Phase Two Environmental Site Assessment
116-118 Carruthers Avenue, Ottawa, Ontario

Client:
MA Precision Holding Inc.
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Prepared By: Devin Clouthier, B.Sc.
Scott Lessard, B.Sc.

Reviewed By: Chris Kimmerly, P.Geo.

EXP Services Inc.
100-2650 Queensview Drive
Ottawa, Ontario K2B 8H6
t: +1.613.688.1899
f: +1.613.225.7337

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Executive Summary

EXP Services Inc. (EXP) was retained by MA Precision Holding Inc. to complete a Phase Two Environmental Site Assessment (ESA) for a residential property located at 116-118 Carruthers Avenue in Ottawa, Ontario, hereinafter referred to as the 'Site' or the 'Phase Two property'. At the time of the investigation, the Phase One property was developed with a two-storey, multi-unit residential apartment building with a gravel/paving stone parking lot and attached garage.

The objective of this Phase Two ESA was to assess the quality of the soil and groundwater conditions within the areas of potential environmental concern (APEC) identified in a Phase One ESA prepared by EXP in June 2024. The Phase One ESA identified five (5) potentially contaminating activities (PCA) which contributed to the identification of five (5) APECs on the Phase Two property.

The Phase Two property use is currently residential and the proposed future land use residential. It is understood that the owner plans to construct a 4 storey – 19-unit residential building with a basement on the Phase Two property. It is understood that this report will be used for due diligence purposes in support of a City of Ottawa site plan application. A Record of Site Condition (RSC) is not required as a change in land use is not anticipated.

The Phase Two property has the municipal address of 116-118 Carruthers Avenue in Ottawa, Ontario. The Phase Two property is rectangular in shape and has an area of approximately 0.045 hectare (0.112 acre).

The Phase Two property is located on the west side of Carruthers Avenue, south of the intersection with Lyndale Avenue. The Site is located in an urban residential neighbourhood which is serviced by municipal water and sanitary systems, as well as the electrical supply networks. Natural gas service is not connected to the Site. In accordance with Section 35 of Ontario Regulation 153/04, non-potable water standards apply to the Phase Two property. Based on a review of historical information in the Phase One ESA, the Phase Two property has been used as a residential property since 1912 and was used as a grocery store in the early 1900s.

In accordance with Section 41 of Ontario Regulation 153/04, the Phase Two property is not considered an environmentally sensitive site. 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.

Based on the Phase Two ESA investigation, the Phase Two property is considered to be a shallow soil property as defined in section 43.1 of O.Reg 153/04, as more than 1/3 of the Phase Two property has less than 2 metres of soil overlying bedrock.

Bedrock in the general area is part of the Ottawa Formation and is comprised of limestone at shallow depths. With respect to surficial geology, beneath any fill, the Phase Two property is underlain by till, sand and/or silt material.

The regional groundwater flow direction is inferred to be in the northwesterly direction towards the Ottawa River, which is located approximately 500 metres northwest of the Site.

The Phase Two ESA investigative activities consisted of drilling four (4) boreholes (BH24-1 to BH24-4) to facilitate the collection of soil samples for visual inspection and chemical analysis. Two (2) of the boreholes were instrumented with monitoring wells (BH/MW 24-1 and BH/MW24-3) to facilitate the collection of groundwater samples. The stratigraphy of the Site consists of granular fill between 0.51 and 0.74 metres in thickness underlain by limestone bedrock.

In accordance with the scope of work, chemical analyses were performed on select soil samples recovered from the boreholes. One worst case soil sample was collected from three (3) of the boreholes (BH24-1, BH24-2 and BH24-3) and one field duplicate were submitted for laboratory analysis of petroleum hydrocarbons (PHC), volatile organic compounds (VOC), polycyclic aromatic compounds (PAH) and metals in the areas of the five (5) APECs on the Phase Two property. All soil samples were considered surficial soil as they were all collected from less than 2 metres below ground surface (mbgs). Exceedances to MECP Table 7 SCS in the soil samples are summarized in the table below.

Table EX-1 – Exceedances in Soil Samples Compared to MECP Table 7 SCS

Parameters		Provincial
		Sample Which Exceeds MECP Table 7 SCS
Metals	Barium	BH24-1-S1, DUP (Duplicate of BH24-1-S1)
	Copper	BH24-1-S1, DUP (Duplicate of BH24-1-S1)
	Lead	BH24-1-S1, DUP (Duplicate of BH24-1-S1), BH24-3-S1
PAH	Acenaphthene	BH24-2-S1
	Benzo(a)anthracene	BH24-1-S1, DUP (Duplicate of BH24-1-S1), BH24-2-S1
	Benzo(a)pyrene	BH24-1-S1, DUP (Duplicate of BH24-1-S1), BH24-2-S1
	Benzo(b)fluoranthene	BH24-1-S1, DUP (Duplicate of BH24-1-S1), BH24-2-S1
	Benzo(k)fluoranthene	BH24-2-S1
	Dibenzo(a,h)anthracene	BH24-1-S1, DUP (Duplicate of BH24-1-S1), BH24-2-S1
	Fluoranthene	BH24-1-S1, DUP (Duplicate of BH24-1-S1), BH24-2-S1
	Indeno(1,2,3-cd)pyrene	BH24-1-S1, DUP (Duplicate of BH24-1-S1), BH24-2-S1

Two (2) groundwater samples and one (1) field duplicate were submitted for laboratory analysis of PHC, VOC, metals and PAH. In accordance with Regulation 153/04, the results were compared to the MECP Table 7 SCS for residential land use.

All groundwater samples meet the MECP Table 7 SCS with the exception of BH/MW24-1 where chloroform exceeded the MECP Table 7 SCS.

The chloroform exceedance from BH/MW24-1 can be attributed to the use of the municipal water system during bedrock coring. The concentration of chloroform in BH/MW24-1 is possibly sourced from the municipal water supply, as chloroform is often an additive to treated water. Therefore, it is assumed that chloroform is unlikely to be present in the groundwater on the Site at concentrations which exceed the Table 7 SCS.

Based on these results, one or more of the PCAs identified in the Phase One ESA have resulted in soil impacts on the Phase Two property. Soil remediation is recommended during site redevelopment. None of the PCAs have resulted in groundwater impacts on the Phase Two property.

The Qualified Person who oversaw this investigation can confirm that the soil characterization and Phase Two Environmental Site Assessment were conducted per the requirements of Ontario Regulation 406/19, Ontario Regulation 153/04, 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.

1.0 Introduction

EXP Services Inc. (EXP) was retained by MA Precision Holding Inc. to complete a Phase Two Environmental Site Assessment (ESA) for a residential property located at 116-118 Carruthers Avenue in Ottawa, Ontario, hereinafter referred to as the 'Site' or the 'Phase Two property'. At the time of the investigation, the Phase One property was developed with a two-storey, multi-unit residential apartment building.

The objective of this Phase Two ESA was to assess the quality of the soil and groundwater conditions within the areas of potential environmental concern (APEC) identified in a Phase One ESA prepared by EXP in June 2024. The Phase One ESA identified thirteen (13) potentially contaminating activities (PCA) which led to the identification of five (5) APECs on the Phase Two property.

The Phase Two property use is currently residential and the proposed future land use residential. It is understood that the owner plans to construct a 4 storey – 19-unit residential building with a basement on the Phase Two property. It is understood that this report will be used for due diligence purposes in support of a City of Ottawa site plan application. A Record of Site Condition (RSC) is not required as a change in land use is not anticipated.

This report has been prepared in accordance with Ontario Regulation 153/04, the general requirements outlined in CSA Standard Z769-00 (2013) 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 of 116-118 Carruthers Avenue in Ottawa, Ontario. At the time of the investigation, the Phase Two property was occupied by a two-storey, multi-unit residential apartment building and gravel or paving stone parking areas. The Phase Two property is rectangular in shape and has an area of approximately 0.045 hectare (0.112 acre). The site location is shown in the Site Location Plan as Figure 1 in Appendix A and a Site Plan is provided as Figure 3 in Appendix A.

The legal description of the Phase Two property is LT 15, PL 35 , W CARRUTHERS AV; OTTAWA/NEPEAN SUBJECT TO AN EASEMENT AS IN CR684686. The Property Identification Number (PIN) is 040960138. The approximate Universal Transverse Mercator (UTM) coordinates for the Phase One property are Zone 18, 442890 m E and 5028423 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.

Based on a review of historical information in the Phase One ESA, the Phase Two property has been used as a residential property since 1912 and was used as a grocery store in the early 1900s.

1.2 Property Ownership

The owner of the Phase Two property is MA Precision Holding Inc according to Geowarehouse. The Phase Two property was transferred to the current owner in 2022. Authorization to proceed with this investigation was provided by Mr. Majid Ahangaran. Contact information for Mr. Ahangaran is MA Precision Holding Inc., 116-118 Carruthers Avenue, Ottawa, Ontario K2V 0L3.

1.3 Current and Proposed Future Use

The Phase Two property use is residential, and the proposed future use is residential. Since a change in land use is not anticipated, an RSC is not required.

1.4 Applicable Site Condition Standards

Analytical results obtained for soil and groundwater samples were compared to Ministry of the Environment, Conservation and Parks (MECP) 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).

For assessment purposes, EXP selected the Table 7 Generic SCS in a non-potable groundwater condition for residential/parkland/institutional property use based on the following factors:

- Bedrock is less than 2 metres below ground surface across more than 1/3 of the Phase Two 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;
- The Phase Two property is serviced by the City of Ottawa's water distribution system and the surrounding properties are municipally serviced;
- The Phase Two property's land use is residential, and the proposed future land use is residential; 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 is located on the west side of Carruthers Avenue, south of the intersection with Lyndale Avenue. At the time of the investigation, the Site was improved with a two-storey, multi-tenant building with associated parking lot and attached garage. The Site is found in an urban residential neighbourhood which is serviced by municipal water and sanitary systems, as well as the electrical supply networks. Natural gas service is not connected to the Site. 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 considered an environmentally sensitive site. 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.

Based on the Phase Two ESA investigation, the Phase Two property is considered to be a shallow soil property as defined in section 43.1 of O.Reg 153/04, as more than 1/3 of the Phase Two property has less than 2 metres of soil overlying bedrock.

Bedrock in the general area is part of the Ottawa Formation and is comprised of limestone at shallow depths. With respect to surficial geology, beneath any fill, the Phase Two property is underlain by till, sand and/or silt material.

The regional groundwater flow direction is inferred to be in the northwesterly direction towards the Ottawa River, which is located approximately 500 metres northwest of the Site.

2.2 Past Investigations

1. EXP Services Inc. prepared a report entitled *Phase One Environmental Site Assessment, 116-118 Carruthers Avenue, Ottawa, Ontario* dated June 2024.

The Phase One study area included the entire Phase Two property as well as properties within 250 metres of the Phase Two property. Based on the results of the Phase One ESA, EXP identified one (1) PCA on the Phase Two property and twelve (12) PCAs in the Phase One study area. Five (5) of the thirteen (13) PCAs identified were determined to contribute to an APEC on the Phase Two property. A summary is provided below in Table 2.1.

Table 2.1: APECs Identified in the 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)
1. Former rail line Along Scott Street (90 m south)	Southern extent of Phase One property	PCA 2: PCA #46 – Rail yards, tracks and spurs	Off-site	Metals, petroleum hydrocarbons (PHC), volatile organic compounds (VOC)s, polycyclic aromatic compounds (PAH)	Groundwater and soil at water table
2. Current automotive garage located 30 m southwest at 195 Hinchey Ave.	Southwestern extent of the Phase One property	PCA 6: PCA#52 Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems	Off-site	Metals, PHC, VOCs	Groundwater and soil at water table

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)
3. Furnace oil spill from AST at 185 Hinchey Ave. 10 m to the west	Western extent of the Phase One property	PCA 10: PCA# Other – Spills, PCA #28 – Gasoline and associated products storage in fixed tanks	Off-site	PHC, benzene, toluene, ethylbenzene and toluene (BTEX)	Groundwater and soil at water table
4. Furnace oil spill from AST at 129 Carruthers Ave. (30 m southeast)	Southeastern extent of the Phase One property	PCA 11: PCA# Other – Spills, PCA #28 – Gasoline and associated products storage in fixed tanks	Off-site	PHC, BTEX	Groundwater and soil at water table
5. Fill of unknown quality	Entire Phase One property	PCA 13: PCA# 30 – Importation of fill of unknown quality	On-site	Metals, PHC, VOC, PAH	Soil and groundwater

The locations of the PCA are shown on Figure 2 in Appendix A. The locations of the APEC are shown on Figure 3 in Appendix A. The Phase One ESA was conducted per the requirements of O.Reg 153/04, as amended, and in accordance with generally accepted professional practices.

2. EXP Services Inc. prepared a report entitled *Geotechnical Investigation – Proposed Residential Development – 116 & 118 Carruthers Avenue, Ottawa, Ontario* dated October 2024.

The geotechnical investigation was completed in conjunction with this Phase Two ESA for 116-118 Carruthers Avenue in Ottawa, Ontario. The geotechnical investigation consisted of drilling four (4) boreholes in conjunction with the Phase Two ESA in the accessible area of the Site to document subsurface conditions of the Site. The subsurface conditions were comprised of granular fill underlain by shallow limestone bedrock contacted at 0.43 to 0.74 metres below ground surface. The borehole logs for the Geotechnical Investigation and this Phase Two ESA are provided in Appendix B.

3.0 Scope of the Investigation

3.1 Overview of Site Investigation

The objective of the Phase Two ESA investigation was to assess the quality of the soil and groundwater conditions within the APEC identified in the previous Phase One ESA prepared by EXP.

3.2 Scope of Work

The scope of work was as follows:

- Ensuring the work area was free from underground utilities by retaining a third-party professional locater (USL-1);
- Advancing four (4) boreholes (BH24-1 to BH24-4) on the Phase Two property and completing two (2) of them as monitoring wells to address the soil and groundwater quality located within the five (5) APECs identified on the Phase Two property;
- Collecting one (1) soil sample from boreholes BH24-1, BH24-2 and BH24-3 along with a field duplicate and submitting the samples for laboratory analysis of PHC, VOC, metals and PAH in accordance with O.Reg 153/04;
- Collecting one (1) groundwater sample from each monitoring well along with a field duplicate and submitting the samples for laboratory analysis of PHC, VOC, metals and PAH;
- Comparing the results of the soil and groundwater laboratory analysis to applicable criteria, as set out by the Ontario MECP; and
- Preparing a report summarizing the results of the Phase Two ESA.

This report has been prepared in accordance with Ontario Regulation 153/04, the general requirements outlined in CSA Standard Z769-00 (2013) 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 and groundwater quality on the Phase Two property. There are no waterbodies on the Phase Two property, therefore sediment sampling was not 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. Figure 2 in Appendix A shows the PCAs within the Phase One study area. The Phase One study area includes all land within a 250-metre radius of the Site.

The CSM is a simplification of reality, which aims to provide a description and assessment of any areas where potentially contaminating activities have occurred within the Phase One study area and may have had aversely affected the Phase Two property. The CSM showing general site features and APECs is provided in Figures 2 and 3 in Appendix A.

3.4.1 Buildings and Structures

A two-storey, multi-tenant residential building covers the majority of the Site. The building has slab-on-grade construction with no basement. An attached, concrete block garage is located on the western portion of the Site. The remainder of the Phase Two property consists of gravel or paving stone parking areas.

3.4.2 Water Bodies and Groundwater Flow Direction

The closest body of water is the Ottawa River located 500 m to the northwest. The regional groundwater flow direction is inferred to be in the northwesterly direction towards this river.

3.4.3 Water Bodies and Groundwater Flow Direction

There are no areas of natural significance (ANSI) within the Phase One study area.

3.4.4 Water Wells

Several records for monitoring wells were identified in the Phase One study area including several at Laroche Park (former landfill) to the east and one each at 52 Carruthers and 55 Carruthers as part of other investigations.

Generally, the overburden consists of sand/gravel fill or silt over limestone bedrock at 0.61 – 1.5 mbgs.

No potable water wells were identified in the Phase One study area. The Phase Two property and surrounding area is serviced by municipal drinking water.

3.4.5 Potentially Contaminating Activity

One (1) PCA was identified on the Phase One property and twelve (12) PCAs were identified in the Phase One study area. Details regarding the PCAs are listed below in Table 3.1.

Table 3.1 – Details of PCAs Identified in the Phase One ESA

EXP PCA #	Location of PCA	Potentially Contaminating Activity (PCA)	Description	Rationale
PCA 1	55 Carruthers Ave. (170 m northeast)	PCA#52 Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems	Former auto repair garage in operation from 1960s to 2000s. RSC filed in 2017.	Due to the large intervening distance and downgradient direction to the Phase One property, this PCA does not contribute to an APEC.
PCA 2	Along Scott Street (90 m south)	PCA #46 – Rail yards, tracks and spurs	Canadian Pacific Railway in operation from the 1910's – 1960's	Due to upgradient location in relation to the Phase One property and operational status in the early 1900s, this PCA represents an APEC (APEC 1).
PCA 3	90 Bayview Drive (220 m east)	PCA#52 Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems PCA#59 Wood Treating and Preservative Facility and Bulk Storage of Treated and Preserved Wood Products	Lumber yard from from 1900's to 1930s and contractor supply yard from 1940s to present	Due to the large intervening distance, this PCA does not contribute to an APEC.

EXP PCA #	Location of PCA	Potentially Contaminating Activity (PCA)	Description	Rationale
PCA 4	80 Bayview Drive (220 m northeast)	PCA #28 – Gasoline and associated products storage in fixed tanks PCA#34 – Metal fabrication	Metal fabrication in operation during the 1940s to 1950s	Due to the large intervening distance, this PCA does not contribute to an APEC.
PCA 5	Laroche Park (Scott St.) – 165 m east	PCA #58 – Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use of biosoils as soil conditioners	Former land fill in operation from 1900s to 1920s	Due to the large intervening distance, this PCA does not contribute to an APEC.
PCA 6	195 Hinchey Ave. (30 m southwest)	PCA#52 Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems	Current automotive garage in operation since 1971.	Due to the proximity to the Phase One property, this represents an APEC to the site (APEC 2).
PCA 7	140/150 Hinchey Ave. (180 m northwest)	PCA#52 Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems	Current automotive garage in operation since at least 1958.	Due to the large intervening distance, this PCA does not contribute to an APEC.
PCA 8	1426 Scott St. (175 m southeast)	PCA #28 – Gasoline and associated products storage in fixed tanks	Former retail fuel outlets in operation from 1960s to 2000s	Due to the large intervening distance, this PCA does not contribute to an APEC.
PCA 9	1480-1484 Scott St. (185 m south)	PCA #28 – Gasoline and associated products storage in fixed tanks PCA#52 Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems	Former retail fuel outlets in operation from 1960s to 2000s Current automotive repair shop in operation sine 1960s	Due to the large intervening distance, this PCA does not contribute to an APEC.
PCA 10	185 Hinchey Ave.	PCA# Other – Spills PCA #28 – Gasoline and associated products storage in fixed tanks	Furnace oil spill to the earthen basement ground in 1999 due to AST leak. Quantity of spill is unknown.	Due to the proximity to the Phase One property, this represents an APEC to the site (APEC 3).
PCA 11	129 Carruthers Ave.	PCA# Other – Spills PCA #28 – Gasoline and associated products storage in fixed tanks	Furnace oil spill to the earthen basement ground in 1988 due to AST leak. Quantity of spill was 200 L.	Due to the proximity to the Phase One property, this represents an APEC to the site (APEC 4).
PCA 12	Intersection of Stonehurst St. and Scott St.	PCA #46 – Rail yards, tracks and spurs	Former rail yard in operation from at least 1950s to 1970s	Due to the large intervening distance, this PCA does not contribute to an APEC.
PCA 13	Phase One property	PCA # 30 – Importation of fill material of unknown quality	Building was first developed pre-1900	Due to unknown nature of fill, this represents an APEC (APEC 5)

It is possible that the former rail line (PCA 2), current automotive garage (PCA 6), previous nearby furnace oil spills (PCA 10 and 11) and unknown quality of on-site fill material (PCA 13) may have impacted the soil and/or groundwater conditions on the Phase One property and were considered to contribute to APECs.

3.4.6 Areas of Potential Environmental Concern

The details regarding the APECs identified on the Phase Two property are described in Table 3.4.6 below.

Table 3.4.6 – Details of APECs Identified in the 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)
1. Former rail line Along Scott Street (90 m south)	Southern extent of Phase One property	PCA 2: PCA #46 – Rail yards, tracks and spurs	Off-site	Metals, PHC, VOCs, PAH	Groundwater and soil at water table
2. Current automotive garage located 30 m southwest at 195 Hinchey Ave.	Southwestern extent of the Phase One property	PCA 6: PCA#52 Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems	Off-site	Metals, PHC, VOCs	Groundwater and soil at water table
3. Furnace oil spill from AST at 185 Hinchey Ave. 10 m to thewest)	Western extent of the Phase One property	PCA 10: PCA# Other – Spills, PCA #28 – Gasoline and associated products storage in fixed tanks	Off-site	PHC, benzene, toluene, ethylbenzene and toluene (BTEX)	Groundwater and soil at water table
4. Furnace oil spill from AST at 129 Carruthers Ave. (30 m southeast)	Southeastern extent of the Phase One property	PCA 11: PCA# Other – Spills, PCA #28 – Gasoline and associated products storage in fixed tanks	Off-site	PHC, BTEX	Groundwater and soil at water table
5. Fill of unknown quality	Entire Phase One property	PCA 13: PCA# 30 – Importation of fill of unknown quality	On-site	Metals, PHC, VOC, PAH	Soil and groundwater

3.4.7 Underground Utilities

The Phase One property is serviced by buried municipal sewage and water systems, and overhead electricity. No natural gas service is provided to the Site as the site building is heated via electric baseboards.

3.4.8 Subsurface Stratigraphy

Based on review of the above information, the subject Site is in the physiographic region known as the St. Lawrence Lowlands. The bedrock in the general area is part of the Ottawa Formation and is composed of limestone at shallow depths. With respect to surficial geology, beneath any fill, the Phase One property is underlain by till, sand and/or silt material.

The local topography of the Site relatively flat, while the area has a slight slope down to the north.

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 One study area may have adversely affected the Phase One 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 One Environmental Site Assessment Reports. The CSM reflects our best interpretation of the information that was available during this investigation.

3.5 Impediments

There were not any impediments encountered that would impact the outcome of this Phase Two ESA.

3 Investigation Method

3.4 General

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

3.5 Borehole Drilling

Prior to the commencement of drilling, the locations of underground public utilities including telephone, natural gas and electrical lines were marked at the subject property by public locating companies. USL-1, a private utility locating contractor, was also retained to clear the individual borehole locations.

The Phase Two ESA investigative activities consisted of advancing four (4) boreholes (BH24-1 to BH24-4) to facilitate the collection of soil samples for visual inspection and chemical analysis. Two (2) of the boreholes were instrumented with monitoring wells (BH/MW 24-1 and BH/MW24-3) to facilitate the collection of groundwater samples.

The drilling was completed on August 20 and 21, 2024, by Ohlmann Geotechnical Services Inc. (OGS), a licenced well contractor. OGS advanced four (4) boreholes across the Phase Two property, using a manual drilling technique. The boreholes were terminated at depths between 0.43 and 4.5 metres below ground surface (mbgs). Two (2) of the boreholes were completed with monitoring wells.

EXP staff continuously monitored the drilling activities to log the stratigraphy observed, to record the depth of soil sample collection, to record total depths of the boreholes, and to record visual or olfactory observations of potential impacts. Field observations are summarized on the borehole logs provided in Appendix B. Nitrile gloves (i.e., one pair per sample) were used during sample handling. No petroleum-based greases or solvents were used during drilling activities.

The locations of boreholes/monitoring wells are shown on Figure 3 in Appendix A.

3.6 Soil Sampling

Soil samples for geologic characterization were collected on a continuous basis in the overburden materials using 3 cm diameter, 1.2 m long, dual-tube sampling system advanced into the subsurface using a weighted hammer. EXP staff continuously monitored the drilling activities to log the stratigraphy observed from the recovered soil cores, to record the depth of soil sample collection, to record total depths of borings, and to record visual or olfactory observations of potential impacts. Field observations are summarized on the borehole logs provided in Appendix B.

Soil samples identified for possible laboratory analysis were collected from the samplers and 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, Paracel Laboratories Ltd. (Paracel) of Ottawa, Ontario. The samples were transported/submitted within 72 hours of collection to the laboratory following chain of custody protocols for chemical analysis.

3.7 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 petroleum 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 ±10% of the standard gas value, then the instrument is deemed to be calibrated, however if the readings are greater than ±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 B.

3.8 Groundwater: Monitoring Well Installation

Monitoring wells were installed in general accordance with the Ontario Water Resources Act - R.R.O. 1990, Regulation 903 (as amended). The monitoring wells consisted of a 32 mm diameter Schedule 40 PVC screen that was approximately 1.5 - 3.0 m long and a 32 mm diameter Schedule 40 PVC riser pipe that was approximately 1.5 – 2.5 m long. The annular space around the wells was backfilled with sand to an average height of 0.3 m above the top of the screen. A bentonite seal was added from the top of the sand pack to approximately 0.3 m below ground surface. The monitoring wells were completed with flush-mounted casings.

Following the installation of the monitoring wells they were developed by purging water with a dedicated inertial pump and foot valve until it became clear or the well went dry.

Measures taken to minimize the potential for cross contamination or the introduction of contaminants during well construction included:

- The use of well pipe components (e.g., riser pipe and well screens) with factory machined threaded flush coupling joints;
- Construction of wells without the use of glues or adhesives;
- Removing the protective plastic wraps from well components at the time of borehole insertion to prevent contact with the ground and other surfaces; and
- Cleaning or disposal of drilling equipment between sampling locations.

Details of the monitoring well installations are shown on the borehole logs provided in Appendix B.

3.9 Groundwater: Field Measurement and Water Quality Parameters

Field measurement of water quality parameters is described in Section 4.10

EXP used a Heron water level tape to measure the static water level in each monitoring well. The measuring tape was cleaned with phosphate-free soap and tap water, rinsed with distilled water after each measurement.

3.10 Groundwater: Sampling

Groundwater samples from all monitoring wells were collected via a low flow sampling technique using a Horiba U-52 multi probe water quality meter. The Horiba probe was calibrated using in-house reference standards. Prior to collecting the groundwater samples, water quality field parameters (turbidity, dissolved oxygen, conductivity, temperature, pH, and oxidation reduction potential) were monitored until stable readings were achieved. These parameters are considered to be stable when three consecutive readings meet the following conditions:

- Turbidity: within 10% for values greater than 5 nephelometric turbidity units (NTU), or three values less than 5 NTU;
- Dissolved oxygen: within 10% for values greater than 0.5 mg/L, or three values less than 0.5 mg/L;
- Conductivity: within 3%;
- Temperature: ± 1°C;
- pH: ± 0.1 unit; and,
- Oxidation reduction potential: ±10 millivolts.

When stabilization occurs, equilibrium between groundwater within a monitor and the surrounding formation water is attained. As such, samples collected when stabilization occurs are considered to be representative of formation water.

Two (2) groundwater samples and one (1) field duplicate were collected as part of the groundwater monitoring program that were submitted to Paracel for chemical analysis of PHC, VOC, PAH and metals. The groundwater samples were placed in clean coolers containing ice packs prior to and during transportation to the laboratory. The samples were transported to the laboratory within 48 hours of collection with a chain of custody.

3.11 Analytical Testing

The contracted laboratory selected to perform chemical analysis on all soil samples was Paracel Laboratories Ltd (Paracel). Paracel 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.

3.12 Residue Management

The soil cuttings from drilling activities were used to backfill boreholes that were not completed as monitoring wells. The purged water was disposed of to the ground as there was no evidence of contamination in the groundwater.

Water used to clean drilling equipment, including augers and split spoon samplers, as drilling progressed was disposed of by the driller at their facility.

3.13 Elevation Surveying

An elevation survey was conducted by EXP. The top of casing and ground surface elevation of each monitoring well location was surveyed relative to a geodetic benchmark. The Universal Transverse Mercator (UTM) coordinates of each borehole and monitoring well were also recorded so that their locations could be plotted accurately.

3.14 Quality Assurance and Quality Control Measures

All soil and groundwater samples were placed in coolers containing ice prior to and during transportation to the contract laboratory, Paracel Laboratories Ltd. (Paracel). Paracel 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;
- 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.

Paracel'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.

4 Review and Evaluation

4.4 Geology

The geology generally consisted of a granular fill layer was contacted at the surface of BH24-1, BH24-3 and BH24-4 and underlying the paving stone at BH24-2. The granular fill layer consisted of silty sand with gravel and was present from ground surface to depths ranging from 0.43 to 0.74 mbgs. The presence of the limestone bedrock was confirmed in BH24-1 and BH24-3 which was present until the boreholes were terminated at depths of 4.2 and 4.5 mbgs, respectively.

The grain size analysis showed that the fill material was coarse grained.

No native material was present on the Phase Two property.

Field observations are documented on the borehole logs provided in Appendix B and the geological cross sections in Figures 7 and 8 provide an overview of the Phase Two property stratigraphy.

4.5 Soil: Field Screening

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

Petroleum vapours were non-detectable. Field screening data is presented in the borehole logs in Appendix B.

4.6 Soil: Quality

In accordance with the scope of work, chemical analyses were performed on select soil samples recovered from the boreholes. One soil sample was collected from three (3) of the boreholes (BH24-1, BH24-2 and BH24-3) and were submitted for laboratory analysis of PHC, VOC, PAH and metals in the areas of all five (5) APECs on the Phase Two property. All soil samples were considered surficial soil as they were all collected from less than 2 mbgs.

The three (3) soil samples and one (1) duplicate sample meet the MECP Table 7 SCS for PHC and VOC. Each sample exceeds the MECP Table 7 SCS for metals and/or PAH parameters. The Table 7 SCS exceedances in the soil samples collected are summarised below in Table 5.1.

Table 5.1: Summary of Soil Exceedances

Parameters		Provincial
		Sample Which Exceeds MECP Table 7 SCS
Metals	Barium	BH24-1-S1, DUP (Duplicate of BH24-1-S1)
	Copper	BH24-1-S1, DUP (Duplicate of BH24-1-S1)
	Lead	BH24-1-S1, DUP (Duplicate of BH24-1-S1), BH24-3-S1
PAH	Acenaphthene	BH24-2-S1
	Benzo(a)anthracene	BH24-1-S1, DUP (Duplicate of BH24-1-S1), BH24-2-S1
	Benzo(a)pyrene	BH24-1-S1, DUP (Duplicate of BH24-1-S1), BH24-2-S1
	Benzo(b)fluoranthene	BH24-1-S1, DUP (Duplicate of BH24-1-S1), BH24-2-S1
	Benzo(k)fluoranthene	BH24-2-S1
	Dibenzo(a,h)anthracene	BH24-1-S1, DUP (Duplicate of BH24-1-S1), BH24-2-S1
	Fluoranthene	BH24-1-S1, DUP (Duplicate of BH24-1-S1), BH24-2-S1
	Indeno(1,2,3-cd)pyrene	BH24-1-S1, DUP (Duplicate of BH24-1-S1), BH24-2-S1

The analytical results for PHC, VOC, metals and PAH in the soil is provided on Figures 5, 7 and 8 in Appendix A and in Tables 1 to 4 in Appendix C. The laboratory certificate of analysis is provided in Appendix D.

4.7 Groundwater: Quality

Following their installation, BH/MW24-1 and BH/MW24-3 were developed by purging water with an inertial pump and foot valve until the water became clear.

All groundwater samples were collected via a low flow sampling technique. EXP monitored several water quality parameters (such as water level, temperature, dissolved oxygen, conductivity, salinity, pH, oxygen reduction potential and turbidity) in order to ensure that the samples collected were representative of actual groundwater conditions.

Two (2) groundwater samples and one (1) field duplicate were submitted for laboratory analysis of PHC, VOC, metals and PAH. In accordance with Regulation 153/04, the results were compared to the MECP Table 7 SCS for residential land use.

All groundwater samples meet the MECP Table 7 SCS with the exception of BH/MW24-1 where chloroform exceeded the MECP Table 7 SCS.

The chloroform exceedance from BH/MW24-1 can be attributed to the use of the municipal water system during bedrock coring. The concentration of chloroform in BH/MW24-1 is possibly sourced from the municipal water supply, as chloroform is often an additive to treated water. Therefore, it is assumed that chloroform is unlikely to be present in the groundwater on the Site at concentrations which exceed the Table 7 SCS.

The analytical results for groundwater are provided on Figure 6 in Appendix A and in Tables 5 to 8 in Appendix C. The Certificate of Analysis is provided in Appendix D.

4.8 Groundwater: Elevations and Flow Direction

On August 29 and September 6, 2024, the two (2) monitoring wells were inspected for general physical condition, groundwater depth, the presence of non-aqueous phase liquid and petroleum vapour. An elevation survey was conducted using a geodetic benchmark.

Groundwater monitoring and elevation data are provided below in Table 5.2.

Table 5.2 Groundwater Elevation

Monitoring Well ID	Grade Elevation (m)	Top of Casing Elevation (m)	Screen Depth (mbgs)	Petroleum Vapour (ppmv)	Depth to LNAPL (mbgs)	Depth to Groundwater (mbgs)	Groundwater Elevation (m)
BH/MW24-1	61.88	61.80	2.4 to 4.2	ND	N/A	1.89	59.99
BH/MW24-3	62.52	62.45	1.5 to 4.5	ND	N/A	2.03	60.49

Notes: LNAPL – light non-aqueous phase liquid
ppmv – parts per million by volume
m – metres
mbgs – metres below ground surface
ND – non-detectable
N/A – not applicable

Groundwater was only encountered in two (2) of the boreholes. Therefore, groundwater elevation was only obtained for the two (2) monitoring wells installed. Without a third elevation, the groundwater flow direction cannot be determined. However, it is inferred that the groundwater flow direction is to the northwest towards the Ottawa River. Groundwater elevations are shown on Figure 3 in Appendix A.

4.9 Groundwater: Hydraulic Gradients

Hydraulic conductivity testing was not conducted during this investigation. The water table is found within the bedrock and not in the surficial soil, so soil is not anticipated to be excavated at water table depth.

4.10 Grain Size Analysis

The ASTM D2487-11 Standard Practice for Classification of Soils for Engineering Purposes divides soils into three major categories: coarse grained, fine-grained and highly organic. Visual classification is not sufficiently accurate to provide exact grain sizing.

Grain size analysis was conducted on one (1) composite samples of the granular fill which was combined from all four (4) boreholes to determine the soil classification. Based on the results of the grain size analysis, 87 % of the granular fill was classified as gravel and sand, with 13% being silt and clay. Based on these results, the granular fill is coarse-grained.

The Laboratory Certificates of Analysis detailing the grain size analysis is included in Appendix D.

4.11 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 soil and groundwater at the site. QA/QC measures, included:

- Collection and analysis of field duplicate soil and groundwater samples to ensure sample collection precision;
- 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.

Paracel'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 Paracel. 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 within acceptable control limits or below applicable alert criteria for the sampled media and analytical test groups.

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 Tables 10 through 15 in Appendix D. All of the RPD for soil and groundwater were either not calculable or within the applicable alert limits.

5 Conclusions

EXP Services Inc. (EXP) was retained by MA Precision Holding Inc. to conduct a Phase Two ESA at 116-118 Carruthers Avenue in Ottawa, Ontario. The objective of the Phase Two ESA was to assess the quality of the soil and groundwater conditions within the APEC identified in the previous Phase One ESA prepared by EXP in June 2024.

One soil sample was collected from three (3) of the boreholes (BH24-1, BH24-2, BH24-3 and BH24-4) and were submitted for laboratory analysis of PHC, VOC, PAH and metals in the areas of all five (5) APECs on the Phase Two property. The three (3) soil samples and one (1) duplicate sample meet the MECP Table 7 SCS for PHC and VOC. Each sample exceeds the MECP Table 7 SCS for various metals and/or PAH parameters.

Two (2) groundwater samples and one (1) field duplicate were submitted for laboratory analysis of PHC, VOC, metals and PAH. In accordance with Regulation 153/04, the results were compared to the MECP Table 7 SCS for residential land use. All groundwater samples meet the MECP Table 7 SCS with the exception of BH/MW24-1 where chloroform exceeded the MECP Table 7 SCS.

The chloroform exceedance from BH/MW24-1 can be attributed to the use of the municipal water system during bedrock coring. The concentration of chloroform in BH/MW24-1 is possibly sourced from the municipal water supply, as chloroform is often an additive to treated water. Therefore, it is assumed that chloroform is not present in the groundwater on the Site at concentrations which exceed the Table 7 SCS.

Based on these results, one or more of the PCAs identified in the Phase One ESA have resulted in soil impacts on the Phase Two property. Soil remediation is recommended during site redevelopment. None of the PCAs have resulted in groundwater impacts on the Phase Two property.

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

Devin Cloutier, B.Sc.
Environmental Scientist
Earth and Environment

Scott Lessard, B.Sc.
Project Manager
Earth and Environment

Chris Kimmerly, M. Sc., P. Geo.
Manager - Environmental
Earth and Environment

PROFESSIONAL GEOSCIENTIST
Christopher Thomas Kimmerly
PRACTISING MEMBER
0703
ONTARIO

6 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., *Geotechnical Investigation, Proposed Residential Development, 116 & 118 Carruthers Avenue, Ottawa, Ontario,* October 2024.
- EXP Services Inc., *Phase One Environmental Site Assessment –116-118 Carruthers Avenue, Ottawa, Ontario,* June 2024.
- 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, *Rules for Soil Management and Excess Soil Quality Standards,* 2020.
- Ontario Regulation 153/04, made under the *Environmental Protection Act*, as amended.
- Ontario Regulation 406/19, 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.

7 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 MA Precision Holding 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.

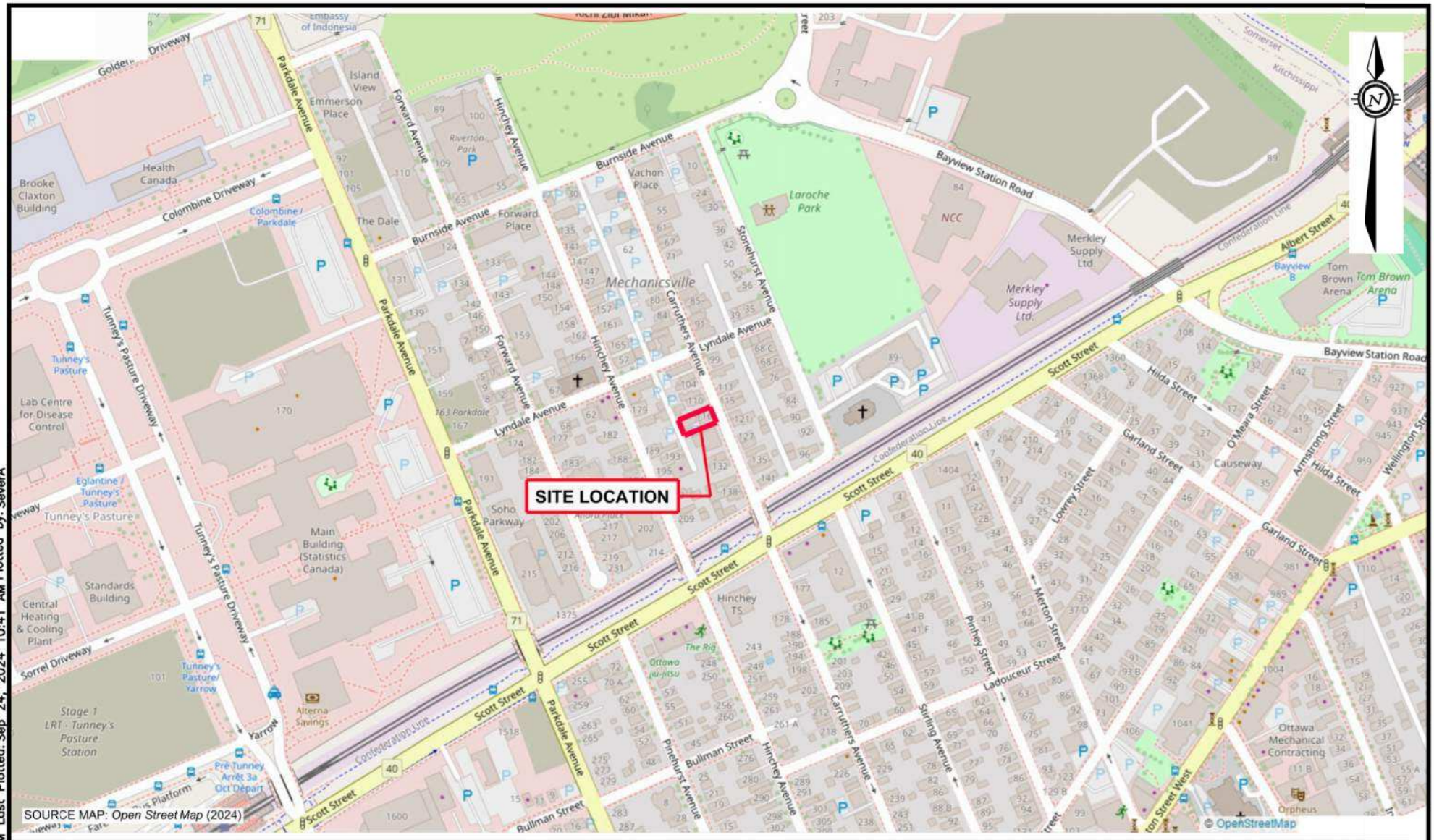
Use of Report

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

Where EXP has submitted both electronic file and a hard copy of the Report, or any document forming part of the Report, only the signed and sealed hard copy shall be the original documents for record and working purposes. In the event of a dispute or discrepancy, the hard copy shall govern. Electronic files transmitted by EXP utilize specific software and hardware systems. EXP makes no representation about the compatibility of these files with the Client's current or future software and hardware systems. Regardless of format, the documents described herein are EXP's instruments of professional service and shall not be altered without the written consent of EXP.

Appendix A: Figures



LEGEND

APPROXIMATE PROPERTY BOUNDARY

0 50m 100m 200m

HORIZONTAL 1:5,000

EXP Services Inc. www.exp.com
t: +1.613.688.1899 | f: +1.613.225.7337
2650 Queensview Drive, Suite 100
Ottawa, ON K2B 8H6, Canada

DATE: SEPTEMBER 2024	Client: MA Precision Holding Inc.116-118 Carruthers Ave.OTT		project no. OTT-24006545-B0
DESIGN: SL / DC	CHECKED: SL	PROJECT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT	scale 1:5,000
DRAWN BY: AS		TITLE: SITE LOCATION PLAN	FIG 1

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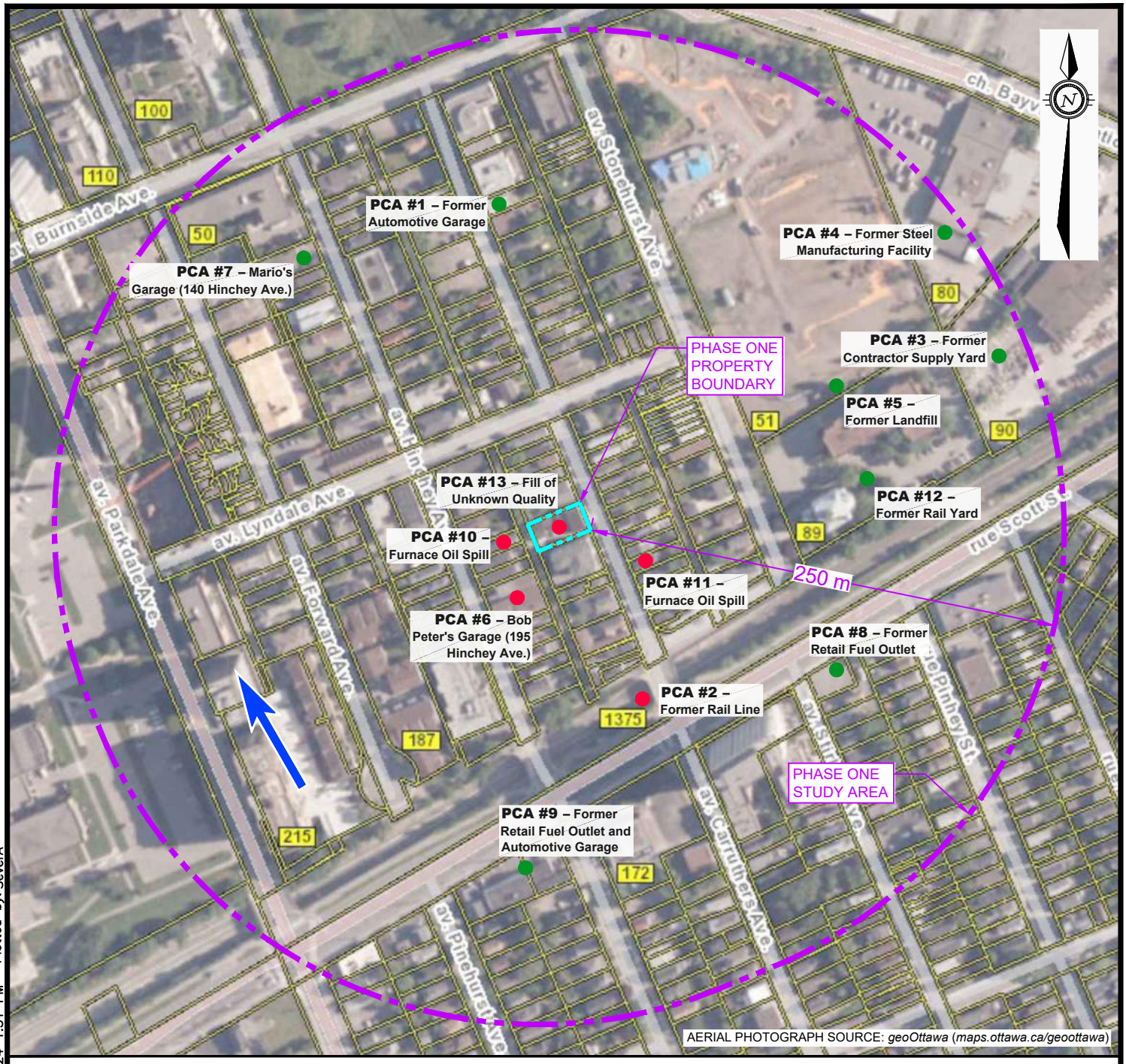

LEGEND

- PROPERTY BOUNDARY
- STUDY AREA (250m)
- INFERRED GROUNDWATER FLOW DIRECTION
- **PCA #1** POTENTIALLY CONTAMINATING ACTIVITY (PCA) NOT RESULTING IN APEC
- **PCA #2** POTENTIALLY CONTAMINATING ACTIVITY (PCA) RESULTING IN APEC

0 30m 60m 120m

HORIZONTAL 1:3,000

EXP Services Inc. www.exp.com
t: +1.613.688.1899 | f: +1.613.225.7337
2650 Queensview Drive, Suite 100
Ottawa, ON K2B 8H6, Canada

DATE: OCTOBER 2024	Client: MA Precision Holding Inc.116-118 Carruthers Ave.OTT	project no.: OTT-24006545-B0
DESIGN: SL / DC; CHECKED: CK	PROJECT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT	scale: 1:3,000
DRAWN BY: AS	TITLE: PHASE ONE CONCEPTUAL SITE MODEL	FIG 2

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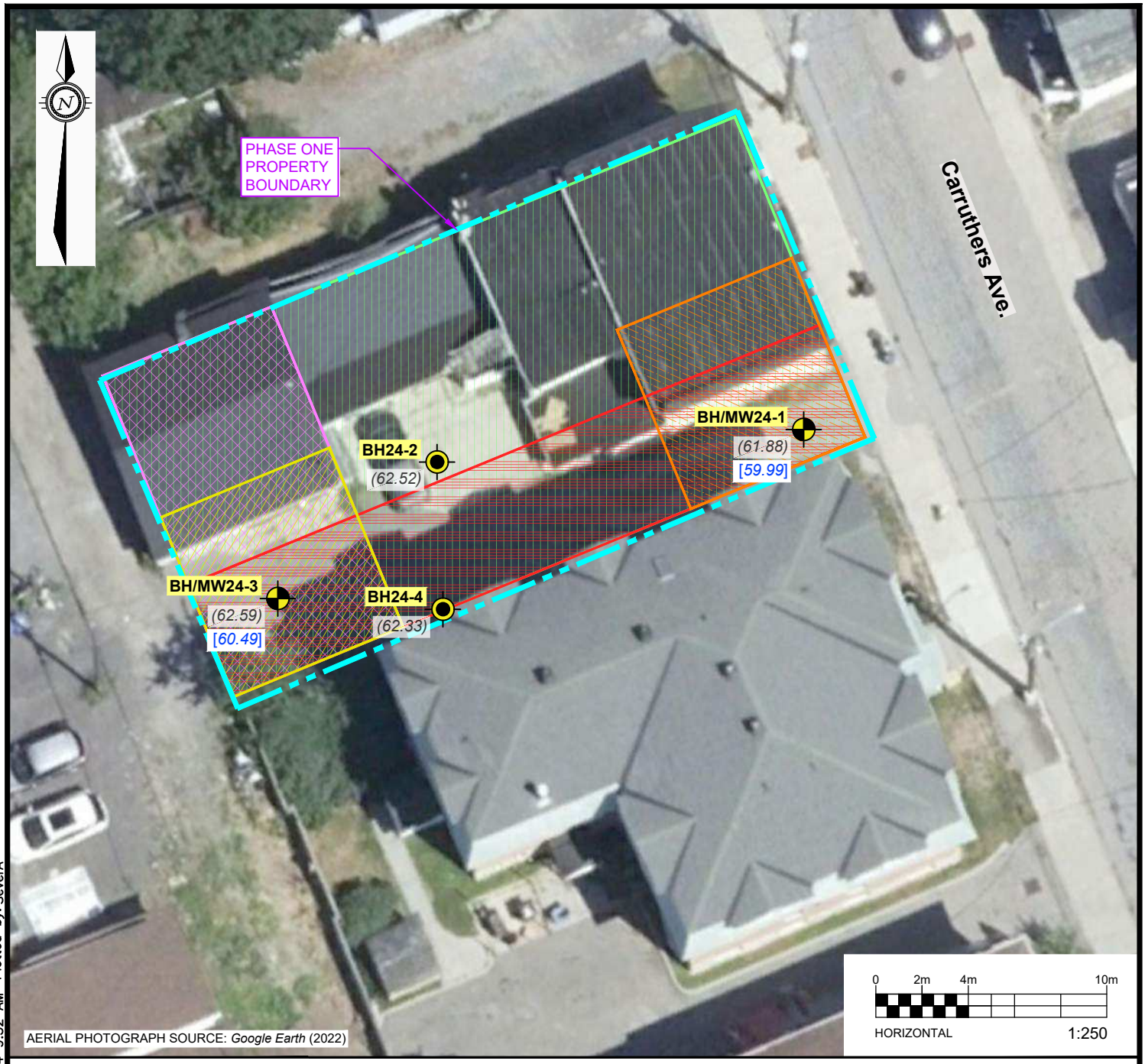

LEGEND

PROPERTY BOUNDARY

BH/MW24-01 BOREHOLE / MONITORING WELL NO. AND LOCATION

BH24-2 BOREHOLE NO. AND LOCATION

(61.88) GROUND SURFACE ELEVATION (m)

[59.99] GROUNDWATER LEVEL (m)

AREA OF POTENTIAL ENVIRONMENTAL CONCERN

APEC 1 – due to former Rail Line to the South

APEC 2 – due to current Automotive Garage located 30 meters South-West.

APEC 3 – due to Furnace Oil Spill to the West.

APEC 4 – due to Furnace Oil Spill to the South-East

APEC 5 – Entire Phase One Property

EXP Services Inc. **www.exp.com**
t: +1.613.688.1899 | f: +1.613.225.7337
2650 Queensview Drive, Suite 100
Ottawa, ON K2B 8H6, Canada

DATE: SEPTEMBER 2024	**Client: MA Precision Holding Inc.116-118 Carruthers Ave.OTT**	project no.: OTT-24006545-B0
DESIGN: SL / DC; CHECKED: SL	PROJECT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT	scale: 1:250
DRAWN BY: AS	TITLE: PHASE ONE PROPERTY - SITE PLAN	FIG 3

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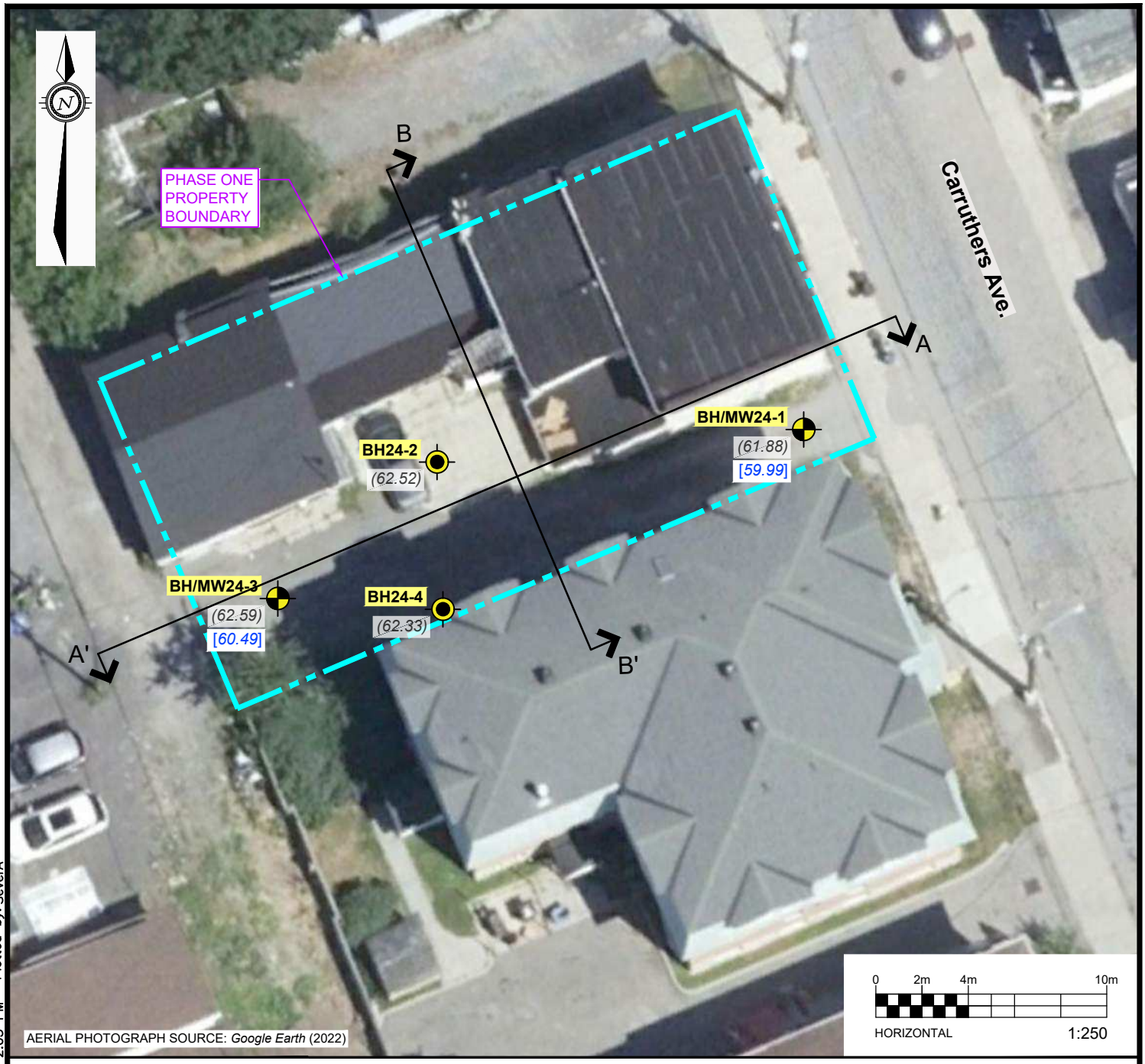

LEGEND

- PROPERTY BOUNDARY
- BH/MW24-01 — BOREHOLE / MONITORING WELL NO. AND LOCATION
- BH24-2 — BOREHOLE NO. AND LOCATION
- (61.88) — GROUND SURFACE ELEVATION (m)
- [59.99] — GROUNDWATER LEVEL (m)
- SECTION MARK

EXP Services Inc. www.exp.com
t: +1.613.688.1899 | f: +1.613.225.7337
2650 Queensview Drive, Suite 100
Ottawa, ON K2B 8H6, Canada

DATE: OCTOBER 2024	Client: MA Precision Holding Inc.116-118 Carruthers Ave.OTT	project no.: OTT-24006545-B0
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DRAWN BY: AS	TITLE: CROSS SECTION PLAN	FIG 4

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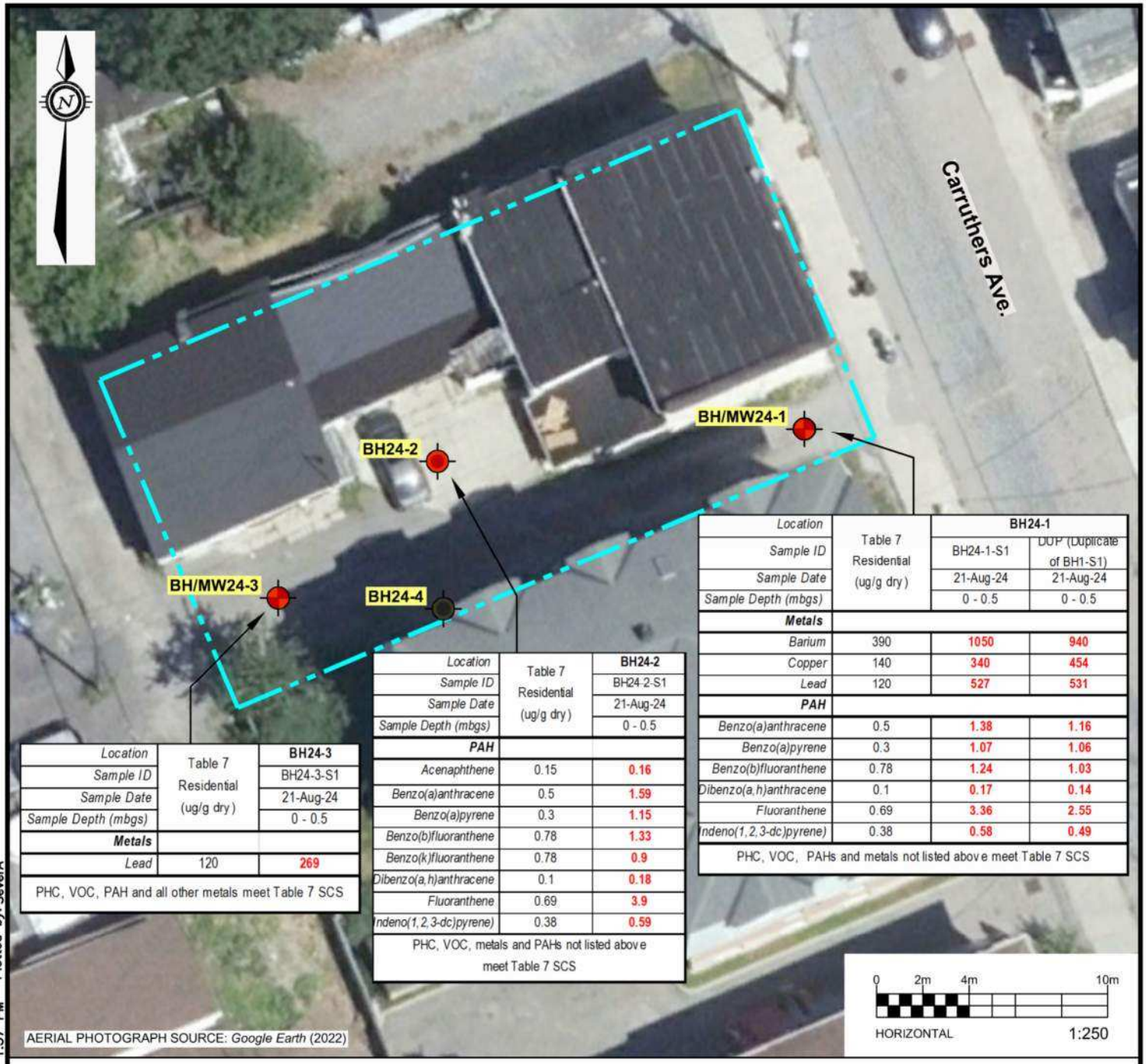

Location	Table 7 Residential (ug/g dry)	BH24-3
Sample ID		BH24-3-S1
Sample Date		21-Aug-24
Sample Depth (mbgs)		0 - 0.5
Metals		
Lead	120	269
PHC, VOC, PAH and all other metals meet Table 7 SCS		

Location	Table 7 Residential (ug/g dry)	BH24-2
Sample ID		BH24-2-S1
Sample Date		21-Aug-24
Sample Depth (mbgs)		0 - 0.5
PAH		
Acenaphthene	0.15	0.16
Benzo(a)anthracene	0.5	1.59
Benzo(a)pyrene	0.3	1.15
Benzo(b)fluoranthene	0.78	1.33
Benzo(k)fluoranthene	0.78	0.9
Dibenzo(a,h)anthracene	0.1	0.18
Fluoranthene	0.69	3.9
Indeno(1,2,3-dc)pyrene)	0.38	0.59
PHC, VOC, metals and PAHs not listed above meet Table 7 SCS		

Location	Table 7 Residential (ug/g dry)	BH24-1	
Sample ID		BH24-1-S1	DUP (Duplicate of BH1-S1)
Sample Date		21-Aug-24	21-Aug-24
Sample Depth (mbgs)		0 - 0.5	0 - 0.5
Metals			
Barium	390	1050	940
Copper	140	340	454
Lead	120	527	531
PAH			
Benzo(a)anthracene	0.5	1.38	1.16
Benzo(a)pyrene	0.3	1.07	1.06
Benzo(b)fluoranthene	0.78	1.24	1.03
Dibenzo(a,h)anthracene	0.1	0.17	0.14
Fluoranthene	0.69	3.36	2.55
Indeno(1,2,3-dc)pyrene)	0.38	0.58	0.49
PHC, VOC, PAHs and metals not listed above meet Table 7 SCS			

LEGEND

- PROPERTY BOUNDARY
- BH/MW24-01 — BOREHOLE / MONITORING WELL NO. AND LOCATION
- BH24-2 — BOREHOLE NO. AND LOCATION
- PARAMETERS TESTED DO NOT MEET REGULATORY STANDARDS (TABLE 7 RESIDENTIAL)
- PARAMETERS TESTED MEET REGULATORY STANDARDS (TABLE 7 RESIDENTIAL)
- NOT SAMPLED

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t: +1.613.688.1899 | f: +1.613.225.7337
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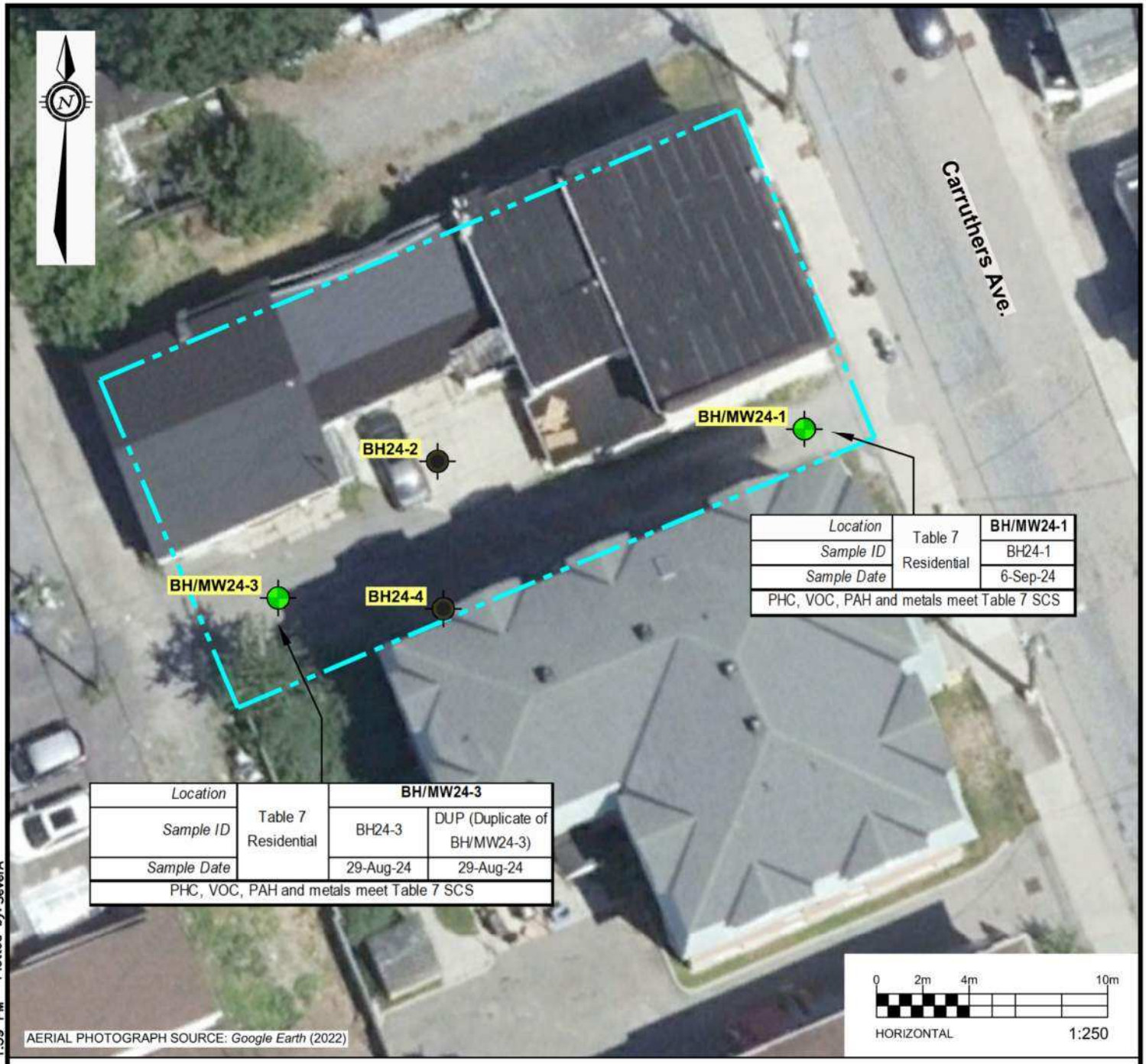
Ottawa, ON K2B 8H6, Canada

DATE: OCTOBER 2024	Client: MA Precision Holding Inc.116-118 Carruthers Ave.OTT	project no.: OTT-24006545-B0
DESIGN: SL / DC; CHECKED: CK	PROJECT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT	scale: 1:250
DRAWN BY: AS	TITLE: SOIL ANALYTICAL RESULTS: PHC, VOC, PAH & METALS	FIG 5

Filename: E:\OTT\OTT-24006545-B0\60 Execution\65 Drawings\OTT-24006545-B0_Ph-2_116-118-Carruthers-Ave.dwg
Last Saved: Oct 1, 2024 1:33 PM Last Plotted: Oct 1, 2024 1:37 PM Plotted by: SeverA



LEGEND

- PROPERTY BOUNDARY
- BH/MW24-01 — BOREHOLE / MONITORING WELL NO. AND LOCATION
- BH24-2 — BOREHOLE NO. AND LOCATION
- PARAMETERS TESTED DO NOT MEET REGULATORY STANDARDS (TABLE 7 RESIDENTIAL)
- PARAMETERS TESTED MEET REGULATORY STANDARDS (TABLE 7 RESIDENTIAL)
- NOT SAMPLED

EXP Services Inc. www.exp.com
t: +1.613.688.1899 | f: +1.613.225.7337
2650 Queensview Drive, Suite 100
Ottawa, ON K2B 8H6, Canada

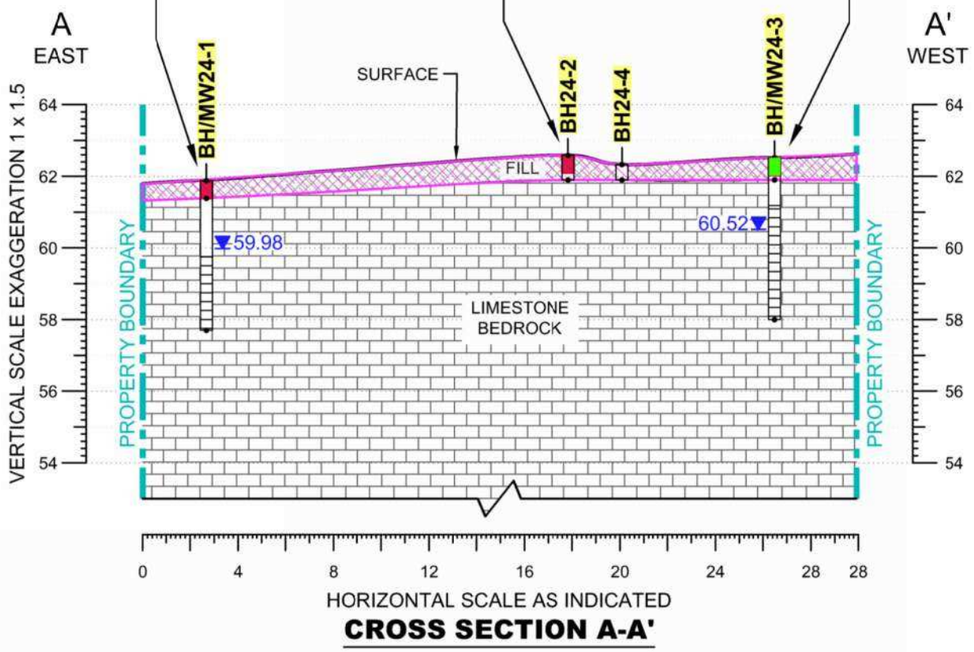
DATE: OCTOBER 2024	Client: MA Precision Holding Inc.116-118 Carruthers Ave.OTT	project no.: OTT-24006545-B0
DESIGN: SL / DC; CHECKED: CK	PROJECT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT	scale: 1:250
DRAWN BY: AS	TITLE: GROUNDWATER ANALYTICAL RESULTS: PHC, VOC, PAH & METALS	FIG 6

Filename: E:\OTT\OTT-24006545-B0\60 Execution\65 Drawings\OTT-24006545-B0_Ph-2_116-118-Carruthers-Ave.dwg
Last Saved: Oct 1, 2024 1:38 PM Last Plotted: Oct 1, 2024 1:39 PM Plotted by: SeverA

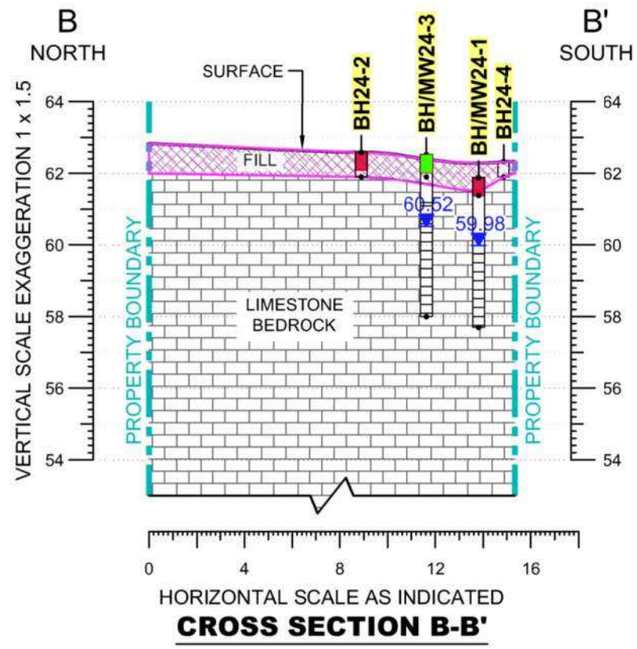
Location	Table 7 Residential (ug/g dry)	BH24-1	
Sample ID		BH24-1-S1	DUP (Duplicate of BH1-S1)
Sample Date		21-Aug-24	21-Aug-24
Sample Depth (mbgs)		0 - 0.5	0 - 0.5
PAH			
Benzo(a)anthracene	0.5	**1.38**	**1.16**
Benzo(a)pyrene	0.3	**1.07**	**1.06**
Benzo(b)fluoranthene	0.78	**1.24**	**1.03**
Dibenzo(a,h)anthracene	0.1	**0.17**	**0.14**
Fluoranthene	0.69	**3.36**	**2.55**
Indeno(1,2,3-dc)pyrene)	0.38	**0.58**	**0.49**
PHC, VOC, PAHs and metals not listed above meet Table 7 SCS			

Location	Table 7 Residential (ug/g dry)	BH24-2
Sample ID		BH24-2-S1
Sample Date		21-Aug-24
Sample Depth (mbgs)		0 - 0.5
PAH		
Acenaphthene	0.15	**0.16**
Benzo(a)anthracene	0.5	**1.59**
Benzo(a)pyrene	0.3	**1.15**
Benzo(b)fluoranthene	0.78	**1.33**
Benzo(k)fluoranthene	0.78	**0.9**
Dibenzo(a,h)anthracene	0.1	**0.18**
Fluoranthene	0.69	**3.9**
Indeno(1,2,3-dc)pyrene)	0.38	**0.59**
PHC, VOC, metals and PAHs not listed above meet Table 7 SCS		

Location	Table 7 Residential (ug/g dry)	BH24-3
Sample ID		BH24-3-S1
Sample Date		21-Aug-24
Sample Depth (mbgs)		0 - 0.5
All PAH meets Table 7 SCS		



CROSS SECTION A-A'



CROSS SECTION B-B'

0 2m 4m 10m

HORIZONTAL 1:250

LEGEND

- PROPERTY BOUNDARIES
- GROUNDWATER LEVEL (2024)
- SOIL QUALITY MEETS MECP TABLE 7 SCS
- SOIL QUALITY EXCEEDS MECP TABLE 7 SCS
- ESTIMATED AREA OF IMPACTED SOIL

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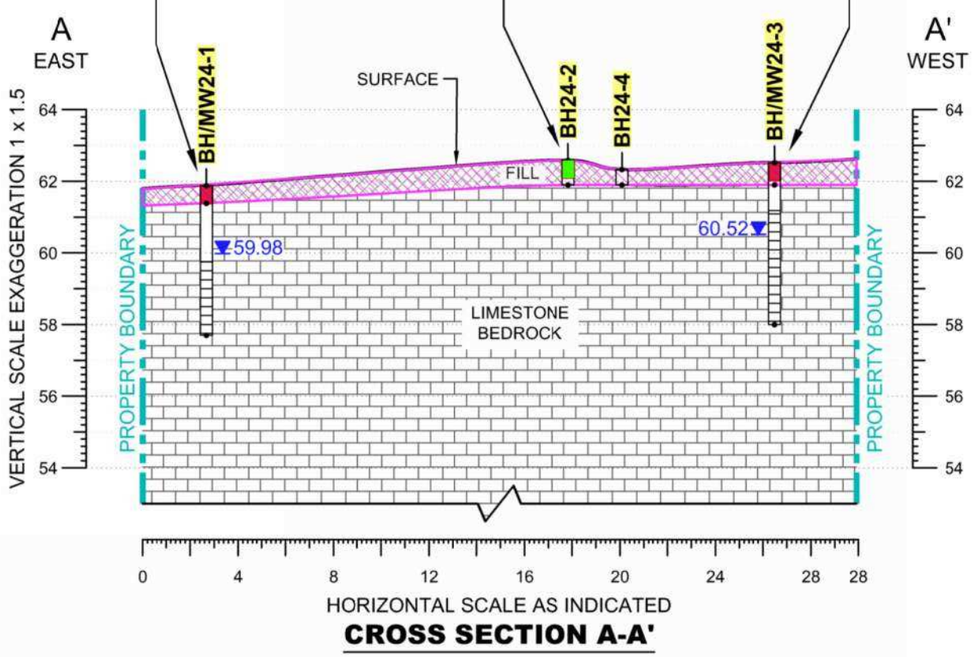
DATE: OCTOBER 2024	Client: MA Precision Holding Inc.116-118 Carruthers Ave.OTT		project no. OTT-24006545-B0
DESIGN: SL / DC	CHECKED: CK	PROJECT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT	scale 1:250
DRAWN BY: AS		TITLE: CROSS SECTIONS A-A' & B-B', ANALYTICAL RESULTS - PAH	FIG 7

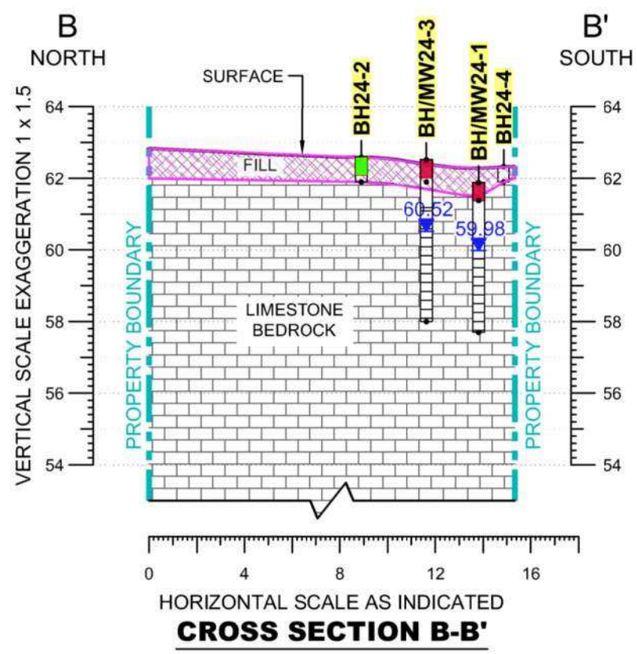
Location	Table 7 Residential (ug/g dry)	BH24-1	
Sample ID		BH24-1-S1	DUP (Duplicate of BH1-S1)
Sample Date		21-Aug-24	21-Aug-24
Sample Depth (mbgs)		0 - 0.5	0 - 0.5
Metals			
Barium	390	1050	940
Copper	140	340	454
Lead	120	527	531
Metals not listed above meet Table 7 SCS			

Location	Table 7 Residential (ug/g dry)	BH24-2
Sample ID		BH24-2-S1
Sample Date		21-Aug-24
Sample Depth (mbgs)		0 - 0.5
All Metals meet Table 7 SCS		

Location	Table 7 Residential (ug/g dry)	BH24-3
Sample ID		BH24-3-S1
Sample Date		21-Aug-24
Sample Depth (mbgs)		0 - 0.5
Metals		
Lead	120	269
All other Metals meet Table 7 SCS		



CROSS SECTION A-A'



CROSS SECTION B-B'

0 2m 4m 10m

HORIZONTAL 1:250

LEGEND

- PROPERTY BOUNDARIES
- GROUNDWATER LEVEL (2024)
- SOIL QUALITY MEETS MECP TABLE 7 SCS
- SOIL QUALITY EXCEEDS MECP TABLE 7 SCS
- ESTIMATED AREA OF IMPACTED SOIL

EXP Services Inc. www.exp.com
t: +1.613.688.1899 | f: +1.613.225.7337
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DATE: OCTOBER 2024	Client: MA Precision Holding Inc.116-118 Carruthers Ave.OTT		project no. OTT-24006545-B0
DESIGN: SL / DC	CHECKED: CK	PROJECT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT	scale 1:250
DRAWN BY: AS		TITLE: CROSS SECTIONS A-A' & B-B', ANALYTICAL RESULTS - METALS	FIG 8

Filename: E:\OTT\OTT-24006545-B0\60 Execution\65 Drawings\OTT-24006545-B0_Ph-2_116-118-Carruthers-Ave.dwg
Last Saved: Oct 2, 2024 4:02 PM Last Plotted: Oct 2, 2024 4:03 PM Plotted by: SeverA

Appendix B: Borehole Logs

Log of Borehole BH/MW24-01

Project No: OTT-24006545-B0

Project: Proposed Residential Development

Location: 116 & 118 Carruthers Avenue, Ottawa, ON

Figure No. 3

Page. 1 of 1

Date Drilled: 'August 21, 2024

Drill Type: Portable Drill Rig

Datum: Geodetic Elevation

Logged by: J.E. Checked by: M.Z.

Split Spoon Sample ⊠ | Auger Sample ◧ | SPT (N) Value ○ | Dynamic Cone Test —— | Shelby Tube ■ | Shear Strength by Vane Test +S

Combustible Vapour Reading □ | Natural Moisture Content × | Atterberg Limits ⊢○⊣ | Undrained Triaxial at % Strain at Failure ⊕ | Shear Strength by Penetrometer Test ▲

GWL	SYMBOL	SOIL DESCRIPTION	Geodetic Elevation m	Depth	Standard Penetration Test N Value (20 40 60 80) / Shear Strength kPa (50 100 150 200)	Combustible Vapour Reading (ppm) (250 500 750) / Natural Moisture Content % Atterberg Limits (% Dry Weight) (20 40 60)	SAMPLES	Natural Unit Wt. kN/m³
		GRANULAR FILL ~500 mm thick Silty sand with gravel, brown, moist, no odours, no stains, (loose)	61.88	0	9	0	SS1	
		HIGHLY WEATHERED LIMESTONE BEDROCK Grey, very poor quality	61.4	1			RUN 1	
		Rock core barrel dropped from 1.3 m to 1.5 m depths due to possible 180 mm thick void at 1.3 m depth						
		LIMESTONE BEDROCK Grey, excellent quality	60.2	2			RUN 2 26.6	
			59.98					
				3			RUN 3	
				4			RUN 4 26.6	
		Borehole Terminated at 4.2 m Depth	57.7					

LOG OF BOREHOLE BH LOGS-116 CARRUTHERS.GPJ TROW OTTAWA.GDT 10/1/24

NOTES:

1. Borehole data requires interpretation by EXP before use by others
2. A 32 mm diameter monitoring well was installed as shown.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24006545-B0

WATER LEVEL RECORDS

Date	Water Level (m)	Hole Open To (m)
Sept. 6, 2024	1.9	

CORE DRILLING RECORD

Run No.	Depth (m)	% Rec.	RQD %
1	0.5 - 1.7	73	0
2	1.7 - 2.3	96	93
3	2.3 - 3.3	97	97
4	3.3 - 4.2	94	94

Log of Borehole BH24-02

Project No: OTT-24006545-B0

Project: Proposed Residential Development

Location: 116 & 118 Carruthers Avenue, Ottawa, ON

Figure No. 4

Page. 1 of 1

Date Drilled: 'August 20, 2024

Drill Type: Portable Drill Rig

Datum: Geodetic Elevation

Logged by: J.E. Checked by: M.Z.

Split Spoon Sample ⊠
Auger Sample ◧
SPT (N) Value ○
Dynamic Cone Test ——
Shelby Tube ■
Shear Strength by Vane Test +S

Combustible Vapour Reading □
Natural Moisture Content ×
Atterberg Limits ⊢○
Undrained Triaxial at % Strain at Failure ⊕
Shear Strength by Penetrometer Test ▲

GWL	SYMBOL	SOIL DESCRIPTION	Geodetic Elevation m	Depth	Standard Penetration Test N Value / Shear Strength kPa	Combustible Vapour Reading (ppm) / Natural Moisture Content % / Atterberg Limits (% Dry Weight)	SAMPLES	Natural Unit Wt. kN/m³
		GRANULAR FILL Silty sand with gravel, brown, moist, no odours, no stains, (loose)	62.52	0	6	0	SS1	
			61.8		50 for 127mm		SS2	
		Casing Refusal at 0.7 m Depth						

NOTES:
1. Borehole data requires interpretation by EXP before use by others
2. The borehole was backfilled upon completion.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24006545-B0

WATER LEVEL RECORDS

Date	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD

Run No.	Depth (m)	% Rec.	RQD %

LOG OF BOREHOLE BH LOGS-116 CARRUTHERS.GPJ TROW OTTAWA.GDT 10/1/24

Log of Borehole BH/MW24-03

Project No: OTT-24006545-B0

Project: Proposed Residential Development

Location: 116 & 118 Carruthers Avenue, Ottawa, ON

Figure No. 5

Page. 1 of 1

Date Drilled: 'August 20, 2024

Drill Type: Portable Drill Rig

Datum: Geodetic Elevation

Logged by: J.E. Checked by: M.Z.

Split Spoon Sample ⊠ | Auger Sample ◧ | SPT (N) Value ○ | Dynamic Cone Test —— | Shelby Tube ■ | Shear Strength by Vane Test +S

Combustible Vapour Reading □ | Natural Moisture Content × | Atterberg Limits ⊢○ | Undrained Triaxial at % Strain at Failure ⊕ | Shear Strength by Penetrometer Test ▲

GWL	SYMBOL	SOIL DESCRIPTION	Geodetic Elevation m	Depth	Standard Penetration Test N Value (20 40 60 80) / Shear Strength kPa (50 100 150 200)	Combustible Vapour Reading (ppm) (250 500 750) / Natural Moisture Content % Atterberg Limits (% Dry Weight) (20 40 60)	SAMPLES	Natural Unit Wt. kN/m³
		GRANULAR FILL ~600 mm thick Silty sand with gravel, brown, damp, no odours, no stains, (compact)	62.59	0	22	0	SS1	
		LIMESTONE BEDROCK Grey, good to excellent quality	62.0	1			RUN 1	26.9
			60.59	2				
				3			RUN 2	26.7
				4				
		Borehole Terminated at 4.5 m Depth	58.1					

LOG OF BOREHOLE BH LOGS-116 CARRUTHERS.GPJ TROW OTTAWA.GDT 10/1/24

NOTES:

1. Borehole data requires interpretation by EXP before use by others
2. A 32 mm diameter monitoring well was installed as shown.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24006545-B0

WATER LEVEL RECORDS

Date	Water Level (m)	Hole Open To (m)
Sept. 6, 2024	2.0	

CORE DRILLING RECORD

Run No.	Depth (m)	% Rec.	RQD %
1	0.6 - 2.4	100	83
2	2.4 - 4.5	100	98

Log of Borehole BH24-04

Project No: OTT-24006545-B0

Project: Proposed Residential Development

Location: 116 & 118 Carruthers Avenue, Ottawa, ON

Figure No. 6

Page. 1 of 1

Date Drilled: 'August 20, 2024

Drill Type: Portable Drill Rig

Datum: Geodetic Elevation

Logged by: J.E. Checked by: M.Z.

Split Spoon Sample ⊠ | Auger Sample ▮▯ | SPT (N) Value ○ | Dynamic Cone Test ——— | Shelby Tube ■ | Shear Strength by Vane Test +S

Combustible Vapour Reading □ | Natural Moisture Content × | Atterberg Limits ⊢○ | Undrained Triaxial at % Strain at Failure ⊕ | Shear Strength by Penetrometer Test ▲

GWL	SYMBOL	SOIL DESCRIPTION	Geodetic Elevation m	Depth	Standard Penetration Test N Value (20 40 60 80) / Shear Strength kPa (50 100 150 200)	Combustible Vapour Reading (ppm) (250 500 750) / Natural Moisture Content % Atterberg Limits (% Dry Weight) (20 40 60)	SAMPLES	Natural Unit Wt. kN/m³
		GRANULAR FILL Silty sand with gravel, brown, moist, no odours, no stains, (compact)	62.33	0	27	0	SS1	
			61.9					
		Casing Refusal at 0.4 m Depth						

LOG OF BOREHOLE BH LOGS-116 CARRUTHERS.GPJ TROW OTTAWA.GDT 10/1/24

NOTES:

1. Borehole data requires interpretation by EXP before use by others
2. The borehole was backfilled upon completion.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24006545-B0

WATER LEVEL RECORDS		
Date	Water Level (m)	Hole Open To (m)

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

Appendix C: Analytical Summary Tables

Table 1 Soil Analytical Results - PHC
116-118 Carruthers, Ottawa

Parameter (µg/g)	MECP Table 7[1]	BH24-1-S1	BH24-2-S1	BH24-3-S1	DUP (duplicate of BH24-1-S1)
Sample Date (d/m/y)	Residential	21/08/24	21/08/24	21/08/24	21/08/24
Sample Depth (mbg)		0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
PHC F_1 (>C_6-C_{10})	55	<7	<7	<7	<7
PHC F_2 (>C_{10}-C_{16})	98	<4	<4	<4	<4
PHC F_3 (>C_{16}-C_{34})	300	22	35	50	22
PHC F_4 (>C_{34}-C_{50})	2800	<6	<6	26	6

NOTES:

1	MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the EPA, April 2011, Table 7 non potable residential standards, coarse textured soil.
Shaded	Concentration exceeds MECP Table 7 residential soil quality standard.
N/A	Not analyzed

Table 2 Soil Analytical Results - VOC
116-118 Carruthers, Ottawa

Parameter (µg/g)	MECP Table 7[1]	BH24-1-S1	BH24-2-S1	BH24-3-S1	DUP (duplicate of BH24-1-S1)
Sample Date (d/m/y)	Residential	21/08/24	21/08/24	21/08/24	21/08/24
Sample Depth (mbsg)		0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
Acetone	16	<0.5	<0.5	<0.5	<0.5
Benzene	0.21	<0.02	<0.02	0.10	<0.02
Bromodichloromethane	13	<0.05	<0.05	<0.05	<0.05
Bromoform	0.27	<0.05	<0.05	<0.05	<0.05
Bromomethane	0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	0.05	<0.05	<0.05	<0.05	<0.05
Chlorobenzene	2.4	<0.05	<0.05	<0.05	<0.05
Chloroform	0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	9.4	<0.05	<0.05	<0.05	<0.05
Dichlorodifluoromethane	16	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	3.4	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	4.8	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	0.083	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	3.5	<0.05	<0.05	<0.05	<0.05
1,2-Dichloroethane	0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethylene	0.05	<0.05	<0.05	<0.05	<0.05
Cis-1,2-Dichloroethylene	3.4	<0.05	<0.05	<0.05	<0.05
Trans-1,2-Dichloroethylene	0.084	<0.05	<0.05	<0.05	<0.05
1,2-Dichloropropane	0.05	<0.05	<0.05	<0.05	<0.05
Cis-1,3-Dichloropropylene	0.05	<0.05	<0.05	<0.05	<0.05
Trans-1,3-Dichloropropylene		<0.05	<0.05	<0.05	<0.05
Ethylbenzene	2	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	0.05	<0.05	<0.05	<0.05	<0.05
Hexane	2.8	<0.05	<0.05	<0.05	<0.05
Methyl Ethyl Ketone	16	<0.50	<0.50	<0.50	<0.50
Methylene Chloride	0.1	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	1.7	<0.50	<0.50	<0.50	<0.50
Methyl-t-Butyl Ether	0.75	<0.05	<0.05	<0.05	<0.05
Styrene	0.7	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	0.058	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	0.05	<0.05	<0.05	<0.05	<0.05
Tetrachloroethylene	0.28	<0.05	<0.05	<0.05	<0.05
Toluene	2.3	<0.05	<0.05	0.35	<0.05
1,1,1-Trichloroethane	0.38	<0.05	<0.05	<0.05	<0.05
1,1,2-Trichloroethane	0.05	<0.05	<0.05	<0.05	<0.05
Trichloroethylene	0.061	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	4	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	0.02	<0.02	<0.02	<0.02	<0.02
Total Xylenes	3.1	<0.05	<0.05	0.26	<0.05

NOTES:

1 MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the EPA, April 2011, Table 7 non potable residential standards, coarse textured soil.

Shaded Concentration exceeds MECP Table 7 residential soil quality standard.

NV No Value

Table 3 Soil Analytical Results - Metals
116-118 Carruthers, Ottawa

Parameter (µg/g)	MECP Table 7[1]	BH24-1-S1	BH24-2-S1	BH24-3-S1	DUP (duplicate of BH24-1-S1)
Sample Date (d/m/y)	Residential	21/08/24	21/08/24	21/08/24	21/08/24
Sample Depth (mbsg)		0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
Antimony	7.5	6.7	<1.0	1.2	4.4
Arsenic	18	7.9	2.9	4.5	8.3
Barium	390	1050	120	118	940
Beryllium	4	0.6	<0.5	<0.5	0.6
Boron	120	7.2	7.9	8.4	7.4
Cadmium	1.2	<0.5	<0.5	0.7	0.5
Chromium	160	19.3	13.1	15.4	19.5
Cobalt	22	8.2	4.2	4.1	8.4
Copper	140	340	25	59.5	454
Lead	120	527	90.4	269	531
Molybdenum	6.9	2.1	<1.0	1.8	2.1
Nickel	100	20.6	11.5	12.3	21.8
Selenium	2.4	1.0	<1.0	<1.0	1.1
Silver	20	0.4	<0.3	<0.3	0.4
Thallium	1	<1.0	<1.0	<1.0	<1.0
Uranium	23	<1.0	<1.0	<1.0	<1.0
Vanadium	86	26.1	12.3	21.2	26.5
Zinc	340	247	78.1	96.2	292

NOTES:

1 MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the EPA, April 2011, Table 7 non potable residential standards, coarse textured soil.

Shaded Concentration exceeds MECP Table 7 residential soil quality standard.

Table 4 Soil Analytical Results - PAH
116-118 Carruthers, Ottawa

Parameter (µg/g)	MECP Table 7[1]	BH24-1-S1	BH24-2-S1	BH24-3-S1	DUP (duplicate of BH24-1-S1)
Sample Date (d/m/y)	Residential	21/08/24	21/08/24	21/08/24	21/08/24
Sample Depth (mbsg)		0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
Acenaphthene	7.9	0.14	0.17	ND (0.02)	0.10
Acenaphthylene	0.15	0.11	0.16	0.05	0.14
Anthracene	0.67	0.44	0.58	0.08	0.38
Benzo[a]anthracene	0.5	1.38	1.59	0.25	1.16
Benzo[a]pyrene	0.3	1.07	1.15	0.21	1.06
Benzo[b]fluoranthene	0.78	1.24	1.33	0.27	1.03
Benzo[g,h,i]perylene	6.6	0.61	0.61	0.18	0.51
Benzo[k]fluoranthene	0.78	0.78	0.90	0.16	0.65
Chrysene	7	1.38	1.57	0.24	1.18
Dibenzo[a,h]anthracene	0.1	0.17	0.18	0.04	0.14
Fluoranthene	0.7	3.36	3.90	0.57	2.55
Fluorene	62	0.10	0.20	<0.02	0.09
Indeno[1,2,3-cd]pyrene	0.38	0.58	0.59	0.14	0.49
1-Methylnaphthalene	0.99	<0.02	0.04	<0.02	<0.02
2-Methylnaphthalene		<0.02	0.06	0.02	<0.02
Naphthalene	0.6	0.02	0.21	0.02	0.02
Phenanthrene	6.2	1.75	2.33	0.29	1.35
Pyrene	78	2.86	3.09	0.48	2.29

NOTES:

1 MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the EPA, April 2011, Table 7 non potable residential standards, coarse textured soil.

Shaded Concentration exceeds MECP Table 7 residential soil quality standard.

Table 5 Groundwater Analytical Results - PHC
116-118 Carruthers, Ottawa

Parameter (µg/L)	MECP Table 7[1]	BH/MW24-3	DUP	BH/MW24-1
Sample Date (d/m/y)		29/8/24	29/8/24	6/9/24
PHC F_1 (C_6-C_{10})	420	<25	<25	<25
PHC F_2 (>C_{10}-C_{16})	150	<171	<100	<100
PHC F_3 (>C_{16}-C_{34})	500	<171	<100	<100
PHC F_4 (>C_{34}-C_{50})	500	<171	<100	<100

NOTES:

1	MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the EPA, April 2011, Table 7 non potable residential standards, coarse textured soil.
Shaded	Concentration exceeds MECP Table 7 groundwater quality standard.

Table 6 Groundwater Analytical Results - VOC
116-118 Carruthers, Ottawa

Parameter (µg/L)	MECP	BH/MW24-3	DUP	BH/MW24-1
Sample Date (d/m/y)	Table 7[1]	29/8/24	29/8/24	6/9/24
Acetone	100,000	<5.0	<5.0	<5.0
Benzene	0.5	<0.5	<0.5	<0.5
Bromodichloromethane	67,000	<0.5	<0.5	0.5
Bromoform	5	<0.5	0.5	<0.5
Bromomethane	0.89	<0.5	<0.5	<0.5
Carbon Tetrachloride	0.20	<0.2	<0.2	<0.2
Chlorobenzene	140	<0.5	<0.5	<0.5
Chloroform	2	0.8	0.8	9.8
Dibromochloromethane	65,000	<0.5	<0.5	<0.5
Dichlorodifluoromethane	3,500	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	150	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	7,600	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	11	<0.5	<0.5	<0.5
1,2-Dichloroethane	0.5	<0.5	<0.5	<0.5
1,1-Dichloroethylene	0.5	<0.5	<0.5	<0.5
Cis-1,2-Dichloroethylene	1.6	<0.5	<0.5	<0.5
Trans-1,2-Dichloroethylene	1.6	<0.5	<0.5	<0.5
1,2-Dichloropropane	1	<0.5	<0.5	<0.5
Cis-1,3-Dichloropropylene	0.5	<0.5	<0.5	<0.5
Trans-1,3-Dichloropropylene				
Ethylbenzene	54	<0.5	<0.5	<0.5
Ethylene Dibromide	0.20	<0.2	<0.2	<0.2
Hexane	5	<1.0	<1.0	<1.0
Methyl Ethyl Ketone	21,000	<5.0	<5.0	<5.0
Methylene Chloride	5,200	<5.0	<5.0	<5.0
Methyl Isobutyl Ketone	15	<5.0	<5.0	<5.0
Methyl-t-Butyl Ether	26	<2.0	<2.0	<2.0
Styrene	43	<0.5	<0.5	<0.5
1,1,1,2-Tetrachloroethane	1.1	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	0.5	<0.5	<0.5	<0.5
Tetrachloroethylene	0.5	<0.5	<0.5	<0.5
Toluene	320	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	23	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	0.5	<0.5	<0.5	<0.5
Trichloroethylene	0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	2,000	<1.0	<1.0	<1.0
Vinyl Chloride	0.5	<0.5	<0.5	<0.5
Total Xylenes	72	<0.5	<0.5	<0.5

NOTES:

1 MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the EPA, April 2011, Table 7 non potable residential standards, coarse textured soil.

Shaded Concentration exceeds MECP Table 7 groundwater quality standard.

TABLE 7 Groundwater Analytical Results - Metals
116-118 Carruthers, Ottawa

Parameter (µg/L)	MECP Table 7[1]	BH/MW24-3	DUP	BH/MW24-1
Sample Date (d/m/y)	**Residential**	29/8/24	29/8/24	9/6/24
Antimony	16000	1.1	1.1	4.1
Arsenic	1500	<1	<1	1
Barium	23000	274	280	39
Beryllium	53	<0.5	<0.5	<0.5
Boron	36000	137	137	322
Cadmium	2.1	<0.1	<0.1	<0.1
Chromium	640	<1	<1	<1
Cobalt	52	1.7	1.7	22.4
Copper	69	3	2.8	4.7
Lead	20	0.1	0.1	<0.1
Molybdenum	7300	3.8	3.9	7.4
Nickel	390	3	2	1
Selenium	50	<1	<1	12
Silver	1.2	<0.1	<0.1	<0.1
Sodium	1800000	124000	126000	128000
Thallium	400	0.5	0.5	0.1
Uranium	330	1.7	1.7	0.8
Vanadium	200	<0.5	0.5	1.4
Zinc	890	<5	<5	<5

NOTES:

1	MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the EPA, April 2011, Table 7 non potable residential standards, coarse textured soil.
Shaded	Concentration exceeds MECP Table 7 residential groundwater quality standard.

TABLE 8 Groundwater Analytical Results - PAH
116-118 Carruthers, Ottawa

Parameter (µg/g)	MECP Table 7[1]	BH/MW24-3	DUP	BH/MW24-1
Sample Date (d/m/y)	**Residential**	29/8/24	29/8/24	6/9/24
Acenaphthene	17	<0.11	<0.11	<0.10
Acenaphthylene	1	<0.11	<0.11	<0.10
Anthracene	1	<0.02	<0.02	<0.02
Benzo[a]anthracene	1.8	<0.02	<0.02	<0.02
Benzo[a]pyrene	0.81	<0.02	<0.02	<0.02
Benzo[b]fluoranthene	0.75	<0.11	<0.11	<0.10
Benzo[g,h,i]perylene	0.2	<0.11	<0.11	<0.10
Benzo[k]fluoranthene	0.4	<0.11	<0.11	<0.10
Chrysene	0.7	<0.11	<0.11	<0.10
Dibenzo[a,h]anthracene	0.4	<0.11	<0.11	<0.10
Fluoranthene	44	<0.02	<0.02	<0.02
Fluorene	290	<0.11	<0.11	<0.10
Indeno[1,2,3-cd]pyrene	0.2	<0.11	<0.11	<0.10
1-Methylnaphthalene	15000	<0.22	<0.22	<0.20
2-Methylnaphthalene				
Naphthalene	7	<0.11	<0.11	<0.10
Phenanthrene	380	<0.11	<0.11	<0.10
Pyrene	5.7	<0.02	<0.02	<0.02

NOTES:

1 MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the EPA, April 2011, Table 7 non potable residential standards, coarse textured soil.

Shaded Concentration exceeds MECP Table 7 residential groundwater quality standard.

Table 9 Maximum Concentrations in Soil

116-118 Carruthers Avenue, Ottawa, Ontario

Parameter	Sample Location	Sampling Date	Sampling Depth (mbgs)	Maximum Concentration	MECP Table 7 Residential [1]
Petroleum Hydrocarbons					
F1 PHC (C6-C10)	All sample locations	21-Aug-24	0 - 0.5	<7	55
F2 PHC (C10-C16)	All sample locations	21-Aug-24	0 - 0.5	<4	98
F3 PHC (C16-C34)	BH24-3-S1	21-Aug-24	0 - 0.5	50	300
F4 PHC (C34-C50)	BH24-3-S1	21-Aug-24	0 - 0.5	26	2800
Volatile Organic Compounds					
Acetone	All sample locations	21-Aug-24	0 - 0.5	<0.50	16
Benzene	BH24-3-S1	21-Aug-24	0 - 0.5	0.1	0.21
Bromodichloromethane	All sample locations	21-Aug-24	0 - 0.5	<0.05	13
Bromoform	All sample locations	21-Aug-24	0 - 0.5	<0.05	0.27
Bromomethane	All sample locations	21-Aug-24	0 - 0.5	<0.05	0.05
Carbon Tetrachloride	All sample locations	21-Aug-24	0 - 0.5	<0.05	0.05
Chlorobenzene	All sample locations	21-Aug-24	0 - 0.5	<0.05	2.4
Chloroform	All sample locations	21-Aug-24	0 - 0.5	<0.05	0.05
Dibromochloromethane	All sample locations	21-Aug-24	0 - 0.5	<0.05	9.4
Dichlorodifluoromethane	All sample locations	21-Aug-24	0 - 0.5	<0.05	16
1,2-Dichlorobenzene	All sample locations	21-Aug-24	0 - 0.5	<0.05	3.4
1,3-Dichlorobenzene	All sample locations	21-Aug-24	0 - 0.5	<0.05	5
1,4-Dichlorobenzene	All sample locations	21-Aug-24	0 - 0.5	<0.05	0.083
1,1-Dichloroethane	All sample locations	21-Aug-24	0 - 0.5	<0.05	4
1,2-Dichloroethane	All sample locations	21-Aug-24	0 - 0.5	<0.05	0.05
1,1-Dichloroethylene	All sample locations	21-Aug-24	0 - 0.5	<0.05	0.05
cis-1,2-Dichloroethylene	All sample locations	21-Aug-24	0 - 0.5	<0.05	3.4
trans-1,2-Dichloroethylen	All sample locations	21-Aug-24	0 - 0.5	<0.05	0.084
1,2-Dichloropropane	All sample locations	21-Aug-24	0 - 0.5	<0.05	0.050
1,3-Dichloropropene, tota	All sample locations	21-Aug-24	0 - 0.5	<0.05	0.05
Ethylbenzene	All sample locations	21-Aug-24	0 - 0.5	<0.05	2
Ethylene dibromide (dibro	All sample locations	21-Aug-24	0 - 0.5	<0.05	0.05
Hexane	All sample locations	21-Aug-24	0 - 0.5	<0.05	3
Methyl Ethyl Ketone (2-Bu	All sample locations	21-Aug-24	0 - 0.5	<0.50	16
Methyl Isobutyl Ketone	All sample locations	21-Aug-24	0 - 0.5	<0.50	0.1
Methyl tert-butyl ether	All sample locations	21-Aug-24	0 - 0.5	<0.05	1.7
Methylene Chloride	All sample locations	21-Aug-24	0 - 0.5	<0.05	0.75
Styrene	All sample locations	21-Aug-24	0 - 0.5	<0.05	0.7
1,1,1,2-Tetrachloroethane	All sample locations	21-Aug-24	0 - 0.5	<0.05	0.058
1,1,2,2-Tetrachloroethane	All sample locations	21-Aug-24	0 - 0.5	<0.05	0.05
Tetrachloroethylene	All sample locations	21-Aug-24	0 - 0.5	<0.05	0.28
Toluene	BH24-3-S1	21-Aug-24	0 - 0.5	0.35	2
1,1,1-Trichloroethane	All sample locations	21-Aug-24	0 - 0.5	<0.05	0.4
1,1,2-Trichloroethane	All sample locations	21-Aug-24	0 - 0.5	<0.05	0.05
Trichloroethylene	All sample locations	21-Aug-24	0 - 0.5	<0.05	0.061
Trichlorofluoromethane	All sample locations	21-Aug-24	0 - 0.5	<0.05	4.0
Vinyl Chloride	All sample locations	21-Aug-24	0 - 0.5	<0.02	0.020
Xylenes, total	BH24-3-S1	21-Aug-24	0 - 0.5	0.26	3.1
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	BH24-2-S1	21-Aug-24	0 - 0.5	0.17	7.9
Acenaphthylene	BH24-2-S1	21-Aug-24	0 - 0.5	**0.16**	0.15
Anthracene	BH24-2-S1	21-Aug-24	0 - 0.5	0.58	0.67

Benzo[a]anthracene	BH24-2-S1	21-Aug-24	0 - 0.5	**1.59**	0.5
Benzo[a]pyrene	BH24-2-S1	21-Aug-24	0 - 0.5	**1.15**	0.3
Benzo[b/j]fluoranthene	BH24-2-S1	21-Aug-24	0 - 0.5	**1.33**	0.78
Benzo[g,h,i]perylene	BH24-2-S1 and BH24-1-S1	21-Aug-24	0 - 0.5	0.61	6.6
Benzo[k]fluoranthene	BH24-2-S1	21-Aug-24	0 - 0.5	**0.9**	0.78
Chrysene	BH24-2-S1	21-Aug-24	0 - 0.5	1.57	7
Dibenzo[a,h]anthracene	BH24-2-S1	21-Aug-24	0 - 0.5	**0.18**	0.1
Fluoranthene	BH24-2-S1	21-Aug-24	0 - 0.5	**3.9**	0.69
Fluorene	BH24-2-S1	21-Aug-24	0 - 0.5	0.2	62
Indeno[1,2,3-cd]pyrene	BH24-2-S1	21-Aug-24	0 - 0.5	**0.59**	0.38
1-Methylnaphthalene	BH24-2-S1	21-Aug-24	0 - 0.5	0.04	0.99
2-Methylnaphthalene	BH24-2-S1	21-Aug-24	0 - 0.5	0.06	0.99
Naphthalene	BH24-2-S1	21-Aug-24	0 - 0.5	0.21	0.6
Phenanthrene	BH24-2-S1	21-Aug-24	0 - 0.5	2.33	6.2
Pyrene	BH24-2-S1	21-Aug-24	0 - 0.5	3.09	78
Metals					
Antimony	BH24-1-S1	21-Aug-24	0 - 0.5	6.7	7.5
Arsenic	DUP (Duplicate of BH24-1-S1)	21-Aug-24	0 - 0.5	8.3	18
Barium	BH24-1-S1	21-Aug-24	0 - 0.5	**1050**	390
Beryllium	BH24-1-S1 and DUP	21-Aug-24	0 - 0.5	0.6	4
Boron (Total)	BH24-3-S1	21-Aug-24	0 - 0.5	8.4	120
Cadmium	BH24-3-S1	21-Aug-24	0 - 0.5	0.7	1.2
Chromium (Total)	DUP (Duplicate of BH24-1-S1)	21-Aug-24	0 - 0.5	19.5	160
Cobalt	DUP (Duplicate of BH24-1-S1)	21-Aug-24	0 - 0.5	8.4	22
Copper	DUP (Duplicate of BH24-1-S1)	21-Aug-24	0 - 0.5	**454**	140
Lead	DUP (Duplicate of BH24-1-S1)	21-Aug-24	0 - 0.5	**531**	120
Molybdenum	BH24-1-S1 and DUP	21-Aug-24	0 - 0.5	2.1	6.9
Nickel	DUP (Duplicate of BH24-1-S1)	21-Aug-24	0 - 0.5	21.8	100
Selenium	DUP (Duplicate of BH24-1-S1)	21-Aug-24	0 - 0.5	1.1	2.4
Silver	BH24-1-S1 and DUP	21-Aug-24	0 - 0.5	0.4	20
Thallium	All sample locations	21-Aug-24	0 - 0.5	<1.0	1
Uranium	All sample locations	21-Aug-24	0 - 0.5	2.6	23
Vanadium	DUP (Duplicate of BH24-1-S1)	21-Aug-24	0 - 0.5	26.5	86
Zinc	DUP (Duplicate of BH24-1-S1)	21-Aug-24	0 - 0.5	292	340

NOTES:

1	MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the EPA, April 2011, Table 7 non potable residential standards, coarse textured soil.
NV	No Value
-	Parameter not analyzed
BOLD	Concentration Exceeds MECP Table 7 SCS

Table 10 Maximum Concentrations in Groundwater

116-118 Carruthers Avenue, Ottawa, Ontario

Parameter	Sample Location	Sampling Date	Maximum Concentration	MECP Table 7 Residential [1]
Petroleum Hydrocarbons				
F1 PHC (C6-C10)	All sample locations	21-Aug-24	<25	420
F2 PHC (C10-C16)	All sample locations	21-Aug-24	<100	150
F3 PHC (C16-C34)	All sample locations	21-Aug-24	<100	500
F4 PHC (C34-C50)	All sample locations	21-Aug-24	<100	500
Volatile Organic Compounds				
Acetone	All sample locations	21-Aug-24	<5.0	<5.0
Benzene	All sample locations	21-Aug-24	<0.5	<0.5
Bromodichloromethane	All sample locations	21-Aug-24	0.5	1
Bromoform	All sample locations	21-Aug-24	<0.5	<0.5
Bromomethane	All sample locations	21-Aug-24	<0.5	<0.5
Carbon Tetrachloride	All sample locations	21-Aug-24	<0.2	<0.2
Chlorobenzene	All sample locations	21-Aug-24	<0.5	<0.5
Chloroform	BH24-1	21-Aug-24	**9.8**	2
Dibromochloromethane	All sample locations	21-Aug-24	<0.5	<0.5
Dichlorodifluoromethane	All sample locations	21-Aug-24	<1.0	<1.0
1,2-Dichlorobenzene	All sample locations	21-Aug-24	<0.5	<0.5
1,3-Dichlorobenzene	All sample locations	21-Aug-24	<0.5	<0.5
1,4-Dichlorobenzene	All sample locations	21-Aug-24	<0.5	<0.5
1,1-Dichloroethane	All sample locations	21-Aug-24	<0.5	<0.5
1,2-Dichloroethane	All sample locations	21-Aug-24	<0.5	<0.5
1,1-Dichloroethylene	All sample locations	21-Aug-24	<0.5	<0.5
cis-1,2-Dichloroethylene	All sample locations	21-Aug-24	<0.5	<0.5
trans-1,2-Dichloroethylen	All sample locations	21-Aug-24	<0.5	<0.5
1,2-Dichloropropane	All sample locations	21-Aug-24	<0.5	<0.5
1,3-Dichloropropene, tota	All sample locations	21-Aug-24	<0.5	<0.5
Ethylbenzene	All sample locations	21-Aug-24	<0.40	<0.5
Ethylene dibromide (dibro	All sample locations	21-Aug-24	<0.5	<0.2
Hexane	All sample locations	21-Aug-24	<0.2	<1.0
Methyl Ethyl Ketone (2-Bu	All sample locations	21-Aug-24	<1.0	<5.0
Methyl Isobutyl Ketone	All sample locations	21-Aug-24	<5.0	<5.0
Methyl tert-butyl ether	All sample locations	21-Aug-24	<5.0	<5.0
Methylene Chloride	All sample locations	21-Aug-24	<5.0	<2.0
Styrene	All sample locations	21-Aug-24	<2.0	<0.5
1,1,1,2-Tetrachloroethane	All sample locations	21-Aug-24	<0.5	<0.5
1,1,2,2-Tetrachloroethane	All sample locations	21-Aug-24	<0.5	<0.5
Tetrachloroethylene	All sample locations	21-Aug-24	<0.5	<0.5
Toluene	All sample locations	21-Aug-24	<0.5	<0.5
1,1,1-Trichloroethane	All sample locations	21-Aug-24	<0.5	<0.5
1,1,2-Trichloroethane	All sample locations	21-Aug-24	<0.5	<0.5
Trichloroethylene	All sample locations	21-Aug-24	<0.5	<0.5
Trichlorofluoromethane	All sample locations	21-Aug-24	<0.5	<1.0
Vinyl Chloride	All sample locations	21-Aug-24	<1.0	<0.5
Xylenes, total	All sample locations	21-Aug-24	<0.5	<0.5
Polycyclic Aromatic Hydrocarbons				
Acenaphthene	All sample locations	21-Aug-24	<0.02	17
Acenaphthylene	All sample locations	21-Aug-24	<0.02	1
Anthracene	All sample locations	21-Aug-24	<0.02	1

Benzo[a]anthracene	All sample locations	21-Aug-24	0.02	1.8
Benzo[a]pyrene	All sample locations	21-Aug-24	0.02	0.81
Benzo[b/j]fluoranthene	All sample locations	21-Aug-24	0.03	0.75
Benzo[g,h,i]perylene	All sample locations	21-Aug-24	<0.02	0.2
Benzo[k]fluoranthene	All sample locations	21-Aug-24	<0.02	0.4
Chrysene	All sample locations	21-Aug-24	0.02	0.7
Dibenzo[a,h]anthracene	All sample locations	21-Aug-24	<0.02	0.4
Fluoranthene	All sample locations	21-Aug-24	0.04	44
Fluorene	All sample locations	21-Aug-24	<0.02	290
Indeno[1,2,3-cd]pyrene	All sample locations	21-Aug-24	<0.02	0.2
1-Methylnaphthalene	All sample locations	21-Aug-24	<0.02	0.99
2-Methylnaphthalene	All sample locations	21-Aug-24	<0.02	0.99
Naphthalene	All sample locations	21-Aug-24	<0.10	0.6
Phenanthrene	All sample locations	21-Aug-24	<0.10	6.2
Pyrene	All sample locations	21-Aug-24	<0.02	78
Metals				
Antimony	MW24-1	21-Aug-24	4.1	16000
Arsenic	MW24-1	21-Aug-24	1	1500
Barium	DUP (Duplicate of BH24-3)	21-Aug-24	280	23000
Beryllium	All sample locations	21-Aug-24	<0.5	53
Boron (Total)	MW24-1	21-Aug-24	322	2.1
Cadmium	All sample locations	21-Aug-24	<0.1	640
Chromium (Total)	DUP (Field Duplicate of BH24-3)	21-Aug-24	<1	52
Cobalt	DUP (Field Duplicate of BH24-3)	21-Aug-24	22.4	69
Copper	MW24-1	21-Aug-24	4.7	20
Lead	DUP (Duplicate of BH24-3) and MW24-3	21-Aug-24	0.1	7300
Molybdenum	MW24-1	21-Aug-24	7.4	390
Nickel	MW24-3	21-Aug-24	3	50
Selenium	MW24-1	21-Aug-24	12	1.2
Silver	All sample locations	21-Aug-24	<0.1	1800000
Thallium	MW24-3 and DUP	21-Aug-24	0.5	400
Uranium	MW24-3 and DUP	21-Aug-24	1.7	330
Vanadium	MW24-1	21-Aug-24	1.4	200
Zinc	All sample locations	17-May-24	<5	890

NOTES:

1	MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the EPA, April 2011, Table 7 non potable residential standards, coarse textured soil.
NV	No Value
-	Parameter not analyzed
BOLD	Concentration Exceeds MECP Table 7 SCS

Table 11 Relative Percent Differences - PHC and VOC in Soil
116-118 Carruthers Avenue, Ottawa, Ontario

Parameter	Units	RDL	BH24-1	DUP	RPD (%)
Sampling Date			8/21/2024	8/21/2024	
Petroleum Hydrocarbons					
F1 PHC (C6 - C10) - BTEX	ug/g dry	25	<7	<7	nc
F2 PHC (C10-C16)	ug/g dry	100	<4	<4	nc
F3 PHC (C16-C34)	ug/g dry	100	22	22	nc
F4 PHC (C34-C50)	ug/g dry	100	<6	<6	nc
Volatiles					
Acetone	ug/g dry	0.5	0.5	0.5	nc
Benzene	ug/g dry	0.02	0.02	0.02	nc
Bromodichloromethane	ug/g dry	0.05	0.05	0.05	nc
Bromoform	ug/g dry	0.05	0.05	0.05	nc
Bromomethane	ug/g dry	0.05	0.05	0.05	nc
Carbon Tetrachloride	ug/g dry	0.05	0.05	0.05	nc
Chlorobenzene	ug/g dry	0.05	0.05	0.05	nc
Chloroform	ug/g dry	0.05	0.05	0.05	nc
Dibromochloromethane	ug/g dry	0.05	0.05	0.05	nc
Dichlorodifluoromethane	ug/g dry	0.05	0.05	0.05	nc
1,2-Dichlorobenzene	ug/g dry	0.05	0.05	0.05	nc
1,3-Dichlorobenzene	ug/g dry	0.05	0.05	0.05	nc
1,4-Dichlorobenzene	ug/g dry	0.05	0.05	0.05	nc
1,1-Dichloroethane	ug/g dry	0.05	0.05	0.05	nc
1,2-Dichloroethane	ug/g dry	0.05	0.05	0.05	nc
1,1-Dichloroethylene	ug/g dry	0.05	0.05	0.05	nc
1,2-Dichloropropane	ug/g dry	0.05	0.05	0.05	nc
cis-1,3-Dichloropropylene	ug/g dry	0.05	0.05	0.05	nc
trans-1,3-Dichloropropyle	ug/g dry	0.05	0.05	0.05	nc
1,3-Dichloropropene, tota	ug/g dry	0.05	0.05	0.05	nc
Ethylbenzene	ug/g dry	0.05	0.05	0.05	nc
Ethylene dibromide (dibro	ug/g dry	0.05	0.05	0.05	nc
Hexane	ug/g dry	0.05	0.05	0.05	nc
Methyl Ethyl Ketone (2-Bu	ug/g dry	0.5	0.5	0.5	nc
Methyl Isobutyl Ketone	ug/g dry	0.5	0.5	0.5	nc
Methyl tert-butyl ether	ug/g dry	0.05	0.05	0.05	nc
Methylene Chloride	ug/g dry	0.05	0.05	0.05	nc
Styrene	ug/g dry	0.05	0.05	0.05	nc
1,1,1,2-Tetrachloroethane	ug/g dry	0.05	0.05	0.05	nc
1,1,2,2-Tetrachloroethane	ug/g dry	0.05	0.05	0.05	nc
Tetrachloroethylene	ug/g dry	0.05	0.05	0.05	nc
Toluene	ug/g dry	0.05	0.05	0.05	nc
1,1,1-Trichloroethane	ug/g dry	0.05	0.05	0.05	nc
1,1,2-Trichloroethane	ug/g dry	0.05	0.05	0.05	nc
Trichloroethylene	ug/g dry	0.05	0.05	0.05	nc
Trichlorofluoromethane	ug/g dry	0.05	0.05	0.05	nc
Vinyl Chloride	ug/g dry	0.02	0.02	0.02	nc
Xylenes, total	ug/g dry	0.05	0.05	0.05	nc

NOTES:

Analysis by Bureau Veritas 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 12 Relative Percent Differences - Metals in Soil
116-118 Carruthers Avenue, Ottawa, Ontario

Parameter / Sampling Date	Units	RDL	BH24-1	DUP	RPD (%)	Alert Limit (%)
			8/21/2024	8/21/2024		
Metals Parameters						
Antimony	ug/g dry	1	7	4	nc	60
Arsenic	ug/g dry	1	8	8	5	60
Barium	ug/g dry	1	1050	940	11	60
Beryllium	ug/g dry	0.5	1	1	nc	60
Boron (Available)	ug/g dry	0.5	7	7	nc	60
Cadmium	ug/g dry	0.5	<0.5	1	nc	60
Chromium (Total)	ug/g dry	5	19	20	1	60
Cobalt	ug/g dry	1	8	8	nc	60
Copper	ug/g dry	5	340	454	29	60
Lead	ug/g dry	1	527	531	1	60
Molybdenum	ug/g dry	1	2	2	nc	60
Nickel	ug/g dry	5	21	22	6	60
Selenium	ug/g dry	1	1	1	nc	60
Silver	ug/g dry	0.3	0	0	nc	60
Thallium	ug/g dry	1	<1.0	<1.0	nc	60
Uranium	ug/g dry	1	<1.0	<1.0	nc	60
Vanadium	ug/g dry	10	26	27	2	60
Zinc	ug/g dry	20	247	292	17	60

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 13 Relative Percent Differences - PAH in Soil
116-118 Carruthers Avenue, Ottawa, Ontario

Parameter	Units	RDL	BH24-1	DUP	RPD (%)	Alert Limit (%)
Sampling Date			8/21/2024	8/21/2024		
Inorganic Parameters						
Acenaphthene	µg/g	96.00	0.14	0.10	33	60
Acenaphthylene	µg/g	0.2	0.11	0.14	24	60
Anthracene	µg/g	0.7	0.44	0.38	15	60
Benzo(a)anthracene	µg/g	1.0	1.38	1.16	17	60
Benzo(a)pyrene	µg/g	0.30	1.07	1.06	1	60
Benzo(b)fluoranthene	µg/g	0.96	1.24	1.03	19	60
Benzo(g,h,i)perylene	µg/g	9.6	0.61	0.51	18	60
Benzo(k)fluoranthene	µg/g	1.0	0.78	0.65	18	60
Chrysene	µg/g	10	1.38	1.18	16	60
Dibenzo(a,h)anthracene	µg/g	0.10	0.17	0.14	19	60
Fluoranthene	µg/g	10	3.36	2.55	27	60
Fluorene	µg/g	62	0.10	0.09	11	60
Indeno(1,2,3,-cd)pyrene	µg/g	0.8	0.58	0.49	17	60
Methylnaphthalene,1-	µg/g	76	<0.02	<0.02	nc	60
Methylnaphthalene,2-	µg/g	76	<0.02	<0.02	nc	60
Naphthalene	µg/g	10	0.02	0.02	nc	60
Phenanthrene	µg/g	12	1.75	1.35	26	60
Pyrene	µg/g	96	2.86	2.29	22	60

NOTES:

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

- 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 14 Relative Percent Differences - PHC and VOC in Groundwater
116-118 Carruthers Avenue, Ottawa, Ontario

Parameter	Units	RDL	BH/MW24-3	DUP	RPD (%)
Sampling Date			8/21/2024	8/21/2024	
Petroleum Hydrocarbons					
F1 PHC (C6 - C10) - BTEX	ug/g dry	420	<7	<7	nc
F2 PHC (C10-C16)	ug/g dry	150	<4	<4	nc
F3 PHC (C16-C34)	ug/g dry	500	22	22	nc
F4 PHC (C34-C50)	ug/g dry	500	<6	<6	nc
Volatiles					
Acetone	ug/g dry	0.5	<0.5	<0.5	nc
Benzene	ug/g dry	0.02	<0.02	<0.02	nc
Bromodichloromethane	ug/g dry	0.05	<0.05	<0.05	nc
Bromoform	ug/g dry	0.05	<0.05	<0.05	nc
Bromomethane	ug/g dry	0.05	<0.05	<0.05	nc
Carbon Tetrachloride	ug/g dry	0.05	<0.05	<0.05	nc
Chlorobenzene	ug/g dry	0.05	<0.05	<0.05	nc
Chloroform	ug/g dry	0.05	<0.05	<0.05	nc
Dibromochloromethane	ug/g dry	0.05	<0.05	<0.05	nc
Dichlorodifluoromethane	ug/g dry	0.05	<0.05	<0.05	nc
1,2-Dichlorobenzene	ug/g dry	0.05	<0.05	<0.05	nc
1,3-Dichlorobenzene	ug/g dry	0.05	<0.05	<0.05	nc
1,4-Dichlorobenzene	ug/g dry	0.05	<0.05	<0.05	nc
1,1-Dichloroethane	ug/g dry	0.05	<0.05	<0.05	nc
1,2-Dichloroethane	ug/g dry	0.05	<0.05	<0.05	nc
1,1-Dichloroethylene	ug/g dry	0.05	<0.05	<0.05	nc
1,2-Dichloropropane	ug/g dry	0.05	<0.05	<0.05	nc
cis-1,3-Dichloropropylene	ug/g dry	0.05	<0.05	<0.05	nc
trans-1,3-Dichloropropylene	ug/g dry	0.05	<0.05	<0.05	nc
1,3-Dichloropropene, total	ug/g dry	0.05	<0.05	<0.05	nc
Ethylbenzene	ug/g dry	0.05	<0.05	<0.05	nc
Ethylene dibromide (dibrom	ug/g dry	0.05	<0.05	<0.05	nc
Hexane	ug/g dry	0.05	<0.05	<0.05	nc
Methyl Ethyl Ketone (2-Buta	ug/g dry	0.5	<0.5	<0.5	nc
Methyl Isobutyl Ketone	ug/g dry	0.5	<0.5	<0.5	nc
Methyl tert-butyl ether	ug/g dry	0.05	<0.05	<0.05	nc
Methylene Chloride	ug/g dry	0.05	<0.05	<0.05	nc
Styrene	ug/g dry	0.05	<0.05	<0.05	nc
1,1,1,2-Tetrachloroethane	ug/g dry	0.05	<0.05	<0.05	nc
1,1,2,2-Tetrachloroethane	ug/g dry	0.05	<0.05	<0.05	nc
Tetrachloroethylene	ug/g dry	0.05	<0.05	<0.05	nc
Toluene	ug/g dry	0.05	<0.05	<0.05	nc
1,1,1-Trichloroethane	ug/g dry	0.05	<0.05	<0.05	nc
1,1,2-Trichloroethane	ug/g dry	0.05	<0.05	<0.05	nc
Trichloroethylene	ug/g dry	0.05	<0.05	<0.05	nc
Trichlorofluoromethane	ug/g dry	0.05	<0.05	<0.05	nc
Vinyl Chloride	ug/g dry	0.02	<0.02	<0.02	nc
Xylenes, total	ug/g dry	0.05	<0.05	<0.05	nc

NOTES:

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

- 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 15 Relative Percent Differences - Metals in Groundwater
116-118 Carruthers Avenue, Ottawa, Ontario

Parameter Sampling Date	Units	RDL	BH/MW24-3 8/21/2024	DUP 8/21/2024	RPD (%)	Alert Limit (%)
Metals Parameters						
Antimony	ug/g dry	1	1	1	nc	60
Arsenic	ug/g dry	1	<1	<1	nc	60
Barium	ug/g dry	1	274	280	2	60
Beryllium	ug/g dry	0.5	<0.5	<0.5	nc	60
Boron (Available)	ug/g dry	0.5	137	137	0	60
Cadmium	ug/g dry	0.5	<0.1	<0.1	nc	60
Chromium (Total)	ug/g dry	5	<1	<1	nc	60
Cobalt	ug/g dry	1	2	2	nc	60
Copper	ug/g dry	5	3	3	7	60
Lead	ug/g dry	1	0	0	nc	60
Molybdenum	ug/g dry	1	4	4	3	60
Nickel	ug/g dry	5	3	2	nc	60
Selenium	ug/g dry	1	<1	<1	nc	60
Silver	ug/g dry	0.3	<0.1	<0.1	nc	60
Sodium	ug/g dry		124000	126000	2	60
Thallium	ug/g dry	1	1	1	0	60
Uranium	ug/g dry	1	2	2	0	60
Vanadium	ug/g dry	10	<0.5	1	nc	60
Zinc	ug/g dry	20	<5	<5	nc	60

NOTES:

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 16 Relative Percent Differences - PAH in Groundwater
116-118 Carruthers Avenue, Ottawa, Ontario

Parameter	Units	RDL	BH/MW24-3	DUP	RPD (%)	Alert Limit (%)
Sampling Date			8/21/2024	8/21/2024		
Inorganic Parameters						
Acenaphthene	µg/g	0.11	<0.11	<0.11	nc	60
Acenaphthylene	µg/g	0.11	<0.11	<0.11	nc	60
Anthracene	µg/g	0.02	<0.02	<0.02	nc	60
Benzo(a)anthracene	µg/g	0.02	<0.02	<0.02	nc	60
Benzo(a)pyrene	µg/g	0.02	<0.02	<0.02	nc	60
Benzo(b)fluoranthene	µg/g	0.11	<0.11	<0.11	nc	60
Benzo(g,h,i)perylene	µg/g	0.11	<0.11	<0.11	nc	60
Benzo(k)fluoranthene	µg/g	0.11	<0.11	<0.11	nc	60
Chrysene	µg/g	0.11	<0.11	<0.11	nc	60
Dibenzo(a,h)anthracene	µg/g	0.11	<0.11	<0.11	nc	60
Fluoranthene	µg/g	0.02	<0.02	<0.02	nc	60
Fluorene	µg/g	0.11	<0.11	<0.11	nc	60
Indeno(1,2,3,-cd)pyrene	µg/g	0.11	<0.11	<0.11	nc	60
Methylnaphthalene,1-	µg/g	0.22	<0.22	<0.22	nc	60
Methylnaphthalene,2-	µg/g	0.22	<0.22	<0.22	nc	60
Naphthalene	µg/g	0.11	<0.11	<0.11	nc	60
Phenanthrene	µg/g	0.11	<0.11	<0.11	nc	60
Pyrene	µg/g	0.02	<0.02	<0.02	nc	60

NOTES:

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

- means "not analysed"

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

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

Appendix D: Laboratory Certificates of Analysis

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Certificate of Analysis

exp Services Inc. (Ottawa)
100-2650 Queensview Dr.
Ottawa, ON K2B 8H6
Attn: Scott Lessard

Client PO: 116 Carruthers Ave.
Project: OTT24006545B0
Custody: 74204

Report Date: 27-Aug-2024
Order Date: 22-Aug-2024

Order #: 2434327

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2434327-01	BH24-1-SS1
2434327-02	BH24-2-SS1
2434327-03	BH24-3-SS1
2434327-05	DUP

Approved By:

Dale Robertson, BSc
Laboratory Director

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
PHC F1	CWS Tier 1 - P&T GC-FID	23-Aug-24	23-Aug-24
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	22-Aug-24	23-Aug-24
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	23-Aug-24	23-Aug-24
REG 153: PAHs by GC-MS	EPA 8270 - GC-MS, extraction	24-Aug-24	24-Aug-24
REG 153: VOCs by P&T GC/MS	EPA 8260 - P&T GC-MS	23-Aug-24	23-Aug-24
Solids, %	CWS Tier 1 - Gravimetric	23-Aug-24	26-Aug-24

Certificate of Analysis

Report Date: 27-Aug-2024

Client: exp Services Inc. (Ottawa)

Order Date: 22-Aug-2024

Client PO: 116 Carruthers Ave.

Project Description: OTT24006545B0

	Client ID:	BH24-1-SS1	BH24-2-SS1	BH24-3-SS1	DUP	-	-
	Sample Date:	21-Aug-24 10:00	20-Aug-24 15:00	20-Aug-24 10:15	21-Aug-24 10:00		
	Sample ID:	2434327-01	2434327-02	2434327-03	2434327-05		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	87.3	92.8	94.9	88.5	-	-
Metals							
Antimony	1.0 ug/g	6.7	<1.0	1.2	4.4	-	-
Arsenic	1.0 ug/g	7.9	2.9	4.5	8.3	-	-
Barium	1.0 ug/g	1050	102	118	940	-	-
Beryllium	0.5 ug/g	0.6	<0.5	<0.5	0.6	-	-
Boron	5.0 ug/g	7.2	7.9	8.4	7.4	-	-
Cadmium	0.5 ug/g	<0.5	<0.5	0.7	0.5	-	-
Chromium	5.0 ug/g	19.3	13.1	15.4	19.5	-	-
Cobalt	1.0 ug/g	8.2	4.2	4.1	8.4	-	-
Copper	5.0 ug/g	340	25.0	59.5	454	-	-
Lead	1.0 ug/g	527	90.4	269	531	-	-
Molybdenum	1.0 ug/g	2.1	<1.0	1.8	2.1	-	-
Nickel	5.0 ug/g	20.6	11.5	12.3	21.8	-	-
Selenium	1.0 ug/g	1.0	<1.0	<1.0	1.1	-	-
Silver	0.3 ug/g	0.4	<0.3	<0.3	0.4	-	-
Thallium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Uranium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Vanadium	10.0 ug/g	26.1	12.3	21.2	26.5	-	-
Zinc	20.0 ug/g	247	78.1	96.2	292	-	-
Volatiles							
Acetone	0.50 ug/g	<0.50	<0.50	<0.50	<0.50	-	-
Benzene	0.02 ug/g	<0.02	<0.02	0.10	<0.02	-	-
Bromodichloromethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Bromoform	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-

	Client ID:	BH24-1-SS1	BH24-2-SS1	BH24-3-SS1	DUP	-	-
	Sample Date:	21-Aug-24 10:00	20-Aug-24 15:00	20-Aug-24 10:15	21-Aug-24 10:00		
	Sample ID:	2434327-01	2434327-02	2434327-03	2434327-05		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Bromomethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Carbon Tetrachloride	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Chlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Chloroform	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Dibromochloromethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Dichlorodifluoromethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
1,2-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
1,3-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
1,4-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
1,1-Dichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
1,2-Dichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
1,1-Dichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
cis-1,2-Dichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
trans-1,2-Dichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
1,2-Dichloropropane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
cis-1,3-Dichloropropylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
trans-1,3-Dichloropropylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
1,3-Dichloropropene, total	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Ethylene dibromide (dibromoethane,	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Hexane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	<0.50	<0.50	<0.50	<0.50	-	-
Methyl Isobutyl Ketone	0.50 ug/g	<0.50	<0.50	<0.50	<0.50	-	-
Methyl tert-butyl ether	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Methylene Chloride	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-

	Client ID:	BH24-1-SS1	BH24-2-SS1	BH24-3-SS1	DUP	-	-
	Sample Date:	21-Aug-24 10:00	20-Aug-24 15:00	20-Aug-24 10:15	21-Aug-24 10:00		
	Sample ID:	2434327-01	2434327-02	2434327-03	2434327-05		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Styrene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
1,1,1,2-Tetrachloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
1,1,2,2-Tetrachloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Tetrachloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Toluene	0.05 ug/g	<0.05	<0.05	0.35	<0.05	-	-
1,1,1-Trichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
1,1,2-Trichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Trichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Trichlorofluoromethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Vinyl chloride	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	0.16	<0.05	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	0.09	<0.05	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	0.26	<0.05	-	-
Toluene-d8	Surrogate	112%	108%	106%	112%	-	-
Dibromofluoromethane	Surrogate	87.8%	85.6%	84.0%	87.5%	-	-
4-Bromofluorobenzene	Surrogate	109%	107%	104%	110%	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	<7	<7	-	-
F2 PHCs (C10-C16)	4 ug/g	<4	<4	<4	<4	-	-
F3 PHCs (C16-C34)	8 ug/g	22	35	50	22	-	-
F4 PHCs (C34-C50)	6 ug/g	<6	<6	26	6	-	-
Semi-Volatiles							
Acenaphthene	0.02 ug/g	0.14	0.17	<0.02	0.10	-	-
Acenaphthylene	0.02 ug/g	0.11	0.16	0.05	0.14	-	-
Anthracene	0.02 ug/g	0.44	0.58	0.08	0.38	-	-

	Client ID:	BH24-1-SS1	BH24-2-SS1	BH24-3-SS1	DUP	-	-
	Sample Date:	21-Aug-24 10:00	20-Aug-24 15:00	20-Aug-24 10:15	21-Aug-24 10:00		
	Sample ID:	2434327-01	2434327-02	2434327-03	2434327-05		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Semi-Volatiles							
Benzo [a] anthracene	0.02 ug/g	1.38	1.59	0.25	1.16	-	-
Benzo [a] pyrene	0.02 ug/g	1.07	1.15	0.21	1.06	-	-
Benzo [b] fluoranthene	0.02 ug/g	1.24	1.33	0.27	1.03	-	-
Benzo [g,h,i] perylene	0.02 ug/g	0.61	0.61	0.18	0.51	-	-
Benzo [k] fluoranthene	0.02 ug/g	0.78	0.90	0.16	0.65	-	-
Chrysene	0.02 ug/g	1.38	1.57	0.24	1.18	-	-
Dibenzo [a,h] anthracene	0.02 ug/g	0.17	0.18	0.04	0.14	-	-
Fluoranthene	0.02 ug/g	3.36	3.90	0.57	2.55	-	-
Fluorene	0.02 ug/g	0.10	0.20	<0.02	0.09	-	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	0.58	0.59	0.14	0.49	-	-
1-Methylnaphthalene	0.02 ug/g	<0.02	0.04	<0.02	<0.02	-	-
2-Methylnaphthalene	0.02 ug/g	<0.02	0.06	0.02	<0.02	-	-
Methylnaphthalene (1&2)	0.04 ug/g	<0.04	0.10	<0.04	<0.04	-	-
Naphthalene	0.01 ug/g	0.02	0.21	0.02	0.02	-	-
Phenanthrene	0.02 ug/g	1.75	2.33	0.29	1.35	-	-
Pyrene	0.02 ug/g	2.86	3.09	0.48	2.29	-	-
2-Fluorobiphenyl	Surrogate	62.6%	63.5%	58.0%	56.2%	-	-
Terphenyl-d14	Surrogate	98.9%	101%	93.6%	100%	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons								
F1 PHCs (C6-C10)	ND	7	ug/g					
F2 PHCs (C10-C16)	ND	4	ug/g					
F3 PHCs (C16-C34)	ND	8	ug/g					
F4 PHCs (C34-C50)	ND	6	ug/g					
Metals								
Antimony	ND	1.0	ug/g					
Arsenic	ND	1.0	ug/g					
Barium	ND	1.0	ug/g					
Beryllium	ND	0.5	ug/g					
Boron	ND	5.0	ug/g					
Cadmium	ND	0.5	ug/g					
Chromium	ND	5.0	ug/g					
Cobalt	ND	1.0	ug/g					
Copper	ND	5.0	ug/g					
Lead	ND	1.0	ug/g					
Molybdenum	ND	1.0	ug/g					
Nickel	ND	5.0	ug/g					
Selenium	ND	1.0	ug/g					
Silver	ND	0.3	ug/g					
Thallium	ND	1.0	ug/g					
Uranium	ND	1.0	ug/g					
Vanadium	ND	10.0	ug/g					
Zinc	ND	20.0	ug/g					
Semi-Volatiles								
Acenaphthene	ND	0.02	ug/g					
Acenaphthylene	ND	0.02	ug/g					
Anthracene	ND	0.02	ug/g					
Benzo [a] anthracene	ND	0.02	ug/g					
Benzo [a] pyrene	ND	0.02	ug/g					
Benzo [b] fluoranthene	ND	0.02	ug/g					
Benzo [g,h,i] perylene	ND	0.02	ug/g					
Benzo [k] fluoranthene	ND	0.02	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Chrysene	ND	0.02	ug/g					
Dibenzo [a,h] anthracene	ND	0.02	ug/g					
Fluoranthene	ND	0.02	ug/g					
Fluorene	ND	0.02	ug/g					
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g					
1-Methylnaphthalene	ND	0.02	ug/g					
2-Methylnaphthalene	ND	0.02	ug/g					
Methylnaphthalene (1&2)	ND	0.04	ug/g					
Naphthalene	ND	0.01	ug/g					
Phenanthrene	ND	0.02	ug/g					
Pyrene	ND	0.02	ug/g					
Surrogate: 2-Fluorobiphenyl	*0.750*		*%*	*56.2*	*50-140*			
Surrogate: Terphenyl-d14	*1.30*		*%*	*97.7*	*50-140*			
Volatiles								
Acetone	ND	0.50	ug/g					
Benzene	ND	0.02	ug/g					
Bromodichloromethane	ND	0.05	ug/g					
Bromoform	ND	0.05	ug/g					
Bromomethane	ND	0.05	ug/g					
Carbon Tetrachloride	ND	0.05	ug/g					
Chlorobenzene	ND	0.05	ug/g					
Chloroform	ND	0.05	ug/g					
Dibromochloromethane	ND	0.05	ug/g					
Dichlorodifluoromethane	ND	0.05	ug/g					
1,2-Dichlorobenzene	ND	0.05	ug/g					
1,3-Dichlorobenzene	ND	0.05	ug/g					
1,4-Dichlorobenzene	ND	0.05	ug/g					
1,1-Dichloroethane	ND	0.05	ug/g					
1,2-Dichloroethane	ND	0.05	ug/g					
1,1-Dichloroethylene	ND	0.05	ug/g					
cis-1,2-Dichloroethylene	ND	0.05	ug/g					
trans-1,2-Dichloroethylene	ND	0.05	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
1,2-Dichloropropane	ND	0.05	ug/g					
cis-1,3-Dichloropropylene	ND	0.05	ug/g					
trans-1,3-Dichloropropylene	ND	0.05	ug/g					
1,3-Dichloropropene, total	ND	0.05	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g					
Hexane	ND	0.05	ug/g					
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g					
Methyl Isobutyl Ketone	ND	0.50	ug/g					
Methyl tert-butyl ether	ND	0.05	ug/g					
Methylene Chloride	ND	0.05	ug/g					
Styrene	ND	0.05	ug/g					
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g					
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g					
Tetrachloroethylene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
1,1,1-Trichloroethane	ND	0.05	ug/g					
1,1,2-Trichloroethane	ND	0.05	ug/g					
Trichloroethylene	ND	0.05	ug/g					
Trichlorofluoromethane	ND	0.05	ug/g					
Vinyl chloride	ND	0.02	ug/g					
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					
Xylenes, total	ND	0.05	ug/g					
Surrogate: 4-Bromofluorobenzene	*8.09*		*%*	*101*	*50-140*			
Surrogate: Dibromofluoromethane	*6.35*		*%*	*79.4*	*50-140*			
Surrogate: Toluene-d8	*8.62*		*%*	*108*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g	ND			NC	40	
F2 PHCs (C10-C16)	ND	4	ug/g	ND			NC	30	
F3 PHCs (C16-C34)	ND	8	ug/g	ND			NC	30	
F4 PHCs (C34-C50)	ND	6	ug/g	ND			NC	30	
Metals									
Antimony	ND	1.0	ug/g	ND			NC	30	
Arsenic	7.1	1.0	ug/g	7.2			1.3	30	
Barium	78.6	1.0	ug/g	67.6			15.1	30	
Beryllium	ND	0.5	ug/g	ND			NC	30	
Boron	7.1	5.0	ug/g	7.2			0.8	30	
Cadmium	ND	0.5	ug/g	ND			NC	30	
Chromium	13.2	5.0	ug/g	13.7			4.2	30	
Cobalt	5.1	1.0	ug/g	5.1			0.5	30	
Copper	16.7	5.0	ug/g	17.0			2.1	30	
Lead	15.0	1.0	ug/g	14.9			0.5	30	
Molybdenum	1.9	1.0	ug/g	1.9			0.2	30	
Nickel	14.6	5.0	ug/g	14.9			2.1	30	
Selenium	ND	1.0	ug/g	ND			NC	30	
Silver	ND	0.3	ug/g	ND			NC	30	
Thallium	ND	1.0	ug/g	ND			NC	30	
Uranium	ND	1.0	ug/g	1.1			NC	30	
Vanadium	23.6	10.0	ug/g	24.4			3.3	30	
Zinc	61.8	20.0	ug/g	61.1			1.3	30	
Physical Characteristics									
% Solids	86.3	0.1	% by Wt.	87.3			1.2	25	
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g	ND			NC	40	
Acenaphthylene	ND	0.02	ug/g	ND			NC	40	
Anthracene	ND	0.02	ug/g	ND			NC	40	
Benzo [a] anthracene	ND	0.02	ug/g	ND			NC	40	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzo [a] pyrene	ND	0.02	ug/g	ND			NC	40	
Benzo [b] fluoranthene	ND	0.02	ug/g	ND			NC	40	
Benzo [g,h,i] perylene	ND	0.02	ug/g	ND			NC	40	
Benzo [k] fluoranthene	ND	0.02	ug/g	ND			NC	40	
Chrysene	ND	0.02	ug/g	ND			NC	40	
Dibenzo [a,h] anthracene	ND	0.02	ug/g	ND			NC	40	
Fluoranthene	ND	0.02	ug/g	ND			NC	40	
Fluorene	ND	0.02	ug/g	ND			NC	40	
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g	ND			NC	40	
1-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
2-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
Naphthalene	ND	0.01	ug/g	ND			NC	40	
Phenanthrene	ND	0.02	ug/g	ND			NC	40	
Pyrene	ND	0.02	ug/g	ND			NC	40	
Surrogate: 2-Fluorobiphenyl	*0.850*		*%*		*60.6*	*50-140*			
Surrogate: Terphenyl-d14	*1.27*		*%*		*90.9*	*50-140*			
Volatiles									
Acetone	ND	0.50	ug/g	ND			NC	50	
Benzene	ND	0.02	ug/g	ND			NC	50	
Bromodichloromethane	ND	0.05	ug/g	ND			NC	50	
Bromoform	ND	0.05	ug/g	ND			NC	50	
Bromomethane	ND	0.05	ug/g	ND			NC	50	
Carbon Tetrachloride	ND	0.05	ug/g	ND			NC	50	
Chlorobenzene	ND	0.05	ug/g	ND			NC	50	
Chloroform	ND	0.05	ug/g	ND			NC	50	
Dibromochloromethane	ND	0.05	ug/g	ND			NC	50	
Dichlorodifluoromethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,3-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,4-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethane	ND	0.05	ug/g	ND			NC	50	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,2-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
cis-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
trans-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloropropane	ND	0.05	ug/g	ND			NC	50	
cis-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
trans-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g	ND			NC	50	
Hexane	ND	0.05	ug/g	ND			NC	50	
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g	ND			NC	50	
Methyl Isobutyl Ketone	ND	0.50	ug/g	ND			NC	50	
Methyl tert-butyl ether	ND	0.05	ug/g	ND			NC	50	
Methylene Chloride	ND	0.05	ug/g	ND			NC	50	
Styrene	ND	0.05	ug/g	ND			NC	50	
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
Tetrachloroethylene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
1,1,1-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
Trichloroethylene	ND	0.05	ug/g	ND			NC	50	
Trichlorofluoromethane	ND	0.05	ug/g	ND			NC	50	
Vinyl chloride	ND	0.02	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: 4-Bromofluorobenzene	*10.3*		*%*		*110*	*50-140*			
Surrogate: Dibromofluoromethane	*7.98*		*%*		*84.9*	*50-140*			
Surrogate: Toluene-d8	*10.6*		*%*		*113*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	190	7	ug/g	ND	95.2	85-115			
F2 PHCs (C10-C16)	121	4	ug/g	ND	121	60-140			
F3 PHCs (C16-C34)	304	8	ug/g	ND	124	60-140			
F4 PHCs (C34-C50)	151	6	ug/g	ND	97.5	60-140			
Metals									
Arsenic	51.1	1.0	ug/g	2.9	96.4	70-130			
Barium	75.3	1.0	ug/g	27.0	96.5	70-130			
Beryllium	53.1	0.5	ug/g	ND	106	70-130			
Boron	52.9	5.0	ug/g	ND	100	70-130			
Cadmium	44.9	0.5	ug/g	ND	89.6	70-130			
Chromium	59.6	5.0	ug/g	5.5	108	70-130			
Cobalt	51.9	1.0	ug/g	2.0	99.6	70-130			
Copper	54.2	5.0	ug/g	6.8	94.8	70-130			
Lead	50.2	1.0	ug/g	6.0	88.6	70-130			
Molybdenum	48.7	1.0	ug/g	ND	95.9	70-130			
Nickel	55.0	5.0	ug/g	6.0	98.2	70-130			
Selenium	46.2	1.0	ug/g	ND	92.1	70-130			
Silver	39.5	0.3	ug/g	ND	79.0	70-130			
Thallium	45.0	1.0	ug/g	ND	89.8	70-130			
Uranium	48.5	1.0	ug/g	ND	96.2	70-130			
Vanadium	63.7	10.0	ug/g	ND	108	70-130			
Zinc	69.8	20.0	ug/g	24.4	90.8	70-130			
Semi-Volatiles									
Acenaphthene	0.156	0.02	ug/g	ND	89.0	50-140			
Acenaphthylene	0.160	0.02	ug/g	ND	91.1	50-140			
Anthracene	0.147	0.02	ug/g	ND	83.9	50-140			
Benzo [a] anthracene	0.121	0.02	ug/g	ND	69.0	50-140			
Benzo [a] pyrene	0.131	0.02	ug/g	ND	74.9	50-140			
Benzo [b] fluoranthene	0.104	0.02	ug/g	ND	59.3	50-140			
Benzo [g,h,i] perylene	0.130	0.02	ug/g	ND	73.9	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzo [k] fluoranthene	0.107	0.02	ug/g	ND	61.3	50-140			
Chrysene	0.143	0.02	ug/g	ND	81.8	50-140			
Dibenzo [a,h] anthracene	0.125	0.02	ug/g	ND	71.5	50-140			
Fluoranthene	0.149	0.02	ug/g	ND	84.9	50-140			
Fluorene	0.148	0.02	ug/g	ND	84.7	50-140			
Indeno [1,2,3-cd] pyrene	0.133	0.02	ug/g	ND	76.1	50-140			
1-Methylnaphthalene	0.132	0.02	ug/g	ND	75.2	50-140			
2-Methylnaphthalene	0.142	0.02	ug/g	ND	81.3	50-140			
Naphthalene	0.154	0.01	ug/g	ND	87.7	50-140			
Phenanthrene	0.162	0.02	ug/g	ND	92.4	50-140			
Pyrene	0.156	0.02	ug/g	ND	89.1	50-140			
Surrogate: 2-Fluorobiphenyl	*0.836*		*%*		*59.6*	*50-140*			
Surrogate: Terphenyl-d14	*1.26*		*%*		*90.0*	*50-140*			
Volatiles									
Acetone	6.89	0.50	ug/g	ND	68.9	50-140			
Benzene	3.49	0.02	ug/g	ND	87.3	60-130			
Bromodichloromethane	2.61	0.05	ug/g	ND	65.1	60-130			
Bromoform	3.12	0.05	ug/g	ND	78.1	60-130			
Bromomethane	4.02	0.05	ug/g	ND	100	50-140			
Carbon Tetrachloride	2.75	0.05	ug/g	ND	68.8	60-130			
Chlorobenzene	3.79	0.05	ug/g	ND	94.8	60-130			
Chloroform	3.32	0.05	ug/g	ND	83.0	60-130			
Dibromochloromethane	2.60	0.05	ug/g	ND	65.0	60-130			
Dichlorodifluoromethane	4.47	0.05	ug/g	ND	112	50-140			
1,2-Dichlorobenzene	3.77	0.05	ug/g	ND	94.3	60-130			
1,3-Dichlorobenzene	3.82	0.05	ug/g	ND	95.5	60-130			
1,4-Dichlorobenzene	3.79	0.05	ug/g	ND	94.9	60-130			
1,1-Dichloroethane	3.74	0.05	ug/g	ND	93.6	60-130			
1,2-Dichloroethane	3.15	0.05	ug/g	ND	78.7	60-130			
1,1-Dichloroethylene	3.48	0.05	ug/g	ND	86.9	60-130			
cis-1,2-Dichloroethylene	3.27	0.05	ug/g	ND	81.8	60-130			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
trans-1,2-Dichloroethylene	3.23	0.05	ug/g	ND	80.9	60-130			
1,2-Dichloropropane	3.11	0.05	ug/g	ND	77.7	60-130			
cis-1,3-Dichloropropylene	2.61	0.05	ug/g	ND	65.3	60-130			
trans-1,3-Dichloropropylene	2.97	0.05	ug/g	ND	74.3	60-130			
Ethylbenzene	3.82	0.05	ug/g	ND	95.4	60-130			
Ethylene dibromide (dibromoethane, 1,2-)	2.60	0.05	ug/g	ND	65.1	60-130			
Hexane	4.17	0.05	ug/g	ND	104	60-130			
Methyl Ethyl Ketone (2-Butanone)	6.17	0.50	ug/g	ND	61.7	50-140			
Methyl Isobutyl Ketone	6.28	0.50	ug/g	ND	62.8	50-140			
Methyl tert-butyl ether	6.22	0.05	ug/g	ND	62.2	50-140			
Methylene Chloride	3.67	0.05	ug/g	ND	91.7	60-130			
Styrene	3.50	0.05	ug/g	ND	87.4	60-130			
1,1,1,2-Tetrachloroethane	2.73	0.05	ug/g	ND	68.2	60-130			
1,1,2,2-Tetrachloroethane	2.73	0.05	ug/g	ND	68.1	60-130			
Tetrachloroethylene	3.91	0.05	ug/g	ND	97.7	60-130			
Toluene	3.85	0.05	ug/g	ND	96.3	60-130			
1,1,1-Trichloroethane	2.71	0.05	ug/g	ND	67.8	60-130			
1,1,2-Trichloroethane	3.00	0.05	ug/g	ND	74.9	60-130			
Trichloroethylene	3.46	0.05	ug/g	ND	86.6	60-130			
Trichlorofluoromethane	4.17	0.05	ug/g	ND	104	50-140			
Vinyl chloride	3.55	0.02	ug/g	ND	88.9	50-140			
m,p-Xylenes	7.49	0.05	ug/g	ND	93.7	60-130			
o-Xylene	3.75	0.05	ug/g	ND	93.7	60-130			
Surrogate: 4-Bromofluorobenzene	*8.13*		*%*		*102*	*50-140*			
Surrogate: Dibromofluoromethane	*6.39*		*%*		*79.9*	*50-140*			
Surrogate: Toluene-d8	*8.20*		*%*		*102*	*50-140*			

Qualifier Notes:

Sample Data Revisions:

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis unlesss otherwise noted.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.

- F1 range corrected for BTEX.

- F2 to F3 ranges corrected for appropriate PAHs where available.

- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.

- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.

- When reported, data for F4G has been processed using a silica gel cleanup.

PARACEL LABORATORIES LTD.

Paracel ID: 2434327

Paracel Order Number (Lab Use Only)

Chain Of Custody (Lab Use Only)

№ 74204

Client Name: ExP Services Inc.	Project Ref: 116 Carruthers Ave.	Page 1 of 1
Contact Name: Scott Lessard	Quote #:	Turnaround Time
Address: 2650 Queensview Dr.	PO #: OTT-24006545-B0	☐ 1 day ☐ 3 day
	E-mail: scott.lessard@exp.com jeremy.eckert@exp.com	☐ 2 day ☒ Regular
Telephone: 613 688 1899		Date Required:

☒ REG 153/04 ☐ REG 406/19

☐ Table 1 ☒ Res/Park ☐ Med/Fine
☐ Table 2 ☐ Ind/Comm ☐ Coarse
☒ Table 3 ☐ Agri/Other
☐ Table

For RSC: ☐ Yes ☒ No

Other Regulation: ☐ REG 558 ☐ PWQO ☐ CCME ☐ MISA ☐ SU - Sani ☐ SU - Storm ☐ Mun: ☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Required Analysis: PHC F1-F4, VOC, metals, PAH

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken: Date	Sample Taken: Time
1	BH24-1-SS1	S		2	24/08/21	1000
2	BH24-2-SS1	S		2	24/08/20	1500
3	BH24-3-SS1	S		2	24/08/20	1015
4	BH24-4-SS1	S		2	24/08/20	1530
5	DUP	S		2	24/08/21	1000
6						
7						
8						
9						
10						

Comments:

Method of Delivery: Drop Box

Relinquished By (Sign):	Received at Depot:	Received at Lab: SS	Verified By: SS
Relinquished By (Print): Jeremy Eckert	Date/Time: Aug 22/24 8:44	Date/Time: 22 Aug 24 0945	Date/Time: 22 Aug 24 0948
Date/Time: 24/08/21 16:00	Temperature: 11.4 °C	Temperature: 4.0 °C	pH Verified: ☐ By:

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Certificate of Analysis

exp Services Inc. (Ottawa)
100-2650 Queensview Dr.
Ottawa, ON K2B 8H6
Attn: Scott Lessard

Client PO:
Project: OTT24006545B0
Custody: 74232

Report Date: 6-Sep-2024
Order Date: 29-Aug-2024

Order #: 2435508

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2435508-01	BH/MW24-3
2435508-02	DUP

Approved By:

Mark Foto, M.Sc.
Lab Supervisor

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Metals, ICP-MS	EPA 200.8 - ICP-MS	30-Aug-24	3-Sep-24
PHC F1	CWS Tier 1 - P&T GC-FID	3-Sep-24	3-Sep-24
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	3-Sep-24	3-Sep-24
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	4-Sep-24	5-Sep-24
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	3-Sep-24	3-Sep-24

	Client ID:	BH/MW24-3	DUP	-	-	-	-
	Sample Date:	29-Aug-24 11:15	29-Aug-24 11:15	-	-		
	Sample ID:	2435508-01	2435508-02	-	-		
	Matrix:	Ground Water	Ground Water	-	-		
	MDL/Units						
Metals							
Antimony	0.5 ug/L	1.1	1.1	-	-	-	-
Arsenic	1 ug/L	<1	<1	-	-	-	-
Barium	1 ug/L	274	280	-	-	-	-
Beryllium	0.5 ug/L	<0.5	<0.5	-	-	-	-
Boron	10 ug/L	137	137	-	-	-	-
Cadmium	0.1 ug/L	<0.1	<0.1	-	-	-	-
Chromium	1 ug/L	<1	<1	-	-	-	-
Cobalt	0.5 ug/L	1.7	1.7	-	-	-	-
Copper	0.5 ug/L	3.0	2.8	-	-	-	-
Lead	0.1 ug/L	0.1	0.1	-	-	-	-
Molybdenum	0.5 ug/L	3.8	3.9	-	-	-	-
Nickel	1 ug/L	3	2	-	-	-	-
Selenium	1 ug/L	<1	<1	-	-	-	-
Silver	0.1 ug/L	<0.1	<0.1	-	-	-	-
Sodium	200 ug/L	126000	128000	-	-	-	-
Thallium	0.1 ug/L	0.5	0.5	-	-	-	-
Uranium	0.1 ug/L	1.7	1.7	-	-	-	-
Vanadium	0.5 ug/L	<0.5	0.5	-	-	-	-
Zinc	5 ug/L	<5	<5	-	-	-	-
Volatiles							
Acetone	5.0 ug/L	<5.0	<5.0	-	-	-	-
Benzene	0.5 ug/L	<0.5	<0.5	-	-	-	-
Bromodichloromethane	0.5 ug/L	<0.5	<0.5	-	-	-	-
Bromoform	0.5 ug/L	<0.5	<0.5	-	-	-	-
Bromomethane	0.5 ug/L	<0.5	<0.5	-	-	-	-

	Client ID:	BH/MW24-3	DUP	-	-	-	-
	Sample Date:	29-Aug-24 11:15	29-Aug-24 11:15	-	-		
	Sample ID:	2435508-01	2435508-02	-	-		
	Matrix:	Ground Water	Ground Water	-	-		
	MDL/Units						
Volatiles							
Carbon Tetrachloride	0.2 ug/L	<0.2	<0.2	-	-	-	-
Chlorobenzene	0.5 ug/L	<0.5	<0.5	-	-	-	-
Chloroform	0.5 ug/L	0.8	0.8	-	-	-	-
Dibromochloromethane	0.5 ug/L	<0.5	<0.5	-	-	-	-
Dichlorodifluoromethane	1.0 ug/L	<1.0	<1.0	-	-	-	-
1,2-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	-	-	-	-
1,3-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	-	-	-	-
1,4-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	-	-	-	-
1,1-Dichloroethane	0.5 ug/L	<0.5	<0.5	-	-	-	-
1,2-Dichloroethane	0.5 ug/L	<0.5	<0.5	-	-	-	-
1,1-Dichloroethylene	0.5 ug/L	<0.5	<0.5	-	-	-	-
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	-	-	-	-
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	-	-	-	-
1,2-Dichloropropane	0.5 ug/L	<0.5	<0.5	-	-	-	-
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	-	-	-	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	-	-	-	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	<0.5	-	-	-	-
Ethylene dibromide (dibromoethane,	0.2 ug/L	<0.2	<0.2	-	-	-	-
Ethylbenzene	0.5 ug/L	<0.5	<0.5	-	-	-	-
Hexane	1.0 ug/L	<1.0	<1.0	-	-	-	-
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	<5.0	-	-	-	-
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	<5.0	-	-	-	-
Methyl tert-butyl ether	2.0 ug/L	<2.0	<2.0	-	-	-	-
Methylene Chloride	5.0 ug/L	<5.0	<5.0	-	-	-	-
Styrene	0.5 ug/L	<0.5	<0.5	-	-	-	-

	Client ID:	BH/MW24-3	DUP	-	-	-	-
	Sample Date:	29-Aug-24 11:15	29-Aug-24 11:15	-	-		
	Sample ID:	2435508-01	2435508-02	-	-		
	Matrix:	Ground Water	Ground Water	-	-		
	MDL/Units						
Volatiles							
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	-	-	-	-
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	-	-	-	-
Tetrachloroethylene	0.5 ug/L	<0.5	<0.5	-	-	-	-
Toluene	0.5 ug/L	<0.5	<0.5	-	-	-	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	<0.5	-	-	-	-
1,1,2-Trichloroethane	0.5 ug/L	<0.5	<0.5	-	-	-	-
Trichloroethylene	0.5 ug/L	<0.5	<0.5	-	-	-	-
Trichlorofluoromethane	1.0 ug/L	<1.0	<1.0	-	-	-	-
Vinyl chloride	0.5 ug/L	<0.5	<0.5	-	-	-	-
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	-	-	-	-
o-Xylene	0.5 ug/L	<0.5	<0.5	-	-	-	-
Xylenes, total	0.5 ug/L	<0.5	<0.5	-	-	-	-
Dibromofluoromethane	Surrogate	110%	114%	-	-	-	-
4-Bromofluorobenzene	Surrogate	124%	123%	-	-	-	-
Toluene-d8	Surrogate	101%	103%	-	-	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	25 ug/L	<25	<25	-	-	-	-
F2 PHCs (C10-C16)	100 ug/L	<171 [1]	<100	-	-	-	-
F3 PHCs (C16-C34)	100 ug/L	<171 [1]	<100	-	-	-	-
F4 PHCs (C34-C50)	100 ug/L	<171 [1]	<100	-	-	-	-
Semi-Volatiles							
Acenaphthene	0.05 ug/L	<0.11 [1]	<0.11 [1]	-	-	-	-
Acenaphthylene	0.05 ug/L	<0.11 [1]	<0.11 [1]	-	-	-	-
Anthracene	0.01 ug/L	<0.02 [1]	<0.02 [1]	-	-	-	-
Benzo [a] anthracene	0.01 ug/L	<0.02 [1]	<0.02 [1]	-	-	-	-

	Client ID:	BH/MW24-3	DUP	-	-	-	-
	Sample Date:	29-Aug-24 11:15	29-Aug-24 11:15	-	-		
	Sample ID:	2435508-01	2435508-02	-	-		
	Matrix:	Ground Water	Ground Water	-	-		
	MDL/Units						
Semi-Volatiles							
Benzo [a] pyrene	0.01 ug/L	<0.02 [1]	<0.02 [1]	-	-	-	-
Benzo [b] fluoranthene	0.05 ug/L	<0.11 [1]	<0.11 [1]	-	-	-	-
Benzo [g,h,i] perylene	0.05 ug/L	<0.11 [1]	<0.11 [1]	-	-	-	-
Benzo [k] fluoranthene	0.05 ug/L	<0.11 [1]	<0.11 [1]	-	-	-	-
Chrysene	0.05 ug/L	<0.11 [1]	<0.11 [1]	-	-	-	-
Dibenzo [a,h] anthracene	0.05 ug/L	<0.11 [1]	<0.11 [1]	-	-	-	-
Fluoranthene	0.01 ug/L	<0.02 [1]	<0.02 [1]	-	-	-	-
Fluorene	0.05 ug/L	<0.11 [1]	<0.11 [1]	-	-	-	-
Indeno [1,2,3-cd] pyrene	0.05 ug/L	<0.11 [1]	<0.11 [1]	-	-	-	-
1-Methylnaphthalene	0.05 ug/L	<0.11 [1]	<0.11 [1]	-	-	-	-
2-Methylnaphthalene	0.05 ug/L	<0.11 [1]	<0.11 [1]	-	-	-	-
Methylnaphthalene (1&2)	0.10 ug/L	<0.22 [1]	<0.22 [1]	-	-	-	-
Naphthalene	0.05 ug/L	<0.11 [1]	<0.11 [1]	-	-	-	-
Phenanthrene	0.05 ug/L	<0.11 [1]	<0.11 [1]	-	-	-	-
Pyrene	0.01 ug/L	<0.02 [1]	<0.02 [1]	-	-	-	-
2-Fluorobiphenyl	Surrogate	68.9% [1]	64.7% [1]	-	-	-	-
Terphenyl-d14	Surrogate	94.7% [1]	93.1% [1]	-	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons								
F1 PHCs (C6-C10)	ND	25	ug/L					
F2 PHCs (C10-C16)	ND	100	ug/L					
F3 PHCs (C16-C34)	ND	100	ug/L					
F4 PHCs (C34-C50)	ND	100	ug/L					
Metals								
Antimony	ND	0.5	ug/L					
Arsenic	ND	1	ug/L					
Barium	ND	1	ug/L					
Beryllium	ND	0.5	ug/L					
Boron	ND	10	ug/L					
Cadmium	ND	0.1	ug/L					
Chromium	ND	1	ug/L					
Cobalt	ND	0.5	ug/L					
Copper	ND	0.5	ug/L					
Lead	ND	0.1	ug/L					
Molybdenum	ND	0.5	ug/L					
Nickel	ND	1	ug/L					
Selenium	ND	1	ug/L					
Silver	ND	0.1	ug/L					
Sodium	ND	200	ug/L					
Thallium	ND	0.1	ug/L					
Uranium	ND	0.1	ug/L					
Vanadium	ND	0.5	ug/L					
Zinc	ND	5	ug/L					
Semi-Volatiles								
Acenaphthene	ND	0.05	ug/L					
Acenaphthylene	ND	0.05	ug/L					
Anthracene	ND	0.01	ug/L					
Benzo [a] anthracene	ND	0.01	ug/L					
Benzo [a] pyrene	ND	0.01	ug/L					
Benzo [b] fluoranthene	ND	0.05	ug/L					
Benzo [g,h,i] perylene	ND	0.05	ug/L					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzo [k] fluoranthene	ND	0.05	ug/L					
Chrysene	ND	0.05	ug/L					
Dibenzo [a,h] anthracene	ND	0.05	ug/L					
Fluoranthene	ND	0.01	ug/L					
Fluorene	ND	0.05	ug/L					
Indeno [1,2,3-cd] pyrene	ND	0.05	ug/L					
1-Methylnaphthalene	ND	0.05	ug/L					
2-Methylnaphthalene	ND	0.05	ug/L					
Methylnaphthalene (1&2)	ND	0.10	ug/L					
Naphthalene	ND	0.05	ug/L					
Phenanthrene	ND	0.05	ug/L					
Pyrene	ND	0.01	ug/L					
Surrogate: 2-Fluorobiphenyl	*12.8*		*%*	*64.2*	*50-140*			
Surrogate: Terphenyl-d14	*17.6*		*%*	*87.8*	*50-140*			
Volatiles								
Acetone	ND	5.0	ug/L					
Benzene	ND	0.5	ug/L					
Bromodichloromethane	ND	0.5	ug/L					
Bromoform	ND	0.5	ug/L					
Bromomethane	ND	0.5	ug/L					
Carbon Tetrachloride	ND	0.2	ug/L					
Chlorobenzene	ND	0.5	ug/L					
Chloroform	ND	0.5	ug/L					
Dibromochloromethane	ND	0.5	ug/L					
Dichlorodifluoromethane	ND	1.0	ug/L					
1,2-Dichlorobenzene	ND	0.5	ug/L					
1,3-Dichlorobenzene	ND	0.5	ug/L					
1,4-Dichlorobenzene	ND	0.5	ug/L					
1,1-Dichloroethane	ND	0.5	ug/L					
1,2-Dichloroethane	ND	0.5	ug/L					
1,1-Dichloroethylene	ND	0.5	ug/L					
cis-1,2-Dichloroethylene	ND	0.5	ug/L					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
trans-1,2-Dichloroethylene	ND	0.5	ug/L					
1,2-Dichloropropane	ND	0.5	ug/L					
cis-1,3-Dichloropropylene	ND	0.5	ug/L					
trans-1,3-Dichloropropylene	ND	0.5	ug/L					
1,3-Dichloropropene, total	ND	0.5	ug/L					
Ethylbenzene	ND	0.5	ug/L					
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.2	ug/L					
Hexane	ND	1.0	ug/L					
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L					
Methyl Isobutyl Ketone	ND	5.0	ug/L					
Methyl tert-butyl ether	ND	2.0	ug/L					
Methylene Chloride	ND	5.0	ug/L					
Styrene	ND	0.5	ug/L					
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L					
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L					
Tetrachloroethylene	ND	0.5	ug/L					
Toluene	ND	0.5	ug/L					
1,1,1-Trichloroethane	ND	0.5	ug/L					
1,1,2-Trichloroethane	ND	0.5	ug/L					
Trichloroethylene	ND	0.5	ug/L					
Trichlorofluoromethane	ND	1.0	ug/L					
Vinyl chloride	ND	0.5	ug/L					
m,p-Xylenes	ND	0.5	ug/L					
o-Xylene	ND	0.5	ug/L					
Xylenes, total	ND	0.5	ug/L					
Surrogate: 4-Bromofluorobenzene	*98.8*		*%*	*124*	*50-140*			
Surrogate: Dibromofluoromethane	*90.9*		*%*	*114*	*50-140*			
Surrogate: Toluene-d8	*82.2*		*%*	*103*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L	ND			NC	30	
Metals									
Antimony	0.99	0.5	ug/L	1.13			13.3	20	
Arsenic	ND	1	ug/L	ND			NC	20	
Barium	275	1	ug/L	274			0.3	20	
Beryllium	ND	0.5	ug/L	ND			NC	20	
Boron	137	10	ug/L	137			0.0	20	
Cadmium	ND	0.1	ug/L	ND			NC	20	
Chromium	ND	1	ug/L	ND			NC	20	
Cobalt	1.73	0.5	ug/L	1.73			0.3	20	
Copper	3.04	0.5	ug/L	3.04			0.3	20	
Lead	0.18	0.1	ug/L	0.14			NC	20	
Molybdenum	3.73	0.5	ug/L	3.85			3.0	20	
Nickel	2.6	1	ug/L	2.6			0.1	20	
Selenium	ND	1	ug/L	ND			NC	20	
Silver	ND	0.1	ug/L	ND			NC	20	
Sodium	128000	200	ug/L	126000			1.1	20	
Thallium	0.54	0.1	ug/L	0.52			2.6	20	
Uranium	2.0	0.1	ug/L	1.7			15.0	20	
Vanadium	0.51	0.5	ug/L	ND			NC	20	
Zinc	ND	5	ug/L	ND			NC	20	
Volatiles									
Acetone	ND	5.0	ug/L	ND			NC	30	
Benzene	ND	0.5	ug/L	ND			NC	30	
Bromodichloromethane	ND	0.5	ug/L	ND			NC	30	
Bromoform	ND	0.5	ug/L	ND			NC	30	
Bromomethane	ND	0.5	ug/L	ND			NC	30	
Carbon Tetrachloride	ND	0.2	ug/L	ND			NC	30	
Chlorobenzene	ND	0.5	ug/L	ND			NC	30	
Chloroform	ND	0.5	ug/L	ND			NC	30	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Dibromochloromethane	ND	0.5	ug/L	ND			NC	30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND			NC	30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
cis-1,2-Dichloroethylene	16.8	0.5	ug/L	16.4			1.9	30	
trans-1,2-Dichloroethylene	0.90	0.5	ug/L	0.90			0.0	30	
1,2-Dichloropropane	ND	0.5	ug/L	ND			NC	30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
Ethylbenzene	ND	0.5	ug/L	ND			NC	30	
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.2	ug/L	ND			NC	30	
Hexane	ND	1.0	ug/L	ND			NC	30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND			NC	30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND			NC	30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND			NC	30	
Methylene Chloride	ND	5.0	ug/L	ND			NC	30	
Styrene	ND	0.5	ug/L	ND			NC	30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
Tetrachloroethylene	37.7	0.5	ug/L	37.4			0.8	30	
Toluene	ND	0.5	ug/L	ND			NC	30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
Trichloroethylene	11.0	0.5	ug/L	11.0			0.0	30	
Trichlorofluoromethane	ND	1.0	ug/L	ND			NC	30	
Vinyl chloride	ND	0.5	ug/L	ND			NC	30	
m,p-Xylenes	ND	0.5	ug/L	ND			NC	30	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
o-Xylene	ND	0.5	ug/L	ND			NC	30	
Surrogate: 4-Bromofluorobenzene	*98.2*		*%*		*123*	*50-140*			
Surrogate: Dibromofluoromethane	*92.7*		*%*		*116*	*50-140*			
Surrogate: Toluene-d8	*82.2*		*%*		*103*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	1900	25	ug/L	ND	111	85-115			
F2 PHCs (C10-C16)	1520	100	ug/L	ND	95.1	60-140			
F3 PHCs (C16-C34)	3950	100	ug/L	ND	101	60-140			
F4 PHCs (C34-C50)	2260	100	ug/L	ND	91.1	60-140			
Metals									
Arsenic	50.2	1	ug/L	ND	99.8	80-120			
Barium	307	1	ug/L	274	65.7	80-120			QM-07
Beryllium	48.8	0.5	ug/L	ND	97.5	80-120			
Boron	169	10	ug/L	137	64.2	80-120			QM-07
Cadmium	46.2	0.1	ug/L	ND	92.4	80-120			
Chromium	54.1	1	ug/L	ND	108	80-120			
Cobalt	52.3	0.5	ug/L	1.73	101	80-120			
Copper	48.9	0.5	ug/L	3.04	91.7	80-120			
Lead	40.9	0.1	ug/L	0.14	81.4	80-120			
Molybdenum	50.8	0.5	ug/L	3.85	93.9	80-120			
Nickel	50.4	1	ug/L	2.6	95.7	80-120			
Selenium	44.1	1	ug/L	ND	86.3	80-120			
Silver	43.5	0.1	ug/L	ND	87.1	80-120			
Sodium	9850	200	ug/L	ND	98.5	80-120			
Thallium	45.4	0.1	ug/L	0.52	89.8	80-120			
Uranium	45.4	0.1	ug/L	1.7	87.3	80-120			
Vanadium	56.1	0.5	ug/L	0.50	111	80-120			
Zinc	43	5	ug/L	ND	83.1	80-120			
Semi-Volatiles									
Acenaphthene	3.66	0.05	ug/L	ND	73.2	50-140			
Acenaphthylene	3.69	0.05	ug/L	ND	73.7	50-140			
Anthracene	3.22	0.01	ug/L	ND	64.3	50-140			
Benzo [a] anthracene	3.55	0.01	ug/L	ND	70.9	50-140			
Benzo [a] pyrene	3.83	0.01	ug/L	ND	76.5	50-140			
Benzo [b] fluoranthene	3.40	0.05	ug/L	ND	68.0	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzo [g,h,i] perylene	3.99	0.05	ug/L	ND	79.8	50-140			
Benzo [k] fluoranthene	3.60	0.05	ug/L	ND	72.0	50-140			
Chrysene	3.45	0.05	ug/L	ND	69.0	50-140			
Dibenzo [a,h] anthracene	4.26	0.05	ug/L	ND	85.3	50-140			
Fluoranthene	3.34	0.01	ug/L	ND	66.7	50-140			
Fluorene	3.18	0.05	ug/L	ND	63.6	50-140			
Indeno [1,2,3-cd] pyrene	4.08	0.05	ug/L	ND	81.6	50-140			
1-Methylnaphthalene	3.71	0.05	ug/L	ND	74.2	50-140			
2-Methylnaphthalene	3.64	0.05	ug/L	ND	72.8	50-140			
Naphthalene	3.99	0.05	ug/L	ND	79.7	50-140			
Phenanthrene	3.67	0.05	ug/L	ND	73.3	50-140			
Pyrene	3.19	0.01	ug/L	ND	63.7	50-140			
Surrogate: 2-Fluorobiphenyl	*12.6*		*%*		*63.2*	*50-140*			
Surrogate: Terphenyl-d14	*15.3*		*%*		*76.7*	*50-140*			
Volatiles									
Acetone	99.9	5.0	ug/L	ND	99.9	50-140			
Benzene	41.7	0.5	ug/L	ND	104	60-130			
Bromodichloromethane	42.6	0.5	ug/L	ND	107	60-130			
Bromoform	34.6	0.5	ug/L	ND	86.4	60-130			
Bromomethane	49.8	0.5	ug/L	ND	124	50-140			
Carbon Tetrachloride	38.9	0.2	ug/L	ND	97.3	60-130			
Chlorobenzene	39.5	0.5	ug/L	ND	98.8	60-130			
Chloroform	43.2	0.5	ug/L	ND	108	60-130			
Dibromochloromethane	39.2	0.5	ug/L	ND	98.1	60-130			
Dichlorodifluoromethane	36.6	1.0	ug/L	ND	91.5	50-140			
1,2-Dichlorobenzene	37.1	0.5	ug/L	ND	92.8	60-130			
1,3-Dichlorobenzene	39.9	0.5	ug/L	ND	99.8	60-130			
1,4-Dichlorobenzene	38.5	0.5	ug/L	ND	96.2	60-130			
1,1-Dichloroethane	45.1	0.5	ug/L	ND	113	60-130			
1,2-Dichloroethane	45.0	0.5	ug/L	ND	112	60-130			
1,1-Dichloroethylene	45.8	0.5	ug/L	ND	115	60-130			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
cis-1,2-Dichloroethylene	42.4	0.5	ug/L	ND	106	60-130			
trans-1,2-Dichloroethylene	46.8	0.5	ug/L	ND	117	60-130			
1,2-Dichloropropane	40.8	0.5	ug/L	ND	102	60-130			
cis-1,3-Dichloropropylene	44.6	0.5	ug/L	ND	112	60-130			
trans-1,3-Dichloropropylene	42.8	0.5	ug/L	ND	107	60-130			
Ethylbenzene	35.4	0.5	ug/L	ND	88.5	60-130			
Ethylene dibromide (dibromoethane, 1,2-)	42.3	0.2	ug/L	ND	106	60-130			
Hexane	35.3	1.0	ug/L	ND	88.4	60-130			
Methyl Ethyl Ketone (2-Butanone)	103	5.0	ug/L	ND	103	50-140			
Methyl Isobutyl Ketone	105	5.0	ug/L	ND	105	50-140			
Methyl tert-butyl ether	91.0	2.0	ug/L	ND	91.0	50-140			
Methylene Chloride	47.3	5.0	ug/L	ND	118	60-130			
Styrene	35.8	0.5	ug/L	ND	89.4	60-130			
1,1,1,2-Tetrachloroethane	36.6	0.5	ug/L	ND	91.4	60-130			
1,1,2,2-Tetrachloroethane	40.5	0.5	ug/L	ND	101	60-130			
Tetrachloroethylene	33.5	0.5	ug/L	ND	83.8	60-130			
Toluene	39.0	0.5	ug/L	ND	97.5	60-130			
1,1,1-Trichloroethane	39.3	0.5	ug/L	ND	98.3	60-130			
1,1,2-Trichloroethane	45.9	0.5	ug/L	ND	115	60-130			
Trichloroethylene	37.8	0.5	ug/L	ND	94.4	60-130			
Trichlorofluoromethane	48.9	1.0	ug/L	ND	122	60-130			
Vinyl chloride	30.7	0.5	ug/L	ND	76.7	50-140			
m,p-Xylenes	74.4	0.5	ug/L	ND	93.0	60-130			
o-Xylene	36.4	0.5	ug/L	ND	91.0	60-130			
Surrogate: 4-Bromofluorobenzene	*85.8*		*%*		*107*	*50-140*			
Surrogate: Dibromofluoromethane	*91.8*		*%*		*115*	*50-140*			
Surrogate: Toluene-d8	*78.0*		*%*		*97.5*	*50-140*			

Qualifier Notes:

Sample Qualifiers :

1: Elevated Reporting Limits due to limited sample volume.

QC Qualifiers:

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on other acceptable QC.

Sample Data Revisions:

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.

- F1 range corrected for BTEX.

- F2 to F3 ranges corrected for appropriate PAHs where available.

- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.

- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.

- When reported, data for F4G has been processed using a silica gel cleanup.

PARACE LABORATORIES L

Paracel ID: 2435508

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Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2435508	№ 74232

Client Name: EXP Services Inc.	Project Ref: OTT-24006545-B0	Page 1 of 1
Contact Name: Accounts Payable	Quote #:	Turnaround Time
Address: 2650 Queensview Dr.	PO #:	☐ 1 day ☐ 3 day
	E-mail: scott.lessard@exp.com jeremy.eckert@exp.com	☐ 2 day ☒ Regular
Telephone: 613-688-1899		Date Required:

☒ REG 153/04 ☐ REG 406/19

☐ Table 1 ☐ Res/Park ☐ Med/Fine
☐ Table 2 ☐ Ind/Comm ☐ Coarse
☒ Table 3 ☐ Agri/Other
☐ Table ___
For RSC: ☐ Yes ☒ No

Other Regulation: ☐ REG 558 ☐ PWQO ☐ CCME ☐ MISA ☐ SU - Sani ☐ SU - Storm Mun: ☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	PHC F1-F4	VOC	ICP Metals	PAH	Limited sample							
1	BH/MW24-3	S		5	24/08/29	11:15	X	X	X	X	X							
2	DUP	S		5	24/08/29	11:15	X	X	X	X	X							
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Comments:

Method of Delivery: walk in

Relinquished By (Sign):	Received at Depot:	Received at Lab: SS	Verified By: SD
Relinquished By (Print): Jeremy Eckert	Date/Time: Aug 29/24 4:01	Date/Time: 30 Aug 24 1112	Date/Time: Aug 30, 2024 11:50 am
Date/Time: 24/08/29 15:00	Temperature: 23.8 °C	Temperature: 4.9 °C	pH Verified: ☑ By: SD

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Certificate of Analysis

exp Services Inc. (Ottawa)
100-2650 Queensview Dr.
Ottawa, ON K2B 8H6
Attn: Scott Lessard

Client PO: 116 Carruthers Ave.
Project: OTT24006545B0
Custody: 121581

Report Date: 12-Sep-2024
Order Date: 6-Sep-2024

Revised Report

Order #: 2436394

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2436394-01	MW24-1

Approved By:

Mark Foto, M.Sc.
Lab Supervisor

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Metals, ICP-MS	EPA 200.8 - ICP-MS	10-Sep-24	10-Sep-24
PHC F1	CWS Tier 1 - P&T GC-FID	6-Sep-24	9-Sep-24
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	9-Sep-24	9-Sep-24
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	11-Sep-24	11-Sep-24
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	6-Sep-24	9-Sep-24

	Client ID:	MW24-1	-	-	-	-	-
	Sample Date:	06-Sep-24 11:00	-	-	-		
	Sample ID:	2436394-01	-	-	-		
	Matrix:	Ground Water	-	-	-		
	MDL/Units						
Metals							
Antimony	0.5 ug/L	4.1	-	-	-	-	-
Arsenic	1 ug/L	1	-	-	-	-	-
Barium	1 ug/L	39	-	-	-	-	-
Beryllium	0.5 ug/L	<0.5	-	-	-	-	-
Boron	10 ug/L	322	-	-	-	-	-
Cadmium	0.1 ug/L	<0.1	-	-	-	-	-
Chromium	1 ug/L	<1	-	-	-	-	-
Cobalt	0.5 ug/L	22.4	-	-	-	-	-
Copper	0.5 ug/L	4.7	-	-	-	-	-
Lead	0.1 ug/L	<0.1	-	-	-	-	-
Molybdenum	0.5 ug/L	7.4	-	-	-	-	-
Nickel	1 ug/L	1	-	-	-	-	-
Selenium	1 ug/L	12	-	-	-	-	-
Silver	0.1 ug/L	<0.1	-	-	-	-	-
Sodium	200 ug/L	124000	-	-	-	-	-
Thallium	0.1 ug/L	0.1	-	-	-	-	-
Uranium	0.1 ug/L	0.8	-	-	-	-	-
Vanadium	0.5 ug/L	1.4	-	-	-	-	-
Zinc	5 ug/L	<5	-	-	-	-	-
Volatiles							
Acetone	5.0 ug/L	<5.0	-	-	-	-	-
Benzene	0.5 ug/L	<0.5	-	-	-	-	-
Bromodichloromethane	0.5 ug/L	0.5	-	-	-	-	-
Bromoform	0.5 ug/L	<0.5	-	-	-	-	-
Bromomethane	0.5 ug/L	<0.5	-	-	-	-	-

	Client ID:	MW24-1	-	-	-	-	-
	Sample Date:	06-Sep-24 11:00	-	-	-		
	Sample ID:	2436394-01	-	-	-		
	Matrix:	Ground Water	-	-	-		
	MDL/Units						
Volatiles							
Carbon Tetrachloride	0.2 ug/L	<0.2	-	-	-	-	-
Chlorobenzene	0.5 ug/L	<0.5	-	-	-	-	-
Chloroform	0.5 ug/L	9.8	-	-	-	-	-
Dibromochloromethane	0.5 ug/L	<0.5	-	-	-	-	-
Dichlorodifluoromethane	1.0 ug/L	<1.0	-	-	-	-	-
1,2-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-	-	-
1,3-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-	-	-
1,4-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-	-	-
1,1-Dichloroethane	0.5 ug/L	<0.5	-	-	-	-	-
1,2-Dichloroethane	0.5 ug/L	<0.5	-	-	-	-	-
1,1-Dichloroethylene	0.5 ug/L	<0.5	-	-	-	-	-
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	-	-	-	-	-
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	-	-	-	-	-
1,2-Dichloropropane	0.5 ug/L	<0.5	-	-	-	-	-
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	-	-	-	-	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	-	-	-	-	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	-	-	-	-	-
Ethylene dibromide (dibromoethane,	0.2 ug/L	<0.2	-	-	-	-	-
Ethylbenzene	0.5 ug/L	<0.5	-	-	-	-	-
Hexane	1.0 ug/L	<1.0	-	-	-	-	-
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	-	-	-	-	-
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	-	-	-	-	-
Methyl tert-butyl ether	2.0 ug/L	<2.0	-	-	-	-	-
Methylene Chloride	5.0 ug/L	<5.0	-	-	-	-	-
Styrene	0.5 ug/L	<0.5	-	-	-	-	-

	Client ID:	MW24-1	-	-	-	-	-
	Sample Date:	06-Sep-24 11:00	-	-	-		
	Sample ID:	2436394-01	-	-	-		
	Matrix:	Ground Water	-	-	-		
	MDL/Units						
Volatiles							
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	-	-	-	-	-
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	-	-	-	-	-
Tetrachloroethylene	0.5 ug/L	<0.5	-	-	-	-	-
Toluene	0.5 ug/L	<0.5	-	-	-	-	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	-	-	-	-	-
1,1,2-Trichloroethane	0.5 ug/L	<0.5	-	-	-	-	-
Trichloroethylene	0.5 ug/L	<0.5	-	-	-	-	-
Trichlorofluoromethane	1.0 ug/L	<1.0	-	-	-	-	-
Vinyl chloride	0.5 ug/L	<0.5	-	-	-	-	-
m,p-Xylenes	0.5 ug/L	<0.5	-	-	-	-	-
o-Xylene	0.5 ug/L	<0.5	-	-	-	-	-
Xylenes, total	0.5 ug/L	<0.5	-	-	-	-	-
Dibromofluoromethane	Surrogate	114%	-	-	-	-	-
4-Bromofluorobenzene	Surrogate	122%	-	-	-	-	-
Toluene-d8	Surrogate	105%	-	-	-	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	25 ug/L	<25	-	-	-	-	-
F2 PHCs (C10-C16)	100 ug/L	<100	-	-	-	-	-
F3 PHCs (C16-C34)	100 ug/L	<100	-	-	-	-	-
F4 PHCs (C34-C50)	100 ug/L	<100	-	-	-	-	-
Semi-Volatiles							
Acenaphthene	0.05 ug/L	<0.10 [1]	-	-	-	-	-
Acenaphthylene	0.05 ug/L	<0.10 [1]	-	-	-	-	-
Anthracene	0.01 ug/L	<0.02 [1]	-	-	-	-	-
Benzo [a] anthracene	0.01 ug/L	<0.02 [1]	-	-	-	-	-

	Client ID:	MW24-1	-	-	-		
	Sample Date:	06-Sep-24 11:00	-	-	-	-	-
	Sample ID:	2436394-01	-	-	-		
	Matrix:	Ground Water	-	-	-		
	MDL/Units						
Semi-Volatiles							
Benzo [a] pyrene	0.01 ug/L	<0.02 [1]	-	-	-	-	-
Benzo [b] fluoranthene	0.05 ug/L	<0.10 [1]	-	-	-	-	-
Benzo [g,h,i] perylene	0.05 ug/L	<0.10 [1]	-	-	-	-	-
Benzo [k] fluoranthene	0.05 ug/L	<0.10 [1]	-	-	-	-	-
Chrysene	0.05 ug/L	<0.10 [1]	-	-	-	-	-
Dibenzo [a,h] anthracene	0.05 ug/L	<0.10 [1]	-	-	-	-	-
Fluoranthene	0.01 ug/L	<0.02 [1]	-	-	-	-	-
Fluorene	0.05 ug/L	<0.10 [1]	-	-	-	-	-
Indeno [1,2,3-cd] pyrene	0.05 ug/L	<0.10 [1]	-	-	-	-	-
1-Methylnaphthalene	0.05 ug/L	<0.10 [1]	-	-	-	-	-
2-Methylnaphthalene	0.05 ug/L	<0.10 [1]	-	-	-	-	-
Methylnaphthalene (1&2)	0.10 ug/L	<0.20 [1]	-	-	-	-	-
Naphthalene	0.05 ug/L	<0.10 [1]	-	-	-	-	-
Phenanthrene	0.05 ug/L	<0.10 [1]	-	-	-	-	-
Pyrene	0.01 ug/L	<0.02 [1]	-	-	-	-	-
2-Fluorobiphenyl	Surrogate	60.8% [1]	-	-	-	-	-
Terphenyl-d14	Surrogate	80.7% [1]	-	-	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons								
F1 PHCs (C6-C10)	ND	25	ug/L					
F2 PHCs (C10-C16)	ND	100	ug/L					
F3 PHCs (C16-C34)	ND	100	ug/L					
F4 PHCs (C34-C50)	ND	100	ug/L					
Metals								
Antimony	ND	0.5	ug/L					
Arsenic	ND	1	ug/L					
Barium	ND	1	ug/L					
Beryllium	ND	0.5	ug/L					
Boron	ND	10	ug/L					
Cadmium	ND	0.1	ug/L					
Chromium	ND	1	ug/L					
Cobalt	ND	0.5	ug/L					
Copper	ND	0.5	ug/L					
Lead	ND	0.1	ug/L					
Molybdenum	ND	0.5	ug/L					
Nickel	ND	1	ug/L					
Selenium	ND	1	ug/L					
Silver	ND	0.1	ug/L					
Sodium	ND	200	ug/L					
Thallium	ND	0.1	ug/L					
Uranium	ND	0.1	ug/L					
Vanadium	ND	0.5	ug/L					
Zinc	ND	5	ug/L					
Semi-Volatiles								
Acenaphthene	ND	0.05	ug/L					
Acenaphthylene	ND	0.05	ug/L					
Anthracene	ND	0.01	ug/L					
Benzo [a] anthracene	ND	0.01	ug/L					
Benzo [a] pyrene	ND	0.01	ug/L					
Benzo [b] fluoranthene	ND	0.05	ug/L					
Benzo [g,h,i] perylene	ND	0.05	ug/L					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzo [k] fluoranthene	ND	0.05	ug/L					
Chrysene	ND	0.05	ug/L					
Dibenzo [a,h] anthracene	ND	0.05	ug/L					
Fluoranthene	ND	0.01	ug/L					
Fluorene	ND	0.05	ug/L					
Indeno [1,2,3-cd] pyrene	ND	0.05	ug/L					
1-Methylnaphthalene	ND	0.05	ug/L					
2-Methylnaphthalene	ND	0.05	ug/L					
Methylnaphthalene (1&2)	ND	0.10	ug/L					
Naphthalene	ND	0.05	ug/L					
Phenanthrene	ND	0.05	ug/L					
Pyrene	ND	0.01	ug/L					
Surrogate: 2-Fluorobiphenyl	*10.8*		*%*	*53.8*	*50-140*			
Surrogate: Terphenyl-d14	*14.9*		*%*	*74.5*	*50-140*			
Volatiles								
Acetone	ND	5.0	ug/L					
Benzene	ND	0.5	ug/L					
Bromodichloromethane	ND	0.5	ug/L					
Bromoform	ND	0.5	ug/L					
Bromomethane	ND	0.5	ug/L					
Carbon Tetrachloride	ND	0.2	ug/L					
Chlorobenzene	ND	0.5	ug/L					
Chloroform	ND	0.5	ug/L					
Dibromochloromethane	ND	0.5	ug/L					
Dichlorodifluoromethane	ND	1.0	ug/L					
1,2-Dichlorobenzene	ND	0.5	ug/L					
1,3-Dichlorobenzene	ND	0.5	ug/L					
1,4-Dichlorobenzene	ND	0.5	ug/L					
1,1-Dichloroethane	ND	0.5	ug/L					
1,2-Dichloroethane	ND	0.5	ug/L					
1,1-Dichloroethylene	ND	0.5	ug/L					
cis-1,2-Dichloroethylene	ND	0.5	ug/L					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
trans-1,2-Dichloroethylene	ND	0.5	ug/L					
1,2-Dichloropropane	ND	0.5	ug/L					
cis-1,3-Dichloropropylene	ND	0.5	ug/L					
trans-1,3-Dichloropropylene	ND	0.5	ug/L					
1,3-Dichloropropene, total	ND	0.5	ug/L					
Ethylbenzene	ND	0.5	ug/L					
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.2	ug/L					
Hexane	ND	1.0	ug/L					
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L					
Methyl Isobutyl Ketone	ND	5.0	ug/L					
Methyl tert-butyl ether	ND	2.0	ug/L					
Methylene Chloride	ND	5.0	ug/L					
Styrene	ND	0.5	ug/L					
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L					
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L					
Tetrachloroethylene	ND	0.5	ug/L					
Toluene	ND	0.5	ug/L					
1,1,1-Trichloroethane	ND	0.5	ug/L					
1,1,2-Trichloroethane	ND	0.5	ug/L					
Trichloroethylene	ND	0.5	ug/L					
Trichlorofluoromethane	ND	1.0	ug/L					
Vinyl chloride	ND	0.5	ug/L					
m,p-Xylenes	ND	0.5	ug/L					
o-Xylene	ND	0.5	ug/L					
Xylenes, total	ND	0.5	ug/L					
Surrogate: 4-Bromofluorobenzene	*96.2*		*%*	*120*	*50-140*			
Surrogate: Dibromofluoromethane	*86.4*		*%*	*108*	*50-140*			
Surrogate: Toluene-d8	*84.2*		*%*	*105*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L	ND			NC	30	
Metals									
Antimony	3.93	0.5	ug/L	4.08			3.8	20	
Arsenic	1.2	1	ug/L	1.2			1.1	20	
Barium	37.2	1	ug/L	38.8			4.1	20	
Beryllium	ND	0.5	ug/L	ND			NC	20	
Boron	333	10	ug/L	322			3.5	20	
Cadmium	ND	0.1	ug/L	ND			NC	20	
Chromium	ND	1	ug/L	ND			NC	20	
Cobalt	22.6	0.5	ug/L	22.4			0.7	20	
Copper	4.70	0.5	ug/L	4.67			0.7	20	
Lead	ND	0.1	ug/L	ND			NC	20	
Molybdenum	7.45	0.5	ug/L	7.38			1.0	20	
Nickel	1.1	1	ug/L	1.1			1.3	20	
Selenium	11.8	1	ug/L	12.0			1.5	20	
Silver	ND	0.1	ug/L	ND			NC	20	
Sodium	129000	200	ug/L	124000			3.5	20	
Thallium	0.12	0.1	ug/L	0.12			2.2	20	
Uranium	0.8	0.1	ug/L	0.8			1.7	20	
Vanadium	1.39	0.5	ug/L	1.41			1.3	20	
Zinc	ND	5	ug/L	ND			NC	20	
Volatiles									
Acetone	ND	5.0	ug/L	ND			NC	30	
Benzene	ND	0.5	ug/L	ND			NC	30	
Bromodichloromethane	ND	0.5	ug/L	ND			NC	30	
Bromoform	ND	0.5	ug/L	ND			NC	30	
Bromomethane	ND	0.5	ug/L	ND			NC	30	
Carbon Tetrachloride	ND	0.2	ug/L	ND			NC	30	
Chlorobenzene	ND	0.5	ug/L	ND			NC	30	
Chloroform	ND	0.5	ug/L	ND			NC	30	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Dibromochloromethane	ND	0.5	ug/L	ND			NC	30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND			NC	30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloropropane	ND	0.5	ug/L	ND			NC	30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
Ethylbenzene	ND	0.5	ug/L	ND			NC	30	
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.2	ug/L	ND			NC	30	
Hexane	ND	1.0	ug/L	ND			NC	30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND			NC	30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND			NC	30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND			NC	30	
Methylene Chloride	ND	5.0	ug/L	ND			NC	30	
Styrene	ND	0.5	ug/L	ND			NC	30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
Tetrachloroethylene	ND	0.5	ug/L	ND			NC	30	
Toluene	ND	0.5	ug/L	ND			NC	30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
Trichloroethylene	ND	0.5	ug/L	ND			NC	30	
Trichlorofluoromethane	ND	1.0	ug/L	ND			NC	30	
Vinyl chloride	ND	0.5	ug/L	ND			NC	30	
m,p-Xylenes	ND	0.5	ug/L	ND			NC	30	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
o-Xylene	ND	0.5	ug/L	ND			NC	30	
Surrogate: 4-Bromofluorobenzene	*96.7*		*%*		*121*	*50-140*			
Surrogate: Dibromofluoromethane	*87.4*		*%*		*109*	*50-140*			
Surrogate: Toluene-d8	*83.8*		*%*		*105*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	1930	25	ug/L	ND	112	85-115			
F2 PHCs (C10-C16)	1520	100	ug/L	ND	95.1	60-140			
F3 PHCs (C16-C34)	3120	100	ug/L	ND	79.6	60-140			
F4 PHCs (C34-C50)	2410	100	ug/L	ND	97.1	60-140			
Metals									
Arsenic	49.6	1	ug/L	1.2	96.8	80-120			
Barium	86.1	1	ug/L	38.8	94.5	80-120			
Beryllium	49.4	0.5	ug/L	ND	98.7	80-120			
Boron	49	10	ug/L	ND	97.8	80-120			
Cadmium	43.9	0.1	ug/L	ND	87.9	80-120			
Chromium	48.8	1	ug/L	ND	96.9	80-120			
Cobalt	67.5	0.5	ug/L	22.4	90.3	80-120			
Copper	47.6	0.5	ug/L	4.67	85.9	80-120			
Lead	40.9	0.1	ug/L	ND	81.7	80-120			
Molybdenum	52.1	0.5	ug/L	7.38	89.4	80-120			
Nickel	44.9	1	ug/L	1.1	87.7	80-120			
Selenium	57.0	1	ug/L	12.0	90.1	80-120			
Silver	42.7	0.1	ug/L	ND	85.4	80-120			
Sodium	133000	200	ug/L	124000	92.7	80-120			
Thallium	45.5	0.1	ug/L	0.12	90.8	80-120			
Uranium	47.8	0.1	ug/L	0.8	94.1	80-120			
Vanadium	51.6	0.5	ug/L	1.41	100	80-120			
Zinc	42	5	ug/L	ND	81.8	80-120			
Semi-Volatiles									
Acenaphthene	3.75	0.05	ug/L	ND	74.9	50-140			
Acenaphthylene	3.73	0.05	ug/L	ND	74.5	50-140			
Anthracene	3.21	0.01	ug/L	ND	64.2	50-140			
Benzo [a] anthracene	3.84	0.01	ug/L	ND	76.9	50-140			
Benzo [a] pyrene	3.94	0.01	ug/L	ND	78.8	50-140			
Benzo [b] fluoranthene	3.54	0.05	ug/L	ND	70.8	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzo [g,h,i] perylene	3.86	0.05	ug/L	ND	77.1	50-140			
Benzo [k] fluoranthene	3.45	0.05	ug/L	ND	68.9	50-140			
Chrysene	3.78	0.05	ug/L	ND	75.6	50-140			
Dibenzo [a,h] anthracene	4.11	0.05	ug/L	ND	82.3	50-140			
Fluoranthene	3.57	0.01	ug/L	ND	71.4	50-140			
Fluorene	3.32	0.05	ug/L	ND	66.3	50-140			
Indeno [1,2,3-cd] pyrene	4.26	0.05	ug/L	ND	85.3	50-140			
1-Methylnaphthalene	3.26	0.05	ug/L	ND	65.3	50-140			
2-Methylnaphthalene	3.34	0.05	ug/L	ND	66.8	50-140			
Naphthalene	3.59	0.05	ug/L	ND	71.8	50-140			
Phenanthrene	3.57	0.05	ug/L	ND	71.4	50-140			
Pyrene	3.44	0.01	ug/L	ND	68.8	50-140			
Surrogate: 2-Fluorobiphenyl	*13.4*		*%*		*66.8*	*50-140*			
Surrogate: Terphenyl-d14	*17.4*		*%*		*87.1*	*50-140*			
Volatiles									
Acetone	113	5.0	ug/L	ND	113	50-140			
Benzene	46.3	0.5	ug/L	ND	116	60-130			
Bromodichloromethane	45.2	0.5	ug/L	ND	113	60-130			
Bromoform	38.5	0.5	ug/L	ND	96.3	60-130			
Bromomethane	39.3	0.5	ug/L	ND	98.2	50-140			
Carbon Tetrachloride	39.3	0.2	ug/L	ND	98.2	60-130			
Chlorobenzene	44.1	0.5	ug/L	ND	110	60-130			
Chloroform	45.9	0.5	ug/L	ND	115	60-130			
Dibromochloromethane	43.1	0.5	ug/L	ND	108	60-130			
Dichlorodifluoromethane	48.1	1.0	ug/L	ND	120	50-140			
1,2-Dichlorobenzene	42.9	0.5	ug/L	ND	107	60-130			
1,3-Dichlorobenzene	45.2	0.5	ug/L	ND	113	60-130			
1,4-Dichlorobenzene	43.7	0.5	ug/L	ND	109	60-130			
1,1-Dichloroethane	43.0	0.5	ug/L	ND	108	60-130			
1,2-Dichloroethane	48.8	0.5	ug/L	ND	122	60-130			
1,1-Dichloroethylene	48.2	0.5	ug/L	ND	121	60-130			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
cis-1,2-Dichloroethylene	45.9	0.5	ug/L	ND	115	60-130			
trans-1,2-Dichloroethylene	49.6	0.5	ug/L	ND	124	60-130			
1,2-Dichloropropane	45.2	0.5	ug/L	ND	113	60-130			
cis-1,3-Dichloropropylene	47.6	0.5	ug/L	ND	119	60-130			
trans-1,3-Dichloropropylene	46.5	0.5	ug/L	ND	116	60-130			
Ethylbenzene	40.0	0.5	ug/L	ND	100	60-130			
Ethylene dibromide (dibromoethane, 1,2-)	47.6	0.2	ug/L	ND	119	60-130			
Hexane	33.8	1.0	ug/L	ND	84.4	60-130			
Methyl Ethyl Ketone (2-Butanone)	121	5.0	ug/L	ND	121	50-140			
Methyl Isobutyl Ketone	121	5.0	ug/L	ND	121	50-140			
Methyl tert-butyl ether	106	2.0	ug/L	ND	106	50-140			
Methylene Chloride	50.4	5.0	ug/L	ND	126	60-130			
Styrene	40.8	0.5	ug/L	ND	102	60-130			
1,1,1,2-Tetrachloroethane	39.7	0.5	ug/L	ND	99.3	60-130			
1,1,2,2-Tetrachloroethane	45.6	0.5	ug/L	ND	114	60-130			
Tetrachloroethylene	35.5	0.5	ug/L	ND	88.8	60-130			
Toluene	44.6	0.5	ug/L	ND	112	60-130			
1,1,1-Trichloroethane	41.4	0.5	ug/L	ND	104	60-130			
1,1,2-Trichloroethane	49.8	0.5	ug/L	ND	124	60-130			
Trichloroethylene	40.6	0.5	ug/L	ND	102	60-130			
Trichlorofluoromethane	47.4	1.0	ug/L	ND	119	60-130			
Vinyl chloride	35.1	0.5	ug/L	ND	87.8	50-140			
m,p-Xylenes	84.3	0.5	ug/L	ND	105	60-130			
o-Xylene	41.4	0.5	ug/L	ND	104	60-130			
Surrogate: 4-Bromofluorobenzene	*82.3*		*%*		*103*	*50-140*			
Surrogate: Dibromofluoromethane	*87.4*		*%*		*109*	*50-140*			
Surrogate: Toluene-d8	*80.9*		*%*		*101*	*50-140*			

Qualifier Notes:

Sample Qualifiers :

1: Elevated Reporting Limits due to limited sample volume.
Applies to Samples: MW24-1

Sample Data Revisions:

None

Work Order Revisions / Comments:

Revision 1 - This report includes updated PAH Reporting Limits.

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.

- F1 range corrected for BTEX.

- F2 to F3 ranges corrected for appropriate PAHs where available.

- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.

- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.

- When reported, data for F4G has been processed using a silica gel cleanup.

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Chain of Custody
(Lab Use Only)
№ 121581

Page 1 of 1

Client Name: EXP Services Inc.	Project Reference: 116 Carruthers Ave.
Contact Name: ~~Matthew~~ Scott Lessard	Quote #
Address: 2650 Queensview Dr.	PO # OTT-~~00~~24006545-30
Telephone: 613 688 1899	Email Address: scott.lessard@exp.com jeremy.eckert@exp.com

Turnaround Time:
☐ 1 Day ☐ 3 Day
☐ 2 Day ☒ Regular
Date Required: _____

Criteria: ~~☒~~ O. Reg. 153/04 (As Amended) Table 3 ☐ RSC Filing ☐ O. Reg. 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: _____ ☐ Other: _____

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Required Analyses

Paracel Order Number:

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken: Date	Sample Taken: Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)	Limited Sample						
1	MW24-1	GW		5	24/09/06	11:00	X	X	X	X				X						
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				

Comments: Matex drilling fluid in well *

Method of Delivery: Walch

Relinquished By (Sign):	Received by Driver/Depot:	Received at Lab: KB Dept 12:23 6th	Verified By: SO
Relinquished By (Print): Jeremy Eckert	Date/Time:	Date/Time:	Date/Time: Sept6, 2024 12:35p
Date/Time: 24/09/06 11:15	Temperature: °C	Temperature: °C 21.5	pH Verified ☐ By: SO