dibromochloromethane	µg/g	13	9.4	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichlorobenzene	µg/g	6.8	3.4	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,3-Dichlorobenzene	µg/g	9.6	4.8	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,4-Dichlorobenzene	µg/g	0.2	0.083	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dichlorodifluoromethane	µg/g	16	16	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1-Dichloroethane	µg/g	17	3.5	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichloroethane	µg/g	0.05	0.05	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,1-Dichloroethylene	µg/g	0.064	0.05	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Cis-1,2-Dichloroethylene	µg/g	55	3.4	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Trans-1,2-Dichloroethylene	µg/g	1.3	0.084	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichloropropane	µg/g	0.16	0.05	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Cis-1,3-Dichloropropylene	µg/g	NV	NV	NV	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Trans-1,3-Dichloropropylene	µg/g	NV	NV	NV	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,3-Dichloropropylene, Total	µg/g	0.18	0.05	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Ethylbenzene	µg/g	9.5	2	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Ethylene Dibromide	µg/g	0.05	0.05	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Hexane(n)	µg/g	46	2.8	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Methyl Ethyl Ketone	µg/g	70	16	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methyl Isobutyl Ketone	µg/g	31	1.7	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methyl-t-Butyl Ether	µg/g	11	0.75	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Methylene Chloride	µg/g	1.6	0.1	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Styrene	µg/g	34	0.7	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1,1,2-Tetrachloroethane	µg/g	0.087	0.058	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,1,2,2-Tetrachloroethane	µg/g	0.05	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Tetrachloroethylene	µg/g	4.5	0.28	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Toluene	µg/g	68	2.3	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
1,1,1-Trichloroethane	µg/g	6.1	0.38	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,1,2-Trichloroethane	µg/g	0.05	0.05	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Trichloroethylene	µg/g	0.91	0.061	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Trichlorofluoromethane	µg/g	4	0.25	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Vinyl Chloride	µg/g	0.032	0.02	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Xylene, m,p-	µg/g	NV	NV	NV	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Xylene, o-	µg/g	NV	NV	NV	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Total Xylenes	µg/g	26	3.1	0.05	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03

**NOTES:**

- 1 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 3 Full Depth Generic Site Condition Standards (SCS) in a Non-Potable Ground Water Condition for Industrial/Commercial/Community Property Use (coarse textured soils)
- 2 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 3 Full Depth Generic Site Condition Standards (SCS) in a Non-Potable Ground Water Condition for Residential/Institutional/Parkland Property Use (coarse textured soils)
- 3 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 1 Full Depth Background Site Condition Standards (SCS) for Parkland/Residential/Institutional/Industrial/Commercial/Community Property Use (coarse textured soils)
- < RDL Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.
- NV No Value
- Parameter not analyzed
- m bgs Metres below ground surface
- Indicates soil exceedance of MECP Table 3 SCS for industrial/commercial/community land use
- Indicates soil exceedance of MECP Table 3 SCS for residential/institutional/parkland land use
- Bold** Indicates soil exceedance of MECP Table 1 SCS

**Table 2 - Analytical Results in Soil - PAH**  
 56 Capilano Drive, Ottawa, Ontario  
 OTT-22003851-A0

Sample ID	UNITS	Provincial			Samples						
		MECP Table 3 Commercial <sup>1</sup>	MECP Table 3 Residential <sup>2</sup>	MECP Table 1 Commercial <sup>3</sup>	TP22-1	TP22-2	TP22-3	DUP (Field Duplicate TP22-3)	TP22-4	TP22-5	TP22-6
		Dark Orange	Light Orange	Bold	16-May-22 0.4 m	16-May-22 0.5 m	16-May-22 0.8 m	16-May-22 0.8 m	16-May-22 0.5 m	16-May-22 1.0 m	16-May-22 0.8 m
<b>Polycyclic Aromatic Hydrocarbons</b>											
Acenaphthene	µg/g	96	7.9	0.072	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<b>0.15</b>
Acenaphthylene	µg/g	0.15	0.15	0.093	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	µg/g	0.67	0.67	0.16	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<b>0.32</b>
Benzo(a)anthracene	µg/g	0.96	0.5	0.36	< 0.05	< 0.05	< 0.05	< 0.05	0.09	< 0.05	<b>0.52</b>
Benzo(a)pyrene	µg/g	0.3	0.3	0.3	< 0.05	< 0.05	< 0.05	< 0.05	0.09	< 0.05	<b>0.41</b>
Benzo(b)fluoranthene	µg/g	0.96	0.78	0.47	< 0.05	< 0.05	< 0.05	< 0.05	0.11	< 0.05	<b>0.57</b>
Benzo(b+k)fluoranthene	µg/g	NV	NV	NV	< 0.05	< 0.05	< 0.05	< 0.05	0.16	< 0.05	0.78
Benzo(g,h,i)perylene	µg/g	9.6	6.6	0.68	< 0.05	< 0.05	< 0.05	< 0.05	0.06	< 0.05	0.25
Benzo(k)fluoranthene	µg/g	0.96	0.78	0.48	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.21
Chrysene	µg/g	9.6	7	2.8	< 0.05	< 0.05	< 0.05	< 0.05	0.1	< 0.05	0.53
Dibenzo(a,h)anthracene	µg/g	0.1	0.1	0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06
Fluoranthene	µg/g	9.6	0.69	0.56	< 0.05	0.06	0.06	0.06	0.12	< 0.05	<b>1.35</b>
Fluorene	µg/g	62	62	0.12	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<b>0.16</b>
Indeno(1,2,3-cd)pyrene	µg/g	0.76	0.38	0.23	< 0.05	< 0.05	< 0.05	< 0.05	0.07	< 0.05	<b>0.32</b>
Methylnaphthalene,1-	µg/g	76	0.99	0.59	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Methylnaphthalene,2-	µg/g	76	0.99	0.59	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Methylnaphthalene 2-(1-)	µg/g	76	0.99	0.59	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Naphthalene	µg/g	9.6	0.6	0.09	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	µg/g	12	6.2	0.69	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<b>1.29</b>
Pyrene	µg/g	96	78	1	< 0.05	< 0.05	< 0.05	< 0.05	0.12	< 0.05	<b>1.02</b>

**NOTES:**

- 1 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 3 Full Depth Generic Site Condition Standards (SCS) in a Non-Potable Ground Water Condition for Industrial/Commercial/Community Property Use (coarse textured soils)
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  - 3 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 1 Full Depth Background Site Condition Standards (SCS) for Parkland/Residential/Institutional/Industrial/Commercial/Community Property Use (coarse textured soils)
- < RDL Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.
- NV No Value
- Parameter not analyzed
- m bgs Metres below ground surface
- Indicates soil exceedance of MECP Table 3 SCS for industrial/commercial/community land use
- Indicates soil exceedance of MECP Table 3 SCS for residential/institutional/parkland land use
- Bold** Indicates soil exceedance of MECP Table 1 SCS

**Table 3 - Analytical Results in Soil - Inorganic Parameters**  
**56 Capilano Drive, Ottawa, Ontario**  
**OTT-22003851-A0**

Sample ID	UNITS	Provincial			Samples						
		MECP Table 3 Commercial <sup>1</sup>	MECP Table 3 Residential <sup>2</sup>	MECP Table 1 Commercial <sup>3</sup>	TP22-1	TP22-2	TP22-3	DUP (Field Duplicate TP22-3)	TP22-4	TP22-5	TP22-6
Sampling Date		Dark Orange	Light Orange	Bold	16-May-22	16-May-22	16-May-22	16-May-22	16-May-22	16-May-22	16-May-22
Sample Depth (mbgs)					0.4 m	0.5 m	0.8 m	0.8 m	0.5 m	1.0 m	0.8 m
<b>Metals</b>											
Antimony	µg/g	40	7.5	1.3	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Arsenic	µg/g	18	18	18	2.7	1.7	1.5	1.6	2.4	5.3	2.3
Barium	µg/g	670	390	220	108	109	81	107	83	128	112
Beryllium	µg/g	8	4	2.5	0.4	0.3	0.3	0.3	0.3	0.6	0.4
Boron (Total)	µg/g	120	120	36	12	9.8	9.8	9.4	12.4	13.1	10.3
Boron (Hot Water Soluble)	µg/g	2	1.5	NV	0.05	0.05	0.09	0.07	0.06	0.06	0.06
Cadmium	µg/g	1.9	1.2	1.2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chromium (Total)	µg/g	160	160	70	17	21	18	22	16	19	21
Chromium (VI)	µg/g	8	8	0.66	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Cobalt	µg/g	80	22	21	9	7	6	6	7	9	7
Copper	µg/g	230	140	92	13	11	9	12	12	13	13
Lead	µg/g	120	120	120	11	8	7	7	16	14	11
Mercury	µg/g	3.9	0.27	0.27	0.114	0.022	0.022	0.022	0.024	0.064	0.083
Molybdenum	µg/g	40	6.9	2	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Nickel	µg/g	270	100	82	15	12	11	13	12	17	14
Selenium	µg/g	5.5	2.4	1.5	0.7	0.5	< 0.5	0.5	0.6	0.7	0.7
Silver	µg/g	40	20	0.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Thallium	µg/g	3.3	1	1	0.2	0.10	0.1	0.1	0.1	0.2	0.1
Uranium	µg/g	33	23	2.5	0.5	0.7	0.6	0.60	0.5	0.5	0.6
Vanadium	µg/g	86	86	86	22	29	28	29	20	23	29
Zinc	µg/g	340	340	290	25	90	45	66	26	28	39
<b>Inorganic Parameters</b>											
Sodium Adsorption Ratio	N/A	12	5	2.4	0.343	0.07	0.109	0.103	0.0747	<b>3.28</b>	0.0961
Conductivity	mS/cm	1.4	0.7	0.57	0.16	0.161	0.151	0.145	0.14	0.457	0.156
pH	No units	5 to 9	5 to 9	5 to 9	7.57	7.46	7.47	7.53	7.65	7.58	7.53

**NOTES:**

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- < RDL Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.
- NV No Value
- Parameter not analyzed
- m bgs Metres below ground surface
- Indicates soil exceedance of MECP Table 3 SCS for industrial/commercial/community land use
- Indicates soil exceedance of MECP Table 3 SCS for residential/institutional/parkland land use
- Bold** Indicates soil exceedance of MECP Table 1 SCS



**Table 4 - Maximum Concentrations in Soil**  
**56 Capilano Drive, Ottawa, Ontario**  
**OTT-22003851-A0**

Parameter	Sample Location	Sample Depth (m bgs)	Sampling Date	Maximum Concentration	MECP Table 3 Community	MECP Table 3 Residential
<b>Petroleum Hydrocarbons</b>						
F1 PHC (C6-C10)	All sample locations	0.4 to 1.0	16-May-22	< 10	55	55
F2 PHC (C10-C16)	All sample locations	0.4 to 1.0	16-May-22	< 5	98	98
F3 PHC (C16-C34)	TP22-6	0.8	16-May-22	34	300	300
F4 PHC (C34-C50)	TP22-2	0.5	16-May-22	172	2800	2800
<b>Volatile Organic Compounds</b>						
Acetone	All sample locations	0.4 to 1.0	16-May-22	< 0.5	16	16
Benzene	All sample locations	0.4 to 1.0	16-May-22	< 0.02	0.320	0.21
Bromodichloromethane	All sample locations	0.4 to 1.0	16-May-22	< 0.02	18	13
Bromoform	All sample locations	0.4 to 1.0	16-May-22	< 0.02	0.61	0.27
Bromomethane	All sample locations	0.4 to 1.0	16-May-22	< 0.05	0.05	0.05
Carbon Tetrachloride	All sample locations	0.4 to 1.0	16-May-22	< 0.05	0.21	0.05
Chlorobenzene	All sample locations	0.4 to 1.0	16-May-22	< 0.02	2.4	2.4
Chloroform	All sample locations	0.4 to 1.0	16-May-22	< 0.02	0.47	0.05
Dibromochloromethane	All sample locations	0.4 to 1.0	16-May-22	< 0.02	13	9.4
1,2-Dichlorobenzene	All sample locations	0.4 to 1.0	16-May-22	< 0.05	6.8	3.4
1,3-Dichlorobenzene	All sample locations	0.4 to 1.0	16-May-22	< 0.05	9.6	4.8
1,4-Dichlorobenzene	All sample locations	0.4 to 1.0	16-May-22	< 0.05	0.2	0.083
Dichlorodifluoromethane	All sample locations	0.4 to 1.0	16-May-22	< 0.05	16	16
1,1-Dichloroethane	All sample locations	0.4 to 1.0	16-May-22	< 0.02	17	3.5
1,2-Dichloroethane	All sample locations	0.4 to 1.0	16-May-22	< 0.02	0.05	0.05
1,1-Dichloroethylene	All sample locations	0.4 to 1.0	16-May-22	< 0.02	0.064	0.05
Cis-1,2-Dichloroethylene	All sample locations	0.4 to 1.0	16-May-22	< 0.02	55	3.4
Trans-1,2-Dichloroethylene	All sample locations	0.4 to 1.0	16-May-22	< 0.02	1.3	0.084
1,2-Dichloropropane	All sample locations	0.4 to 1.0	16-May-22	< 0.02	0.16	0.05
Cis-1,3-Dichloropropylene	All sample locations	0.4 to 1.0	16-May-22	< 0.02	NV	NV
Trans-1,3-Dichloropropylene	All sample locations	0.4 to 1.0	16-May-22	< 0.02	NV	NV
1,3-Dichloropropylene, Total	All sample locations	0.4 to 1.0	16-May-22	< 0.02	0.18	0.05
Ethylbenzene	All sample locations	0.4 to 1.0	16-May-22	< 0.05	9.5	2
Ethylene Dibromide	All sample locations	0.4 to 1.0	16-May-22	< 0.02	0.05	0.05
Hexane(n)	All sample locations	0.4 to 1.0	16-May-22	< 0.02	46	2.8
Methyl Ethyl Ketone	All sample locations	0.4 to 1.0	16-May-22	< 0.5	70	16
Methyl Isobutyl Ketone	All sample locations	0.4 to 1.0	16-May-22	< 0.5	31	1.7
Methyl-t-Butyl Ether	All sample locations	0.4 to 1.0	16-May-22	< 0.05	11	0.75
Methylene Chloride	All sample locations	0.4 to 1.0	16-May-22	< 0.05	1.6	0.1
Styrene	All sample locations	0.4 to 1.0	16-May-22	< 0.05	34	0.7
1,1,1,2-Tetrachloroethane	All sample locations	0.4 to 1.0	16-May-22	< 0.02	0.087	0.058
1,1,2,2-Tetrachloroethane	All sample locations	0.4 to 1.0	16-May-22	< 0.05	0.05	0.05
Tetrachloroethylene	All sample locations	0.4 to 1.0	16-May-22	< 0.05	4.5	0.28
Toluene	All sample locations	0.4 to 1.0	16-May-22	< 0.2	68	2.3
1,1,1-Trichloroethane	All sample locations	0.4 to 1.0	16-May-22	< 0.02	6.1	0.38
1,1,2-Trichloroethane	All sample locations	0.4 to 1.0	16-May-22	< 0.02	0.05	0.05
Trichloroethylene	All sample locations	0.4 to 1.0	16-May-22	< 0.05	0.91	0.061
Trichlorofluoromethane	All sample locations	0.4 to 1.0	16-May-22	< 0.02	4	4
Vinyl Chloride	All sample locations	0.4 to 1.0	16-May-22	< 0.02	0.032	0.02
Xylene, m,p-	All sample locations	0.4 to 1.0	16-May-22	< 0.03	NV	NV
Xylene, o-	All sample locations	0.4 to 1.0	16-May-22	< 0.03	NV	NV
Total Xylenes	All sample locations	0.4 to 1.0	16-May-22	< 0.03	26	3.1
<b>Polycyclic Aromatic Hydrocarbons</b>						
Acenaphthene	TP22-6	0.8	16-May-22	0.15	96	7.9
Acenaphthylene	All sample locations	0.4 to 1.0	16-May-22	<0.05	0.15	0.15
Anthracene	TP22-6	0.8	16-May-22	0.32	0.67	0.67
Benzo(a)anthracene	TP22-6	0.8	16-May-22	0.52	0.96	0.5
Benzo(a)pyrene	TP22-6	0.8	16-May-22	0.41	0.3	0.3
Benzo(b)fluoranthene	TP22-6	0.8	16-May-22	0.57	0.96	0.78
Benzo(b+k)fluoranthene	TP22-6	0.8	16-May-22	0.78	NV	NV
Benzo(g,h,i)perylene	TP22-6	0.8	16-May-22	0.25	9.6	6.6
Benzo(k)fluoranthene	TP22-6	0.8	16-May-22	0.21	0.96	0.78
Chrysene	TP22-6	0.8	16-May-22	0.53	9.6	7
Dibenzo(a,h)anthracene	TP22-6	0.8	16-May-22	0.06	0.1	0.1
Fluoranthene	TP22-6	0.8	16-May-22	1.35	9.6	0.69
Fluorene	TP22-6	0.8	16-May-22	0.16	62	62
Indeno(1,2,3-cd)pyrene	TP22-6	0.8	16-May-22	0.32	0.76	0.38
Methylnaphthalene,1-	All sample locations	0.4 to 1.0	16-May-22	< 0.05	76	0.99
Methylnaphthalene,2-	All sample locations	0.4 to 1.0	16-May-22	< 0.05	76	0.99
Methylnaphthalene 2-(1-)	All sample locations	0.4 to 1.0	16-May-22	< 0.05	76	0.99
Naphthalene	All sample locations	0.4 to 1.0	16-May-22	< 0.05	9.6	0.6
Phenanthrene	TP22-6	0.8	16-May-22	1.29	12	6.2
Pyrene	TP22-6	0.8	16-May-22	1.02	96	78

**Table 4 - Maximum Concentrations in Soil**  
**56 Capilano Drive, Ottawa, Ontario**  
**OTT-22003851-A0**

Parameter	Sample Location	Sample Depth (m bgs)	Sampling Date	Maximum Concentration	MECP Table 3 Community	MECP Table 3 Residential
<b>Metals</b>						
Antimony	All sample locations	0.4 to 1.0	16-May-22		40	7.5
Arsenic	TP22-5	1.0	16-May-22	5.3	18	18
Barium	TP22-5	1.0	16-May-22	128	670	390
Beryllium	TP22-5	1.0	16-May-22	0.6	8	4
Boron (Total)	TP22-5	1.0	16-May-22	13.1	120	120
Boron (Hot Water Soluble)	TP22-3	0.8	16-May-22	0.09	2	1.5
Cadmium	All sample locations	0.4 to 1.0	16-May-22		1.9	1.2
Chromium (Total)	TP22-3 (Dup)	0.8	16-May-22	22	160	160
Chromium (VI)	All sample locations	0.4 to 1.0	16-May-22		8	8
Cobalt	TP22-5	1.0	16-May-22	9	80	22
Copper	TP22-5	1.0	16-May-22	13	230	140
Lead	TP22-4	0.5	16-May-22	16	120	120
Mercury	TP22-1	0.4	16-May-22	0.114	3.9	0.27
Molybdenum	All sample locations	0.4 to 1.0	16-May-22		40	6.9
Nickel	TP22-5	1.0	16-May-22	17	270	100
Selenium	TP22-1	0.4	16-May-22	0.7	5.5	2.4
	TP22-5	1.0				
	TP22-6	0.8				
Silver	All sample locations	0.4 to 1.0	16-May-22		40	20
Thallium	TP22-5	1.0	16-May-22	0.2	3.3	1
Uranium	TP22-2	0.5	16-May-22	0.7	33	23
Vanadium	TP22-2	0.5	16-May-22	29	86	86
	TP22-3 (Dup)	0.8				
	TP22-6	0.8				
Zinc	TP22-2	0.5	16-May-22	90	340	340

**NOTES:**

- 1 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 3 Full Depth Generic Site Condition Standards (SCS) in a Non-Potable Ground Water Condition for Industrial/Commercial/Community Property Use (coarse textured soils)
- 2 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 3 Full Depth Generic Site Condition Standards (SCS) in a Non-Potable Ground Water Condition for Residential/Institutional/Parkland Property Use (coarse textured soils)
- NV No Value
- Parameter not analyzed
- m bgs Metres below ground surface

Table 5 - Relative Percent Differences - PHC and VOC in Soil  
56 Capilano Drive, Ottawa, Ontario  
OTT-22003851-A0

Parameter	Units	RDL	TP22-3	Dup	RPD (%)	Alert Limit (%)
			16-May-2022	16-May-2022		
<b>Petroleum Hydrocarbons</b>						
F1 PHC (C6 - C10) - BTEX	ug/g dry	10	< 10	< 10	nc	60
F2 PHC (C10-C16)	ug/g dry	5	< 5	< 5	nc	60
F3 PHC (C16-C34)	ug/g dry	10	11	14	nc	60
F4 PHC (C34-C50)	ug/g dry	10	< 10	< 10	nc	60
<b>Volatiles</b>						
Acetone	ug/g dry	0.50	< 0.5	< 0.5	nc	100
Benzene	ug/g dry	0.0060	< 0.02	< 0.02	nc	100
Bromodichloromethane	ug/g dry	0.050	< 0.02	< 0.02	nc	100
Bromoform	ug/g dry	0.050	< 0.02	< 0.02	nc	100
Bromomethane	ug/g dry	0.050	< 0.05	< 0.05	nc	100
Carbon Tetrachloride	ug/g dry	0.050	< 0.05	< 0.05	nc	100
Chlorobenzene	ug/g dry	0.050	< 0.02	< 0.02	nc	100
Chloroform	ug/g dry	0.050	< 0.02	< 0.02	nc	100
Dibromochloromethane	ug/g dry	0.050	< 0.02	< 0.02	nc	100
Dichlorodifluoromethane	ug/g dry	0.050	< 0.05	< 0.05	nc	100
1,2-Dichlorobenzene	ug/g dry	0.050	< 0.05	< 0.05	nc	100
1,3-Dichlorobenzene	ug/g dry	0.050	< 0.05	< 0.05	nc	100
1,4-Dichlorobenzene	ug/g dry	0.050	< 0.05	< 0.05	nc	100
1,1-Dichloroethane	ug/g dry	0.050	< 0.02	< 0.02	nc	100
1,2-Dichloroethane	ug/g dry	0.050	< 0.02	< 0.02	nc	100
1,1-Dichloroethylene	ug/g dry	0.050	< 0.02	< 0.02	nc	100
cis-1,2-Dichloroethylene	ug/g dry	0.050	< 0.02	< 0.02	nc	100
trans-1,2-Dichloroethylene	ug/g dry	0.050	< 0.02	< 0.02	nc	100
1,2-Dichloropropane	ug/g dry	0.050	< 0.02	< 0.02	nc	100
cis-1,3-Dichloropropylene	ug/g dry	0.030	< 0.02	< 0.02	nc	100
trans-1,3-Dichloropropylene	ug/g dry	0.040	< 0.02	< 0.02	nc	100
1,3-Dichloropropene, total	ug/g dry	0.050	< 0.02	< 0.02	nc	100
Ethylbenzene	ug/g dry	0.010	< 0.05	< 0.05	nc	100
Ethylene dibromide (dibromoethane, 1,2-	ug/g dry	0.050	< 0.02	< 0.02	nc	100
Hexane	ug/g dry	0.050	< 0.02	< 0.02	nc	100
Methyl Ethyl Ketone (2-Butanone)	ug/g dry	0.50	< 0.5	< 0.5	nc	100
Methyl Isobutyl Ketone	ug/g dry	0.50	< 0.5	< 0.5	nc	100
Methyl tert-butyl ether	ug/g dry	0.50	< 0.05	< 0.05	nc	100
Methylene Chloride	ug/g dry	0.050	< 0.05	< 0.05	nc	100
Styrene	ug/g dry	0.050	< 0.05	< 0.05	nc	100
1,1,1,2-Tetrachloroethane	ug/g dry	0.050	< 0.02	< 0.02	nc	100
1,1,2,2-Tetrachloroethane	ug/g dry	0.050	< 0.05	< 0.05	nc	100
Tetrachloroethylene	ug/g dry	0.050	< 0.05	< 0.05	nc	100
Toluene	ug/g dry	0.020	< 0.2	< 0.2	nc	100
1,1,1-Trichloroethane	ug/g dry	0.050	< 0.02	< 0.02	nc	100
1,1,2-Trichloroethane	ug/g dry	0.050	< 0.02	< 0.02	nc	100
Trichloroethylene	ug/g dry	0.010	< 0.05	< 0.05	nc	100
Trichlorofluoromethane	ug/g dry	0.050	< 0.02	< 0.02	nc	100
Vinyl Chloride	ug/g dry	0.020	< 0.02	< 0.02	nc	100
Xylenes, total	ug/g dry	0.020	< 0.03	< 0.03	nc	100

**NOTES:**

Analysis by Caduceon Environmental Laboratories

All results on dry weight basis; Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.

- means "not analysed"

nc means "not calculable" - one (or both) of the results are <5x RDL

Exceedances of alert limits are shown in **bold**

**Table 6 - Relative Percent Differences - PAH in Soil**  
**56 Capilano Drive, Ottawa, Ontario**  
**OTT-22003851-A0**

Parameter	Units	RDL	TP22-3	Dup	RPD (%)	Alert Limit (%)
			16-May-2022	16-May-2022		
<i>Polycyclic Aromatic Hydrocarbons</i>						
Acenaphthene	ug/g dry	0.05	< 0.05	< 0.05	nc	80
Acenaphthylene	ug/g dry	0.05	< 0.05	< 0.05	nc	80
Anthracene	ug/g dry	0.05	< 0.05	< 0.05	nc	80
Benzo(a)anthracene	ug/g dry	0.05	< 0.05	< 0.05	nc	80
Benzo(a)pyrene	ug/g dry	0.05	< 0.05	< 0.05	nc	80
Benzo(b)fluoranthene	ug/g dry	0.05	< 0.05	< 0.05	nc	80
Benzo(b+k)fluoranthene	ug/g dry	0.05	< 0.05	< 0.05	nc	80
Benzo(g,h,i)perylene	ug/g dry	0.05	< 0.05	< 0.05	nc	80
Benzo(k)fluoranthene	ug/g dry	0.05	< 0.05	< 0.05	nc	80
Chrysene	ug/g dry	0.05	< 0.05	< 0.05	nc	80
Dibenzo(a,h)anthracene	ug/g dry	0.05	< 0.05	< 0.05	nc	80
Fluoranthene	ug/g dry	0.05	0.06	0.06	nc	80
Fluorene	ug/g dry	0.05	< 0.05	< 0.05	nc	80
Indeno(1,2,3,-cd)pyrene	ug/g dry	0.05	< 0.05	< 0.05	nc	80
Methylnaphthalene,1-	ug/g dry	0.05	< 0.05	< 0.05	nc	80
Methylnaphthalene,2-	ug/g dry	0.05	< 0.05	< 0.05	nc	80
Methylnaphthalene 2-(1-)	ug/g dry	0.05	< 0.05	< 0.05	nc	80
Naphthalene	ug/g dry	0.05	< 0.05	< 0.05	nc	80
Phenanthrene	ug/g dry	0.05	< 0.05	< 0.05	nc	80
Pyrene	ug/g dry	0.05	< 0.05	< 0.05	nc	80

**NOTES:**

Analysis by Caduceon Environmental Laboratories

All results on dry weight basis; Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.

- means "not analysed"

nc means "not calculable" - one (or both) of the results are <5x RDL

Exceedances of alert limits are shown in **bold**

**Table 7 - Relative Percent Differences - Inorganics in Soil**  
**56 Capilano Drive, Ottawa, Ontario**  
**OTT-22003851-A0**

Parameter	Units	RDL	TP22-3	Dup	RPD (%)	Alert Limit (%)
			16-May-2022	16-May-2022		
<i>Inorganic Parameters</i>						
Antimony	ug/g dry	0.5	< 0.5	< 0.5	nc	60
Arsenic	ug/g dry	0.5	1.5	1.6	nc	60
Barium	ug/g dry	1	81	107	28	60
Beryllium	ug/g dry	0.2	0.3	0.3	nc	60
Boron	ug/g dry	0.5	9.8	9.4	4	60
Boron (HWS)	ug/g dry	0.02	0.09	0.07	nc	60
Cadmium	ug/g dry	0.5	< 0.5	< 0.5	nc	60
Chromium	ug/g dry	1	18	22	20	60
Chromium (VI)	ug/g dry	0.2	< 0.2	< 0.2	nc	60
Cobalt	ug/g dry	1	6	6	0	60
Copper	ug/g dry	1	9	12	29	60
Lead	ug/g dry	5	7	7	nc	60
Mercury	ug/g dry	0.005	0.022	0.022	nc	60
Molybdenum	ug/g dry	1	< 1	< 1	nc	60
Nickel	ug/g dry	1	11	13	17	60
Selenium	ug/g dry	0.5	< 0.5	0.5	nc	60
Silver	ug/g dry	0.2	< 0.2	< 0.2	nc	60
Thallium	ug/g dry	0.1	0.1	0.1	nc	60
Vanadium	ug/g dry	1	28	29	4	60
Zinc	ug/g dry	3	45	66	38	60
Uranium	ug/g dry	0.1	0.6	0.6	0	60

**NOTES:**

Analysis by Caduceon Environmental Laboratories

All results on dry weight basis; Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.

- means "not analysed"

nc means "not calculable" - one (or both) of the results are <5x RDL

Exceedances of alert limits are shown in **bold**

EXP Services Inc.

*McDonald Brothers Consulting Inc.  
Phase Two Environmental Site Assessment  
56 Capilano Drive, Ottawa, Ontario  
OTT-22003851-A0  
May 27, 2022*

## **Appendix E: Laboratory Certificates of Analysis**

C.O.C.: G110723

REPORT No. B22-14241

**Report To:**

**EXP Services Inc**  
 2650 Queensview Drive, Suite 100  
 Ottawa ON K2B 8H6 Canada

**Attention:** Leah Wells

**Caduceon Environmental Laboratories**

2378 Holly Lane  
 Ottawa Ontario K1V 7P1  
 Tel: 613-526-0123  
 Fax: 613-526-1244

DATE RECEIVED: 16-May-22

JOB/PROJECT NO.: OTT-22003851-BO

DATE REPORTED: 19-May-22

SAMPLE MATRIX: Soil

P.O. NUMBER:

WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
% Moisture	7	Richmond Hill	FAL	17-May-22	A-% moisture RH	
Conductivity	7	Holly Lane	ST	18-May-22	A-COND-01 (o)	SM 2510B
pH	7	Holly Lane	ST	18-May-22	A-PH-01 (o)	SM 4500H
SVOC	7	Kingston	esi	18-May-22	C-NAB-S-001 (k)	EPA 8270
PHC(F2-F4)	7	Kingston	KPR	17-May-22	C-PHC-S-001 (k)	CWS Tier 1
PHC(F2-F4)	1	Kingston	SmT	19-May-22	C-PHC-S-001 (k)	CWS Tier 1
VOC's	7	Richmond Hill	FAL	17-May-22	C-VOC-02 (rh)	EPA 8260
PHC(F1)	7	Richmond Hill	FAL	17-May-22	C-VPHS-01 (rh)	CWS Tier 1
Chromium (VI)	7	Holly Lane	ST	17-May-22	D-CRVI-02 (o)	EPA7196A
Mercury	7	Holly Lane	PBK	17-May-22	D-HG-01 (o)	EPA 7471A
Boron - HWS	7	Holly Lane	NHG	18-May-22	D-HWE s	MOE3470
Sodium Adsorption Ratio	7	Holly Lane	NHG	18-May-22	D-ICP-01 SAR (o)	SM 3120
Metals - ICP-OES	7	Holly Lane	NHG	18-May-22	D-ICP-02 (o)	EPA 6010
Metals - ICP-MS	7	Holly Lane	TPR	18-May-22	D-ICPMS-01 (o)	EPA 6020

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg

F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)

F2 C10-C16 hydrocarbons in µg/g, (F2-naph if requested)

F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)

F4 C34-C50 hydrocarbons in µg/g

This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.

Any deviations from the method are noted and reported for any particular sample.

nC6 and nC10 response factor is within 30% of response factor for toluene:

nC10, nC16 and nC34 response factors within 10% of each other:

C50 response factors within 70% of nC10+nC16+nC34 average:

Linearity is within 15%:

All results expressed on a dry weight basis.

Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met. If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC QC will be made available upon request.

O. Reg. 153 - Soil, Ground Water and Sediment Standards  
 Tbl. 3 - ICC (f/m) - Table 3 - Ind./Commer/Commun Soil (fine/med)  
 Tbl. 3 - ICC Soil - Table 3 - Ind./Commercial/Community Soil Std



Greg Clarkin, BSc., C. Chem  
 Lab Manager - Ottawa District

R.L. = Reporting Limit

Test methods may be modified from specified reference method unless indicated by an \*

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

The analytical results reported herein refer to the samples as received. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.

C.O.C.: G110723

REPORT No. B22-14241

**Report To:**

**EXP Services Inc**

2650 Queensview Drive, Suite 100  
Ottawa ON K2B 8H6 Canada

**Attention:** Leah Wells

**Caduceon Environmental Laboratories**

2378 Holly Lane  
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 16-May-22

JOB/PROJECT NO.: OTT-22003851-BO

DATE REPORTED: 19-May-22

P.O. NUMBER:

SAMPLE MATRIX: Soil

WATERWORKS NO.

Parameter	Units	R.L.	Client I.D.	TP22-1	TP22-2	TP22-3	TP22-4	O. Reg. 153	
			Sample I.D.	B22-14241-1	B22-14241-2	B22-14241-3	B22-14241-4	Tbl. 3 - ICC (f/m)	Tbl. 3 - ICC Soil
			Date Collected	16-May-22	16-May-22	16-May-22	16-May-22		
pH @25°C	pH Units			7.57	7.46	7.47	7.65		
Conductivity @25°C	mS/cm	0.001		0.16	0.161	0.151	0.14	1.4	1.4
Sodium Adsorption Ratio	units			0.343	0.0740	0.109	0.0747	12	12
Antimony	µg/g	0.5		< 0.5	< 0.5	< 0.5	< 0.5	50	40
Arsenic	µg/g	0.5		2.7	1.7	1.5	2.4	18	18
Barium	µg/g	1		108	109	81	83	670	670
Beryllium	µg/g	0.2		0.4	0.3	0.3	0.3	10	8
Boron	µg/g	0.5		12.0	9.8	9.8	12.4	120	120
Boron (HWS)	µg/g	0.02		0.05	0.05	0.09	0.06	2	2
Cadmium	µg/g	0.5		< 0.5	< 0.5	< 0.5	< 0.5	1.9	1.9
Chromium	µg/g	1		17	21	18	16	160	160
Chromium (VI)	µg/g	0.2		< 0.2	< 0.2	< 0.2	< 0.2	10	8
Cobalt	µg/g	1		9	7	6	7	100	80
Copper	µg/g	1		13	11	9	12	300	230
Lead	µg/g	5		11	8	7	16	120	120
Mercury	µg/g	0.005		0.114	0.022	0.022	0.024	20	3.9
Molybdenum	µg/g	1		< 1	< 1	< 1	< 1	40	40
Nickel	µg/g	1		15	12	11	12	340	270
Selenium	µg/g	0.5		0.7	0.5	< 0.5	0.6	5.5	5.5
Silver	µg/g	0.2		< 0.2	< 0.2	< 0.2	< 0.2	50	40
Thallium	µg/g	0.1		0.2	0.1	0.1	0.1	3.3	3.3
Vanadium	µg/g	1		22	29	28	20	86	86
Zinc	µg/g	3		25	90	45	26	340	340
Uranium	µg/g	0.1		0.5	0.7	0.6	0.5	33	33
% moisture	%			9.9	11.2	12.4	10.0		
Acetone	µg/g	0.5		< 0.5	< 0.5	< 0.5	< 0.5	28	16
Benzene	µg/g	0.02		< 0.02	< 0.02	< 0.02	< 0.02	0.4	0.32

O. Reg. 153 - Soil, Ground Water and Sediment Standards  
Tbl. 3 - ICC (f/m) - Table 3 - Ind./Commer/Commun Soil (fine/med)  
Tbl. 3 - ICC Soil - Table 3 - Ind./Commercial/Community Soil Std



Greg Clarkin, BSc., C. Chem  
Lab Manager - Ottawa District

R.L. = Reporting Limit

Test methods may be modified from specified reference method unless indicated by an \*

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

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C.O.C.: G110723

REPORT No. B22-14241

**Report To:**

**EXP Services Inc**

2650 Queensview Drive, Suite 100  
 Ottawa ON K2B 8H6 Canada

**Attention:** Leah Wells

**Caduceon Environmental Laboratories**

2378 Holly Lane  
 Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 16-May-22

JOB/PROJECT NO.: OTT-22003851-BO

DATE REPORTED: 19-May-22

P.O. NUMBER:

SAMPLE MATRIX: Soil

WATERWORKS NO.

Parameter	Units	R.L.	Client I.D.	TP22-1	TP22-2	TP22-3	TP22-4	O. Reg. 153	
			Sample I.D.	B22-14241-1	B22-14241-2	B22-14241-3	B22-14241-4	Tbl. 3 - ICC (f/m)	Tbl. 3 - ICC Soil
Date Collected			16-May-22	16-May-22	16-May-22	16-May-22	16-May-22		
Bromodichloromethane	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	18	18
Bromoform	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	1.7	0.61
Bromomethane	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	0.05
Carbon Tetrachloride	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.5	0.21
Monochlorobenzene (Chlorobenzene)	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	2.7	2.4
Chloroform	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.18	0.47
Dibromochloromethane	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	13	9.4
Dichlorobenzene, 1,2-	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	8.5	4.3
Dichlorobenzene, 1,3-	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	12	9.6
Dichlorobenzene, 1,4-	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.84	0.2
Dichlorodifluoromethane	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	25	16
Dichloroethane, 1,1-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	21	17
Dichloroethane, 1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.05	0.05
Dichloroethylene, 1,1-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.48	0.064
Dichloroethene, cis-1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	37	55
Dichloroethene, trans-1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	9.3	1.3
Dichloropropane, 1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.68	0.16
Dichloropropene, cis-1,3-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02		
Dichloropropene, trans-1,3-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02		
Dichloropropene 1,3-cis+trans	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.21	0.18
Ethylbenzene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	19	9.5
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.05	0.05
Hexane	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	88	46

O. Reg. 153 - Soil, Ground Water and Sediment Standards  
 Tbl. 3 - ICC (f/m) - Table 3 - Ind./Commer/Commun Soil (fine/med)  
 Tbl. 3 - ICC Soil - Table 3 - Ind./Commercial/Community Soil Std



Greg Clarkin, BSc., C. Chem  
 Lab Manager - Ottawa District

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C.O.C.: G110723

REPORT No. B22-14241

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**EXP Services Inc**  
 2650 Queensview Drive, Suite 100  
 Ottawa ON K2B 8H6 Canada

**Attention:** Leah Wells

**Caduceon Environmental Laboratories**

2378 Holly Lane  
 Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 16-May-22

JOB/PROJECT NO.: OTT-22003851-BO

DATE REPORTED: 19-May-22

P.O. NUMBER:

SAMPLE MATRIX: Soil

WATERWORKS NO.

Parameter	Client I.D. Sample I.D. Date Collected		TP22-1 B22-14241-1 16-May-22	TP22-2 B22-14241-2 16-May-22	TP22-3 B22-14241-3 16-May-22	TP22-4 B22-14241-4 16-May-22	O. Reg. 153 Tbl. 3 - ICC (f/m)   Tbl. 3 - ICC Soil	
	Units	R.L.						
Methyl Ethyl Ketone	µg/g	0.5	< 0.5	< 0.5	< 0.5	< 0.5	88	44
Methyl Isobutyl Ketone	µg/g	0.5	< 0.5	< 0.5	< 0.5	< 0.5	210	31
Methyl-t-butyl Ether	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	3.2	11
Dichloromethane (Methylene Chloride)	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	2	1.6
Styrene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	43	34
Tetrachloroethane,1,1,1,2 -	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.11	0.087
Tetrachloroethane,1,1,2,2 -	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.094	0.05
Tetrachloroethylene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	21	4.5
Toluene	µg/g	0.2	< 0.2	< 0.2	< 0.2	< 0.2	78	68
Trichloroethane,1,1,1,-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	12	6.1
Trichloroethane,1,1,2,-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.11	0.05
Trichloroethylene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.61	0.91
Trichlorofluoromethane	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	5.8	4
Vinyl Chloride	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.25	0.032
Xylene, m,p-	µg/g	0.03	< 0.03	< 0.03	< 0.03	< 0.03		
Xylene, o-	µg/g	0.03	< 0.03	< 0.03	< 0.03	< 0.03		
Xylene, m,p,o-	µg/g	0.03	< 0.03	< 0.03	< 0.03	< 0.03	30	26
Dibromofluoromethane (SS)	% rec.		87.6	89.6	79.4	78.2		
Toluene-d8 (SS)	% rec.		96.9	98.8	96.2	99.2		
Bromofluorobenzene,4(S S)	% rec.		107	108	108	108		
PHC F1 (C6-C10)	µg/g	10	< 10	< 10	< 10	< 10	65	55
PHC F2 (>C10-C16)	µg/g	5	< 5	< 5	< 5	< 5	250	230

O. Reg. 153 - Soil, Ground Water and Sediment Standards  
 Tbl. 3 - ICC (f/m) - Table 3 - Ind./Commer/Commun Soil (fine/med)  
 Tbl. 3 - ICC Soil - Table 3 - Ind./Commercial/Community Soil Std



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Fax: 613-526-1244

DATE RECEIVED: 16-May-22

JOB/PROJECT NO.: OTT-22003851-BO

DATE REPORTED: 19-May-22

P.O. NUMBER:

SAMPLE MATRIX: Soil

WATERWORKS NO.

Parameter	Units	R.L.	Client I.D.	TP22-1	TP22-2	TP22-3	TP22-4	O. Reg. 153	
			Sample I.D.	B22-14241-1	B22-14241-2	B22-14241-3	B22-14241-4	Tbl. 3 - ICC (f/m)	Tbl. 3 - ICC Soil
Date Collected			16-May-22	16-May-22	16-May-22	16-May-22	16-May-22		
PHC F3 (>C16-C34)	µg/g	10	< 10	15	11	19	2500	1700	
PHC F4 (>C34-C50)	µg/g	10	< 10	12 <sup>1</sup>	< 10	< 10	6600	3300	
PHC F4 (Gravimetric)	µg/g	50		170			6600	3300	
Acenaphthene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	96	96	
Acenaphthylene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.17	0.15	
Anthracene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.74	0.67	
Benzo(a)anthracene	µg/g	0.05	< 0.05	< 0.05	< 0.05	0.09	0.96	0.96	
Benzo(a)pyrene	µg/g	0.05	< 0.05	< 0.05	< 0.05	0.09	0.3	0.3	
Benzo(b)fluoranthene	µg/g	0.05	< 0.05	< 0.05	< 0.05	0.11	0.96	0.96	
Benzo(b+k)fluoranthene	µg/g	0.05	< 0.05	< 0.05	< 0.05	0.16			
Benzo(g,h,i)perylene	µg/g	0.05	< 0.05	< 0.05	< 0.05	0.06	9.6	9.6	
Benzo(k)fluoranthene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.96	0.96	
Chrysene	µg/g	0.05	< 0.05	< 0.05	< 0.05	0.10	9.6	9.6	
Dibenzo(a,h)anthracene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.1	0.1	
Fluoranthene	µg/g	0.05	< 0.05	0.06	0.06	0.12	9.6	9.6	
Fluorene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	69	62	
Indeno(1,2,3,-cd)pyrene	µg/g	0.05	< 0.05	< 0.05	< 0.05	0.07	0.95	0.76	
Methylnaphthalene,1-	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05		76	
Methylnaphthalene,2-	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05		76	
Methylnaphthalene 2-(1-)	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	85	76	
Naphthalene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	28	9.6	
Phenanthrene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	16	12	
Pyrene	µg/g	0.05	< 0.05	< 0.05	< 0.05	0.12	96	96	
Terphenyl-d14 (SS)	% rec.	10	97.0	96.0	94.0	99.0			

1 NOTE: PHC F4 Gravimetric Required.

O. Reg. 153 - Soil, Ground Water and Sediment Standards  
 Tbl. 3 - ICC (f/m) - Table 3 - Ind./Commer/Commun Soil (fine/med)  
 Tbl. 3 - ICC Soil - Table 3 - Ind./Commercial/Community Soil Std



Greg Clarkin, BSc., C. Chem  
 Lab Manager - Ottawa District

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REPORT No. B22-14241

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**Attention:** Leah Wells

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Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 16-May-22

JOB/PROJECT NO.: OTT-22003851-BO

DATE REPORTED: 19-May-22

P.O. NUMBER:

SAMPLE MATRIX: Soil

WATERWORKS NO.

Parameter	Units	R.L.	Client I.D.	TP22-5	TP22-6	DUP	O. Reg. 153	
			Sample I.D.	B22-14241-5	B22-14241-6	B22-14241-7	Tbl. 3 - ICC (f/m)	Tbl. 3 - ICC Soil
			Date Collected	16-May-22	16-May-22	16-May-22		
pH @25°C	pH Units			7.58	7.53	7.53		
Conductivity @25°C	mS/cm	0.001		0.457	0.156	0.145	1.4	1.4
Sodium Adsorption Ratio	units			3.28	0.0961	0.103	12	12
Antimony	µg/g	0.5		< 0.5	< 0.5	< 0.5	50	40
Arsenic	µg/g	0.5		5.3	2.3	1.6	18	18
Barium	µg/g	1		128	112	107	670	670
Beryllium	µg/g	0.2		0.6	0.4	0.3	10	8
Boron	µg/g	0.5		13.1	10.3	9.4	120	120
Boron (HWS)	µg/g	0.02		0.06	0.06	0.07	2	2
Cadmium	µg/g	0.5		< 0.5	< 0.5	< 0.5	1.9	1.9
Chromium	µg/g	1		19	21	22	160	160
Chromium (VI)	µg/g	0.2		< 0.2	< 0.2	< 0.2	10	8
Cobalt	µg/g	1		9	7	6	100	80
Copper	µg/g	1		13	13	12	300	230
Lead	µg/g	5		14	11	7	120	120
Mercury	µg/g	0.005		0.064	0.083	0.022	20	3.9
Molybdenum	µg/g	1		< 1	< 1	< 1	40	40
Nickel	µg/g	1		17	14	13	340	270
Selenium	µg/g	0.5		0.7	0.7	0.5	5.5	5.5
Silver	µg/g	0.2		< 0.2	< 0.2	< 0.2	50	40
Thallium	µg/g	0.1		0.2	0.1	0.1	3.3	3.3
Vanadium	µg/g	1		23	29	29	86	86
Zinc	µg/g	3		28	39	66	340	340
Uranium	µg/g	0.1		0.5	0.6	0.6	33	33
% moisture	%			14.7	10.8	11.2		
Acetone	µg/g	0.5		< 0.5	< 0.5	< 0.5	28	16
Benzene	µg/g	0.02		< 0.02	< 0.02	< 0.02	0.4	0.32

O. Reg. 153 - Soil, Ground Water and Sediment Standards  
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P.O. NUMBER:

SAMPLE MATRIX: Soil

WATERWORKS NO.

Parameter	Units	R.L.	Client I.D.	TP22-5	TP22-6	DUP	O. Reg. 153	
			Sample I.D.	B22-14241-5	B22-14241-6	B22-14241-7	Tbl. 3 - ICC (f/m)	Tbl. 3 - ICC Soil
Date Collected				16-May-22	16-May-22	16-May-22		
Bromodichloromethane	µg/g	0.02		< 0.02	< 0.02	< 0.02	18	18
Bromoform	µg/g	0.02		< 0.02	< 0.02	< 0.02	1.7	0.61
Bromomethane	µg/g	0.05		< 0.05	< 0.05	< 0.05	0.05	0.05
Carbon Tetrachloride	µg/g	0.05		< 0.05	< 0.05	< 0.05	1.5	0.21
Monochlorobenzene (Chlorobenzene)	µg/g	0.02		< 0.02	< 0.02	< 0.02	2.7	2.4
Chloroform	µg/g	0.02		< 0.02	< 0.02	< 0.02	0.18	0.47
Dibromochloromethane	µg/g	0.02		< 0.02	< 0.02	< 0.02	13	9.4
Dichlorobenzene, 1,2-	µg/g	0.05		< 0.05	< 0.05	< 0.05	8.5	4.3
Dichlorobenzene, 1,3-	µg/g	0.05		< 0.05	< 0.05	< 0.05	12	9.6
Dichlorobenzene, 1,4-	µg/g	0.05		< 0.05	< 0.05	< 0.05	0.84	0.2
Dichlorodifluoromethane	µg/g	0.05		< 0.05	< 0.05	< 0.05	25	16
Dichloroethane, 1,1-	µg/g	0.02		< 0.02	< 0.02	< 0.02	21	17
Dichloroethane, 1,2-	µg/g	0.02		< 0.02	< 0.02	< 0.02	0.05	0.05
Dichloroethylene, 1,1-	µg/g	0.02		< 0.02	< 0.02	< 0.02	0.48	0.064
Dichloroethene, cis-1,2-	µg/g	0.02		< 0.02	< 0.02	< 0.02	37	55
Dichloroethene, trans-1,2-	µg/g	0.02		< 0.02	< 0.02	< 0.02	9.3	1.3
Dichloropropane, 1,2-	µg/g	0.02		< 0.02	< 0.02	< 0.02	0.68	0.16
Dichloropropene, cis-1,3-	µg/g	0.02		< 0.02	< 0.02	< 0.02		
Dichloropropene, trans-1,3-	µg/g	0.02		< 0.02	< 0.02	< 0.02		
Dichloropropene 1,3-cis+trans	µg/g	0.02		< 0.02	< 0.02	< 0.02	0.21	0.18
Ethylbenzene	µg/g	0.05		< 0.05	< 0.05	< 0.05	19	9.5
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/g	0.02		< 0.02	< 0.02	< 0.02	0.05	0.05
Hexane	µg/g	0.02		< 0.02	< 0.02	< 0.02	88	46

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SAMPLE MATRIX: Soil

WATERWORKS NO.

Parameter	Units	R.L.	Client I.D.	TP22-5	TP22-6	DUP	O. Reg. 153	
			Sample I.D.	B22-14241-5	B22-14241-6	B22-14241-7	Tbl. 3 - ICC (f/m)	Tbl. 3 - ICC Soil
			Date Collected	16-May-22	16-May-22	16-May-22		
Methyl Ethyl Ketone	µg/g	0.5		< 0.5	< 0.5	< 0.5	88	44
Methyl Isobutyl Ketone	µg/g	0.5		< 0.5	< 0.5	< 0.5	210	31
Methyl-t-butyl Ether	µg/g	0.05		< 0.05	< 0.05	< 0.05	3.2	11
Dichloromethane (Methylene Chloride)	µg/g	0.05		< 0.05	< 0.05	< 0.05	2	1.6
Styrene	µg/g	0.05		< 0.05	< 0.05	< 0.05	43	34
Tetrachloroethane,1,1,1,2-	µg/g	0.02		< 0.02	< 0.02	< 0.02	0.11	0.087
Tetrachloroethane,1,1,2,2-	µg/g	0.05		< 0.05	< 0.05	< 0.05	0.094	0.05
Tetrachloroethylene	µg/g	0.05		< 0.05	< 0.05	< 0.05	21	4.5
Toluene	µg/g	0.2		< 0.2	< 0.2	< 0.2	78	68
Trichloroethane,1,1,1-	µg/g	0.02		< 0.02	< 0.02	< 0.02	12	6.1
Trichloroethane,1,1,2-	µg/g	0.02		< 0.02	< 0.02	< 0.02	0.11	0.05
Trichloroethylene	µg/g	0.05		< 0.05	< 0.05	< 0.05	0.61	0.91
Trichlorofluoromethane	µg/g	0.02		< 0.02	< 0.02	< 0.02	5.8	4
Vinyl Chloride	µg/g	0.02		< 0.02	< 0.02	< 0.02	0.25	0.032
Xylene, m,p-	µg/g	0.03		< 0.03	< 0.03	< 0.03		
Xylene, o-	µg/g	0.03		< 0.03	< 0.03	< 0.03		
Xylene, m,p,o-	µg/g	0.03		< 0.03	< 0.03	< 0.03	30	26
Dibromofluoromethane (SS)	% rec.			89.4	88.3	82.1		
Toluene-d8 (SS)	% rec.			100	99.5	97.6		
Bromofluorobenzene,4(S S)	% rec.			111	109	110		
PHC F1 (C6-C10)	µg/g	10		< 10	< 10	< 10	65	55
PHC F2 (>C10-C16)	µg/g	5		< 5	< 5	< 5	250	230

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SAMPLE MATRIX: Soil

WATERWORKS NO.

Parameter	Units	R.L.	Client I.D.	TP22-5	TP22-6	DUP	O. Reg. 153		
			Sample I.D.	B22-14241-5	B22-14241-6	B22-14241-7	Tbl. 3 - ICC (f/m)	Tbl. 3 - ICC Soil	
			Date Collected	16-May-22	16-May-22	16-May-22			
PHC F3 (>C16-C34)	µg/g	10		12	34	14		2500	1700
PHC F4 (>C34-C50)	µg/g	10		< 10	23	< 10		6600	3300
PHC F4 (Gravimetric)	µg/g	50						6600	3300
Acenaphthene	µg/g	0.05		< 0.05	0.15	< 0.05		96	96
Acenaphthylene	µg/g	0.05		< 0.05	< 0.05	< 0.05		0.17	0.15
Anthracene	µg/g	0.05		< 0.05	0.32	< 0.05		0.74	0.67
Benzo(a)anthracene	µg/g	0.05		< 0.05	0.52	< 0.05		0.96	0.96
Benzo(a)pyrene	µg/g	0.05		< 0.05	<b>0.41</b>	< 0.05		0.3	0.3
Benzo(b)fluoranthene	µg/g	0.05		< 0.05	0.57	< 0.05		0.96	0.96
Benzo(b+k)fluoranthene	µg/g	0.05		< 0.05	0.78	< 0.05			
Benzo(g,h,i)perylene	µg/g	0.05		< 0.05	0.25	< 0.05		9.6	9.6
Benzo(k)fluoranthene	µg/g	0.05		< 0.05	0.21	< 0.05		0.96	0.96
Chrysene	µg/g	0.05		< 0.05	0.53	< 0.05		9.6	9.6
Dibenzo(a,h)anthracene	µg/g	0.05		< 0.05	0.06	< 0.05		0.1	0.1
Fluoranthene	µg/g	0.05		< 0.05	1.35	0.06		9.6	9.6
Fluorene	µg/g	0.05		< 0.05	0.16	< 0.05		69	62
Indeno(1,2,3,-cd)pyrene	µg/g	0.05		< 0.05	0.32	< 0.05		0.95	0.76
Methylnaphthalene,1-	µg/g	0.05		< 0.05	< 0.05	< 0.05			76
Methylnaphthalene,2-	µg/g	0.05		< 0.05	< 0.05	< 0.05			76
Methylnaphthalene 2-(1-)	µg/g	0.05		< 0.05	< 0.05	< 0.05		85	76
Naphthalene	µg/g	0.05		< 0.05	< 0.05	< 0.05		28	9.6
Phenanthrene	µg/g	0.05		< 0.05	1.29	< 0.05		16	12
Pyrene	µg/g	0.05		< 0.05	1.02	< 0.05		96	96
Terphenyl-d14 (SS)	% rec.	10		92.0	92.0	103			

1 NOTE: PHC F4 Gravimetric Required.

O. Reg. 153 - Soil, Ground Water and Sediment Standards  
Tbl. 3 - ICC (f/m) - Table 3 - Ind./Commer/Commun Soil (fine/med)  
Tbl. 3 - ICC Soil - Table 3 - Ind./Commercial/Community Soil Std



Greg Clarkin, BSc., C. Chem  
Lab Manager - Ottawa District

R.L. = Reporting Limit

Test methods may be modified from specified reference method unless indicated by an \*

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

The analytical results reported herein refer to the samples as received. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.

C.O.C.: G110723

REPORT No. B22-14241

**Report To:**

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**Attention:** Leah Wells

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DATE RECEIVED: 16-May-22

JOB/PROJECT NO.: OTT-22003851-BO

DATE REPORTED: 19-May-22

P.O. NUMBER:

SAMPLE MATRIX: Soil

WATERWORKS NO.

**Summary of Exceedances**

Table 3 - Ind./Commer/Commun Soil (fine/med)		
TP22-6	Found Value	Limit
Benzo(a)pyrene (µg/g)	0.41	0.3

Table 3 - Ind./Commercial/Community Soil Std		
TP22-6	Found Value	Limit
Benzo(a)pyrene (µg/g)	0.41	0.3

O. Reg. 153 - Soil, Ground Water and Sediment Standards  
 Tbl. 3 - ICC (f/m) - Table 3 - Ind./Commer/Commun Soil (fine/med)  
 Tbl. 3 - ICC Soil - Table 3 - Ind./Commercial/Community Soil Std



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Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

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EXP Services Inc.

*McDonald Brothers Consulting Inc.  
Phase Two Environmental Site Assessment  
56 Capilano Drive, Ottawa, Ontario  
OTT-22003851-A0  
May 27, 2022*

